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Exploring Open Disclosure of Patient Safety Incidents in Healthcare: A Multidisciplinary Perspective through a Mixed-Methods Study

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for the Degree of Doctor of Philosophy
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Declaration

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

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Synopsis

Title: Exploring Open Disclosure of Patient Safety Incidents in Healthcare: A Multidisciplinary Perspective through a Mixed-Methods Study.

Background: Open disclosure is an ethical, moral and professional approach to fostering transparent and empathetic communication of Patient Safety Incidents (PSIs) to patients and relevant persons(s). While this approach empowers healthcare professionals (HCPs) to engage in honest discussions, barriers to effective disclosure practices persist. The rising rates of PSIs, heightened public health concerns, and the complex medico-legal and regulatory implications emphasise the need for HCPs to be equipped with the necessary strategies to facilitate open disclosure. Despite policy reforms, legislative frameworks, educational initiatives, and the establishment of a national steering committee in Ireland, empirical evidence on HCPs' attitudes and perceptions towards open disclosure remains limited. This gap highlights the need for further research to support its effective implementation across the Irish healthcare system.

Aim: This study explores multidisciplinary perspectives on the open disclosure of PSIs in Ireland. It examines HCPs' attitudes and perceptions, identifies key barriers and facilitators and aims to inform future practice.

Methodology and Methods: This study is underpinned by a pragmatist philosophical paradigm and employs a sequential explanatory mixed-methods design. The research was conducted across eight hospital sites within the RCSI Hospital Group. Ethical approval was obtained from each site. The quantitative phase involved survey data from a census of HCPs ($N = 417$) to examine their attitudes and perceptions of open disclosure following PSIs. In the qualitative phase, semi-structured interviews were conducted with a purposively selected subset of survey respondents ($N = 42$), using stratified and maximum variation sampling. These interviews explored key barriers, facilitators, and strategies to support open disclosure practice and training. Integration was achieved through joint display analysis, enabling systematic comparison and identification of convergence, divergence, and expansion across data from both phases. Theoretical pluralism further informed the analysis, drawing on multiple frameworks to interpret the interplay between individual attitudes, behaviours, and organisational contexts.

Findings: The findings highlight that HCPs perceived disclosure of PSIs as fundamental to fostering patient trust and promoting patient safety. While many HCPs expressed confidence in supporting colleagues through the disclosure process, some conveyed concerns about their professional competence being questioned following involvement in a PSI. Participants described how multidisciplinary teams (MDTs) prioritise patient care and manage PSIs and their associated disclosures collaboratively, rather than attributing individual blame. Survey data revealed that HCPs perceived a risk of disciplinary action associated with open disclosure and expressed concern about potentially negative responses from patients and families. Most respondents remained neutral regarding the likelihood of increased litigation. Nonetheless, a clear majority believed that disclosure helps to reduce feelings of guilt following a PSI.

Age appears to play a significant role in shaping HCPs' attitudes, values, and communication behaviours, with a statistically significant association ($p < .001$). Respondents aged 21–30 years ($n = 72$) placed greater

emphasis on ethical principles in interprofessional practice. Those aged 41–50 years ($n = 114$), particularly within medical teams, focus on identifying incident causes, assigning responsibility, and facilitating communication across disciplines. Nursing and midwifery professionals ($n = 278$) reported higher levels of comfort in advising and supporting colleagues during disclosure. Across all age groups, participants advocated for disclosure regardless of assumptions about patient preferences or the severity of harm. HCPs with more than 31 years of experience ($n = 44$) reported heightened concerns about the potential repercussions of disclosure. Approximately 55.8% of participants have engaged in open disclosure processes, including initial discussions, preparatory meetings, and formal disclosure conversations. Many perceived that open disclosure contributes to service improvement and enhances professional commitment to patient safety. The majority also acknowledged the importance of structured training in ensuring effective implementation, promoting interdisciplinary collaboration, and increasing awareness of legal protections.

Canonical Correlation Analysis identified a statistically significant multivariate relationship between attitudes and perceptions, indicating a strong positive correlation. It is primarily influenced by interprofessional communication, perceived justifications for disclosure, and access to institutional facilitators. Weaker communication between professionals correlates with greater reliance on institutional mechanisms. Hierarchical Linear Regression further shows that perception significantly predicts attitude. HCPs who expressed stronger justification for open disclosure also demonstrated greater alignment with professional values and ethical reasoning. Additionally, perceptions of legal, professional or emotional consequences impact attitudes, while previous experience with PSIs, socio-demographic factors, and personal ethics also shape disclosure related behaviours.

Reflexive thematic analysis indicates that HCPs viewed open disclosure as the “right thing to do,” irrespective of potential consequences. Participants reported that their experiences with and exposure to the disclosure of PSIs significantly shaped their confidence and competence in undertaking disclosure. They identified key facilitators such as mentorship, supportive leadership, peer encouragement, fact-based enquiry, robust documentation and alignment between organisational culture and open disclosure policies, which fostered a strong sense of responsibility and accountability to patients and their relevant person(s) throughout the process.

HCPs emphasised the importance of focusing on solutions rather than assigning blame and of prioritising what is best for the patient over determining who is at fault. They also valued training that provided practical tools and de-escalation techniques to manage emotional dynamics and facilitate empathetic, patient-centred communication. However, participants identified several barriers to effective disclosure, including limited resources, a pervasive culture of blame, fear of repercussions, psychological strain and complex legal and regulatory frameworks. They further highlighted the lack of consistent access to high-quality training as a significant limitation.

These findings suggest that advancing open disclosure in healthcare requires a multifaceted, multi-level, and multidisciplinary strategy underpinned by a non-punitive, humanistic perspective. Embedding open

disclosure within professional development and organisational learning through accessible, well-structured training is essential to fostering sustained, ethical practice.

Discussion and Conclusion: The integrated findings reveal that HCP's ethical principles and self-efficacy shaped their values, behaviours, and motivation to engage in open disclosure with patients and their relevant person(s). However, prior experiences, influence of role models, emotional and psychological states, and feedback mechanisms influenced their decision-making and depth of engagement. Although hierarchical structures and professional boundaries often constrained disclosure conversations, policy frameworks, organisational support, team-based approaches, and targeted training enabled HCPs to navigate uncertainties across various stages of the disclosure process. Awareness of convergence and divergence strategies appeared to mitigate hostility and promote more effective, patient-centred communication. Moreover, public and media engagement in raising awareness was perceived as a powerful influence on the broader implementation and outcomes of open disclosure. Despite the challenges presented by the COVID-19 pandemic, the study maintained methodological rigour and fulfilled research aims.

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Other Activities

Open Disclosure session as a part of Patient Safety and Human Factors in Healthcare Module to undergraduate nursing students at Trinity College Dublin on 2021-2024.

'Adverse Clinical Outcome-Open Disclosure' session to 2nd year BSc Midwifery Students School of Nursing and Midwifery, University College Cork via Microsoft Teams (online) on 27th Sept 2021.

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Acronyms and Operational Definition

List of abbreviations

ACSQHC: Australian Commission on Safety and Quality in Health Care

CCA: Canonical Correlation Analysis

CAT: Communication Accommodation Theory

CEO: Chief Executive Officer

CAS: Complex Adaptive Systems Theory

CPSI: Canadian Patient Safety Institute

CLA: Civil Liability (Amendment) Act, 2017

CVI: Content Validity Index

COVID-19: Coronavirus Disease 2019

DPIA: Data Protection Impact Assessment

DoH: Department of Health

DPO: Data Protection Officer

DPSI: Disclosure of Patient Safety Incidents

EDC: Electronic Data Collection

EACS: Employee Assistance & Counselling Services

EThOS: Electronic Thesis Online Service

GDPR: General Data Protection Regulation

GMC: General Medical Council

HCPs: Healthcare Professionals

HEI: Higher Education Institution

HIQA: Health Information and Quality Authority

HSE: Health Service Executive

I-CVI: Item Content Validity Index

IP: Internet Protocol address

IPEC: Interprofessional Education Collaborative

ISB: Irish Statute Book

IRS: Incident Reporting System

MDT: Multidisciplinary Team

NCPDNM: National Council for the Professional Development of Nursing and Midwifery

NHS: National Health Service

NMC: Nursing and Midwifery Council

NCHD: Non-Consultant Hospital Doctor

NQPSD: National Quality & Patient Safety Directorate

NMPDU: Nursing/Midwifery Planning and Development Unit

NVivo: Non-Versioned Information, Versatile Outcomes.

OECD: Organisation for Economic Cooperation and Development

PDCA: Plan-Do-Check-Act

PIL: Participant Information Leaflet

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PSA: Patient Safety (Notifiable Incidents and Open Disclosure) Act 2023

PSI: Patient Safety Incident

PTSD: Post-Traumatic Stress Disorder

QR: Quick Response Code

RCSI: Royal College of Surgeons in Ireland

RCPI: Royal College of Physicians of Ireland

RTA: Reflexive Thematic Analysis

SCA: State Claims Agency

S-CVI: Scale Content Validity Index

SPSS: Statistical Package for the Social Sciences

TTT: Train the Trainer

TCD: Trinity College Dublin

URT: Uncertainty Reduction Theory

UK: United Kingdom

USA: United States of America

UMHS: University of Michigan Health System

VIF: Variance Inflation Factor

WHO: World Health Organisation

WMA: World Medical Association

Definition of Key Terms

Adverse Event: An incident which resulted in harm that may or may not be the result of an error (HSE Incident Management Framework 2018).

Healthcare Professionals (HCPs): In the context of this research study, a healthcare professional is a person associated with either a speciality or a discipline and currently registered with a professional regulatory body to provide healthcare service to a patient (Medical, Nursing and Midwifery, Health and Social Care Professionals) within the Royal College of Surgeons in Ireland (RCSI) hospitals.

Open Disclosure (OD): Open Disclosure is defined as an “open, consistent, compassionate and timely approach to communicating with patients and, where appropriate, their relevant person following patient safety incidents. It includes expressing regret for what has happened, keeping the patient informed and providing reassurance concerning on-going care and treatment, learning and the steps being taken by the health services provider to try to prevent a recurrence of the incident.” (HSE 2019)

Patient Safety Incident (PSI): Part 4 of the Civil Liability Act defines a patient safety incident as: “an incident which occurs during the course of the provision of a health service” which: (a) has caused an unintended or unanticipated injury, or harm, to the patient (b) did not result in actual injury or harm to the patient but was one which the health services provider has reasonable grounds to believe placed the patient at risk of unintended or unanticipated injury or harm or (c) unanticipated or unintended injury or harm to the patient was prevented, either by “timely intervention or by chance”, but the incident was one which the health services provider has reasonable grounds for believing could have resulted in injury or harm, if not prevented. Therefore, a patient safety incident includes harm events, no harm events and near-miss events (HSE, 2019).

It should be noted that the terms ‘adverse event’, ‘medical error’ and ‘patient safety incident’ are used interchangeably as these terms emerge in the relevant literature and policy documents.

Patient: “Patient” means, in relation to a health services provider, a person to whom a health service is, or has been, provided; (Civil Liability Amendment Act 2017).

Relevant Person: This is a named person identified by the patient that accompanies a patient at an open disclosure meeting or attends the meeting on behalf of the patient. For example, a relevant person might be a family member, relative or friend who has been identified by the patient (DoH, 2019).

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Chapter 1 Background

1.1 Introduction to Open Disclosure of Patient Safety Incidents

Open Disclosure is an open, honest, compassionate, and timely communication between patients, families and Healthcare Professionals (HCPs) affected by adverse events (Disclosure Working Group, 2011; Harrison et al., 2017; C. Kim et al., 2017; Lamb, 2004). Open Disclosure of adverse events to patients who receive healthcare is crucial. It is intended to promote patient safety and quality of care and to restore confidence in the healthcare system (Mitchell, 2008; Stawicki et al., 2019). 'Patient safety' is defined as "the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum" (Runciman et al., 2009; WHO, 2009, p. 15). Thus, it serves as a cornerstone for the provision of high-quality healthcare services (Stawicki et al., 2019). However, many complex factors can compromise patient safety and quality of care and can cause adverse events (Harrison, Walton, et al., 2019), that may or may not be the result of an error (HSE Quality and Patient Safety Directorate, 2018). This leads to negative consequences for patients, HCPs and the organisations in which they work (Harrison, Walton, et al., 2019). The 'quality of care' provided by HCPs within the healthcare system affects people's lives and livelihoods and impacts the values and culture of an organisation (Mitchell, 2008). The principles of open communication, patient-centred engagement, honesty and truthfulness are essential for maintaining and enhancing transparency in healthcare (Gallagher et al., 2007; Newell & Jordan, 2015). This applies to the promotion of patient safety and the prevention of adverse events (HSE Quality and Patient Safety Directorate, 2018).

Increased patient safety concerns and the release of the Institute of Medicine report 'To Err is Human' have drawn the attention of the public and clinicians to the problem of PSIs (White et al., 2008). Determining whether and how to inform patients of mistakes is a vital part of the error response (Gallagher et al., 2003). The guiding principles of open disclosure were developed in the USA more than 25 years ago and continue to be relevant across healthcare services (Leape, 2021; Leape & Berwick, 2005).

Although HCPs are aware of open disclosure, they lack in-depth knowledge of the process or the policy environment (Harrison, Walton, et al., 2019). Physicians' attitudes toward the organisation that employs them, their interactions with patients, and their self-disclosing of errors are influenced by their fear of criticism and legal action (Benbassat et al., 2001). Furthermore, the decision of whether to disclose an error to the patient is influenced by the HCP's perception of the patient's desire to know that there had been a mistake in their care (Byrth & Aromataris, 2014). These aspects influence the development and application of policies that promote open disclosure following Patient Safety Incidents (PSIs).

1.2 Historical Perspective to Open Disclosure of Patient Safety Incidents

The World Health Organisation (WHO) recognises the prevalence and impact of adverse events as a serious public health concern (HSE, 2019c; Kim et al., 2017; Rafter et al., 2017; WHO, 2011, 2018, 2025). Proactive approaches to open disclosure policies have had variable progression, timing and prioritisation across health systems globally. For example, the Veterans Affairs Hospital in Lexington, USA, implemented an open

disclosure policy in 1995 to deal with increased litigation claims following PSIs (Harrison, Walton, et al., 2019; Iedema et al., 2009). Australian healthcare policymakers adopted a National Open Disclosure Standard in 2003 to promote organisational responsibility with professional accountability in healthcare (ACSQHC, 2014). Similar initiatives for regulating open disclosure policy and practice standards were implemented in the UK, Canada, New Zealand and Ireland (Disclosure Working Group, 2011; GMC, 2015; Health and Disability Commissioner, 2019; HSE, 2019c) and are currently underway in Germany, Switzerland and Austria (McLennan et al., 2012).

Globally, it is estimated that up to 2.6 million people lose their lives each year due to adverse healthcare events in low-to-middle income countries, while one in 10 patients have been a victim of an adverse event during their hospitalisation in high-income countries (Flott et al., 2019; HSE, 2019c; Rafter et al., 2017; Slawomirski & Klazinga, 2022; WHO, 2011b, 2018). Adverse events that cause patient harm are thought to be one of the 10 leading causes of death and disability worldwide (WHO, 2011, 2023). European data demonstrates that 8-12% of patient harm during medical care occurs among hospitalised patients (WHO, 2023; EUR-Lex, 2016). Moreover, four out of ten patients in primary and outpatient care settings are reported to be victims of PSIs (Auraaen et al., 2018). Nationally, HSE recently reported 106,960 adverse events in the health service, suggesting a pattern of rising numbers in the past five years. Nine percent of these incidents were categorised as near misses and 10% required medical treatment, while 550 deaths were associated with adverse events (Halpin, 2023). Around €1.4 billion was paid in compensation by the State Claims Agency (SCA) following HSE adverse events for the past five years (Whelan & Hally, 2020). The cost of such adverse events to patients and health systems is significant (Anand et al., 2019; Auraaen et al., 2018; Flott et al., 2019; Van Den Bos et al., 2011). Rafter et al. (2017) reported an average of 6.1 additional bed days related to adverse events, costing an estimated €5,550 per event. In Organisation of Economic Cooperation and Development (OECD) countries, adverse events have been estimated to account for 15% of total hospital activity and expenditure (Auraaen et al., 2018).

The rising awareness of PSIs and their necessary disclosure have received significant attention among key stakeholders including patients, policymakers, academics, insurers, HCPs, consumer groups and lawyers (Bender, 2007). Honestly and unambiguously disclosing to the patients and families affected by adverse events is an important obligation of responsible health systems and HCPs (ACSQHC, 2014; Anand et al., 2019; Disclosure Working Group, 2011; DoH, 2008; GMC, 2015; Health and Disability Commissioner, 2019; HSE, 2019c; Iedema et al., 2009; McLennan et al., 2012). Wojcieszak (2020) argued that healthcare organisations lack a combination of disclosure training and ‘second victim’ support programmes. The term ‘second victim’, seminally coined by Wu (2000), refers to the trauma and emotional distress experienced by HCPs after the unanticipated impact of an adverse event from a patient-related injury and/or PSI (Scott & Arslanian-Engoren, 2009; Ullström et al., 2014). The organisations where adverse events occur are described as ‘third victims’ (Ozeke et al., 2019). Moral values such as honour, trust, loyalty, respect and compassion gain prominence during a crisis or catastrophe (Denham, 2007). Therefore, the organisations that have a duty to promote a fair, just and safe culture (Denham, 2007; DoH, 2008), as well as the individual

HCPs, are involved to differing extents. At various stages, both are responsible for bearing consequences, taking responsibility, promoting transparency and dealing with distress following an adverse event (DoH, 2008; Ullström et al., 2014).

1.3 Open Disclosure - Definition, Approaches and Impact

The Health Service Executive (HSE, 2019c, p. 7) defined Open Disclosure as an:

“open, consistent, compassionate and timely approach to communicating with patients and, where appropriate, their relevant person following patient safety incidents. It includes expressing regret for what has happened, keeping the patient informed and providing reassurance concerning on-going care and treatment, learning and the steps being taken by the health services provider to try to prevent a recurrence of the incident.”

The Michigan Model (UMHS, 2020) is a structured and proactive framework for managing PSIs, emphasising honesty, accountability and continuous learning. As a key approach to open disclosure, it promotes transparent communication between healthcare providers and patients, enabling professionals to acknowledge errors and offer sincere apologies. Beyond issuing an apology, the model encourages HCPs to explain adverse events, not as self-justification but to promote understanding, reflection and trust-building, thereby strengthening patient-provider relationships and mitigating the risk of litigation. This model also emphasises learning from incidents to enhance clinical practice and prevent recurrence. While the model has helped shift attitudes toward open disclosure and foster a supportive, non-punitive environment regarding claims and legal proceedings (Boothman & Hoyler, 2013; Boothman et al., 2012; UMHS, 2020), caution against unintended consequences, such as potential harm to HCPs from the disclosure of inaccurate information, admissions of liability and the increased complexity of decision-making amid ethical and cultural challenges are evident (Aldrich, 2013; Boothman et al., 2012; Truog et al., 2011; Wojcieszak et al., 2006). There is also an increased demand among all stakeholders for greater transparency (Aldrich, 2013; Boothman et al., 2012; Truog et al., 2011; Wojcieszak et al., 2006) and a consensus amongst HCPs that open disclosure is the ‘right thing to do’ and is integral to embedding a culture of safety (Kaldjian et al., 2006; Truog et al., 2011).

Allan and Munro (2008) argued that, irrespective of differences in specific definitions of open disclosure, the emphasis is on ethical, open and honest communication with patients and their families after an adverse event. Further, competent staff members should be involved in the planning, managing and implementation of open disclosure. Birks et al., (2014) reiterated that training is essential for the candour and medico-legal aspects of care. However, this must not be merely about raising awareness; instead, skills for honest communication when dealing with a difficult situation must be emphasised.

Open disclosure is viewed within academic literature as a sensitive process, requiring compliance and the sharing of critical information with all the relevant stakeholders (ACSQHC, 2014; Iedema, Sorensen, & Piper, 2008; Manser, 2011). The open disclosure process allows organisations to examine PSIs, the circumstances in which they occur and what can be done to ensure mistakes are not repeated (Manser, 2011). Open

disclosure practice is contingent on a respectful environment (Stawicki et al., 2019), where errors can be openly disclosed, debated and examined without negative consequences (Conway et al., 2011; Edrees et al., 2011). The emphasis is on learning lessons and sharing information. However, the embedded prevailing organisational culture can make implementing this approach complex (Conway et al., 2011; Edrees et al., 2011). Additionally, a fear of litigation is evident both organisationally and individually (Aldrich, 2013; Edrees et al., 2011; McLennan, 2018). Authors of several international studies have revealed shortfalls, inconsistencies and variability with open disclosure in practice (Allan & Munro, 2008; Birks, 2014; Iedema, Allen, Sorensen, et al., 2011; Iedema, Sorensen, & Piper, 2008; Levinson, 2009; Wojcieszak, 2020). The central issue is the discrepancy between the theoretical endorsement of open disclosure of PSIs by HCPs to patients and their families and the reality of measurable disclosure levels experienced (Iedema, Allen, Sorensen, et al., 2011). Ultimately, the link between organisational safety, culture, open disclosure practices and the facilitators and barriers to open disclosure must be explored (Allan & Munro, 2008; Birks, 2014; Etchegaray et al., 2012; Iedema, Allen, Sorensen, et al., 2011; Iedema et al., 2009; Lamb, 2004; McLennan et al., 2012).

1.4 Second Victim Phenomenon and Open Disclosure

PSIs greatly impact the quality of patient care and well-being, as well as the performance of HCPs, who may be referred to as 'second victims' (Denham, 2007; HSE/SCA, 2013; Rinaldi et al., 2016; Scott & Arslanian-Engoren, 2009; Ullström et al., 2014; Wu, 2000). Ullström et al. (2014) interviewed 21 HCPs who had experienced an adverse event at a Swedish University Hospital. They found long-lasting emotional distress for the second victims and unstructured or unsystematic organisational support following an adverse event. Ullström et al. (2014) recommended that hospital managers and policymakers address the need for advanced organisational support, transparency when investigating adverse events and practical support for these second victims.

However, the term 'second victim' has been contested in Ireland by Tumelty (2018). In this qualitative study ($n = 18$), Tumelty (2018) cautioned that some physicians and legal professionals (barristers) were uncomfortable with this phrase. She argued that the term 'victim', may de-emphasise the injury experienced by the patient. It may additionally stigmatise the professional identity of the HCPs (Clarkson et al., 2019; Tumelty, 2018; Wu, 2000). Wojcieszak (2019) contended that the findings of a small-scale study (Tumelty, 2018) are insufficient for capturing a consensus or adequately representing the perspectives of HCPs in the US and other global contexts. Indeed, some HCPs are receptive to the term 'second victim' while still adopting the practice of disclosure and apology (Edrees et al., 2011; Ozeke et al., 2019). Many HCPs acknowledge that they suffer the consequences of a defective healthcare system; they advocate for reforms and request assistance from second-victim programmes (Wojcieszak, 2019). However, some consider the term inappropriate as it presents a significant challenge for both patients and HCPs (Clarkson et al., 2019; Daniels, 2016; Tumelty, 2018).

While some experts agree with HCPs' acceptance of the term, others have demanded a suitable replacement for the term 'second victim' (Clarkson et al., 2019; Ozeke et al., 2019). It is crucial to be mindful

of HCPs who might be experiencing distress in silence. Accepting personal responsibility for patient outcomes can bring about emotions such as fear, shame, guilt, anxiety and depression after an adverse event (Ozeke et al., 2019; Schrøder & Assing Hvidt, 2023). While reactions to the term 'second victim' continue to change and evolve, the focus must be on the organisational support programmes to promote, support and maintain HCPs' emotional well-being (Wu et al., 2020). Thus, a synthesis of evidence is essential for exploring how principles of open disclosure have enabled the 'second victim' to deal with the disclosure of PSIs in clinical practice and associated facilitators and barriers (Section 2.9).

1.5 Irish Context to Open Disclosure of Patient Safety Incidents

In Ireland, a series of measures have been implemented following PSIs which extend beyond the provision of apologies to patients and families. These constitute a comprehensive strategy for enhancing service response, promoting organisational learning through open disclosure and driving sustained improvements in patient safety and quality of care (Duffy, 2012). The Commission on Patient Safety and Quality Assurance was initially established by Mary Harney, Minister for Health and Children, in January 2007 (Carr, 2007; Duffy, 2012). The Department of Health and Children's (DoH, 2008) report on 'Building a Culture of Patient Safety' acknowledged the need for organisational, regulatory and educational reforms, including support for HCPs when reporting adverse events, ongoing education and research. The 'Patient Safety First' declaration of commitment to patient safety was signed on 23rd September 2010 to improve the safety and quality of healthcare services (Healy, 2010; HSE Quality and Patient Safety Directorate, 2013). The Commission on Patient Safety and Quality Assurance (DoH, 2011) recognised the issues related to unsafe practices, incompetent HCPs, deficient healthcare governance, patient safety audits, reporting of adverse events, open disclosure and involvement of patients in care delivery. The 134 recommendations included proposals to mandate the reporting of serious PSIs, establish national standards for open disclosure and legally protect those making disclosures. This legislation stipulates that any open disclosure conducted in good faith and in accordance with national standards shall be inadmissible as evidence in legal proceedings against the disclosing party. Additionally, a guidance document has been developed to support the implementation of regional open disclosure policies (DoH, 2011, 2024).

Duffy (2012) studied the multidisciplinary healthcare team and senior management within HSE and Voluntary sectors and found an unstructured approach to PSIs disclosure and a lack of national open disclosure standards and guidelines in Ireland. In 2013, the Open Disclosure Policy and Guidelines were initially launched (HSE Quality Patient Safety Directorate, 2013a, 2013b, 2013c) to set out detailed steps for HCPs to take during a PSI in acute hospital settings. This was followed by a system-wide implementation of the open disclosure process between 2013 and 2019 in acute hospitals, community care, ambulance services, voluntary agencies, general practitioners and screening services (HSE, 2023b).

1.6 National Open Disclosure Training Programmes

Key initiatives included establishing the National Open Disclosure Office and the National Steering Committee, developing the Train the Trainer (TTT) programme and decentralising responsibilities at the local level (HSE, 2019b). The TTT programme was designed to promote active learning and assist open disclosure trainers in implementing the national training programme. Open disclosure training has been mandated for all HSE and HSE-funded services employee since January 2019 (HSE, 2021c). Each service manager is accountable for ensuring that employees receive open disclosure training appropriate to their position and for maintaining local training records to demonstrate that the service complies with legal training obligations. The National Open Disclosure Education Programme has evolved over time. Initially, it comprised three main components: 1) a briefing session for all staff, 2) four-hour accredited workshops for staff involved in formal open disclosure meetings, and 3) a two-day TTT programme. The programme has been further streamlined in recent years with an increased emphasis on online technology.

In 2020, Module 1 of the open disclosure online training programme, titled 'Communicating Effectively through Open Disclosure' (HSELand), was launched. A webinar series was also introduced to facilitate communication between the National Open Disclosure Office (NDO) and open disclosure leads, trainers and staff across various health and social care services (HSE, 2020b). In April 2021, Module 2, titled 'Open Disclosure: Applying Principles to Practice' was launched (HSE, 2021c). The timing of these e-learning modules proved to be valuable during the COVID-19 pandemic. The impact of the online training programme was substantial in 2020, with 35,207 recipients (averaging 800-1,000 staff per week) completing the module between April and December (HSE, 2020b). The total number of open disclosure training recipients increased from 4,958 in 2014 to 108,321 in 2023, reflecting substantial growth over the years (HSE, 2020b, 2023b). Additionally, Module 3, focusing on face-to-face skills for managing the open disclosure process, was delivered as part of the programme (HSE, 2022b).

Between 2020 and 2023, the number of medical staff completing open disclosure training steadily increased, as shown in Table 1 (HSE, 2022b). Completions rose from 2,284 in 2020 to 2,435 in 2021, before more than doubling to 5,149 in 2022 and reaching 7,744 in 2023. The uptake of e-learning modules was the highest, with Module 1 completions increasing from 35,209 in 2020 to 88,342 in 2023, while Module 2 completions rose from 6,324 in 2021 to 17,955 in 2023. Face-to-face training also showed an upward trend from 347 participants in 2020 to 2,024 in 2023. Nursing and Midwifery professionals completed e-learning Module 1 ($n = 25,980$) and e-Learning Module 2 ($n = 6,434$) in 2023. A total of 16,231 (Module 1) and 2,979 (Module 2) Health and Social care Professionals completed the e-learning modules in 2023 (HSE, 2023b).

Table 1 Open Disclosure Training Completions (2020–2023)

(HSE, 2020b, 2021b, 2022a, 2023a)

Year	Total Medical Staff Completions	Consultants	NCHDs	E-Learning (Module 1)	E-Learning (Module 2)	Face-to-Face Training
2020	2,284	473	1,811	35,209	N/A	347
2021	2,435	323	2,112	30,765	6,324	428
2022	5,149	864	4,285	62,650	14,732	1130
2023	7,744	1,441	5,767	88,342	17,955	2024

Despite significant advancements in open disclosure training and its integration into healthcare practice, concerns regarding its effectiveness remain (White et al., 2011). All HCPs must complete open disclosure e-learning modules and those involved in formal open disclosure meetings also undertake face-to-face skills training. Training is delivered through multiple channels, including the RCSI Human Factors programme, the RCPI programme, the HSE and voluntary sectors and Higher Education Institutions (HEIs). To support these initiatives, a national database for training and trainers is maintained, clinical audits are conducted, and training reports are regularly disseminated (HSE, 2023b).

While training is essential for effective open disclosure, it must be supported by clear policies, legal obligations and governance structures to ensure consistency and accountability in practice (Birks et al., 2014). Concerns about transparency, compliance and organisational responsibility have highlighted the need for a robust regulatory framework that embeds open disclosure as a fundamental healthcare practice. The authors of a scoping inquiry into the Cervical Check Screening Programme (Scallly, 2018) highlighted these challenges and called for enhanced understanding and application of open disclosure principles throughout the healthcare system. In response to these findings, the policy was revised, leading to the re-launch of the interim open disclosure policy on 12th June 2019 (HSE, 2019c). Building on these reforms, legislative measures have been introduced to formalise open disclosure requirements, strengthen legal protections, and establish clear mechanisms for oversight.

1.7 National Open Disclosure Legislation

Ireland's legislative framework governing open disclosure has evolved, establishing a legal foundation to guide HCPs in communicating PSIs to patients and their families. These legislative actions reflect a commitment to fostering transparency, patient safety and accountability in the healthcare system (Majeed & Qattan, 2024; Saleh, 2023; Saleh & Hunt, 2020). Key developments, including the Civil Liability (Amendment) Act ("CLA", 2017) and the Patient Safety (Notifiable Incidents and Open Disclosure) Act ("PSA", 2023), have shaped the legal obligations of healthcare providers, transitioning open disclosure from a voluntary to a mandatory framework.

The Civil Liability (Amendment) Act ("CLA", 2017) specifically Part 4 on Open Disclosure provides the legal framework for supporting voluntary open disclosure in healthcare. This Act is significant; it encompasses all PSIs, including near misses and no-harm events. It promotes a consistent and open approach to communication with patients and families, accompanied by appropriate apologies when healthcare issues arise. The Civil Liability Act and its associated regulations commenced on 23rd September 2018 ("CLA", 2017; ISB, 2018). The provisions offer legal protection for healthcare providers and organisations in relation to the information shared and apologies made to patients during open disclosure, as outlined in Part 4 of the Act. Furthermore, apologies cannot be used against the provider in legal proceedings, as stipulated in the Civil Liability (Amendment) Act 2017. In this context, Section 10 states the following:

1) Information provided, and an apology where it is made, to a patient or a relevant person (or both of them) by a health services provider at an open disclosure meeting in respect of a patient safety incident, or pursuant to the provisions specified in subsection (3), the statement referred to in section 16(5) and the statements referred to in the provisions specified in subsection (3)—

(a) shall not constitute an express or implied admission of fault or liability by—

(i) that health services provider,

(ii) an employee of that provider (whether the employee is a health practitioner or otherwise) (Section 10)

This provision was introduced to foster a positive, voluntary culture of open disclosure while reducing healthcare providers' fear that apologising might lead to litigation (Birks et al., 2014). The introduction of the Civil Liability (Open Disclosure) (Prescribed Statements) Regulations 2018 (ISB, 2018) further formalised the process, requiring HCPs to follow structured procedures while ensuring that apologies are legally protected. While the Act was designed to encourage a culture of openness, the effectiveness of apology laws remains debated. Some authors have suggested that legally protected apologies may have limited impact if separated from an acceptance of responsibility (Tabler, 2016), while others suggest that they enhance patient-clinician relationships, deter clinical negligence and uphold justice (Leape & Berwick, 2005; Robbennolt, 2009). However, concerns persist regarding the ambiguity of legal protections for HCPs, misconceptions about the impact of apologies on litigation and the risk of misinterpreting an expression of empathy as an admission of wrongdoing (Tumelty, 2018; Wei, 2006).

The enactment of the Patient Safety (Notifiable Incidents and Open Disclosure) Act ("PSA", 2023), signed into law by President Michael D. Higgins on 2nd May 2023, represents a significant shift from voluntary to mandatory open disclosure for specified notifiable PSIs. Unlike the 2017 Act, which permitted voluntary disclosure, the 2023 Act establishes a statutory obligation for healthcare providers to disclose notifiable incidents, reinforcing patient rights and ensuring transparency in healthcare. Non-compliance with the Act may result in legal consequences, thereby strengthening accountability within the healthcare system. In parallel, the National Open Disclosure Policy Framework (DoH, 2023) has been developed to ensure a standardised and consistent approach to open disclosure across public and private healthcare providers, regulatory bodies and medical education institutions. The implementation of the PSA 2023 is overseen by

the National Implementation Workgroup, which includes representatives from the National Quality and Patient Safety Directorate (NQPSD), acute and community services, screening services, clinical audit bodies and patient representatives. While the introduction of mandatory open disclosure aligns Ireland with international best practices, such as Australia's Open Disclosure Framework (ACSQHC, 2014) and the United Kingdom's Duty of Candour legislation (GMC, 2015), its success will depend on effective implementation, comprehensive training and a cultural shift towards greater openness. The transition to a mandatory framework is expected to enhance patient trust, improve transparency in healthcare delivery and potentially reduce litigation risks (Saleh, 2023). However, sustained regulatory oversight, adequate resources and ongoing evaluation will be essential if open disclosure is to be effectively embedded within the Irish healthcare system (Independent Patient Safety Council, 2021; Madden & Tumelty, 2019).

To ensure consistency between legislative frameworks, Section 82 of the PSA 2023 amends the Civil Liability (Amendment) Act 2017, aligning it with the new mandatory disclosure requirements ("CLA", 2017). Since the 2017 Act introduced a voluntary framework, these amendments reflect the transition to a mandatory approach, ensuring coherence and clarity in the legal obligations of healthcare providers. The "PSA" (2023) establishes mandatory disclosure for specific notifiable PSIs, reinforcing patient rights and enhancing transparency within the healthcare system. Additionally, Section 83 of the 2023 introduces savings and transitional provisions to facilitate the legal transition between the two frameworks. It stipulates that if a healthcare provider made an open disclosure under Part 4 of the Civil Liability (Amendment) Act 2017 before the commencement of the 2023 Act, the provisions of Part 4 of the 2017 Act shall continue to apply to that disclosure. This prevents legal uncertainty by ensuring that disclosures made under the voluntary system remain legally valid, without retrospectively imposing the mandatory requirements introduced under the new legislation. These provisions safeguard healthcare providers who engaged in open disclosure under the CLA 2017, ensuring a smooth transition to the 2023 mandatory framework while maintaining legal clarity ("CLA", 2017; DoH, 2023; HSE; "PSA", 2023).

1.8 Significance of this Research Study

Globally, open disclosure researchers have focused on policy evaluation, the perspectives and experiences of patients, family members and HCPs, PSIs disclosure training as evidence for a value-based ethical environment and the legal aspects of open disclosure (Birks et al., 2014; Boothman & Hoyler, 2013; Denham, 2007; Edrees et al., 2011; Gallagher et al., 2007; Harrison et al., 2017; Harrison, Walton, et al., 2019; HSE/SCA, 2013; Iedema, Allen, Sorensen, et al., 2011; Iedema et al., 2009; Kiegaldie et al., 2016; McLennan, 2018; Newell & Jordan, 2015; Rinaldi et al., 2016; Sage et al., 2014; Scott & Arslanian-Engoren, 2009; Ullström et al., 2014; Wei, 2006). These studies indicate a need for better engagement from HCPs and organisations when disclosing adverse events to patients and their families so that patient-centred care, openness, trust and learning from mistakes can be fostered (Baker et al., 2004; McLennan & Moore, 2019; Pillinger, 2016; WHO, 2011b). Furthermore, researchers have shown that patients want to be informed of adverse events during their care, as safe practice involves both disclosure and transparency (Gallagher et al., 2007; Pillinger, 2016). However, HCPs' concerns over litigation, criminal sanctions and

imprisonment for non-compliance with open disclosure, reputation, career and loss of relationship with patients were reported as some of the barriers to the ethos of open disclosure, where the aim is to seek resolution rather than retribution (ACSQHC, 2014; Bourke & Lochtenberg, 2023; O'Connor et al., 2010; Pillinger, 2016). Moreover, the investigations of HCPs' views of the open disclosure process and training benefits are limited. Open disclosure education is regarded as the initial step in ensuring patient safety and building trust with patients and their families (Kim et al., 2017).

Open disclosure training with simulated apology scenarios was used to evaluate an Australian implementation of the open disclosure policy among clinicians (Iedema et al., 2009). The simulation engaged frontline staff to evaluate the effectiveness of their disclosure, reconciling their emotional and impulsive responsiveness with their professional responsibilities to produce a meaningful organisational apology (Iedema et al., 2009). However, there is limited empirical evidence on the nature and impact of multidisciplinary training on open disclosure of PSIs in practice (Popkess et al., 2017; Rathert & Phillips, 2010). To address the gaps in open disclosure practice and training and to enable patients, HCPs, and organisations to follow the principles of open and honest communication, awareness and a sense of responsibility must be fostered for all stakeholders (Birks et al., 2014; Boothman et al., 2012; Iedema, Allen, Sorensen, et al., 2011). The mixed-method approach employed in the current study enables HCPs to examine their attitudes about and perceptions of disclosure. It empowers the researcher to accurately represent HCPs' views and suggestions while providing a genuine platform for their perspectives.

Although training and leadership are key to achieving better implementation of open disclosure policy, exploring HCP's attitudes about and perceptions of open disclosure of PSIs is important for understanding its impact on clinical practice. The Irish context of this study is crucial as it addresses the current gap in evidence, aligns with international and local evidence-based research and reinforces the role of open disclosure in Quality and Patient Safety incident management. The Patient Safety (Notifiable Incidents and Open Disclosure) Act 2023 has made disclosure mandatory, necessitating research into how HCPs perceive, implement and navigate open disclosure in practice (HSE, 2022a). Despite existing policies and initiatives, including the National Open Disclosure Training Programme, gaps persist in HCPs' knowledge, confidence and institutional support for disclosure, highlighting the need for empirical research to identify strategies for improving compliance.

In Ireland, a comprehensive review (O'Connor et al., 2010) conducted by the Health Information and Quality Authority (HIQA) in collaboration with the World Health Organisation's World Alliance for Patient Safety found that both patients and HCPs advocate for PSIs disclosure, emphasising timely and transparent communication, appropriate apologies and assurances regarding future care. However, a disconnect remains between ideal disclosure practices and their actual implementation, with limited evidence on how attitudes, legal concerns and fear of litigation impact HCPs' disclosure behaviours.

Duffy (2012) highlighted that inconsistent attitudes and inadequate organisational support hindered effective open disclosure, with HCPs feeling uncertain about when and how to disclose, fearing legal and

professional repercussions. Since then, disclosure legislation, expanded education and increased resources have somewhat standardised practice. Given these advancements, a multidisciplinary examination is timely for assessing their impact on attitudes, training and implementation in clinical settings. While researchers have tended to focus on physicians' experiences (Carrillo et al., 2021; Christensen et al., 1992; Dossett et al., 2018; Eaves-Leanos & Dunn, 2012), it is recognised that multidisciplinary healthcare teams play a vital role in disclosure, necessitating a broader examination of team-based approaches and interprofessional communication. There is a growing recognition that disclosure policies must reflect the diverse roles and responsibilities of healthcare teams and that evaluating the effectiveness of training programmes is critical for ensuring meaningful, consistent disclosure practices across disciplines (Iedema, Allen, Sorensen, et al., 2011; Independent Patient Safety Council, 2021).

By employing a mixed-methods approach (Creswell & Clark, 2017; Creswell & Creswell, 2018), the aim of this study is to address critical gaps in HCPs' attitudes, training needs and the practical challenges they face in disclosure. The findings will enhance open disclosure practices, strengthen training frameworks and support interprofessional collaboration. Ultimately, this research will help to ensure that open disclosure in Ireland is effectively integrated into clinical practice, fostering a culture of transparency, trust and accountability while reinforcing continuous quality improvement in patient safety management.

This study is relevant to the Irish healthcare context, as it addresses critical aspects of patient safety, healthcare practices and interprofessional communication within a hospital group in Ireland. Specifically, the Royal College of Surgeons in Ireland (RCSI) Hospital Group was selected for its broad demographic reach; it serves a population of 875,000 across five counties and has a multidisciplinary focus of acute, maternity, and specialist services. With 11,299 WTE staff working across hospitals of varying levels (II to IV), the group offers a diverse environment for exploring patient-provider interactions and open disclosure practices (HSE, 2020a).

Given this context, it is timely to investigate how the revised Open Disclosure Policy (HSE, 2019c), the launch of Part 4 of the Civil Liability (Amendment) Act ("CLA", 2017) and the Patient Safety (Notifiable Incidents and Open Disclosure) Act 2023 ("PSA", 2023) which makes Open Disclosure of serious PSIs mandatory impact HCPs' perceptions, attitudes and practice needs. Understanding how these legislative and policy changes influence compliance and organisational support is essential for embedding a culture of transparency, trust and accountability within Irish healthcare.

1.9 Personal Journey to this Research Study

As a Nurse Tutor, my engagement with open disclosure practices began in 2015, when I first delivered educational programmes across multiple healthcare disciplines and underwent training to become a certified Open Disclosure Trainer. Building on these experiences, I later served as a national trainer in open disclosure, collaborating with clinicians, pharmacists, nurses, physiotherapists, dieticians and other professionals. Our discussions consistently highlighted the critical significance of disclosing PSIs and the

diverse responses of HCPs, ranging from apprehension about blame to embracing transparent communication.

Embedded within these interactions were profound reflections on the principles of open disclosure and my unwavering commitment to patient safety and the quality of care. Guided by the principles of Christ's teachings, which align harmoniously with the ethos of open disclosure, I found myself drawn even closer to this essential aspect of healthcare. Christ's teachings of compassion, empathy and truth have profoundly shaped my thought processes and sense of duty to patients and their families. These alignments have significantly influenced my decision to embark on this research journey.

It soon became apparent that there was a pressing need for empirical evidence within the Irish context to inform and strengthen open disclosure practices. Feedback from the HSE National Open Disclosure Lead, senior colleagues, and academic mentors reinforced the importance of undertaking robust research to support policy, education and practice. Recognising this gap, I committed to a study examining how HCPs can integrate open disclosure principles into everyday roles. My hope is that this research will help bridge the gap between theory and practice, contributing to a transformative shift in healthcare culture that embraces openness, transparency and a steadfast commitment to patient well-being and safety.

1.10 Aim and Objectives

This research aims to explore attitudes and perceptions towards open disclosure of patient safety incidents from a multidisciplinary perspective in a selected hospital group in Ireland.

The objectives of this research are:

- i. To explore multidisciplinary professionals' attitudes and perceptions towards open disclosure of patient safety incidents within the healthcare practice.
- ii. To identify the facilitators and barriers to open disclosure practice and training within the healthcare practice.
- iii. To determine the strategies to overcome barriers to implement open disclosure in practice.
- iv. To inform open disclosure training programmes for healthcare professionals within the healthcare practice.

1.11 Structure of the Thesis

This thesis is organised into nine chapters.

This Chapter included the background information to the open disclosure of PSIs within the international and Irish contexts. It also outlined the rationale, aim and objectives of this research.

Chapter two includes evidence from a scoping review, highlighting attitudes, perceptions, facilitators, barriers and strategies related to open disclosure internationally and in Ireland.

Chapter three provides a broader understanding of the methodological underpinnings and philosophical issues pertinent to this research. It explains the rationale for using pragmatic mixed-methods approach and the theoretical perspectives for the study.

Chapter four is an outline of the recruitment, data collection, quality assurance, rigour and ethical considerations used to achieve the study objectives.

Chapter five includes survey findings about 417 HCPs' attitudes to and perception of open disclosure. It also details the statistical analysis employed to address the research objectives.

Chapter six provides the findings from 42 qualitative interviews with participants, who discussed facilitators, barriers and strategies related to open disclosure practice and training.

Chapter seven presents a joint display of integrated findings from both phases, highlighting the meta-inferences that inform open disclosure practices within the context of Irish healthcare.

Chapter eight discusses the key findings with reference to existing literature and through the application of multiple theoretical perspectives. It also addresses the strengths and limitations of the research.

Chapter nine concludes the thesis with recommendations for practice, education and future research.

Chapter 2 Literature Review

2.1 Introduction

This chapter presents a comprehensive review of the literature on open disclosure practices in healthcare across various countries highlighting key insights and lessons applicable to the Irish context. This chapter begins with a description of the review aims, objectives and design, methods, synthesis and discussion of the findings. The latter part of the chapter presents a rationale for the study, drawing out the gaps in the wider literature and how the current study addresses those gaps.

2.2 Aim and Objectives

The primary aim of the review is to examine open disclosure practices related to Patient Safety Incidents (PSIs) in healthcare settings worldwide.

The specific objectives are:

- To explore HCPs' knowledge, attitudes and perceptions towards open disclosure practice
- To examine barriers and facilitators to open disclosure practice and training
- To identify strategies to overcome barriers to open disclosure practice

2.3 Review Design

In this study, a scoping review methodology was employed to comprehensively explore and map the existing global literature on open disclosure practices in healthcare, offering a broad and inclusive perspective on this critical topic (Peters et al., 2021). A scoping review methodology is particularly valuable, as it facilitates a comprehensive synthesis of literature with various methodologies, legal, emotional, cultural and social contexts. The quality appraisal of the literature is less relevant as the focus is on scoping the evidence, exploring attitudes and identifying barriers and strategies. It also enables the mapping of characteristics or concepts across a wide range of evidence sources, including empirical and non-empirical data. A scoping review can be used to respond to complex questions and issues, especially when comparison is not feasible or relevant (Peters et al., 2021; Pham et al., 2014).

The review process is informed by Arksey and O'Malley (2005) framework describing a six-stage approach for conducting a scoping review. This includes identifying research questions, selecting relevant studies, extracting data, collating it, summarising results, and consulting experts. The chosen scoping review methodology enabled a rigorous approach to exploring extensive areas of patient safety, open disclosure practice, education and continuous professional development literature (Pham et al., 2014).

2.4 Identifying Review Question and Relevant Literature

2.4.1.1 Review Question

A scoping review question must be broad and clearly defined, as this influences the review stages (Arksey & O'Malley, 2005). In this review, a clear pathway is maintained for examining the key concepts related to open disclosure practice, HCPs as the population of interest and HCP's knowledge of, attitude to and perceptions of open disclosure, as well as facilitators and barriers to open disclosure practice as the outcomes. Specific review questions and their operational definitions are as follows (Table 2).

Table 2 Review Questions and Operational Definitions

1. What are HCPs' existing knowledge, attitudes and perceptions of open disclosure practice?
Definitions
Existing awareness, beliefs and viewpoints held by HCPs. HCPs' familiarity with the principles, guidelines and procedures related to open disclosure practices.
HCPs include physicians, nurses, midwives, pharmacists, risk managers, student HCPs, surgeons and other relevant personnel.
Healthcare settings: Hospitals, clinics, physicians' offices, outpatient centres, GP practices, pharmacies and other relevant settings where healthcare is delivered.
Open disclosure practice: Systematic process and procedures followed by HCPs and organisations when communicating with patients and their families after a PSI has occurred.
2. What are the documented barriers and facilitators associated with the implementation of open disclosure practice and training?
Definitions
Facilitators: Facilitators are factors or conditions that promote, support or enhance the successful adoption and execution of open disclosure practices and training. These can include supportive leadership, clear guidelines or educational resources.
Barriers: Barriers are obstacles, challenges, or impediments that hinder or obstruct the effective implementation of open disclosure practices and training. These can include factors such as organisational resistance, fear of legal repercussions, human factors or lack of training resources.
Training: Educational curriculum, communication skills, continuous learning, legal and ethical considerations, role play or simulations
3. What strategies have been identified or proposed to overcome the barriers encountered in the practice of open disclosure?
Definitions
Strategies: Evidence-based approaches, methods, or interventions that have been proposed or implemented to address barriers or improve practice.

2.4.1.2 Review Team and Search Strategy

The review team included a supervisory team and an information retrieval expert (Librarian) (Morris et al., 2016). A search strategy was developed alongside the review team (Appendix 1). The following electronic databases were searched until 2025: MEDLINE (EBSCO), CINAHL (EBSCO), Embase, PsycINFO, Cochrane Library, Web of Science, ERIC, AMED, British Education Index and JBI Database of Systematic Reviews and Implementation Reports. These databases provide a broad sample of literature from health sciences, education and other related disciplines. When systematic reviews were identified, the researcher extracted data from their primary studies for this scoping review, rather than from the synthesised review findings. The reference lists of included articles were hand-searched to identify additional relevant articles. Google Scholar, government websites, conference proceedings, reports, patient safety websites, NICE Evidence Search, World Health Organisation (WHO), ETHOS (Electronic Thesis Online Service), UK and Ireland Reference Centre, British Education Index, ProQuest Dissertations and Theses, Global and Open Grey were searched for unpublished articles and other literature sources. The search strategy consisted of subject headings, keywords, and related terms for 'open disclosure', 'adverse events', 'education' and 'healthcare professional'. These search terms are applied to individual databases utilising their unique MeSH terms and thesaurus tools. The search terms and concepts are combined using Boolean operators.

2.4.1.3 Selection

The identified citations were collated and uploaded into EndNote and the duplicates were removed. The final search results were imported into the Covidence reference manager for screening and charting processes by two independent reviewers. A two-step screening process included a title and abstract review and a full-text review. Articles that met the inclusion criteria were retained, and the reasons for excluding studies were reported using a Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) chart (Figure 1). Any disagreements during the process are discussed and a consensus is reached.

The inclusion and exclusion criteria for selection of studies are described by defining who the participants are, what are the concepts, context and types of studies.

Participants: All articles that include HCPs' involvement in 'open disclosure' practice were considered.

Concept: The core concepts of interests for this scoping review included 'open disclosure' and 'adverse events' or 'patient safety incidents' (PSIs).

Context:

- Studies conducted in acute healthcare, community and long-term care facilities were considered for this review, with no restriction to geographical location.
- Studies examining barriers and facilitators to 'open disclosure' practice were included.
- Studies investigating the knowledge, attitudes and perceptions of HCPs towards open disclosure practices were considered.
- The review did not include 'open disclosure' practices or training delivered outside of healthcare services.

Types of Studies:

This review includes all available literature incorporating 'open disclosure' from quantitative or qualitative research studies, mixed-methods studies, literature reviews, systematic reviews, scoping reviews, policies, guidelines, protocols, theses, dissertations, grey literature and relevant studies on the subject included in the reference list.

2.5 Data Extraction

All the information relevant to the review questions was extracted, as outlined in Appendix 2. The specific details on study characteristics included, but were not limited to the title, author, publication year, country of origin, aim, study population, methodology or frameworks and key findings. The included articles were not assessed for quality as the objective was to synthesise research evidence, identify literature gaps and highlight future research areas (Arksey & O'Malley, 2005; Westphaln et al., 2021).

2.6 Data Synthesis and Analysis

To comprehensively synthesise the existing literature on open disclosure practice, including its extent, scope and gaps, numerical summarisation and thematic analysis were applied to the collected data (Levac et al., 2010). The choice of Braun and Clarke (2021b) thematic analysis approach is grounded in its emphasis on capturing the subjective experiences and often overlooked nuances inherent in research participants. This method prioritises the preservation of the genuine social realities encountered by participants in their respective studies, rather than imposing an artificially constructed reality devised solely by the researcher (Fereday & Muir-Cochrane, 2006).

The initial themes were thoroughly examined, and additional insights were developed through collaborative discussions within the supervisory team. Study characteristics were presented in a tabular format, while other data will be visually represented using diagrams and figures as deemed suitable. Drawing upon the key findings, identified gaps and resultant conclusions, recommendations were made for future research to inform practice and influence policy considerations (Daudt et al., 2013).

2.7 Results

The databases were initially searched in January 2020 and an updated search was performed in June 2023 and March 2025. A total of 11,268 articles were retrieved from the searches (Figure 1). A search of grey literature resulted in a further 35 articles. Title and abstract screening commenced following the removal of duplicates ($n = 5607$). A total of 4975 articles were excluded at the title and abstract screening stage and 632 articles underwent full text screening. A further 497 articles were excluded due to lack of focus, non-English papers, no full text available and non-empirical. Finally, a total of 135 articles which met the inclusion criteria were included in the review (Figure 1).

2.8 Study Characteristics

The analysis of 135 articles revealed a significant increase in the focus and importance placed on the disclosure of PSIs in recent years, with the selected literature highlighting current trends and developments across various countries. The comprehensive categorisation (Appendix 2) provides valuable insights into the diverse range of investigations (Levac et al., 2010). Notably, the United States ($n = 47$) emerged as leading open disclosure research, with a focus on various healthcare institutions, practitioners, patients and families. Researchers from Australia ($n = 20$), Ireland ($n = 13$), the United Kingdom ($n = 11$), Canada ($n = 9$) and South Korea ($n = 9$) also actively contribute to the body of knowledge in this area.

Concerning the participant demographics, HCPs, including physicians, nurses, midwives, pharmacists, risk managers and students, constituted the most frequently engaged group ($n = 99$), while patients and their families were participants in 25 studies. Since the focus of the review is HCPs' views and attitudes to error disclosure, patients' family data was not extracted unless it demonstrated a tangible link to review objectives. A wide variety of study types, including reviews ($n = 19$) that explore healthcare systems, practices, attitudes, laws across multiple geographic locations, survey-based studies ($n = 29$), simulation-based qualitative and training studies in healthcare settings worldwide were evident. Furthermore, the research extends beyond typical medical settings to encompass educational institutions, inter-professional learning programmes and international policy contexts. A substantial number of qualitative studies ($n = 20$), encompassing interviews and document analyses, provide rich insights into open disclosure practices in multiple countries.

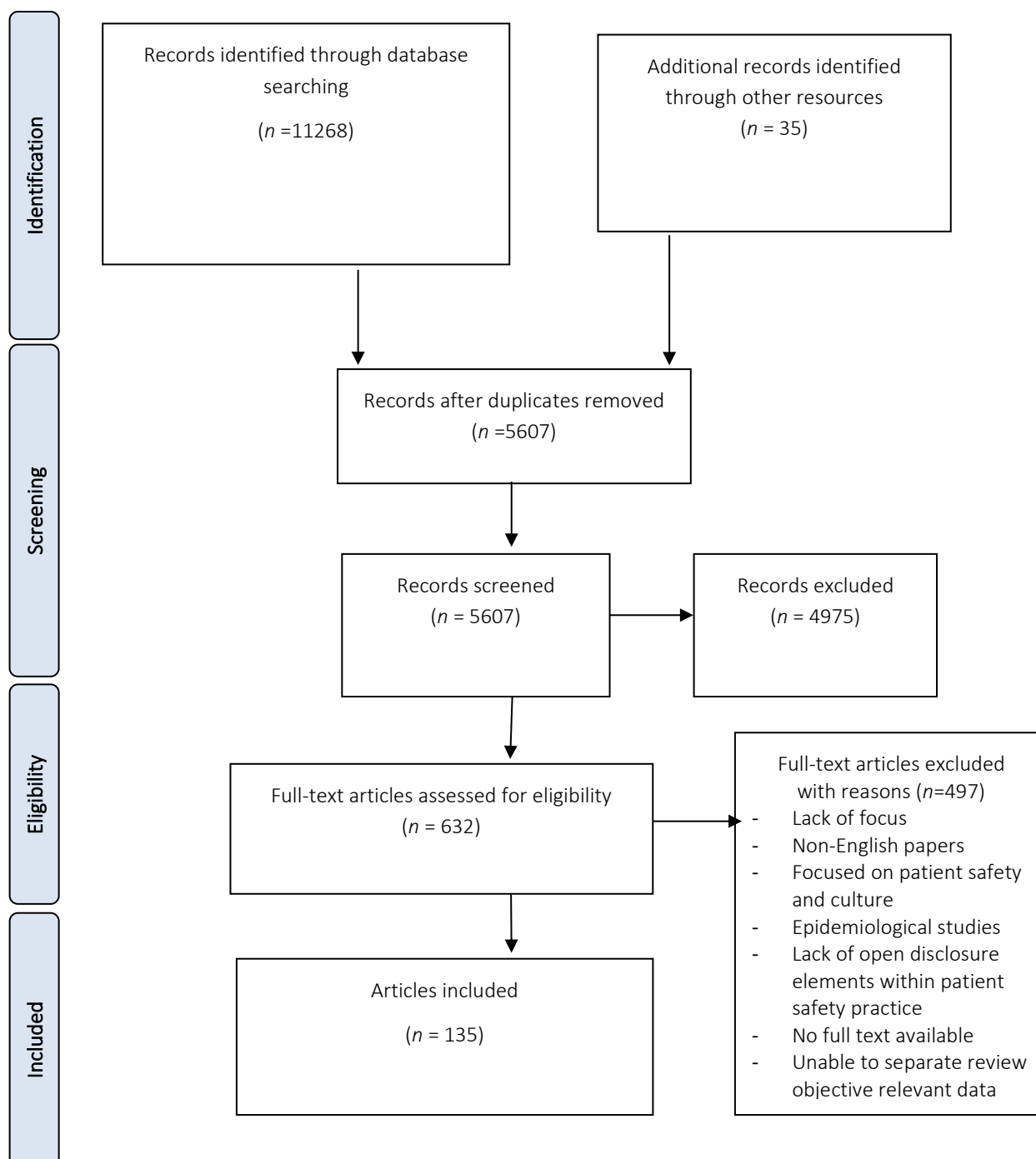


Figure 1 PRISMA Flow chart for Scoping Reviews (PRISMA-ScR)

2.9 Analysis

This section provides a comprehensive synthesis of key themes that prominently shape HCPs' knowledge of attitudes and perceptions of open disclosure (Appendix 2). The psychological, systemic and cultural factors that profoundly influence HCPs' perspectives and act as facilitators or barriers to open disclosure were examined. These critical themes include the pervasive presence of fear and stress, the impact of cognitive biases, emotional distress, defensive medical practices, varied perceptions and attitudes towards errors and the crucial importance of HCPs' confidence, and self-efficacy in navigating the disclosure process. By unpacking these themes, the aim was to provide a comprehensive understanding of the factors that can inform strategies for fostering a culture of openness and transparency within healthcare systems.

The findings are discussed under the primary themes 'Knowledge', 'Attitudes', 'Perceptions', 'Facilitators' and 'Barriers' to open disclosure.

2.10 Knowledge

2.10.1.1 Knowledge and Awareness of Open Disclosure

The clear and standardised definition of PSIs is essential for ensuring consistency in error recognition, reporting, and disclosure (Adams et al., 2023; Birks et al., 2014; Duffy, 2012; Espin et al., 2006). While HCPs generally agree on what constitutes an error, inconsistencies in terminology create barriers to accurate reporting and transparency (Espin et al., 2006). Research indicates that HCPs' ability to recognise errors and disclose correlates with their level of training and experience, with junior staff and students demonstrating improvement in error awareness through structured education (Kim & Lee, 2020; White et al., 2011).

Differences in beliefs about which errors should be disclosed, make open communication more challenging (Allan & Munro, 2008; Finlay et al., 2013; Mazor et al., 2006; Perez et al., 2014), highlighting the need for clearer guidelines and ongoing education (Adams et al., 2023; Al-Nomay et al., 2017; Bell et al., 2017; Kim et al., 2017; Lane & Roberts, 2020b). While patients expect clear explanations and an apology, HCPs often struggle with what to disclose, how to communicate, and how to manage the disclosure process (Bell et al., 2010; Gallagher, Brundage, et al., 2006; Gallagher, Garbutt, et al., 2006; Gallagher et al., 2003; Watson et al., 2015). Although institutional support for open disclosure is increasing (McLennan et al., 2013), many physicians remain unaware of the legal protections (Robertson & Long, 2018), existing disclosure policies and legal safeguards (Allan & Munro, 2008; Wu et al., 2013) to promote transparency. For instance, only 54.8% of faculty and resident physicians knew how to report and disclose errors and just 39.5% understood what kinds of errors should be reported and disclosed (Kaldjian et al., 2007). Even among those who recognised the seriousness of PSIs, only 65% of physicians stated they would definitely disclose an error to a patient, reflecting uncertainty regarding when and how disclosure should occur (Gallagher, Garbutt, et al., 2006). These findings highlight the need for continuous legal training to better equip HCPs for disclosure situations (Adams et al., 2023; Birks et al., 2014; Leape et al., 2009; Lee & Kim, 2020).

The relationship between error recognition and disclosure is further influenced by institutional and legal frameworks (Bender, 2007; Elwy et al., 2016). Studies indicate that while HCPs understand the principles of error disclosure, gaps in knowledge of policies and protections limit their confidence in applying them effectively (Bardon, 2018; Bender, 2007; Kolaitis et al., 2016; McLennan et al., 2015; White et al., 2011; White et al., 2017). The awareness of error reporting does not always translate into a comprehensive understanding of open disclosure, particularly in terms of legal responsibilities, institutional protocols, and best practices for communication with patients (Allan & Munro, 2008; Finlay et al., 2013; Mazor et al., 2006).

This is further reflected in cross-country comparisons, where knowledge and awareness vary significantly. In South Korea, education enhanced error recognition, yet a culture of concealment restricted practical disclosure (Kim & Lee, 2020). In the USA, HCPs demonstrated greater awareness of preventable errors but faced legal uncertainties that affect their willingness to disclose (White et al., 2011; White et al., 2017; Wu et al., 2013). Australian practitioners showed competence in recognising near misses, although the extent of their disclosure engagement is less clear (Kiegaldie et al., 2016). Meanwhile, in Malaysia, emphasis is placed on defining errors to guide PSI identification, highlighting the need for clearer conceptual frameworks (Wong et al., 2017). These variations underline the importance of context-specific strategies to improve both the understanding and implementation of open disclosure practices.

2.10.1.2 Variability in Knowledge and Training

Research shows that training significantly enhances HCPs' knowledge about and confidence in disclosing PSIs (Lane & Roberts, 2020a; Popkess et al., 2017). Krumwiede et al. (2019) reported that, following a disclosure training programme, over 80% of HCPs demonstrated improved understanding and preparedness for discussing PSIs with patients. Similarly, Pyo et al. (2020) found that 94.9% of physicians who received formal education on 'Disclosure of PSIs' exhibited a strong knowledge of disclosure principles, reinforcing the effectiveness of structured learning in bridging knowledge gaps. However, training opportunities remain inconsistent, with Kolaitis et al. (2016) noting that only 31% of paediatric HCPs had received formal training in open disclosure, despite recognising its importance. Hobgood et al. (2002) stated that only 12% of emergency medicine physicians had received training on disclosure, highlighting the ongoing inadequacies in preparing HCPs for these conversations (White et al., 2017). Moreover, Kim and Kim (2024a) found that a structured PSI disclosure educational programme significantly improved undergraduate nursing students' knowledge ($p < 0.001$), perception ($p = 0.031$) and self-efficacy ($p < 0.001$). Shapiro et al. (2018) also found that disclosure coaching programmes improved confidence and willingness to engage in open disclosure discussions, suggesting that training can positively shape attitudes.

Global health organisations suggest standardising training, with WHO highlighting the importance of structured education for equipping HCPs with the necessary skills for effective disclosure practices (Dalton & Williams, 2014; Inge Dhamanti et al., 2023; Passini et al., 2023; WHO, 2011). Despite these recommendations, many physicians lack formal training in disclosure communication (Gallagher &

Levinson, 2005), while errors continue to be underreported due to uncertainty about disclosure obligations (Gallagher et al., 2007; Giraldo et al., 2020).

Continuous professional developmental programmes and simulated training in educational settings are critical in knowledge development (Madden, 2008; Ock et al., 2020; WHO, 2011). For example, as demonstrated by Lee and Kim (2020), students benefit from guided simulations, which bridge the gap between theoretical knowledge and practical application. Training workshops can enhance participants' knowledge and nonverbal communication through realistic scenarios, facilitating better comprehension and retention (Hannawa & Frankel, 2021; Mansour et al., 2020). Alongside training programmes, the need to make research evidence accessible to practitioners who play a crucial role in enhancing knowledge and awareness is recognised (Allan & Munro, 2008; Pfrimmer, 2010).

2.10.1.3 Disclosure Policies and Professional Obligations

Awareness of and adherence to disclosure policies are essential for maintaining patient trust and ensuring errors are appropriately addressed. However, significant gaps persist in HCPs knowledge of disclosure policies. Duffy (2012) highlighted a lack of awareness of organisations disclosure policies among HCPs in Ireland, indicating limitations in institutional communication and training (McLennan, 2018; Sattar et al., 2020; Walshe & Shortell, 2004; Wu et al., 2013). Conversely, researchers in the United States have suggested that HCPs recognise their ethical, professional and legal obligations to disclose adverse events (Cockburn, 2021; Eaves-Leanos & Dunn, 2012). Despite this, ethical dilemmas regarding error disclosure remain, influenced by factors such as perceived severity, potential consequences and distinctions between personal and systemic faults (Birks et al., 2014; Gallagher, Brundage, et al., 2006; Gallagher, Garbutt, et al., 2006; Gallagher & Levinson, 2005; Gallagher et al., 2003; Kaldjian et al., 2007; Wagner et al., 2013). This suggests that knowledge and awareness of disclosure obligations may vary significantly between countries and healthcare systems (McLennan, 2018; McLennan et al., 2012; McLennan & Moore, 2019; McLennan et al., 2015).

In Australia, Studdert et al. (2010) found that even experienced practitioners had limited knowledge of apology laws and qualified privilege laws within medico-legal contexts, potentially due to inconsistencies in legal frameworks across states (Finlay et al., 2013). Bender (2007) also identified gaps in HCPs' understanding of disclosure obligations, particularly regarding legal protections such as 'I'm sorry' laws, which influence attitudes toward error disclosure. The UK context reveals limited practitioner knowledge and lack of clear, evidence-based disclosure policies. However, the duty of candour policy has the potential to enhance patient safety outcomes (Birks et al., 2014; Dalton & Williams, 2014; Leape et al., 2009; Shekar & Brennan, 2023).

Physicians' legal knowledge varies and is influenced by differences in legal education, professional experience and exposure (Bender, 2007; Elwy et al., 2016). These disparities contribute to inconsistent application of disclosure policies and uncertainty about whether the disclosure is always in the patient's best interests (Birks et al., 2014; Mansour et al., 2020). The need for standardised and comprehensive training programmes to ensure that all HCPs are well-informed about their disclosure responsibilities and

institutional policies has been highlighted in many studies (Abu-El-Noor et al., 2019; Birks et al., 2014; Duffy, 2012; Elwy et al., 2016; Gallagher et al., 2007; Kim & Lee, 2020; Leape et al., 2009; White et al., 2017; Wolk et al., 2014; Wu et al., 2013).

2.10.1.4 Contextual Factors and Organisational Influence

HCPs' roles, experience, and demographic characteristics significantly influence their knowledge and practice of open disclosure. Risk management staff tend to be more knowledgeable than frontline practitioners, who often lack clarity on procedures (Ruroede, 2001). While 90% of oncology nurses support error data collection, only 16% believe patients are consistently informed and just 24% report that apologies are routinely provided (Waller et al., 2020). Physicians also show significant variation in their understanding of disclosure practices, particularly regarding legal obligations, highlighting a disconnect between policy and practice (Choi et al., 2021; Giraldo et al., 2020; Harrison, Sharma, et al., 2019; Pillinger, 2016b; Renkema et al., 2014).

Variations in open disclosure practices are closely linked to professional role, experience, and area of practice. Senior clinicians typically demonstrate stronger understanding, while students and junior staff develop competence through observation and experience (Leape et al., 2009). Experience and professional maturity also play a role, with HCPs in their 30s and 40s showing greater comprehension of disclosure practices than younger counterparts (Ock et al., 2016). Differences across specialities further influence familiarity with disclosure, shaped by clinical exposure to patient harm and risk (Gallagher, Waterman, et al., 2006). Physicians from different departments also report varied engagement and confidence, underscoring how clinical context affects attitudes and application (Lawton & Parker, 2002). In more complex settings, such as intellectual disability care, HCPs often express uncertainty around how to tailor disclosures appropriately (Mullally & Corby, 2021). These findings highlight the need for tailored, role-specific training that reflects the realities of diverse clinical environments and supports consistent, effective disclosure.

Organisational culture and the healthcare work environment critically shape HCPs' knowledge and open disclosure practice. Perez et al. (2014) highlight a disconnect between safety education and its practical application, suggesting that institutional norms often constrain effective implementation. These tensions contribute to inconsistencies between policy and practice, limiting organisational learning and efforts to normalise open disclosure (Adams et al., 2023; Walshe & Shortell, 2004). The ongoing gap between patient expectations and what physicians disclose highlights the need for stronger organisational and regulatory alignment to ensure consistent, accountable disclosure (Adams et al., 2023; Adams et al., 2022; Allan & Munro, 2008; Christensen et al., 1992; Hingorani et al., 1999).

2.11 Attitudes

2.11.1.1 Cultural Variations and Regional Context

The Cultural norms around transparency and accountability significantly shape HCPs' attitudes towards error disclosure, influencing both public and professional expectations (Esswood & Olley, 2019; Ock et al.,

2020). Comparative studies demonstrate notable regional variation. For instance, Bell et al. (2017) found that attitudes toward disclosing errors varied among US and Canadian physicians. In the US, 54% of physicians agreed with disclosing all harmful errors, whereas in Canada, this number was lower at 38%. Similarly, Jeffs et al. (2010) noted that attitudes towards team-based error disclosure varied significantly. Some viewed this as an unrealistic practice, while others saw it as beneficial. This variation could reflect different cultural norms or practices within Canadian hospitals. In the USA, White et al. (2008) found that most trainees supported disclosing serious errors, reflecting a positive attitude and strong ethical commitment to transparency. However, regional differences, particularly in litigations processes can shape these attitudes (Perez et al., 2014; Wu et al., 2013). Despite this ethical awareness, a persistent gap between attitudes and practice remains (Ghalandarpoorattar et al., 2012), often influenced by institutional norms, medico legal risks and hierarchical structures that discourage full transparency (McLennan & Truog, 2013). Finlay et al. (2013) and McLennan et al. (2012) stated that disclosure is often seen as a risk rather than a responsibility, leading to selective disclosure or avoidance of apologies.

Iedema, Allen, Sorensen, et al. (2011) found that clinicians were uncertain about the appropriateness of open disclosure communication, especially when dealing with patients from diverse backgrounds. This implies that cultural variations may influence clinicians' willingness to disclose PSIs. Cultural norms and societal attitudes towards professional standing also impact willingness (McLennan, 2018) and the likelihood of error disclosure, especially in highly hierarchical structures such as healthcare, where admitting mistakes could be viewed negatively due to societal norms of 'saving face' (Dalton & Williams, 2014; Lee & Kim, 2020). In Malaysia, Wong et al. (2016) found that the hierarchical nature of the medical field influenced attitudes towards error disclosure. Faculty members were willing to attribute responsibility to more senior clinicians as the severity of the case increased. A key element in fostering openness is preventing apologies from being used as admissions of liability (Bender, 2007) and shifting from a compliance-driven culture to a learning culture (Dalton & Williams, 2014).

2.11.1.2 The Impact of Education and Training

This section examines how training shapes HCPs' attitudes by strengthening confidence, ethical commitment, and openness in disclosing PSIs. Studies showed that training enhances willingness to communicate transparently (Hooper, 2019; Kim et al., 2017). In the USA, Brown et al. (2014) reported a rise in support for explicit apologies among radiology trainees from 29% to 61% after a communication workshop. Cole et al. (2013) highlighted trainees found disclosure complex, reinforcing the need for targeted guidance. Yet only 33% of trainees had received formal training (Wu et al., 2013) and this lack of education may influence attitudes, contributing to reduced willingness to disclose. Kim et al. (2017) found that structured education increased HCPs' confidence and recognition of the need for systemic change. Similar shifts were noted by Madigosky et al. (2006) and Sorokin et al. (2005).

The value of positive open disclosure training experience for building trust with patients (Harrison et al., 2017) and seeking support from colleagues and superiors (Hobgood et al., 2005) suggests that both providing training and creating a supportive environment for HCPs to apply their learning are important.

This suggests that training should not only focus on individual skills but also address the complexities of teamwork in error disclosure scenarios. Piper and Iredema (2011) pointed out challenges linked to training, which include resistance due to concerns about legal repercussions, professional reputation and communication difficulties. This suggests that while there is a growing recognition of the importance of open disclosure, HCPs may still harbour reservations, which targeted training programmes need to address.

2.11.1.3 Need for Systemic Change

Several studies have drawn attention to a cultural shift in healthcare to address negative perceptions and attitudes towards error disclosure. Systemic change is seen as key to fostering openness, with perceived institutional support strongly influencing HCPs' attitudes and, lack of support reinforcing reluctance to disclose (Adams et al., 2023; Allan & Munro, 2008; Bassett, 2015; Birks et al., 2014; Jeffs et al., 2011; Manser & Staender, 2005). Hierarchical dynamics within healthcare organisations also influence professionals' attitudes to error disclosure. Junior nurses in Kiegaldie et al.'s (2016) study reportedly lacked trust in their organisation's ability to stand by their interests when reporting and disclosing incidents. These fears, seeded in the healthcare organisations' power dynamics and hierarchy contribute to negative attitudes towards error disclosure and reduce the likelihood of transparent communication. This calls for improved reporting procedures and guidance to facilitate a culture of openness. The role of an organisation is critical for fostering a positive attitude toward error disclosure, as evident in the University of Michigan Health System (UMHS), which supported disclosures through open communication, leading to reduced malpractice claims, lower legal fees and shorter case resolution times (Bender, 2007).

Healthcare leaders can cultivate a culture of transparency, diminishing the fear and embarrassment that typically deter HCPs from disclosing errors (Leape et al., 2009). The paper also highlights the importance of clear guidelines and action plans, to foster honest and unprejudiced communication with patients, and supporting those involved in adverse events. This strategy emphasises the need for systemic changes in the error disclosure process, which aligns closely with patient safety goals.

2.11.1.4 Ethics, Fear and Reputation

Ethical considerations emerge as a fundamental driver of attitudes, demonstrating that healthcare practitioners recognise the ethical obligations associated with open communication about serious errors (Kolaitis et al., 2016; Warehall, 2023; Wu et al., 2013). Renkema (2017) highlighted the ethical dilemmas and different attitudes of physicians facing malpractice litigations. Some physicians hesitated to disclose due to fear of blame or legal repercussions, while others viewed disclosure as an essential part of the care process and did not see the associated risks as a reason to avoid it. However, the fear of consequences, litigation, damage to the patient-doctor relationship and potential harm to the doctor's reputation were reported (Perez et al., 2014; Wu et al., 2013). McLennan (2018) reported that HCPs, regardless of their location, grapple with apprehensions concerning potential complaints, lawsuits and harm to their professional reputations. This universal fear underlines the cultural variations and regional contexts influencing attitudes to error disclosure. Moreover, the fear of legal repercussions (Benbassat et al., 2001;

Claringbold et al., 2023; Stawicki et al., 2019) significantly impacts attitudes, particularly in litigious environments such as the USA and Israel. Despite general support for openness, negative attitudes driven by fear of complaints, reputational harm, and emotional burden continue to impact consistent disclosure practices (Iedema, Sorensen, & Piper, 2008). HCPs often dread engaging in difficult conversations or admitting failures due to concerns about tarnishing their reputation (Mansour et al., 2020). Feeling responsible and experiencing emotional distress following errors, as seen in White et al. (2008) study, further complicates attitudes towards error disclosure. While the sense of accountability can drive professionals to disclose errors, the emotional toll can be significant, emphasising the need for robust emotional support systems within healthcare settings.

2.12 Perceptions

HCPs widely recognise open disclosure as central to patient trust and safety (O'Connor et al., 2010), yet their perceptions are shaped by uncertainty, institutional culture, and emotional burden (Adams et al., 2023; Benbassat et al., 2001; Birks et al., 2014; Duffy, 2012; White et al., 2011; White et al., 2017). Perceptions regarding apologies vary among professionals; some prefer expressing regret for an adverse event, while others advocate for explicit apologies (White et al., 2011). Despite acknowledging the value of transparency, many HCPs perceive error disclosure as increasing litigation risks (Perez et al., 2014; Renkema, 2017; Saleh, 2023). A misalignment persists between patient expectations and HCPs' perceptions. While over 80% of patients expect full transparency, only 60% of physicians believe patients truly desire detailed disclosure, particularly for minor errors. This gap in perception may lead to inconsistent disclosure practices, ultimately undermining patient trust in healthcare institutions (Mazor et al., 2006).

Perceptions are also deeply influenced by organisational context, whether supportive and non-punitive (Adams et al., 2023; Birks et al., 2014). While a culture of learning is perceived as essential to encouraging openness (Adams et al., 2023; Leape et al., 2009) many HCPs doubt whether institutional support is reliably available following adverse events (Mira et al., 2017). Some view disclosure as a means to strengthen patient trust, while others fear it may impact confidence in HCPs (Ghalandarpoorattar et al., 2012; Hobgood et al., 2004; Mazor et al., 2006).

There is a prevailing belief that all PSIs are unacceptable, rooted in the ethical principle of 'do no harm.' This can lead to self-defensive behaviours and hiding errors (Adams et al., 2023). Benbassat et al. (2001) pointed out that stress from uncertainty is associated with defensive medical practice. This suggests that psychological stressors could affect medical practices and perceptions of PSIs. Physicians believe effective disclosure is often challenging and causes discomfort (Ock et al., 2016). Participants have reported feeling of being judged by their colleagues in the aftermath of such events, leading to discomfort and fear of encountering patient's family within the hospital facility (Christensen et al., 1992; Mira et al., 2017). Negative perceptions of apologies as an admission of guilt and fears about open disclosure significantly influence HCPs' willingness to disclose errors (Bender, 2007; Delbanco & Bell, 2007). However, some HCPs perceived disclosure process is to reduce feelings of guilt (Choi et al., 2021). HCPs' fears include litigation, loss of reputation, patient mistrust, professional consequences and increased anxiety among professionals

and patients (Perez et al., 2014). Robertson and Long (2018) reported post-traumatic stress disorder (PTSD) among physicians, significantly affecting their confidence and job satisfaction. Some participants in Mendonca and Schmidt (2020) study were dissatisfied with the process of handling adverse events, believing it was slow and lacked neutrality, with the hospital favouring the patient's family. This could contribute to professionals' emotional burden. Medical professionals often internalise the incident, feeling responsible or upset about a PSI. This perception can contribute to the fear and hesitation seen in discussions around error disclosure, as well as anxiety and potential burnout (White et al., 2011). The need for systemic reforms that prioritise HCPs and patients' psychological safety while promoting learning rather than blame is acknowledged widely (Adams et al., 2023; Dalton & Williams, 2014).

2.13 Facilitators

2.13.1.1 Responsibility, Accountability and Positive Attitude

HCPs including physicians, nurses, pharmacists and surgeons, commonly view error disclosure as an ethical obligation (Dossett et al., 2018; Gallagher et al., 2003). Their commitment to patients' right to know about PSIs aligns with ethical values (Dossett et al., 2018; Gallagher et al., 2003) and arises from a dedication to honesty and patient well-being (Gallagher et al., 2003). Several authors have emphasised that HCPs with a strong sense of responsibility are more likely to communicate transparently, including error disclosure to patients, discussions with colleagues, and reporting to institutions (Boothman et al., 2012; Carmichael, 2017). Recognising open disclosure as an ethical imperative (Dossett et al., 2018; McLennan, 2018) highlights the moral duty of HCPs to engage in honest and open communication with patients (Goldberg et al., 2002; Harrison et al., 2017). A positive attitude toward error disclosure is a vital facilitator (McLennan, 2018; Wagner et al., 2013), while recognising the ethical duty to disclose PSIs is a strong motivator (McLennan, 2018).

Accountability extends to peer oversight and mentorship, where clinicians support reporting and receiving feedback on errors, reinforcing a culture of learning and transparency (Asghari et al., 2010; Mansour et al., 2020). Some professional groups, such as nurses, are recognised as more proactive in reporting errors than others (Harrison et al., 2017). Other error disclosure facilitators include individuals being responsible for disclosure, an organisational culture that encourages openness, the availability of professional guidance, and appropriate conduct within healthcare settings (Birks et al., 2014). HCPs are more willing to report errors, discuss them with colleagues and disclose them to patients when they trust that meaningful institutional responses will follow (Carmichael, 2017; Delbanco & Bell, 2007). Trust in the effectiveness of the institutional response is a facilitator for transparent communication (Amir et al., 2017; Duffy, 2012).

2.13.1.2 Patient and Family Involvement

Engaging patients and their families in discussions about PSIs can promote transparency and understanding (Scally, 2018; WHO, 2012). Patients wish to be informed of PSIs; some authors have indicated that younger patients are more likely to seek immediate disclosure (Hobgood et al., 2002). A supportive environment that encourages patients to speak up about safety concerns is crucial (WHO, 2012). Patients and their

families strongly desire transparency, expecting detailed information about errors and their consequences (Dossett et al., 2018; Wong et al., 2016). They expect comprehensive information about the incident, its causes and the steps that will be taken to address and prevent similar occurrences (Dossett et al., 2018). This desire for openness serves as a compelling motivator for HCPs to engage in error disclosure. In cases where disclosure was withheld, the likelihood of patients changing physicians increased significantly (46.7% for nondisclosure vs. 19.1% for full disclosure in a missed allergy scenario). The likelihood of seeking legal advice was also higher in nondisclosure cases (10.9% vs. 3.8% in the same scenario). This suggests that patients view transparency as crucial for maintaining trust and that failure to disclose errors can have negative consequences for physicians (Mazor et al., 2006).

2.13.1.3 Awareness, Cultural Shift and Communication

Increased awareness among HCPs regarding the importance of error disclosure is a common facilitator (Hobgood et al., 2002; McLennan, 2018; Ock et al., 2016; Pyo et al., 2020). A clear understanding of the reporting process is essential for timely disclosure (Wong et al., 2017). Additionally, public awareness and media attention on the importance of error disclosure can encourage HCPs to engage in open communication (Ock et al., 2016)

A cultural transformation towards transparency and patient-centred care is a recurring theme in the analysis. Healthcare organisations that prioritise patient safety and cultivate a culture characterised by openness, effective communication, and trust create an environment conducive to error disclosure (Duffy, 2012; McLennan, 2018; Sorensen et al., 2008). When healthcare institutions emphasise transparency, this encourages HCPs to actively engage in error disclosure (Wagner et al., 2013).

Creating a supportive environment within healthcare systems is vital for promoting the disclosure of adverse events (Elwy et al., 2016). Trust among team members, a supportive atmosphere, and effective communication are key elements for error disclosure (Espin et al., 2006). Implementing communication skills workshops and interprofessional training programmes effectively improves HCPs' comfort in discussing errors and sensitive topics (Brown et al., 2014). Alignment of communication with cultural values, optimism and hope encourages HCPs and patients to engage in open discussions about errors (Aljubran, 2010). Positive past experiences with disclosure also contribute to a culture of openness (Harrison et al., 2017).

2.13.1.4 Clear Policies, Guidelines and Legislation

Clear policies are instrumental in guiding HCPs and fostering motivation to disclose PSIs (Boothman et al., 2012; Duffy, 2012; Eaves-Leanos & Dunn, 2012; McLennan, 2018; O'Connor et al., 2010; Sorensen et al., 2008). These policies create a culture that encourages openness and provides HCPs with well-defined guidelines for handling adverse events. Government support through policies can further expedite the implementation of error disclosure (Adams et al., 2023; Birks et al., 2014; Duffy, 2012; Pyo et al., 2020), offering a regulatory framework for HCPs.

With clear guidelines, HCPs are more likely to engage in transparent communication regarding errors. Ensuring institutions provide support after disclosing adverse events significantly promotes HCPs' confidence to report those errors (O'Connor et al., 2010; Sorensen et al., 2008). Key elements in fostering this openness are the policy and legal frameworks that prevent apologies from being used as admissions of liability (Bender, 2007).

Organisations shape the landscape of patient safety initiatives, offering vision and strategic direction (Leape et al., 2009). Their commitment to patient safety, establishment of guidelines for managing adverse events, implementation of open disclosure policies and the provision of systems for debriefing and incident analysis are all facilitators for error disclosure (Manser & Staender, 2005). Emphasising educational approaches over punitive measures and employing systematic processes like root cause analysis are also effective facilitators in error disclosure (Jones & Levy, 2012).

2.13.1.5 Systems-Based Approach, Quality Improvement and Research

Adopting a systems-based approach encourages HCPs to report and discuss incidents as it is recognised that errors are not solely the result of individual actions but are influenced by the broader healthcare system (Wu, 2000). Quality improvement methodologies such as the Plan-Do-Check-Act (PDCA) model can enhance patient safety protocols (Stawicki et al., 2019). Error disclosure, in turn, can improve healthcare quality and prevent future errors (Dossett et al., 2018). Feedback mechanisms, reporting systems, and institutional policies all contribute to this approach (Elwy et al., 2016; Gallagher et al., 2003; McFadden et al., 2006). Practices such as monthly reporting, morbidity and mortality conferences and immediate peer feedback have also been identified as facilitators (McLennan, 2018; Rachel Sorokin et al., 2005). Increased research interest in open disclosure holds the potential to facilitate better understanding and enactment of disclosure processes. Additionally, the growing research interest in open disclosure enhances understanding and implementation, shedding light on effective strategies and outcomes related to error disclosure (Iedema, Sorensen, & Piper, 2008; Koller et al., 2016).

Allocating resources to patient safety initiatives and setting clear objectives, such as striving to become the safest healthcare institution, can drive a stronger focus on enhancing safety and claims management (Boothman et al., 2012). The presence of protocols, the utilisation of quality improvement cycles and the standardisation of checklists all indicate their role in facilitating error reporting (Stawicki et al., 2019).

Involving risk managers and promoting open communication within healthcare organisations facilitates error disclosure (Gallagher, Waterman, et al., 2006). Risk managers and administration can support HCPs when errors occur and create an environment where HCPs feel comfortable discussing errors and seeking collective solutions (Dossett et al., 2018; Kaldjian et al., 2007). Quality improvement efforts that include regular feedback are highlighted as additional facilitators. Healthcare organisations actively supporting disclosure practices and integrating them into risk management strategies foster a culture of openness. Creating dedicated teams within hospitals specifically for open disclosure can provide expertise and support for effective communication (Ock et al., 2016).

At the systemic level, leadership, legal protections, and feedback mechanisms facilitate error disclosure (Gallagher et al., 2003). National leadership in patient safety and protective legislation contribute to an environment conducive to error disclosure (DoH, 2008). Well-structured incentives within healthcare organisations can influence behaviours related to error disclosure. When HCPs are rewarded for reporting errors and engaging in transparent communication, it acts as a catalyst for open disclosure. Additionally, education programmes, policy integration and the allocation of sufficient resources and incentives are facilitators for enhancing nursing and midwifery practice (NCPDNM, 2010).

2.13.1.6 Pressure, Advocacy and Legal Factors

In the UK, Walshe and Shortell (2004) highlighted that severe instances of mistakes or failures often prompt organisations to acknowledge issues and take corrective actions. This was observed within Swiss healthcare where 100% endorsement of disclosure of serious errors among anaesthesiologists was evident (McLennan et al., 2015). Staff members who raise concerns, within or outside the organisation, can bring major failures to light. External pressure from organisations such as NHS Litigation Authority who advocate for apologies and explanations when things go wrong, encourages healthcare organisations to prioritise error disclosure as standard practice. Internal and external influences such as advocacy agencies, whistle-blowers, patient groups, peer support groups and the media can support open disclosure (Birks et al., 2014; Duffy, 2012; Ock et al., 2020; Ock et al., 2016; Walshe & Shortell, 2004). Legal considerations influence HCPs' decisions (Allan & Munro, 2008). Transparent communication can potentially reduce patients' pursuit of legal actions, while legislation can alleviate the fear of litigation (Dossett et al., 2018; Renkema et al., 2014). This indicates that legal protections and the perception that disclosure can mitigate legal consequences facilitate error disclosure.

Public media significantly contribute to raising awareness of and shaping institutional responses to open disclosure (Sally, 2018). Media exposure influences public demand for transparency, encourages policy reforms, and holds institutions accountable for disclosure practices (Harrison et al., 2017). Investigative journalism and news reports have led to legal and regulatory shifts, reinforcing the need for institutional compliance and public engagement in patient safety discussions (Bardon, 2018; Bourke & Lochtenberg, 2023; Fitzpatrick et al., 2023; Laoh, 2023).

2.13.1.7 Learning and Improvement

Structured educational models are recognised as a practical approach for improving open disclosure practices among HCPs. These models equip HCPs with the skills and knowledge necessary for effective patient communication (Duffy, 2012; Gallen et al., 2019; Jeffs et al., 2011; Jones & Levy, 2012). Appropriate procedural training is a key aspect of accountability (Rachel Sorokin et al., 2005). Departments and divisions holding conferences to discuss adverse patient events encourage accountability as clinicians collectively learn from mistakes and work together to make improvements (Rachel Sorokin et al., 2005).

Ongoing education programmes, such as those for residents and teaching faculty, contribute to improved understanding and hold educators accountable for ensuring staff are trained in error reporting and

disclosures (Baalmann et al., 2023; Kim & Kim, 2024b). Similarly, adapting the curriculum for medical students based on their feedback and responses enhances their education and aligns it with their needs (Duffy, 2012; Madigosky et al., 2006). Moreover, specific training on how to communicate and disclose adverse events helps HCPs navigate difficult conversations (Elwy et al., 2016). In the US, the establishment of open disclosure policies, an educational approach over punishment and systematic processes like root cause analysis have been identified as facilitating factors (Jones & Levy, 2012).

Telehealth simulations in the USA have demonstrated improved confidence in error disclosure and telehealth technology use among students (Baalmann et al., 2023). In South Korea, educational programmes, learning from past events, enhanced knowledge, organisational culture, legal protections, education and formal guidelines have all been found to facilitate error disclosure among HCPs (Kim et al., 2017; Kim et al., 2022)

The perception that errors are opportunities for learning and improvement serves as a facilitator (Wu, 2000). Overall, structured educational models, ongoing education programmes and various educational methods improve HCPs' readiness and skills for open disclosure. These approaches foster responsibility, accountability and a positive attitude towards transparency, ultimately facilitating error disclosure within healthcare systems.

2.14 Barriers

A comparative analysis of barriers to open disclosure in healthcare, based on a diverse range of studies from different regions, highlights both commonalities and regional variations in these obstacles. These findings highlight the complexity of the challenges HCPs face when openly disclosing PSIs and adverse events.

Legal and litigation concerns are a universal barrier to open disclosure in healthcare (Allan & Munro, 2008; Bender, 2007). The fear of disciplinary actions or lawsuits was found in studies from various countries, including the UK and Saudi Arabia (Adams et al., 2023; Aljubran, 2010; Walshe & Shortell, 2004). This fear impacts HCPs' willingness to report errors and openly communicate with patients and families.

Another widespread barrier is a lack of training and education. HCPs in different regions, including the UK, Saudi Arabia, India, Ireland and Australia, often lack sufficient training and education in error disclosure and effective communication (Adams et al., 2023; Aljubran, 2010; Byrth et al., 2012; Watson et al., 2015). This gap in knowledge leaves them ill-equipped to navigate the challenging terrain of open disclosure.

Communication and cultural factors also shape error disclosure practices. Cultural norms and expectations vary across regions and can introduce additional barriers. For instance, authors from South Korea emphasise the influence of social desirability bias on error reporting due to cultural factors (Pyo et al., 2020). Additionally, researchers from Saudi Arabia have highlighted the impact of religious and cultural norms on disclosure (Aljubran, 2010). Allan and Munro (2008) argued that 'club culture' in healthcare, where secrecy and protectionism are prevalent, is a barrier to disclosure. They suggested that HCPs may prioritise protecting colleagues over adhering to disclosure policies, contributing to negative attitudes

toward reporting errors. These variations highlight the need for culturally sensitive approaches to open disclosure.

Patient and family involvement is a critical aspect of open disclosure. Inadequate provision of information to patients and families is a common barrier identified in studies from the UK and Saudi Arabia (Adams et al., 2023; Al-Nomay et al., 2017). However, the extent of family involvement and the cultural significance of family in healthcare decisions can differ between countries, affecting disclosure practices.

Impact on reputation and trust is a shared concern among HCPs. The fear of damaging one's reputation and concerns about patient trust recurred in studies from the UK, USA and South Korea (Adams et al., 2023; Bell et al., 2010; C. Kim et al., 2017; Kim et al., 2017). The cultural importance of reputation and trust can vary, influencing the extent to which these factors serve as barriers.

Systemic and organisational factors introduce hurdles to open disclosure. Issues such as a lack of support, inadequate reporting systems and a culture of blame were reported across regions including the UK, USA and South Korea (Adams et al., 2023; Gallagher et al., 2003; Kim & Lee, 2020). These systemic barriers can overshadow HCPs' intentions to disclose errors.

Educational gaps and guidelines represent a common barrier related to the absence of clear guidelines and policies for error disclosure and insufficient education on the topic. Studies from the UK (Adams et al., 2023; Birks et al., 2014) have demonstrated these barriers. The existence and enforcement of guidelines can vary, impacting HCPs' practice.

Professional culture influences disclosure practices. A culture of silence and reluctance to self-disclose errors due to professional norms or anxiety about confrontation (Christensen et al., 1992) has been identified as a barrier in various studies, including those from the UK and Germany (Adams et al., 2023; Langer et al., 2016). The extent to which professional culture encourages or discourages open disclosure can vary between countries and specialities.

Knowledge and awareness are fundamental barriers to open disclosure. A lack of knowledge about disclosure processes and the importance of reporting errors was evident in studies from Saudi Arabia and South Korea (Al-Nomay et al., 2017; C. W.Kim et al., 2017). Addressing these gaps requires educational initiatives and awareness campaigns tailored to the local context.

Open disclosure in healthcare faces numerous barriers that can vary in nature and intensity across regions and healthcare systems. While some barriers, such as legal concerns and a lack of training, are universal, others are heavily influenced by cultural norms and each country's context. Effectively addressing these barriers requires a multifaceted approach that includes cultural sensitivity, comprehensive education and training, clear guidelines and systemic changes within healthcare organisations. Achieving open disclosure is essential for patient safety and fostering trust and transparency in healthcare systems worldwide.

2.15 Strategies

Several strategies for addressing barriers related to open disclosure practices and training were identified in this review. There has been steady progress in developing, implementing and sustaining open disclosure within clinical practice. Authors of some empirical studies focused on evidence-based guidelines, policies and frameworks (Byrth et al., 2012, 2014; Carrillo et al., 2021), while others examined cultural factors, systemic issues and educational initiatives (Abdollahi et al., 2024; Adams et al., 2023). Notably, several authors have highlighted the vital role of strong leadership (Bourke & Lochtenberg, 2023) coupled with robust organisational support encompassing both 'top-down' and 'bottom-up' approaches (De Silva, 2025). Furthermore, psychological support for HCPs (Wu, 2000) is crucial for fostering an environment conducive to effective disclosure practices.

Healthcare organisations must recognise the 'teachable moments' that arise when things go wrong, as these instances can lead to improvements in the future (ACSQHC, 2013). However, details about these key moments are often missing, limiting HCPs' ability to receive proper guidance and resources for engaging in disclosure processes. Several factors influence how often HCPs are willing to participate in disclosure practices, including the culture of safety, past experiences, leadership by example, organisational support and the reactions of patients and their families (Carrillo et al., 2021). Nonetheless, evidence demonstrating how these factors affect disclosure outcomes is lacking (Bender, 2007; Harrison et al., 2017).

Patient-centred care positions the patients' experiences of adverse events at the heart of disclosure conversations regardless of public pressure, patient complaints or lawsuits (Carrillo et al., 2021), thereby promoting transparent and honest communication. Family-centred strategies are recommended to make disclosure methods more flexible and patient-focused. Considering demographic factors such as age, education level and patients' culture will help identify which approaches are effective, for whom, in what circumstances and why, especially during PSI disclosure (Adams et al., 2022). Several authors have highlighted the need to bridge the gap between HCPs and the general public regarding their understanding, expectations and perceptions of open disclosure (Choi et al., 2021). As such, HCPs are well-positioned, due to their experience and expertise, to develop strategies that address the needs and expectations of those involved in or affected by PSIs.

Considering the healthcare environment's complex, stressful, and demanding nature, fostering a culture of personal responsibility and honesty is essential. This reinforces the understanding that PSIs are an inevitable part of healthcare and cannot be completely eliminated (De Silva, 2025; Shekar & Brennan, 2023). Inflexible organisational procedures and inadequate investment in training hinder open, honest, and transparent communication with patients and their families (ACSQHC, 2013; Carrillo et al., 2021). These factors also limit HCPs' ability to interact, listen, and respond to patients, thereby denying patients the opportunity to ask questions and contributing to escalation. Therefore, organisational measures that prioritise learning and improvement based on a value-focused approach to healthcare and the necessary training must be identified (Popkess et al., 2017). Providing the right resources, skills, behaviours and attitudes will help HCPs acknowledge and apologise for PSIs while alleviating uncertainties related to disclosure conversations. Empowering HCPs with the tools needed to work as a team will result in higher

patient satisfaction and positive disclosure outcomes enhancing provider-patient relationship (Hannawa & Frankel, 2021; Mazor et al., 2004).

Implementing regulatory procedures to establish clear guidelines on when, how, who and what to inform patients about during the disclosure of PSIs is essential to ensure the efficiency and effectiveness of open disclosure (Carrillo et al., 2021). However, De Silva (2025) highlighted clinicians' and NHS managers' reluctance to comply with the 'duty of candour,' despite this being a legal requirement within Health and Social Care legislation. Therefore, investing in open disclosure training not only strengthens ethical awareness and behaviour among HCPs but also addresses ethical challenges more effectively than punitive legislation (Bourke & Lochtenberg, 2023; Choi et al., 2021). It is crucial to develop targeted, multidisciplinary training focusing on relevant content, methodologies and strategies, particularly in communication, cultural competency and sensitivity training. Although authors have indicated that a multidisciplinary approach to training can help overcome various barriers related to roles and responsibilities and facilitate team-based disclosure conversations, there is limited understanding of how this is integrated into open disclosure practices.

The psychological impact on HCPs must be recognised while also attending to the needs of patients and their families. Bourke and Lochtenberg (2023) argued against criminalisation due to the practical difficulties in defining PSIs, existing regulatory frameworks that address failures to disclose and the recent implementation of the Civil Liability (Amendment) Act 2017, which requires more time to demonstrate its effects. Additionally, criminal sanctions may deter individuals from entering the healthcare profession, as fear-based approaches are contrary to the ethos of open disclosure (Bourke & Lochtenberg, 2023; Shekar & Brennan, 2023). However, raising awareness about human factors, organisational failures and person-centred strategies tailored to individual needs can foster a culture of openness and honesty, ultimately safeguarding the professional integrity of HCPs (Harrison et al., 2017; Shekar & Brennan, 2023). This scoping review highlights the significance of shared responsibility and collaboration among organisational bodies, regulatory authorities and governance systems, as well as the need for adequate resources. Consequently, the researcher in this study aims to explore strategies that effectively assist multidisciplinary HCPs in engaging with and sustaining open disclosure practices in Ireland.

2.16 Summary of Key Findings

Various authors highlighted the multifaceted nature of open disclosure in healthcare and its complex interplay with professionals' level of knowledge, attitudes to adverse events and decisions to disclose errors and near misses (Bell et al., 2017; Harrison et al., 2017; Pillinger, 2016). Cultural and contextual variations significantly shape the understanding of open disclosure practices within different healthcare settings and locations (Bell et al., 2010). These contextual nuances must be considered when designing educational interventions and implementing policies. Furthermore, numerous authors have emphasised the need for a cultural transformation at the organisational and individual level that addresses negative attitudes to and perceptions of error disclosure (Gallagher, Brundage, et al., 2006; Ghalandarpoorattar et al., 2012; McLennan, 2018; Perez et al., 2014; Wu, 2000). A key finding from reviewed studies is the wide variation

in HCPs' knowledge, attitude and approach to PSIs disclosure, which is evident across different regions and healthcare contexts (Adams et al., 2023; Bell et al., 2017; Mahmudah et al., 2022; Mazan et al., 2020).

Psychological factors influence HCPs' knowledge, attitudes and behaviours concerning open disclosure. Firstly, the presence of fear, particularly of legal actions or reputational harm, generates stress and diminishes HCPs' inclination to admit errors openly (Benbassat et al., 2001; Birks et al., 2014; Madden, 2008; Sattar et al., 2020). Secondly, cognitive biases influence perceptions (Crookery et al., 2000). For instance, minimising the severity of an error or deflecting blame onto others are cognitive biases that can deter HCPs from embracing disclosure (Birks et al., 2014; Byrth et al., 2012; Wolk et al., 2014). Thirdly, the emotional distress stemming from guilt and anxiety following a mistake can significantly impede professionals' willingness to acknowledge and disclose errors. Additionally, the fear of litigation or uncertainty may prompt defensive medical practices involving excessive tests and procedures and an aversion to error disclosure. Whether errors are perceived as opportunities for learning or personal failures will profoundly influence the propensity for disclosure (Kaldjian et al., 2007; Wong et al., 2016). Lastly, HCPs' confidence in and self-efficacy around effectively communicating errors to patients and their families also impact attitudes to open disclosure. However, these perceptions are not fixed and can be positively influenced by training, a supportive organisational culture, protective legislation and positive role models (Abdollahi et al., 2024; Kim & Kim, 2024b; Pyo et al., 2020; Romano et al., 2022; Waller et al., 2020). These perceptions must be navigated sensitively when implementing open disclosure practices and policies (Da Silva et al., 2019; Eisenschmidt et al., 2019).

Authors have consistently shown that targeted training and education can significantly improve HCPs' understanding of open disclosure and the importance of transparent communication about errors or adverse events. Standardised training programmes and educational initiatives are crucial for bridging knowledge disparities and promoting a comprehensive understanding of open disclosure (Bell et al., 2010; Duffy, 2012; Pillinger, 2016; Wu et al., 2013). Additionally, attitudes and beliefs about open disclosure among HCPs can be varied and complex. Reshaping HCPs' attitudes, as discussed in the literature, is achieved through educational programmes, peer learning, practical guidance on handling and disclosing errors, mentorship by senior and experienced professionals, creating a supportive environment, regular feedback and patient involvement (Leape et al., 2009; WHO, 2011).

Organisational culture and leadership critically shape HCPs' willingness to engage in open disclosure. In cultures where blame and fear dominate, HCPs are discouraged from acknowledging errors, hindering learning and compromising patient safety (Duffy et al., 2022). High workloads, unclear processes, and lack of emotional support further deter disclosure (Lim & Gardner, 2019). In contrast, supportive leadership, structured protocols, and a learning-oriented environment foster transparency and confidence. A just culture that prioritises learning over punishment enables safer care, empowers staff and drives system-level improvement (Dalton & Williams, 2014).

A more comprehensive and holistic approach may be needed to enhance open disclosure in healthcare effectively. This approach should reinforce the facilitators and tackle the complex and varied barriers by

considering regional, cultural and organisational contexts. However, given the culturally specific and context-dependent nature of many barriers, further research is needed to inform more region-specific strategies. Furthermore, as these findings are primarily from high-income countries, the dynamics of open disclosure in low- and middle-income countries are less well-understood.

2.17 Conclusion and Recommendation

Based on the findings presented, several gaps in the literature and recommendations for practice or future research on open disclosure in healthcare can be highlighted. Firstly, more research is needed on the mechanisms through which open disclosure can address and reduce the psychological and health-related consequences of errors for patients, their families and HCPs. This can inform strategies and interventions that target the needs and challenges faced by these stakeholders. Secondly, research on the effectiveness of training models designed to support open disclosure is lacking. Future researchers should investigate the impact of educational and institutional interventions on promoting open disclosure practices and whether these interventions can reduce barriers and enhance facilitators while policy-practice gap is addressed (Harrison, Walton, et al., 2019). Thirdly, the contextual factors influencing open disclosure must be further explored to understand how regional, cultural and organisational contexts impact open disclosure practices. Researchers should also examine patients' perceptions of different disclosure styles and their impact on outcomes (Birks et al., 2014). Finally, more research on open disclosure in different healthcare settings is needed. This includes exploring open disclosure practices in primary, private, and social care settings. Currently, most of the research on open disclosure is focused on secondary care in high-income countries, leaving a significant gap in our understanding of open disclosure in other healthcare contexts. Implementing open disclosure in healthcare settings requires clear policies and guidelines, practical training, a supportive environment, strong leadership and protective legislation.

In conclusion, the successful implementation of open disclosure in healthcare settings requires a combination of facilitators such as structured communication, continuous learning, emotional support, clear policies and guidelines, training, supportive environments, strong leadership, protective legislation and promoting a culture of safety. These facilitators can help improve communication, encourage HCPs to take responsibility for their mistakes and ultimately lead to improved patient outcomes.

Chapter 3 Philosophical and Methodological Approaches

3.1 Introduction

This chapter discusses the philosophical, methodological, and theoretical approaches that support the research study, offering a rationale for adopting a mixed methods design. It explains the choice of a sequential explanatory design highlighting the integration of methods within the study. The first sections discuss the philosophical principles and the underlying paradigm of pragmatism that inform the methodological decisions. The latter sections focus on the methodological and theoretical positioning within the context of pragmatism.

3.2 Philosophical and Theoretical Perspectives

3.2.1 Research Paradigm

The conceptual and methodological frameworks provide systematic and technical rigor to the research process by offering a philosophical worldview and contextualising the conceptual and theoretical aspects. These frameworks are essential in guiding fundamental methodological decisions aimed at generating knowledge (Grant & Osanloo, 2014; Ngulube et al., 2015; Ravitch & Riggan, 2016). Although the term 'paradigm' was first introduced by Thomas Kuhn in 1962 to denote a philosophical way of thinking, Guba and Lincoln in 1994 expanded to describe it as a fundamental set of beliefs, principles, and assumptions that guide research actions or investigations (Kivunja, 2018; Kivunja & Kuyini, 2017). In essence, a paradigm serves as a conceptual lens through which researchers understand acquiring knowledge, interpret the nature of reality, and determine appropriate research methods for answering research questions and analysing data (Creswell & Clark, 2017; Guba & Lincoln, 1994; Kivunja, 2018).

A strong philosophical foundation is crucial to the research process, as it guides methodological choices, enhances validity and reliability and provides a structured theoretical framework for understanding complex phenomena. It also ensures that the research accurately reflects the subject under investigation (Tashakkori & Teddlie, 2010). Different worldviews are linked to specific research paradigms, which influence how researchers perceive reality and acquire knowledge thus shaping their methodological decisions (Dewey, 1916; Kaushik & Walsh, 2019; Pansiri, 2005). While there are various philosophical perspectives, Creswell and Creswell (2018) identified four-core paradigms, post-positivism, constructivism, pragmatism, and transformative, that guide mixed methods research (Figure 2). These paradigms align with broader worldviews and correspond with key philosophical dimensions, such as ontology (the nature of reality), epistemology (how knowledge is acquired), methodology and methods (the research process), axiology (the role of values), and theoretical perspectives (Crotty, 1998; Lincoln & Guba, 1985). For example, positivism (Park et al., 2020) emphasises objectivity, empirical methods, and hypothesis testing, while constructivism (Lee, 2012) focuses on subjective experiences, qualitative inquiry, and interpretive analysis. A thorough understanding of these foundational principles ensures coherence in research design,

enhances rigor and credibility, and ensures alignment between theoretical foundations and methodological decisions (Morgan, 2014; Tashakkori & Teddlie, 2010).

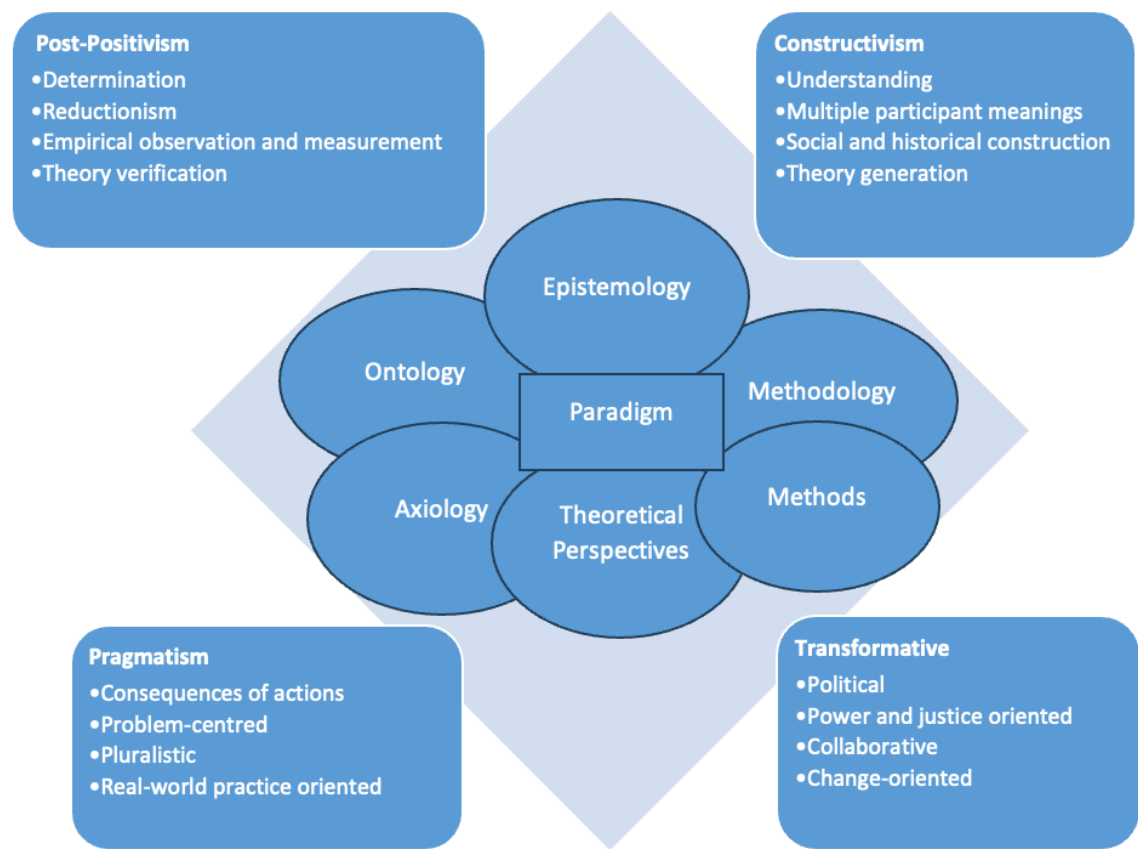


Figure 2 Research Paradigm

(Creswell & Clark, 2017; Crotty, 1998; Guba & Lincoln, 1994)

Building on how worldviews shape research paradigms, the following section examines the ontological, epistemological, axiological, and methodological foundations guiding the research design.

3.2.1.1 Ontological Positioning

Ontology concerns with philosophical assumptions about reality and existence, often referred to as the "theory of reality" (Khatri, 2020). It represents a philosophical stance on being, reality, and fundamental categories of entities. In this context, ontology examines researcher's beliefs about open disclosure practice, helping to understand the nature of reality and what can be known about open disclosure of PSIs (Khatri, 2020; Kivunja & Kuyini, 2017; Scotland, 2012). Additionally, it assists the researcher clarify their epistemological and methodological views (Khatri, 2020). From an ontological perspective, the study recognises that the reality of open disclosure and PSIs is complex and multidimensional. It acknowledges that multiple perspectives exist among multidisciplinary professionals each contributing to the overall understanding of the phenomenon. The study assumes that there is no single objective truth but rather a range of interpretations that can collectively inform improvements in healthcare practice. Adopting a relativist ontology (King & Horrocks, 2010; Lincoln et al., 2011) this study views reality as being constructed

through interactions, contexts, experiences and social norms. This approach allows the researcher to capture the richness and complexity of human experiences, recognising that HCPs' attitudes and perceptions of PSIs and disclosure processes may vary depending on contexts and experiences.

3.2.1.2 Epistemological Positioning

Epistemology derived reasoning and empirical on objective facts. Epistemology plays a critical role in shaping data reliability and guiding the pursuit of knowledge within the researched social context (Kivunja & Kuyini, 2017). Epistemologically, this research seeks to explore the understanding, perspectives and interpretations of open disclosure of PSIs, from a multidisciplinary approach. It adopts a constructivist epistemological position recognising the subjective nature of reality and the importance of in-depth exploration of attitudes and perceptions from a multidisciplinary discipline. This approach acknowledges that knowledge is multifaceted, evolving through interactions, experiences and interpretations of the multidisciplinary professionals involved. By combining qualitative exploration and quantitative measurement, the research aims to provide a comprehensive, nuanced understanding of open disclosure within the healthcare context, embracing the complexity of individual interpretations and experiences.

3.2.1.3 Methodology and Pragmatism

The term *methodology* refers to the set of principles, procedures, and approaches that guide research within a specific research paradigm or worldview. The conceptual and methodological frameworks ensure that the research process is systematic and aligned with philosophical beliefs about reality, knowledge, values and theorem which are making key methodological decisions in knowledge generation (Grant & Osanloo, 2014; Ngulube et al., 2015; Ravitch & Riggan, 2016).

This study is grounded in the pragmatism paradigm, which supports methodological flexibility and encourages the integration of multiple perspectives to address complex research problems (Creswell & Creswell, 2018). Pragmatism aligns with mixed-methods research, as it prioritises practical problem-solving, real-world applicability and the use of diverse approaches to generate actionable knowledge (Tashakkori & Teddlie, 2010). Crotty's (1998) conceptualisation model provides a structured framework that sequentially links philosophical, theoretical and methodological approaches. Adopting this model, the study employs a mixed-methods design, ensuring alignment between philosophical assumptions and methodological choices.

The concept of pragmatism was introduced by Pierce (Dewey, 1916; Ormerod, 2006; Peirce, 1905) as a method for clarifying ideas by considering their practical consequences, laying the groundwork for later epistemological and methodological developments. In 1898, William James (1843-1910) popularised the term '*pragmatism*' to the world, crediting Pierce as the original architect of this influential philosophy through the publication of his influential book '*Pragmatism: A New Name for Some Old Ways of Thinking*' in 1907 (Ormerod, 2006). James (1975) emphasised that truth is not absolute but rather evolves through human experiences and interactions (Creswell & Creswell, 2018; Dewey, 1916; Ormerod, 2006). His perspective reinforced that knowledge should be evaluated based on its utility and applicability to real-

world situations. Dewey (1916), another figure in the development of pragmatic philosophy, argued that knowledge emerges through inquiry and active problem-solving. He viewed positioning research as an iterative process that integrates theory and practice (Creswell & Creswell, 2018; James, 2001; Morgan, 2014), a perspective that significantly influenced research methodologies, particularly in education and healthcare. Dewey's work on experiential learning and reflective thinking continues to shape how research is conducted, encouraging a more dynamic, practice-based approach to knowledge generation.

Mead, a sociologist and psychologist, contributed to pragmatism by highlighting the social and communicative aspects of knowledge construction, aligning closely with constructivist epistemology (Creswell & Creswell, 2018; Kaushik & Walsh, 2019; Morris, 1937; Stryker, 2008). His theories on symbolic interactionism emphasise that meaning is derived through social interactions, reinforcing the idea that research should engage with real-world contexts and diverse perspectives (Stryker, 2008). Other theorists, including Arthur F. Bentley, Chauncey Wright, and Oliver Wendell Holmes Jr., further shaped pragmatism by integrating it into legal, political and sociological domains, broadening its interdisciplinary applicability (Kaushik & Walsh, 2019; Wells, 2016).

In this research, pragmatism acts as a bridge between quantitative and qualitative approaches, supporting mixed-methods research as an effective means of generating comprehensive and actionable insights (Creswell & Creswell, 2018; Kaushik & Walsh, 2019; Kelly & Cordeiro, 2020; Morgan, 2014; Ormerod, 2006; Pansiri, 2005). Pragmatism rejects rigid dichotomies between objectivism and subjectivism, advocating for methodological pluralism and flexibility in addressing complex research problems. This philosophical orientation aligns with the study's focus on open disclosure of PSIs by integrating multiple perspectives, ensuring that the research is both theoretically deep and practically relevant. Pragmatism's emphasis on problem-solving, real-world applicability and iterative inquiry makes it particularly suitable for healthcare research, where evidence-based decision-making and stakeholder engagement are essential for improving patient outcomes.

Three core methodological principles of pragmatism guide this study (Kelly & Cordeiro, 2020). First, the principle of actionable knowledge enables a pragmatic inquiry into the open disclosure of PSIs by exploring HCPs' attitudes and perceptions. By engaging with multiple disciplines, the study generates insights that are directly relevant to clinical practice. Second, the interconnectedness of experience, knowing and acting allows for a deeper understanding of barriers and facilitators to open disclosure. This principle captures experiences and perspectives, to inform strategies to enhance training and implementation in real-world healthcare settings. Third, inquiry as an experiential process ensures that the research approach remains reflexive and iterative, especially given the sensitive nature of open disclosure. This enables a thorough exploration of how HCPs' beliefs influence their actions, particularly in decision-making processes related to patient safety.

3.2.1.4 Axiology

Axiology recognises that researchers' values and biases inevitably influence the research process (Hart, 1971). It is important to determine if the researcher is striving for value-neutral research or embraces

subjectivity by acknowledging their own values (Hartman, 2011). Transparency in recognising these values is vital for ensuring the integrity and credibility of the findings (Edelheim, 2014; Kotlyarova et al., 2015).

Axiologically, this research values the perspectives of multidisciplinary HCPs and aims to bridge the gap between theory and practical application. The researcher's extensive 30-year professional journey within healthcare has consistently raised critical questions such as '*What happens when things go wrong in healthcare?*' and '*How are HCPs best supported?*'. Additionally, the researcher's role as a nurse, educator, and researcher helped to gain insights into the attitudes and perceptions of HCPs, the barriers they encounter in open disclosure practices and training within healthcare and the development of evidence-based strategies to improve these practices. While the researcher's personal values align closely with the principles of open disclosure, a rigorous approach was maintained to minimise potential biases in data collection and analysis. This was achieved through reflexivity and ongoing discussions with the supervisory team, ensuring methodological integrity of the research process. By integrating qualitative insights with quantitative evidence, this holistic approach provides a comprehensive understanding of this critical area.

3.3 Research Study Design – A Sequential Explanatory Mixed Method Design

Tashakkori and Teddlie (2010) defined mixed methods research as “research designs using qualitative and quantitative data collection and analysis techniques in either parallel or sequential phases” (p. 11). This research design encompasses both philosophical assumptions and inquiry methods that guide the data collection and analysis within a mixed-methods approach.

Considering the study's objectives (Section 1.10), a purely quantitative approach alone was deemed insufficient, as the research design does not seek to test hypothesis or simplify complex phenomena (Amaratunga et al., 2002; Creswell & Clark, 2017). A multi-method approach, using two or more methods to investigate various aspects of the same research question, could have been considered (Morse, 2015). However, it is important to note that '*multimethods*,' does not necessarily imply combining qualitative and quantitative methods (Marks, 2015). The real distinction lies in how research methods are viewed either as technical tools (methods) or as holistic approaches rooted in specific epistemological and ontological frameworks (Järvinen & Mik-Meyer, 2020; Silverman, 2020). Ultimately, the chosen methodological approach is justified by the philosophical worldview and theoretical framework guiding the study (Creswell & Clark, 2017).

The sequential explanatory design (Figure 3) allowed the researcher to conduct the quantitative phase first, analyse the outcomes and then use qualitative research to provide a deeper explanation of the quantitative findings. The sequential explanatory design enabled the qualitative data to enrich and expand upon the quantitative phase. Additionally, the mixed-methods explanatory sequential design connects the quantitative and qualitative phases in the intermediate stage of the study (Ivankova et al., 2006; Silverman, 2020). Therefore, equal-status mixed methods research is also addressed as '*interactive mixed methods research*' (Schoonenboom & Johnson, 2017).

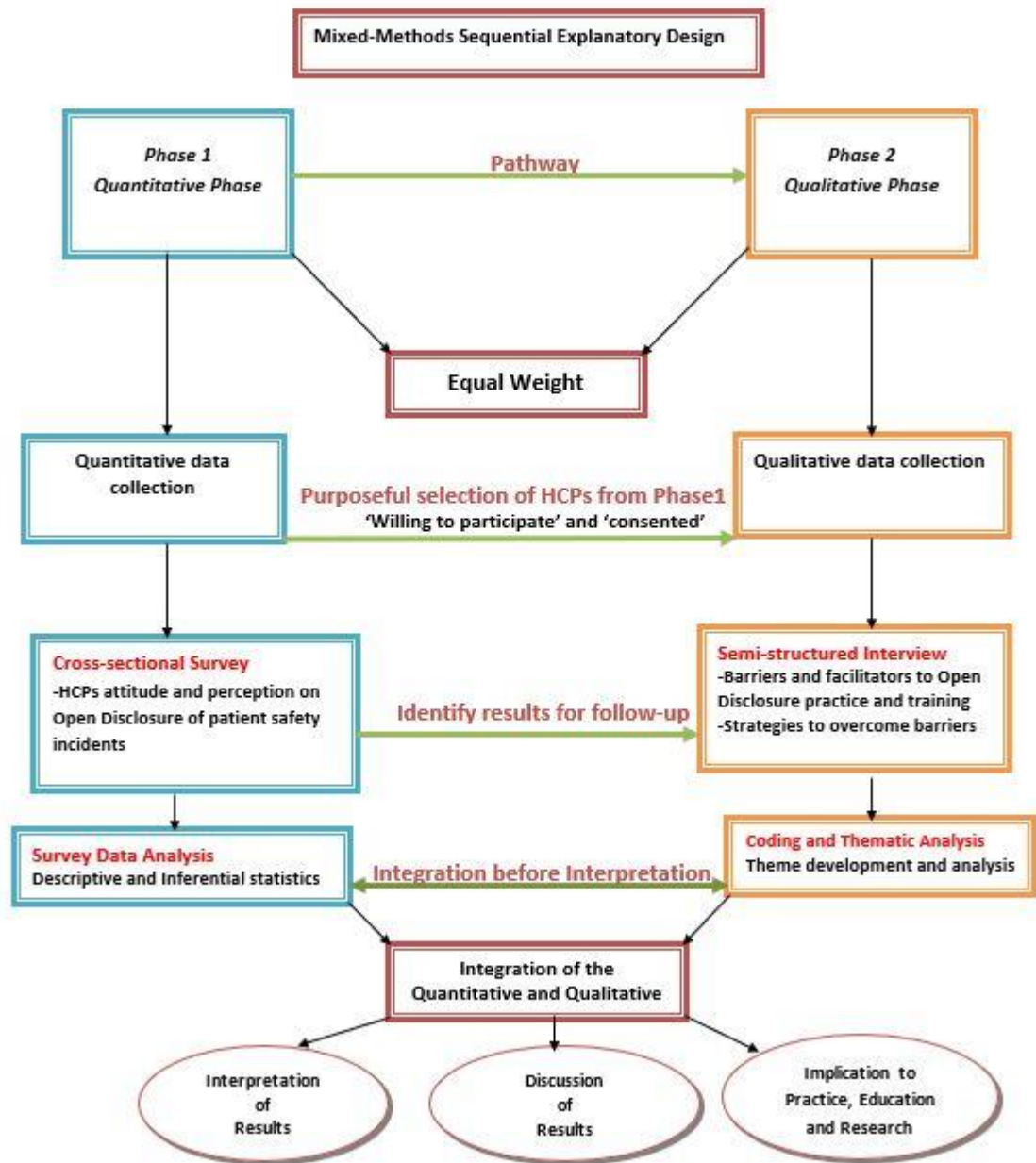


Figure 3 Mixed-Method Explanatory Sequential Design

3.3.1.1 Phase 1 (Quantitative)

In Phase 1, the researcher administered survey questionnaires to a census population of HCPs. This phase focused on collecting numerical data addressing attitudes and perceptions towards open disclosure of PSIs as well as identifying facilitators and barriers to the practice and training of open disclosure within healthcare (Objectives I and II).

3.3.1.2 Phase 2 (Qualitative)

In Phase 2, semi-structured interviews were conducted with survey participants who agreed to participate. These interviews explored participants' experiences and perspectives, offering insight into strategies for overcoming barriers to open disclosure in both practice and training (Objective III). Thus, the mixed-methods approach provided a comprehensive exploration of attitudes and perceptions regarding open

disclosure of PSIs within healthcare practice, with a view to fostering greater interdisciplinary collaboration and effective implementation of national open disclosure training programmes (Objective IV).

3.3.1.3 Phase 3 Integration (Mixing of Quantitative and Qualitative Data)

The integration of quantitative and qualitative phases is a distinctive feature of mixed-methods research (Kroll & Neri, 2009), offering a more comprehensive understanding of complex phenomena (Creswell & Creswell, 2018). This approach enables a holistic analysis (Creswell & Clark, 2017). In this study integration occurs at multiple stages (Section 4.9 and Chapter 7), ensuring that numerical data is contextualised within participants' experiences, while qualitative insights are supported by statistical trends. As a result, quantitative outcomes are placed into the real-life contexts and narratives. However, debates around combining methodological paradigms persist (Sandelowski, 2000; Smith, 1983). Rossman and Wilson (1985) categorised researchers into three groups, 'purists,' who resist mixing paradigms; 'situationists,' who adapt methods based on the research context; and 'pragmatists,' who embrace multiple paradigms to address research problems effectively. Among these, pragmatism has emerged as the most widely accepted framework for mixed-methods integration, offering methodological flexibility while maintaining coherence (Tashakkori & Teddlie, 2010). This approach emphasises the importance of methodological transparency to ensure the credibility and reliability of findings (Greene & Caracelli, 1997).

3.4 Theoretical Framework

A theoretical framework in this study underpins the analysis and aids in understanding various phenomena in relation to open disclosure of PSIs, the contexts and the interactions within and across concepts, as well as between stakeholders and broader healthcare systems (Brydges & Batt, 2023). The use of theories in research provides a foundation for the creation and expansion of knowledge, structuring, validation and making sense of the research outcomes in real-world contexts (Grant & Osanloo, 2014; Kerlinger, 1966; Varpio et al., 2020). This study draws upon a combination of theories due to the multifaceted nature of the topic, examining the perspectives of HCPs from diverse disciplines, career stages and organisations on the open disclosure of PSIs. Additionally, it considers the critical roles of patients, relevant persons, organisations, HCPs, systems, and advocacy, highlighting the ethical, psychological, social, organisational, and systemic dimensions involved. No single theory can fully capture the complexity of how HCPs, patients, and organisations interact in open disclosure processes. Hence, a theoretical pluralism approach (Jacobs, 2012; Midgley, 2011; Turner & Turner, 2009) is employed, allowing for a more comprehensive understanding by integrating different perspectives that address various aspects of open disclosure. A review of theoretical models in health service research has highlighted the importance of adopting multiple theories to enhance understanding of complex healthcare phenomena (Gliedt et al., 2023).

Theoretical pluralism is rooted in pragmatism, which recognises that reality is shaped by both objective conditions and human experience (Creswell & Clark, 2017; Morgan, 2013). It acknowledges that knowledge is socially constructed, yet some constructions resonate more closely with lived experiences than others (Yefimov, 2004). By incorporating diverse theoretical perspectives, pragmatism offers a flexible and practical foundation for exploring the complex and multifaceted nature of open disclosure in healthcare.

These theories directly informed the design of data collection methods (surveys and interviews) and guided analytical strategies, ensuring methodological coherence. For instance, Social Cognitive Theory (Bandura, 1986), highlights how self-efficacy and collective efficacy influence HCPs' confidence in disclosure, informing survey items focused on assessing practitioners' attitudes, perceptions, confidence and behavioural intentions. Attribution Theory (Kelley, 1967; Weiner, 1985a) helps explain how individuals assign meaning to PSIs and how their interpretations shape subsequent emotional and behavioural responses, guiding interview questions and thematic analysis exploring participants' experiences, emotional reactions, and coping strategies. Communication theories, including Uncertainty Reduction Theory (URT) (Berger & Calabrese, 1975) and Communication Accommodation Theory (CAT) (Giles & Ogay, 2007) inform both interview design and the qualitative analysis of communication strategies used by participants to manage uncertainty and enhance trust during disclosures. Additionally Complex Adaptive Systems (CAS) theory (Glover et al., 2020), captures the evolving and interactive nature of healthcare environments, guiding an integrated analysis of survey and interview data to reveal systemic dynamics and interactions influencing open disclosure practices. By explicitly linking each theoretical perspective to specific data collection methods and analytical frameworks, the research design achieves coherence, methodological rigour, and deeper insights into the complex individual, organisational, systemic, social, ethical, psychological, and emotional factors shaping open disclosure. The detailed rationale for employing each theory and its methodological alignment are discussed further in the following sections.

3.4.1.1 Social Cognitive theory

Social Cognitive Theory (Bandura, 1986) provides a comprehensive framework for understanding HCPs behaviours in open disclosure by emphasising the reciprocal interaction between personal factors, environmental influences, and behaviour. This is particularly relevant in healthcare settings, where individual confidence, organisational culture and external pressures shape how HCPs engage in disclosing PSIs. These dynamics are, to some extent, explained by the theory of planned behaviour which links intentions to attitudes, subjective norms and perceived behavioural controls. However, this theory overlooks key factors such as observational learning and self-efficacy (Ajzen, 2002) which are critical in shaping sustained disclosure practices.

Self-efficacy plays a crucial role in determining whether HCPs feel confident and capable of engaging in open disclosure. It refers to an individual's belief in their ability to execute the behaviours necessary to achieve specific goals. In the context of open disclosure, a HCP's confidence in their ability to effectively communicate about PSIs directly impacts their willingness to engage in these challenging conversations. Studies have demonstrated that higher levels of self-efficacy are associated with increased proactive behaviours in healthcare settings (Smith et al., 2022). The Theory of Planned Behaviour also highlights the importance of observational learning-witnessing peers' success can reinforce learning and encourage change in behaviours (Lane & Roberts, 2021). Additionally, the concept of reciprocal determinism further explains the continuous interaction between personal factors (such as beliefs, emotions), environmental influences (such as organisational policies, and peer behaviour), and individual actions. The concept of self-regulation is another concept key in understanding HCPs ability to monitor, reflect and adjust one's

behaviour based on personal goals and external feedback. In open disclosure, HCPs engagement in self-reflection after disclosure experiences is critical for fostering positive attitudes, altering perception and encouraging change in practice. Collective efficacy, which refers to a group's shared belief in its ability to achieve a desired outcome through coordinated effort is also vital. In healthcare, collective efficacy is essential for cultivating a culture of transparency and accountability, particularly when it comes to communicating PSIs openly and ethically.

3.4.1.2 Attribution Theory

Attribution theory (Kelley, 1967; Weiner, 1985a) explains how people assign causes to events and behaviours, distinguishing between internal (dispositional) and external (situational) attributions. Kelley's (1967) covariation model focuses on consensus, consistency and distinctiveness in forming attributions, while Weiner's model (1985a) emphasises locus of control, stability and controllability in shaping emotions and motivation. This theory is particularly relevant to open disclosure research in healthcare, where patients and providers interpret PSIs differently (Hobgood et al., 2002). For instance, Patients or HCPs may attribute errors to internal factors (such as human error) or external factors (such as system failures), which in turn influence their emotional responses, trust and the likelihood of seeking legal action (Benbassat et al., 2001). Attribution theory offers valuable insight into how HCPs and organisations approach disclosure of PSIs. For example, HCPs may experience guilt when attributing errors to internal causes while organisations may adopt a blame culture when assigning responsibility for errors to individuals rather than systemic issues (Duffy, 2012). The theory also extends our understanding of the root causes and the dynamics influencing open disclosure practice in healthcare settings. By recognising how individuals and organisations attribute blame, we can develop more effective strategies to shift attributions toward systemic issues, thereby reducing hostility and promoting constructive dialogue (Runciman et al., 2009). Such an approach can foster accountability, reduce blame, and ultimately improve patient-provider relationships.

3.4.1.3 Uncertainty Reduction Theory

Uncertainty Reduction Theory (Berger & Calabrese, 1975) explains how individuals seek to reduce uncertainty in interactions to improve communication and predict behaviour. The theory distinguishes between cognitive uncertainty (uncertainty about a person's beliefs, attitudes, or intentions) and behavioural uncertainty (uncertainty about how a person will act in a given situation). It proposes several axioms, such as that increased communication reduces uncertainty, higher uncertainty leads to greater information seeking and reduced uncertainty fosters trust and liking. To manage uncertainty, individuals use passive strategies (observing others), active strategies (seeking information indirectly) and interactive strategies (direct communication and self-disclosure).

In the context of this study, Uncertainty Reduction Theory is particularly useful in examining how patients, families, HCPs and organisations navigate the uncertainties encountered during disclosure conversations. When patients experience unexpected medical outcomes or when HCPs identify PSIs they face both cognitive uncertainty (reasons for the PSIs) and behavioural uncertainty (actions, response, support)

(Iedema, Allen, Britton, et al., 2011; Iedema, Allen, Sorensen, et al., 2011). Uncertainty Reduction Theory (URT) outlines three phases in interpersonal communication as individuals work to reduce uncertainty and predict behaviour (Berger & Calabrese, 1975). The first or entry phase is the initial interaction, where communication is structured, cautious and guided by social norms. During this phase individuals focus on reducing behavioural uncertainty through basic exchanges like names and occupations. As the interaction progresses, the personal phase emerges, where people share deeper attitudes, emotions, and beliefs. This reduces cognitive uncertainty, and fosters trust through self-disclosure. Finally, exit phase involves deciding whether to continue or end the relationship based on the level of uncertainty reduced and the quality of interaction. If uncertainty remains high or interactions are unsatisfactory, communication may cease; otherwise, it may strengthen the relationship. These phases are particularly relevant in open disclosure research, where HCPs engage in conversations with patients after adverse events, moving from structured explanations to deeper discussions that build trust and transparency. The theory also helps explain how effective disclosure reduce patient anxiety, enhance trust in HCPs, and mitigate potential conflict (Kim et al., 2022). By emphasising the role of clear, honest, and proactive communication, URT offers a framework for improving open disclosure practices by reducing ambiguity and fear. Additionally, it provides a structure for addressing uncertainties in difficult conversations, improving relationships and enhancing predictability in social interactions (Kelley & Michela, 1980a).

3.4.1.4 Communication Adaptive Theory

Communication Accommodation Theory (CAT) (Giles & Ogay, 2007) explains how individuals adjust their communication style to either align with or differentiate from others in social interactions. This adaptation can take the form of convergence where individuals modify their speech, tone, or style to reduce differences or divergence, where they emphasise differences to maintain distance or assert identity (Gallois et al., 2005). In the context of healthcare, CAT helps to understand how HCPs modify their communication to meet the emotional and informational needs of patients and families following PSIs. CAT complements Attribution Theory (Kelley, 1967; Weiner, 1985a), which explains how patients, HCPs and organisations make sense of the PSIs, causation and decisions around disclosure, as well as and Uncertainty Reduction Theory (Berger & Calabrese, 1975), which focuses on managing ambiguity in disclosure communication.

CAT provides a unique perspective by emphasising the flexibility and adaptability of communication in sensitive situations (Gallois et al., 2005). Open disclosure is not just about providing factual information but also about how that information is conveyed (White et al., 2008). Effective disclosure requires HCPs to adjust their language, tone, and emotional responsiveness based on the patient's level of distress, comprehension, and cultural background (Watson et al., 2015; Wolk et al., 2014). Convergence in communication, such as using empathetic language, simplifying medical jargon, and mirroring patient concerns can enhance trust, reduce anxiety and foster rapport (Amir et al., 2017; Carmichael, 2017). Conversely, divergence may occur if providers use defensive or highly technical language, creating emotional distance and increasing frustration (Langer et al., 2016).

This theory adds value by emphasising dynamic, patient-centred communication strategies that can be tailored to different individuals and contexts. By understanding how HCPs can accommodate their communication styles, open disclosure practices can become more effective in reducing conflict, enhancing patient satisfaction and ultimately fostering a culture of transparency and trust in healthcare.

3.4.1.5 Complex Adaptive Systems Theory

Healthcare systems are recognised as complex and emerging environment characterised by dynamic interactions among various components (Glover et al., 2020). This complexity demands an approach that goes beyond linear models to understand how systemic factors influence disclosure practices. Complex Adaptive Systems (CAS) theory captures the dynamic, interconnected, and evolving nature of healthcare systems which is often overlooked within linear models such as systems theory (Luhmann et al., 2013) or reductionist approaches (Gallagher & Appenzeller, 1999). CAS accounts for nonlinear interactions, feedback loops and emergent behaviours, making it particularly well suited for studying real-world healthcare challenges where multiple stakeholders (patients, providers, administrators, policymakers) interact unpredictably.

CAS theory aligns well with pragmatism (Canan & Sousa-Poza, 2016), making it a valuable framework for researching the disclosure of PSIs. Pragmatism emphasises problem solving and real-world applicability, supporting CAS view of healthcare as a dynamic system where interactions between agents (patients, providers, institutions) shape outcomes (Popa et al., 2015). This paradigm provides strong justification for using CAS, enabling a nuanced exploration of the nonlinear, adaptive and complex nature of healthcare systems (Covvey, 2018). This theoretical approach offers practical insights for improving disclosure practices.

CAS Theory explains how healthcare systems evolve through self-organisation, interaction, feedback, emergence, system history and temporality, adapting to internal and external influences without centralised control (Chandler et al., 2016). Self-organisation refers to the system's ability to adapt and restructure itself without external oversight, as smaller subsystems interact and influence each other within a larger framework (Green, 2000). This process is driven by Interaction and feedback where continuous exchanges of information among agents, such as HCPs, patients, and organisations shape behaviours and decision-making in unpredictable, nonlinear ways. Through emergence, new patterns and structures develop at a systemic level, which cannot be understood by analysing individual components alone (Holland, 2002). These emergent properties not only influence both the system but also impact its agents, reinforcing adaptive behaviours over time. System history plays a crucial role in shaping present and future responses, as past experiences, policies and institutional norms create constraints and inform system evolution (Holden, 2005). Finally, temporality highlights that healthcare systems are in a constant state of flux, oscillating between periods of stability and transformation rather than ever reaching a fixed equilibrium (Gomersall, 2018). Integrating CAS with the above-mentioned philosophical perspectives provides deeper insights into the nonlinear, adaptive, and complex nature of healthcare systems. This integration allows for a more comprehensive understanding of how healthcare systems evolve and how

the dynamics of these systems shape disclosure practice. Additionally, it informs practical strategies to enhance disclosure practices and promote systemic learning, encouraging flexibility and responsiveness to the changing conditions within the healthcare environment.

3.5 Conclusion

This chapter establishes the philosophical, methodological, and theoretical foundations underpinning the study of open disclosure of PSIs. By adopting a pragmatist paradigm, the study embraces methodological flexibility, allowing for the integration of both qualitative and quantitative approaches. This approach enables a comprehensive understanding of HCPs perspectives on open disclosure. The justification for using a sequential explanatory mixed-methods design is discussed, demonstrating how the quantitative phase provides a broad understanding of trends, while the qualitative phase offers deeper insights into the complexities of open disclosure practices. Moreover, the chapter highlights the interconnectedness between worldviews, paradigms and methodological choices, ensuring that the study's philosophical stance aligns with its research design. By positioning the study within a pragmatic framework, it acknowledges the multifaceted nature of open disclosure, accommodating diverse perspectives and real-world applicability. This methodological approach not only strengthens the validity and reliability of the findings but also enhances their relevance for informing policy, training and practice in healthcare settings.

The next chapter builds upon this foundation by detailing the specific research methods, data collection strategies and analytical procedures employed to investigate open disclosure practices. This ensures a rigorous and systematic approach to addressing the study's objectives providing clarity on how the research will be conducted and how the findings will contribute to improving disclosure practices in healthcare.

Chapter 4 Methods

4.1 Introduction

This chapter provides an overview of the research methods, sampling procedures, data collection and data analysis processes for both the quantitative and qualitative phases of this research study. The ethical considerations and reflexivity are integrated throughout the research process to ensure rigour, reliability, and validity. These elements foster transparency, enhance the trustworthiness and establish credibility of the research findings.

4.2 Study Aims and Objectives

The study aims to explore open disclosure of PSIs from a multidisciplinary perspective within healthcare practice in a selected hospital group in Ireland. The following Table summarises how each research objective is addressed through quantitative (survey) and qualitative (interview) phases.

Table 3 Mapping of study objectives across phases 1 and 2

Objective 1: To explore multidisciplinary professionals' attitudes and perceptions towards Open Disclosure of PSIs within the healthcare practice.	
Quantitative Phase	Qualitative Phase
What are HCPs' attitudes toward the open disclosure of PSIs as reported in survey data?	What do you think about disclosing PSIs to patients and their families?
What are HCPs' perceptions regarding the open disclosure of PSIs, specifically measuring views across various harm levels, situations, justifications, consequences, and facilitators?	Have you personally had any experiences with disclosing PSIs? How does the disclosure of PSIs impact your physical and mental wellbeing?
Objective 2: To identify facilitators and barriers to open disclosure practice and training within the healthcare practice.	
Quantitative Phase	Qualitative Phase
What are the facilitators and barriers to open disclosure practice, training within the healthcare practice?	What did/would you find helpful or challenging in dealing with patients and families during the disclosure of the PSIs? Have you previously received open disclosure training? If so, what was your experience with the training?
Objective 3: To determine the strategies to overcome barriers to implement open disclosure in practice	
Quantitative Phase	Qualitative Phase
What are the strategies to overcome barriers to implement open disclosure in practice?	How can HCPs be supported to improve open disclosure practices in the future?
Objective 4: To inform open disclosure training programmes for HCPs within the healthcare practice	
Quantitative Phase	Qualitative Phase
What quantitative findings inform open disclosure training programmes for HCPs within the healthcare practice	What qualitative findings inform open disclosure training programmes for HCPs within the healthcare practice

4.3 Study Design

In this study, a sequential explanatory mixed-methods design combines quantitative and qualitative approaches (Figure 3) to explore diverse perspectives and integrate findings effectively (Creswell & Creswell, 2018). In Phase 1, survey questionnaires are used to examine HCPs' attitudes and perceptions regarding open disclosure of PSIs. In Phase 2, selected survey participants participated in semi-structured interviews to provide in-depth narratives that contextualise and enrich quantitative findings by identifying facilitators, barriers and strategies for effectively implementing open disclosure practices. This sequential design facilitates meaningful integration of both methods, strengthens the study's methodological rigour, and ensures that the unique contributions of each phase complement one another in addressing the overall research objectives, as outlined in Table 3.

4.4 Study Setting

This study is conducted within the RCSI Hospital Group, established in 2015, serving a population of 875,000 across five counties (RCSI Hospitals, 2022). It is supported by a workforce of 11,200 staff offering a wide range of emergency, diagnostic, treatment and rehabilitation services (RCSI Hospitals, 2022). The study sites include acute, academic, maternity and district hospitals. These hospitals are categorised from Level II to Level IV and reflect the range of complexity of healthcare delivery in addition to the dynamics of patient-provider relationships (HSE, 2024b). The hospitals' acuity, multidisciplinary focus, employment data, significant HSE investment in open disclosure of PSIs and participation in open disclosure training have informed the selection of the RCSI Hospital Group for this research study (HSE, 2023b, 2024b; RCSI Hospitals, 2022).

4.5 Study Population and Sample

4.5.1 Census Population

The target population for this study includes all HCPs employed within the RCSI Hospital Group. This encompasses a diverse range of staff including those employed in medical, nursing, health, and social care positions (all registered with professional regulatory body). The composition of the workforce, as outlined by the HSE (2020a), is detailed in Table 4. This diverse professional representation ensures a comprehensive exploration of perspectives on open disclosure within the healthcare setting.

Table 4 Employment by Staff Group

Employment by Staff Group (Sept 2020a)	
Medical & Dental	1,476
Nursing and Midwifery	3,813
Health & Social Care Professionals	1,187
Management & Administrative	1,491
General Support	1,075
Patient & Client Care personnel	993

A detailed breakdown of the workforce demographics, highlighting the distribution of male and female employees, their rates of permanent employment and the proportion of those employed full-time is presented in Table 5. This data provides insight into the employment structure within the organisation.

Table 5 Workforce Demographics

	Employees	Permanent Employment	Full-Time (FT)
Male	22.9%	84.4% in	93.4%
Female	77.1%	87.5%	72.3%

It is important to understand the overall population at each study site and HCPs employed in the RCSI Hospital Group as it influences the sampling strategy. Table 6 presents the study sites along with the total number of employees at each location (HSE, 2020a).

Based on the acquired employee data and sample size calculation to achieve the research objectives, each respective study site was approached with a request for a representative and readily accessible sample who meet the inclusion criteria and were willing to participate in the study. Along with proportionate distribution, the representative sample number was aligned to site-specific factors and adjusted based on study design, site capabilities and target population.

Table 6 Study Sites and Population

Study sites	Employees at each study sites (HSE, Sept 2020)
Beaumont Hospital Dublin & St. Joseph Hospital	3,975
Our Lady of Lourdes Hospital Drogheda	2304
Connolly Hospital Dublin	1,432
Cavan General Hospital	1,038
Rotunda Hospital Dublin	932
Louth County Hospital Dundalk	281
Monaghan Hospital	95
Total	10,057

4.5.2 Sampling Strategy – Phase 1

4.5.2.1 Sampling Approach

Phase 1 of the study employed a convenience sampling strategy to collect information from a census population (Stratton, 2023). A sample frame of all registered HCPs (Medical, Nursing and Midwifery, Health and Social Care Professionals) working at eight hospitals were invited to participate in the survey. This provided an opportunity for all HCPs, the target population (Census) in these settings to participate in the survey willingly (Phase 1) rather than focusing on a sample, which represents a subsection of the target population. The sample size is informed by census-derived population approach (Section 4.5.2.3) as it facilitates comprehensive and inclusive representation, enhances statistical power, detailed subgroup analysis and making the result robust and reliable (Fricker, 2008; Onwuegbuzie & Collins, 2017; Shah, 2023). Thus, issues related to sampling bias and sampling errors were minimised to ensure that the study findings to be reflective of the target population with an intensive, rich data providing accurate and reliable conclusions and generalisability.

4.5.2.2 Sampling Criteria

The following criteria were applied to ensure the selection of relevant HCPs for Phase 1 of the study.

Table 7 Inclusion and Exclusion Criteria - Phase 1

Inclusion	Exclusion
Registered HCPs employed at selected RCSI hospitals.	Non-regulated healthcare workers and Students.
Multidisciplinary HCPs registered with a regulatory body.	HCPs outside RCSI hospitals.

4.5.2.3 Sample Size

Based on the HSE Report (HSE, 2020a), a census population of 6,322 HCPs employed across eight hospitals within RCSI Group excluding population categorised as others and student in the report were invited to participate in the research study. Table 8 outlines the HCPs distribution by professional group who were eligible for inclusion in the study and the representative sample required.

Table 8 Employment by Professional Group

Professional Category	Number (%) of Staff	Representative Sample required
Medical Professionals	1469 (23.23%)	89 (23.17%)
Nursing and Midwifery Professionals	3672 (58.08%)	223 (58.07%)
Health & Social Care Professionals	1181 (18.68%)	72 (18.75%)
Total	6322	384

In order to obtain an adequate sample size for the effective use of resources, time and reliable research findings (Fitzner & Heckinger, 2010), a power analysis is an essential aspect of research survey design. However, it is important to be cautious in selecting the appropriate formula for a different study design (Charan & Biswas, 2013). In the current study, the cross-sectional quantitative survey phase focuses on attitudes and perceptions of specific groups of HCPs in a defined population within a RCSI Hospital group. Based on the population sample of 6,322 (HSE, 2020a), with the confidence interval or margin of error of ± 5 and a confidence level of 95%, the estimated minimum sample size was 384. The sample size was determined by using the formula by Naing et al (2022). A total of 417 HCPs employed in the RCSI hospital group participated in the quantitative phase of the study.

The following formula was used:

$$n = \frac{Z^2 P (1 - p)}{d^2}$$

where n =Sample size,

Z =Z statistic for a level of confidence (1.96 for 95% confidence level),

P =Expected prevalence or proportion (0.5)

d =Precision (0.05)

4.5.2.4 Maximising Response Rate

The cross-sectional study design enables the simultaneous measurement of outcomes and exposures, reducing participant burden and increasing response rates (Wang et al., 2020). While low response rates can be problematic, research suggests that attempts to reduce non-response rates do not always significantly impact non-response errors (Fricker, 2008; Groves et al., 2009). Fincham (2008) highlights the need for survey research to meet scientific rigour, ensuring transparent response rates and representative findings. To optimise response rates, several strategies were employed, including advance notifications through study poster (Appendix 3) and newsletters, a cover letter (Appendix 4) outlining the instructions, survey length and researcher's contact details, as well as return envelopes for securing undelivered or completed surveys (Birmingham & Wilkinson, 2003). The survey was accompanied by a Participant Information Leaflet (PIL) (Appendix 5) and submission of a completed questionnaire was considered as consent to participate. Additionally, careful attention was given to survey design, ensuring clarity, accessibility, standardisation and anonymity. The study employed Electronic Data Collection (EDC) tools via Qualtrics and validated the questionnaire through pilot testing (Haun et al., 2020). An incentive of €1 was offered for each completed survey, donated to a charity of the respondent's choice. HCPs could access the survey via email, intranet, flyers, or paper copies distributed by designated contacts at each study site. A disclaimer was included to prevent duplicate responses. Furthermore, the researcher engaged with gatekeepers (e.g., Quality and Safety Managers, Directors of Service, Communication Officers) to distribute recruitment emails and study posters, followed by reminder emails. As data collection occurred at a single point in time, participants are more likely to complete the survey, ensuring broader engagement than longitudinal studies (Setia, 2016; Wang & Cheng, 2020). Among the 6,322 eligible HCPs across eight study

sites, 242 either opened or started the survey and a total of 417 submitted the completed survey. They accessed the survey via QR code ($n = 46$), an anonymous survey link ($n = 196$) and paper-based questionnaires ($n = 175$). A high response rate is essential to mitigate response bias and non-response errors (Burkell, 2003; Hager et al., 2003).

To minimise missing data, the researcher conducted real-time verification, cross-referenced responses across paper-based and electronic formats, and sought an additional 10% survey respondents to compensate for potential data gaps and ensure a comprehensive dataset (Chaudhuri & Agiwal, 2024). Data entry for paper-based surveys was manually checked to ensure accuracy. Missing data, whether due to skipped questions, technical issues or participant oversight (Chaudhuri & Agiwal, 2024; Mirzaei et al., 2022), were carefully reported in the quantitative analysis (Chapter 5) to enhance transparency, research integrity and avoid bias. Due to the anonymous nature of the survey, it was not possible to determine how many HCPs received invitations or to distinguish between non-participation and non-invitation. Consequently, the precise response rate remains uncertain. However, the final sample size met the required threshold as determined by power analysis, ensuring robust and representative sample for Phase 1 of the study.

4.5.3 Sampling Strategy- Phase 2

4.5.3.1 Sampling Approach

Braun and Clarke (2021b) emphasise the importance of strategic sampling in qualitative research to ensure diverse perspectives and rich data (Braun & Clarke, 2021b; Onwuegbuzie & Collins, 2017), while Creswell and Clark (2017) highlight the need for alignment between sampling strategies and research objectives in mixed-methods studies. In this study, purposive sampling with maximum variation stratification was used to capture a broad range of experiences, consistent with these methodological approaches. This structured sampling process not only facilitated a comprehensive exploration of open disclosure but also ensured that insights from the qualitative phase were meaningfully integrated with the quantitative findings, reinforcing the explanatory sequential design.

To ensure diverse representation, participants were stratified based on age, gender, length of service, current role, training involvement, and experience with PSIs and open disclosure. This variation enhances understanding of the barriers, facilitators and strategies for improving open disclosure practice and training. Maximum variation sampling (Herchline, 2024) further ensured diversity across the multidisciplinary healthcare team, revealing shared patterns, themes, and discrepancies that enriched the study's findings. The explanatory sequential design enabled survey respondents to be invited for semi-structured interviews in the qualitative phase (Phase 2), providing deeper insights into open disclosure challenges and solutions. Willing participants contacted the researcher and HCPs from diverse professional backgrounds were purposively selected and consented to participate, ensuring a comprehensive and nuanced exploration of the phenomenon under investigation.

4.5.3.2 Sampling Criteria

Phase 2 participants were selected based on the following criteria to ensure relevance and data integrity (Table 9).

Table 9 Inclusion and Exclusion Criteria - Phase 2

Inclusion	Exclusion
HCPs who completed the quantitative survey.	HCPs who did not complete Phase 1 survey.
HCPs who contacted the researcher, consented, and agreed to audio-recorded interviews.	HCPs who did not express interest in the qualitative phase.

4.5.3.3 Sample Size and Data Saturation

A subset of participants who completed the questionnaire in Phase 1 had the option to contact the researcher directly via email, telephone, text or providing their contact details at the end of the survey, expressing their interest in a follow-up interview. The researcher assessed potential participants' eligibility, offered further information about the study, answered any questions and arranged an interview. A purposive sample of 42 HCPs were selected by maximum variation sampling stratification.

Data saturation is a critical principle in qualitative research, particularly in health sciences, influencing sample size decisions to ensure rigour and validity (Ahmed, 2025; Braun & Clarke, 2013; Glaser & Strauss, 2006; Hennink et al., 2017). Several parameters influence the researcher's decision regarding data saturation. Traditional views of saturation focus on achieving theoretical, code, or meaning saturation (Glaser & Strauss, 2006; Hennink et al., 2017), often ceasing data collection once no new themes or insights emerge (Ahmed, 2025; Guest et al., 2006; Johnson et al., 2020). According to Fusch and Ness (2015), data saturation is reached when sufficient information allows for study replication and additional data no longer yields novel insights, rendering further coding impractical. However, Johnson et al. (2020) argue that data saturation may be unrealistic with some study designs, study populations or research questions as the data collection could continue indefinitely corresponding to its ongoing event or due to attrition and factors related to time and resources. However, Braun and Clarke (2021c) critique these approaches, particularly within reflexive thematic analysis, asserting that meaning is not merely excavated from data but constructed through interpretation. Decisions on the sufficiency of data are subjective and cannot be predetermined.

In this study, the researcher maintained a reflexive diary after each interview, summarising key insights and reflections, which helped address challenges in determining saturation. Discussions with supervisors further facilitated evaluating saturation. Interviews continued until no new insights emerged regarding barriers, facilitators, and strategies associated with open disclosure practice. The sample comprised 42 HCPs, including nine medical professionals, 24 nursing and midwifery professionals, and nine health and social care professionals. Recognising that saturation is inherently context-dependent (Lodico et al., 2010; Rahimi, 2024) and shaped by the researcher's interpretative judgement (Fusch & Ness, 2015; Guest et al., 2006; Rahimi, 2024), This reflective process demanded methodological rigour and transparency (Ahmed, 2025; Mason, 2010). Acknowledging the researcher's positionality and biases enhances the credibility of

the findings (Johnson et al., 2020), ensuring they accurately reflect participants' perspectives and contribute to a comprehensive understanding of open disclosure practice.

4.6 Recruitment Procedures

4.6.1 Phase 1

Recruitment of eligible HCPs from eight study sites within the RCSI Hospitals Group necessitated extensive collaboration with senior management. An initial meeting with the Chief Director of Nursing and the HSE National Lead for open disclosure on 18th July 2019 guided the recruitment of study participants within RCSI Hospitals. The recruitment process, spanning from March 2020 to January 2023, was significantly affected by the COVID-19 pandemic (WHO, 2023a, 2023b), prompting the researcher to implement various strategies to ensure sufficient participant recruitment. The researcher's engagement in numerous meetings, discussions, and presentations was complex, yet essential for navigating ethical approval and ensuring feasibility of recruitment protocol. A detailed consideration was given to participant demographics, stratification of employment, acuity of hospitals, multidisciplinary focus, staff categories, and their involvement in open disclosure training provided a context to the overall study population.

Firstly, the researcher secured permission from Chief Executive Officer (CEO), RCSI Hospitals Group; Chief Director of Nursing & Midwifery RCSI and Quality and Safety Manager, RCSI Hospitals Group on 19th November 2020 subject to the provision of Research Ethics Committee approval and a full outline of the research study (Appendix 6). Ethics approval was obtained (Appendix 7) from TCD Faculty Research Ethics Committee on 22nd December 2021; Connolly Hospital Research Ethics Committee on 16th December 2021; The Rotunda Hospital Ethics Committee on 26th October 2021; HSE North East Area Research Ethic Committee on 5th July 2021 and Beaumont Hospital Ethics (Medical Research) Committee on 25th May 2021 and 9th May 2022. Subsequently, the General Manager or Director of Service from each study site were contacted to assist with advertisement and facilitate distribution and recruitment of study participants (Appendix 8).

Recruitment emails were sent through gatekeepers at each hospital (typically Quality and Safety Manager or General Manager or Director of Service or General Manager's secretarial/administrative staff member or Communication Officer) to HCPs employed within the eight study sites. The hard copies of the questionnaire were also provided to the gatekeepers for those HCPs who preferred to complete the paper copy. A disclaimer was included to complete an online or hard copy of the questionnaire to prevent duplication. Additionally, two reminder emails (July and October 2022) were sent to the HCPs in the study sites through gatekeepers (Ratislavová & Ratislav, 2014). The researcher further established contact with the Communications Manager for the RCSI Hospitals Group and Beaumont Hospital who assisted with the wider advertising of the study.

A pilot study was conducted on 19th January 2022 involving 40 HCPs employed at the first site. The purpose of this pilot study was to evaluate the feasibility of the methods and procedures, as well as the suitability of the study instrument (Bujang et al., 2024; Thabane et al., 2010) proposed for the main study. No

corrections were made to the survey instrument following the pilot study. The data obtained from the pilot study was not analysed as the primary aim was to assess the functionality of the survey instrument. Participants from the pilot study were excluded from the subsequent major study. Recruitment commenced at the first site on 4th March 2022 and continued until November 2022 at various study sites until the sample size was achieved.

4.6.2 Phase 2

The explanatory sequential design facilitated survey respondents to be invited to participate in an individual semi-structured interview for the qualitative phase (Phase 2) of the study (Creswell & Creswell, 2018). The justification for choosing one-to-one interview in contrast over focus groups lies in the sensitive nature of the study. One-to-one interviews helped promote openness and ensured greater privacy for the study participants. The survey participants representing eight study sites from Phase 1 received the information about the interview phase of the study alongside the survey. They were given an option to contact the researcher directly via email, telephone, or text or providing their contact details at the end of the survey, expressing their interest to a follow-up Phase 2 interview process.

A subset of survey participants who completed the questionnaire in the Phase 1 were sequentially recruited between December 2022 to January 2023. A total of 110 survey participants were willing to participate in the interview and contacted the Researcher. The researcher assessed and purposively selected 42 survey participants, obtained informed consent (Appendix 9) and scheduled the interview. This allowed the researcher to compare, examine variations and draw inferences from the stratum or group (Ames *et al.* 2019) of knowledgeable and experienced HCPs on the disclosure of PSIs. The researcher offered further information on the study, answered any questions and scheduled a semi-structured interview with the participant to explore barriers, facilitators and strategies to overcome barriers related to open disclosure practice and training in clinical practice.

4.7 Data Collection

4.7.1 Phase 1

The Quantitative data was collected through the anonymised survey questionnaire (Appendix 10) from a census-population of HCPs within RCSI Hospitals group. The recruitment email containing the survey link, which was hosted online on Qualtrics, a letter of invitation (Appendix 4), a study recruitment poster with a Quick Response (QR) code (Appendix 11) and a Participant Information Leaflet (PIL) (Appendix 5), were disseminated via email to gatekeepers at each hospital. The gatekeepers were requested to circulate this link to HCPs via different platforms such as distribution list, hospital web pages, newsletters, flyers, posters, notice board and intranet. In compliance with the Health Research Regulations, 2018 and Guidelines on consent under Regulation, 2020, all measures were taken to maintain the anonymity and confidentiality of HCPs participating in the study. The study did not hold any 'Internet Protocol' (IP) tracking address for the digital platforms.

The self-administered questionnaire has its own benefits with regards to economical approach, broadness of scope and flexibility in terms of its resources, time, cost and accessibility (Polit & Beck, 2018). However, the online survey for data collection presents numerous issues in accessing study participants. It's difficult to establish how many gatekeepers shared the study information with HCPs or how many HCPs were made aware of the study. It cannot be known how many emails may have reached the respective HCPs as some HCPs do not have work emails or may have ended up in their spam folders. Therefore, it is impossible to determine accurate response/non-response rates for Phase 1 of this study. If HCPs choose to complete a paper-based survey, the survey pack containing hard copies of the questionnaire were provided to the gatekeepers with a return envelope.

In this study, two survey instruments were used to explore the attitude and perception of HCPs towards open disclosure of PSIs and to examine its association to open disclosure practice and training. To facilitate understanding, key terms such as '*Open Disclosure*', '*Adverse Event*', and '*Patient Safety Incident*' were clearly defined within the questionnaire. The survey was structured into three sections: Section A assessed HCPs' attitudes towards the disclosure of PSIs, while Section B explored their perceptions of this process. Section C gathered demographic information, including age, gender, current position, length of service in healthcare, involvement in open disclosure training, perceived benefits of such training and experiences with PSIs. An open-text box was also provided, allowing participants to share additional insights about open disclosure.

4.7.1.1 Attitude towards Disclosure of PSIs Questionnaire

HCPs' attitudes to disclosure of PSIs was measured using an adapted version of the questionnaires based on Popkess et al. (2017) study on interprofessional error disclosure simulation for health professional students (Appendix 12). The Attitude Assessment items were grouped by Inter-Professional Education Collaborative (IPEC) Core Competency domains (IPEC, 2011). The core competency domains include Values and Ethics for Interprofessional Practice, Roles and Responsibilities, Interprofessional Communication and Teams and Teamwork. The survey instrument within Popkess et al. (2017) study was originally developed by Madigosky et al. (2006) while assessing medical students' knowledge, skills and attitudes on patient safety and medical fallibility. It was later modified and validated by Chenot and Daniel (2010) as HCPs Patient Safety Assessment Curriculum Survey (HPPSACS).

Permission to use and modify the survey instrument was sought and obtained from the authors (Appendix 13). The modifications to the instrument under each domain are detailed in (Appendix 14) and were later subjected to content validity testing. The instrument was reviewed in consultation with the supervision team, an expert panel of multidisciplinary HCPs, and academics to ensure its relevance to the Irish healthcare context. The final adapted questionnaire is a 14-item, Likert scale instrument structured to maximise the response rate with reverse-coded items and found to be useful in an attitude research study (Croasmun & Ostrom, 2011) (Appendix 15). The domain names were excluded from the survey to promote HCPs' genuine response and transparency. These domains were, the values and ethics for Interprofessional Practice (4 items), Roles and Responsibilities (3 items), Interprofessional Communication (3 items) and

Teams and Teamwork (4 items). Researcher paid careful attention to the sequencing of questions, to minimise survey fatigue, maintain their concentration and maximise the response rate to survey questionnaires.

4.7.1.2 Perceptions of Disclosure of PSIs Questionnaire

The 30-item questionnaire measured HCPs perception towards disclosure of PSIs under 6 sub-categories such as Open disclosure across harm levels (3 items); Open disclosure across situations (6 items); Justification of open disclosure (4 items); Negative consequences of open disclosure (5 items); Positive consequence of open disclosure (6 items); and Facilitators of open disclosure (6 items) (Lee and Kim (2020) (Appendix 10). The content validity for this scale (S-CVI) was 0.89 exceeding the recommended benchmark (S-CVI >0.8 and 0.9) (Polit & Beck, 2018; Shi et al., 2012). The Cronbach's alpha reliability coefficient for this instrument was 0.866 which is considered as desirable (Coefficient of $\geq .80$) (Lee & Kim, 2020; Polit & Beck, 2018). Hence, this survey instrument was used. Each item is scored within a range of 1 representing 'Absolutely disagree' to 5 representing 'Absolutely agree' with reverse coded items considered instead of 4-point Likert scale used in cross-sectional study on the relationship of moral sensitivity and patient safety attitudes with nursing students' perceptions of disclosure of PSIs (Lee & Kim, 2020). While the 30-items were considered easier for participants to answer (Pornel & Saldana, 2013); 5-point Likert scale said to enhance clarity, reliability, data quality and participant's engagement with the questionnaire (Østerås et al., 2008). Besides, inclusion of the neutral response option, participants have a choice to decide on the particular issue. The purpose of reverse-coded items is to engage participants in a controlled manner and believed to measure the same concept similar to the positively worded items (Croasmun & Ostrom, 2011).

4.7.1.3 Validity

The validity of an instrument is a vital factor in the selection and application of an instrument in a research study. Validity refers to the extent to which empirical evidence and theoretical frameworks support the interpretation of test scores involved in the proposed application of tests. Therefore, a validated instrument is supposed to precisely measure the specific concept or construct it is designed and intended to measure (Bolarinwa, 2015; Polit & Beck, 2018) so that valid inferences are drawn to address research objectives (Sangoseni et al., 2013). It is determined through various aspects of measurement such as face validity, content validity, criterion validity and construct validity which measures internal and external components (Bolarinwa, 2015; Wong et al., 2012). In this study, survey instruments about attitude and perception of multidisciplinary HCPs on disclosure of PSIs were measured and validated through cognitive Interviewing, face validity and content validity.

4.7.1.3.1 Cognitive Interviewing

Cognitive Interviewing techniques was used as a pre-testing phase in combination with other validity and reliability measures prior to the pilot study. Researcher carried out cognitive interviewing with purposively selected multidisciplinary HCPs to understand the manner in which potential study participants perceive, comprehend, mentally process, recall, make decisions, judgment, interpret, and respond to the survey

questionnaire and instructions (Campbell, 2009; Willis, 2018). It allowed researcher to understand the questionnaire from the participants perspective and identify potential breakdowns, unrecognised difficulties or ambiguity related to the wording, ordering, length, sensitive questions, skip-patterns or format within survey questionnaire and related materials (Conrad & Blair, 1996; Drennan, 2003; Willis, 2018). Even though, there are number of issues identified related to cognitive interviewing with regards to subjectiveness and artificiality (Drennan, 2003), sample size (Blair & Conrad, 2011) and procedures and techniques (Willis, 2004); this process helped to review each item and decide on whether the items should be retained, deleted or modified to enhance the accuracy and reliability, thereby improve the data quality and reduce the corresponding response errors.

4.7.1.3.2 Face Validity

Face validity was established through expert review and consensus by a panel of open disclosure experts, academics, and peer scholars. This process involved carefully evaluating the questionnaire items to determine their representational validity in capturing the intended conceptual domain (Bolarinwa, 2015; Polit & Beck, 2018). Six experts, including open disclosure leads, academics, and peer scholars, assessed the instrument's clarity, relevance, and comprehensibility. Although face validity is useful in determining whether a questionnaire appears to measure a theoretical construct, it lacks empirical testing and may not provide sufficient evidence of measurement validity (Engel & Schutt, 2016). To address this limitation, scoring systems have been employed in prior studies. For example, Roy et al. (2023) assessed the face validity of the Tool to Assess and Classify Work-Stress (TAWS-16) using a 10-point scale across four criteria: understanding, unambiguousness, clarity, and likelihood of misinterpretation. Items scoring ≥ 8 were retained, while modifications were made to those below the threshold. Similarly, (Nogueira et al., 2025) applied a four-point scale to the Mental Health Literacy and Stigma Scale-Bilingual (MHLaSS-B), with a mean score >3 serving as the acceptance criterion. In this study, face validity was complemented by content validity, which evaluates the theoretical soundness of the survey instrument. This combined approach minimised subjectivity and enhanced the overall validity of the questionnaire (Bolarinwa, 2015).

4.7.1.3.3 Content Validity

Content validity is the degree to which survey items effectively capture and measure the specific construct or phenomena being studied (Polit & Beck, 2018). It is a two-stage critical and complex process, assessing whether the elements of an assessment tool are relevant and representative of the targeted construct and suitable for the intended assessment purpose in measuring objectives (Lynn, 1986; Sangoseni et al., 2013; Wynd et al., 2003). The identification of the survey instrument and the definition of content domains for the attitude and perception survey tools were informed by a comprehensive literature review, alongside judgement, logic, and reasoning (Wynd et al., 2003). This process adhered to a structured approach to ensure robust content validation of the survey questionnaires.

During the '*Judgement/Quantification stage*', multidisciplinary HCPs involving medical ($n = 3$), nursing ($n=4$), social and healthcare professionals ($n=3$) and academics ($n=4$) were identified to evaluate the item relevance to the domain of construct using a 4-point Likert scale (Lynn, 1986; Polit & Beck, 2018; Wynd et

al., 2003). The 14 panel of experts received a copy of the attitude and perception towards open disclosure of PSIs survey questionnaires, including the content validity instruction scoring sheet (Appendix 16) and the overview of scales. Even though a minimal acceptable number of three experts is required for the content validation (Lynn, 1986), a larger panel is recommended to yield richer information on the instrument (Polit & Beck, 2018). The panel of experts rated the content validity of each item for the clarity (how clear the wording of the items is), relevance (how necessary the question is) and representativeness (how important the question is) of the domain of construct (Abd Gani et al., 2020). Permission to use the content validity rating guidelines was obtained from the author (Abd Gani et al., 2020) (Appendix 17).

While the judgment of experts informs the rating on item relevance (proportion agreement), the Kappa measures inter-rater agreement and provides details around degree of agreement beyond chance agreement (Polit et al., 2007; Wynd et al., 2003). Hence, the multi-rater Kappa (Modified Kappa) (k^*) statistics were calculated and agreement was categorised based on K values (Cohen, 1960; Polit et al., 2007; Wynd et al., 2003). Based on the summary of evaluation of I-CVIs with different number of experts and agreements (Polit et al., 2007) for rating the relevance of an item in the survey instrument, the value of $k \geq .78$ is considered excellent regardless of the number of experts and I-CVI of .80 is considered to be an acceptable value (Polit & Beck, 2017). Nevertheless, the sensitive nature of Kappa may yield low result despite higher values of proportion agreement due to factors such as the distribution of data, number of observations made and presence of bias among observers (Wynd et al., 2003).

In this study, Content Validity Index was determined in consultation, collaboration and the rigorous domain analysis by a panel of experts, including Quality and Safety division, multidisciplinary HCPs from the clinical practice and academics. The Content Validity Indices for both the survey instruments were assessed for clarity, relevance and representativeness. The CVI score was calculated from the total sum of the agreement scores of all items that were rated '3' or '4' by the experts. The survey item is considered to be relevant if the I-CVI > 0.79, items need revision if I-CVI ranges between 0.70-0.79 and an item is removed, if the I-CVI < 0.70 (Polit et al., 2007; Zamanzadeh et al., 2015). The items in the attitude survey questionnaire were considered to be clear (S-CVI/Ave=0.91), relevant (S-CVI/Ave=0.88) and representative (S-CVI/Ave=0.88) of the phenomenon under study. The 'Clarity' index for the items on the attitude scale (I-CVI) ranged from 0.79 to 1.00, except one item that scored 0.64: *'The lesson I have learned from a PSI is to avoid sharing responsibility with other HCPs'* which was subsequently removed. In terms of 'Relevance', the item that scored 0.64, *'Disclosing errors as a healthcare team spreads the blame'*, was replaced with *'Disclosing errors as a healthcare team demonstrates a patient safety culture'*. The modified kappa (k^*) statistics formula (Table 10) supported the content validity of both (I-CVI) and (S-CVI) for the attitude survey instrument with an excellent agreement (k' ranging from 0.78 to 1.00) (Polit et al., 2007) except for two items as discussed previously ($k'=0.59$) (Appendix 18).

Table 10 Computing Modified Kappa (k^*) for the evaluation of I-CVIs among the Expert Panel

Step 1: Calculating the probability of chance agreement (P_c)	Step 2: Computing modified kappa (k^*) statistics	Step 3: Evaluation criteria for kappa (Cicchetti & Sparrow (1981) and Fleiss (1981))
$P_c = \left[\frac{N!}{A!(N-A)!} \right] \cdot 5^N$ Where, N = Number of experts A = Number agreeing on good relevance	$k^* = \frac{I-CVI - P_c}{1 - P_c}$ I-CVI= Proportion of agreements on clarity, relevance and representativeness I-CVI > 0.79= Item is relevant I-CVI 0.70 - 0.79= Item need revision and I -CVI < 0.70 = Item is removed P_c =The Probability of chance agreement	Fair = k of .40 to .59 Good = k of .60–.74 Excellent = k > .74.

The items in the perception survey questionnaire were rated as clear (S-CVI/Ave=0.94), relevant (S-CVI/Ave=0.94) and representative (S-CVI/Ave=0.94) of the phenomenon under study. The 'Clarity' index values for the items (I-CVI) ranged from 0.79 to 1.00 (excellent), the 'Relevance' index was between 0.71 to 1.00 and 'Representativeness' scored from 0.71 to 1.00. The modified Kappa agreement demonstrated excellent interrater agreement (Gisev et al., 2013) on item ratings ($k'=0.94$) as outlined in (Appendix 19).

4.7.1.4 Refinement of the Questionnaire

Based on cognitive interviewing, face validity assessment, and content validity evaluation by the multidisciplinary experts, amendments were made to the attitude questionnaire in consultation with the research team (Appendix 15). The researcher also considered undertaking a validity assessment of the factor structure of this revised instrument for the structural/construct validity. However, this was beyond the scope of the current study. Nonetheless, the rigor and quality of a quantitative research were adhered through the assessment of content validity. There were no major changes to the content of the perception survey questionnaire except for modification to the Likert Scale measurements. Based on the suggestions, the term 'healthcare provider' was changed to 'HCPs', as some experts noted that the term 'provider' could refer to an organisation. Consistency in terminology was ensured throughout the questionnaire.

The attitude item on 'Disclosing errors as a health care team spreads the blame' was replaced by 'Disclosing errors as a health care team demonstrates a patient safety culture' under the 'value/Ethics for Interprofessional Practice' domain. The item 'Only the prescriber can determine the causes of a medication error' was changed to 'Only the medical team can determine if a PSI has occurred during the care of a patient' and 'Disclosing patient safety incidents is everyone's responsibility' included under 'Roles/Responsibilities' domain. The item 'The lesson I have learned from a PSI is to avoid sharing responsibility with other HCPs' was removed.

Within the '*Interprofessional Communication*' the item 'I am fearful that other Health Care Professionals might doubt my professional ability if they are aware of my involvement in a patient safety incident' and 'I am aware of policies and guidelines to assist me in communicating effectively when there are any patient safety concerns in my clinical area' were included. The items 'The HCPs in the multidisciplinary team in my clinical area work together as a well-coordinated team when managing and responding to patient safety incidents' and 'Disagreements among HCPs when responding to patient safety incidents are resolved appropriately (i.e., not who is right but what is best for the patient)' were included within the '*Teams and Teamwork*' domain. Finally, the item 'Learning how to disclose medical errors is an appropriate use of time in my training' excluded, as there was a separate section on the training.

4.7.1.5 Finalised Survey Questionnaires

The final version of the questionnaire comprised of three sections (Appendix 10). Section 'A' included 14 items measuring the HCPs attitude on disclosure of PSIs, Section 'B' comprised 30-items assessing the HCPs perception on disclosure of PSIs. Section 'C' included four questions on demographic details, two questions on involvement in open disclosure training and two questions related to the involvement in a PSI and finally an open-text box was included.

4.7.1.6 Reliability

Reliability analysis is concerned with the precision of a research instrument for the accuracy, stability and consistency of the information about a measure or phenomenon of interest obtained in the study (Polit & Beck, 2018; Ranganathan et al., 2024; Taherdoost, 2016). Reliability is a significant component of a test quality to prevent variation and measurement error irrespective of repetition over occasions (Test–retest reliability), repetition over persons (Interrater reliability), repetition over occasions (Intra-rater reliability) and repetition over versions (Parallel test reliability) (Polit & Beck, 2017).

In order to measure the stability or reproducibility of a survey instrument, Test-retest reliability method is recommended, where two sets of scores are obtained from the same individuals with one or two weeks apart, to assess for the consistency of scores across two separate measurements (Polit & Beck, 2018). However, Polit (2014) addressed various challenges related to test-retest reliability assessment, including the real change in the '*state*' of a measuring attribute during the period of assessments, leading to lower temporal stability. Even though the issue of real change is addressed with minimum duration between the assessments, the carryover effects from previous scores and desire to be consistent may not provide an accurate stability score for the instrument. Additionally, participants responses on a retest measure might shift without the actual change in the construct itself. Other challenges may be attrition, maintaining anonymity with regards to sensitive constructs, initial sample may be biased and homogenous subgroup of the intended population. Given that both 'attitude' and 'perception' are considered '*state*' attributes which have a lower temporal stability compared to 'trait' with higher temporal stability (Paallant, 2007; Polit, 2014); a test-retest reliability score was not carried out for this study. The results may be unstable, low, biased and carry over effects with response shifts may hinder the accurate representation of stability in the

scale scores. While reliability assesses a measure's degree of consistency over time, raters' versions of a measure, the internal consistency captures consistency across items.

4.7.1.7 Internal Consistency

The internal consistency indicates how well the items in a survey instrument relate to each other and contribute to the coherence of the entire instrument (Croasmun & Ostrom, 2011). Internal consistency captures participants' responses to multiple items during a single administration and measures the extent of correlations among the individual items (Polit & Beck, 2018; Ranganathan et al., 2024). It is concerned with the various components of multicomponent measure and consistency in measuring the same attribute (Polit & Beck, 2018). Thus, inter-item correlation includes associations among all items within the questionnaire and are estimated by an index called as '*Cronbach's alpha coefficient*'. In this study, the overall Cronbach alpha analysis for attitude scale was 0.775 (n=417) and reported in detail in chapter 5 (Section 5.5). A '*Cronbach's alpha coefficient*' of 0.7 is considered as a good association of the items (Paallant, 2007; Ranganathan et al., 2024). If the scale contains several subscales, it is recommended to compute the '*Cronbach's alpha coefficient*' for each subscale separately (Polit & Beck, 2018). The reliability analysis for the attitude subscale ranged from 0.33 0.74.

According to Paallant (2007), the number of items within a scale determines the Cronbach alpha coefficient. When the scale generates a low Cronbach's alpha, it is said to be due to the small number of items (Briggs & Cheek, 1986; Wadkar et al., 2016), which is less than 10 in the scale. Empirical studies indicate that increasing the number of items or the inclusion of items that are most cohesive might increase the average item correlation (Briggs & Cheek, 1986). However, mean inter-item correlation (Briggs & Cheek, 1986), which is directly related to the reliability coefficient, is suggested to be the clearer measure of item homogeneity with acceptable values ranging from .15 to .50 (Clark & Watson, 2019; Larsson et al., 2021). In addition, the mean inter-item correlation differs from reliability as it is not influenced by scale length. Thus, the inter-item correlation for the domain 'Roles/Responsibilities' is 0.15 and is within the acceptable value.

The overall Cronbach's alpha analysis for the HCPs' perception of open disclosure of PSIs scale was 0.90 (N=417), suggesting excellent reliability (Taherdoost, 2016) and discussed in detail in Chapter 5 (Section 5.5). The Reliability analysis for the subscale was estimated to range from 0.754 to 0.835 with high reliability scores for the instrument.

4.7.2 Phase 2

4.7.2.1 Interview Guide Development

A semi-structured interview method, recognised for its versatile and flexible data collection approach (Kallio et al., 2016) enabled researcher to gain in-depth understanding of the facilitators, barriers and strategies related to disclosure of PSIs. The development of the semi-structured interview guide followed a systematic and evidence-based approach to ensure clarity, relevance, and alignment with the study objectives. A literature review informed identification of key topic areas, followed by review of survey

questionnaires to ensure that the interview guide addressed areas that required further exploration and captured HCPs experiences. The interview guide included central broad questions around open disclosure practice, facilitators, barriers and strategies to elicit comprehensive narratives, followed by open-ended sub-questions or prompts tailored to explore specific aspects (Creswell & Creswell, 2018; Kallio et al., 2016; Polit & Beck, 2018). Sub-questions were limited to less than seven, as recommended by Creswell and Creswell (2018), while maintaining a total of no more than twelve (Miles & Huberman, 1994) to maintain focus while ensuring that all key areas were addressed (Polit & Beck, 2018).

To enhance clarity and validity, the draft interview guide underwent expert review by open disclosure specialists, academics, and experienced HCPs. The final semi-structured interview guide facilitated an introductory icebreaker question to build rapport with interviewees, followed by a sequence of core questions with opportunities for probing and follow-ups based on participants' responses (Appendix 20). A summary question at the end allowed participants to reflect on any additional insights they wished to share (Creswell & Creswell, 2018). This structured yet adaptable approach ensured that the interview guide facilitated meaningful discussions while capturing diverse perspectives on open disclosure within multidisciplinary healthcare settings.

4.7.2.2 Interview Procedure

Phase 1 and phase 2 data collection occurred during the COVID-19 pandemic from December 2022 to January 2023. Information related to the subsequent interview was included in the PIL and consent form for the survey participants who wished to partake in the qualitative phase of this study. Survey participants were provided with an option to express their willingness to receive potential future contact about participating in a follow-up interview. Survey participants who indicated their willingness and returned their contact information were contacted regarding the interview. The researcher assessed potential participants' eligibility and recruited interview participants as outlined (Section 4.5.3.2). The researcher offered further information on the purpose of the interview, the process involved and answered any questions.

HCPs who consented to participate in phase 2 were contacted to schedule a mutually convenient time and mode of interview. The researcher carefully selected a date, time, and venue that were free from potential noise and distractions (McGrath et al., 2019). Interviews were conducted via telephone or zoom, prioritising participant preferences while ensuring compliance with public health guidelines and safety. Additionally, given the geographical dispersion of participants across multiple hospital sites, remote interviews provided a more practical and accessible option. Before the interviews, the researcher familiarised with the interview guide, data recording equipment and conducted practice interviews with peers from the PhD support group (McGrath et al., 2019). The researcher prepared detailed notes alongside interview guide to facilitate the interview process.

A brief pre-interview conversation was encouraged to help establish rapport with the interview participants (McGrath et al., 2019). Establishing a comfortable and trusting environment was essential for generating rich and detailed responses (Clarke & Braun, 2013). The researcher remained reflexive and conscious of

conversations with interviewees and employed active listening techniques, such as sounds like ‘*M-hm*’ for telephone interviews or non-verbal affirmations ‘*head nodding*’ for online interviews, strategic pauses, and paraphrasing, to encourage elaboration and ensure a natural flow of conversation (McGrath et al., 2019). The researcher began the interviews by providing an overview of the study and obtaining verbal consent and demographic data. All the interviews were audio-recorded with consent. Audio recordings of study participants from the interview were pseudonymised at source to maintain confidentiality and stored on a secured, encrypted, password-protected server (School of Nursing and Midwifery, Trinity College Dublin) and later transcribed. An adapted Research Interview and Distress Protocol (Draucker et al., 2009) was established with permission (Boland, 2024) (Appendix 21), allowing the researcher to be aware of participants' emotional distress related to the sensitive nature of the topic. Following each interview, researcher maintained a reflexive diary recording thoughts on interview dynamics, participant responses, potential biases, and methodological decisions. It recorded challenges, adaptations, ethical concerns, and rapport-building efforts, ensuring transparency and rigour (Nadin & Cassell, 2006). These reflections informed data analysis, enhancing credibility and depth in interpretation.

4.7.2.3 Quality and Rigour

Ensuring quality and rigour in qualitative research is crucial for establishing trustworthiness in a qualitative enquiry. Trustworthiness is developed by adhering to criteria such as credibility, dependability, confirmability, transferability, authenticity and reliability (Creswell & Creswell, 2018; Creswell & Poth, 2016; Lincoln & Guba, 1985). Methodological transparency is crucial to ensure findings are robust and meaningful (Creswell & Poth, 2016). This is particularly important in sensitive topics like open disclosure of PSIs where insights can shape healthcare policies and practices (Clarke & Braun, 2013). To achieve rigour, this study applied multiple strategies outlined by Creswell & Miller (Creswell & Poth, 2016). These include triangulation (data source, and theoretical) to enhance validity, member checking for credibility, peer review for validation and confirmability, and thick description for transferability and dependability, and reflexivity to acknowledge researcher bias and ensure transparency.

4.7.2.3.1 Triangulation

Triangulation validates study findings by means of theoretical pluralism, gathering data from multiple sources, including different types of HCPs from various disciplines and across different hospital settings (Denzin, 2012). This approach allowed for cross-validation of findings and a more comprehensive understanding of open disclosure practices by integrating various perspectives across various settings, representing a diverse range of clinical settings, disciplines, and professional roles. This helped to ensure that findings were not limited to a single institution or professional perspective but rather reflected broader experiences across the healthcare system. Additionally, theoretical triangulation was incorporated by interpreting findings through established frameworks related to understanding stakeholder and organisational behaviours, complexity of healthcare systems, and healthcare communication. The integration of multiple theoretical perspectives strengthened the interpretation of results and added depth to the analysis.

4.7.2.3.2 Member Checking

According to Lincoln and Guba (1985), member checking is the most essential strategy for validating the credibility of the participants' findings and interpretations. The accuracy of the qualitative findings was ensured by verifying the transcribed data with the interview participants and obtaining their reactions. Furthermore, the findings represent a range of realities, experiences and contexts associated with open disclosure practices while maintaining sensitivity to the participants' feelings. Additionally, the researcher has shared her experiences of engaging with the interview participants and documented her observations from the interview process throughout the qualitative findings (Chapter 6) while maintaining an audit trail throughout the research process.

4.7.2.3.3 Peer Review

The research process, from study design to data collection and analysis, was regularly reviewed by academic supervisors and experts in open disclosure. The transcribed data was independently coded, reviewed and confirmed with the academic supervisors to mitigate the risks associated with individual bias, subjectivity or misinterpretation and enhance the accuracy and better representation of the data. This ongoing engagement and presentation of study at several conferences, seminars and PhD summer school helped identify potential biases, refine the research approach, and ensure that findings are credible and accurately represent participants' experiences. Engaging with peers also provided an opportunity to challenge assumptions and enhance the reflexivity of the study (Lincoln & Guba, 1985).

4.7.2.3.4 Rich Description

Another essential strategy employed was thick description, which enhances transferability by providing detailed contextual information about the study settings, hospital environments, participants' roles and justifications to the decisions (Polit & Beck, 2010). By offering a rich, in-depth account of the healthcare contexts in which open disclosure occurs, the study enables readers to assess whether findings may be applicable to other settings. In other words, evaluate the dependability of the data over time and the conditions for its replication (Polit & Beck, 2017). Thick description includes not only the words of participants but also descriptions of institutional policies, workplace cultures, and broader systemic factors that influence open disclosure practices.

4.7.2.3.5 Reflexivity

Reflexivity provides insight into the researcher's positionality, including assumptions, values, and beliefs that may influence the research process (Jamieson et al., 2023; Walker et al., 2013). Given the potential for biases to shape research design, data collection, and analysis (Fontana, 2004; Hesse-Biber & Johnson, 2013), self-reflection was integrated at every stage of this study. Reflexivity is particularly vital in mixed-methods research due to its complex design (Cain et al., 2019), offering an opportunity for thoughtful engagement (Jamieson et al., 2023). It enabled critical reflection on researcher's role, ensuring transparency and mitigating bias (Corlett & Mavin, 2018). Reflexivity prompts from Jamieson et al. (2023) are used to document this process.

Throughout the study, researcher engaged in self-reflection to address potential biases arising from 30 years of clinical, leadership, and academic roles. While the researcher's work in open disclosure over the past 12 years reveals prolonged engagement in understanding the phenomenon, several steps were taken to ensure the objectivity, integrity, and credibility of this research study. For example, research questions were shaped by a comprehensive literature review and in consultations with open disclosure leads, academics, multidisciplinary HCPs, and patient safety representatives to further refine the study focus.

During data collection, recruitment materials were designed with clear language and images to encourage participation. Although researcher is an open disclosure trainer, decisions were guided by empirical evidence, consultations with research supervisors, and participation in training and conferences. Efforts were made to ensure participant responses were not influenced by researcher's background. While researcher empathised with HCPs sharing challenging experiences, she remained neutral, offering support services when necessary. Engaging in spiritual exercises and discussions with supervisory team helped researcher to manage any emotional impact.

In data analysis, adherence to rigour and transparency was maintained through consultation with statisticians and qualitative research scholars. Training in SPSS and NVivo strengthened researcher's mixed-methods expertise, while note-taking documented key decisions. In the final stages, balancing research with work, family, and other commitments was challenging, but peer support and spiritual activities provided motivation to complete the study.

By applying these rigorous strategies, the study ensures credibility, dependability, and confirmability, contributing to the robustness of the research findings. These methodological approaches reinforce the trustworthiness of the study and provide a strong foundation for understanding the facilitators, barriers, and strategies associated with open disclosure of PSIs in healthcare settings.

4.8 Data Management and Analysis

This section presents the systematic approach undertaken to organise, process, and analyse quantitative and qualitative data. Informed by a sequential explanatory design, the analysis was conducted in a structured manner, with appropriate analytical techniques applied to each dataset in a sequential order.

4.8.1.1 Phase 1

The quantitative phase data were managed using the IBM Statistical Package for the Social Sciences (SPSS) Statistics version 26. The accuracy, clarity, and consistency of data entry were thoroughly checked and verified during the data management, data cleaning and analysis process to ensure integrity and reliability. Even though data preparation is considered to be a time-consuming process, it is an important step to make the data suitable for the analysis. It must be done in a systematic and thoughtful manner to ensure the trustworthiness and meaningfulness of future analysis results (Creswell & Clark, 2017; Sheard, 2018). Data accuracy was carried out by random checks for the missing data, partially completed record or unusual value. Descriptive statistics were generated for each variable, including an examination of minimum and

maximum values, to identify anomalies. Additionally, cross-checking values against their corresponding variables was conducted to detect and correct any inconsistencies.

Descriptive analysis was conducted to summarise the survey responses, presenting the results in frequencies and percentages, both in text and graphs. The analysis of the single Likert-items would have been unreasonable, leading to over analysis on single-item data. Therefore, a scale variable for each sub-category was created by summing the responses to each Likert items, considering reverse-coded items. The summing of the Likert items for each sub-category was supported by Cronbach's alpha for each group (Section 5.5). Cronbach's alpha analysis served as a statistical indicator that provided a measure of consistency of the items included in the sub-categories of attitude and perception scale (Lee & Kim, 2020). This approach reduces the number of variables to analyse in the quantitative section from 14 individual Likert items to 4 sub-categories in the attitude scale and from 30 individual Likert items to 6 sub-categories in the perception scale in the study. It combines multiple Likert items together producing discrete scale variables, to which non-parametric hypothesis testing procedures can be easily applied. Furthermore, combining multiple Likert scale items into sub-category totals provides a more granular scale by which to differentiate between sample participants (e.g., participants responses can take values in the range (4-20) for Values/Ethics for Interprofessional Practice as opposed to (1-5) for individual items.

Univariate analysis of HCPs socio-demographic characteristics such as age, gender, current position, duration of work in healthcare sector, involvement in open disclosure training and nature of involvement in PSI was conducted to explore their association with their attitude towards open disclosure of PSIs. In order to compare differences between two independent sample groups, when the dependent variable is ordinal or continuous and non-normally distributed, the Mann-Whitney U test was used. As the scale variables computed in the section 5.5 are not continuous, the nonparametric test is employed as an alternative to the t-test. This is crucial for understanding whether attitudes towards open disclosure of PSIs differ based on HCP's gender and involvement in open disclosure training and PSI. Simultaneously, the Kruskal-Wallis H test, a rank-based nonparametric test was employed to assess whether there was statistically significant differences between two or more groups of an independent variable, specifically when analysing a continuous or ordinal dependent variable. It was considered as a nonparametric alternative to the one-way ANOVA, as the data was discrete, ordinal and non-normally distributed. This is important to understand whether attitude towards open disclosure of PSIs differ based on HCP's age, current position, years of experience in the healthcare sector.

A Canonical Correlation Analysis (CCA), a multivariate statistical technique, was performed to assess the shared multivariate relationship between the two sets of perception and attitude variables. CCA is a multivariate statistical technique aimed at discovering and quantifying the associations between multidimensional variables (Hotelling, 1935; Hotelling, 1936; Hotelling, 1992; Hardoon, 2004; Sherry & Henson, 2005). It serves as a dimensionality reduction method that identifies linear combinations of synthetic or latent variables in each set, often referred to as 'canonical variates,' in such a way that maximises the correlation between these canonical variables (Sherry & Henson, 2005; Härdle et al., 2015; Abdi et al., 2018). Consequently, each set can represent an array of variables or attributes, and the goal is

to determine if and how these two sets of variables are related. This process facilitates the identification of canonical variables, comprehension of the inherent patterns of canonical correlations, and assessment of the strength of the relationships between the two sets of variables through the use of canonical correlations. The number of canonical variate pairs was derived from the smaller set of variables. Therefore, from the six variables in the perception set and four variables in the attitude set, four pairs of canonical variates were derived and related to each other from both sets (Section 5.8).

Finally, a Hierarchical Linear Regression model was developed to examine unique associations of HCPs' socio-demographic characteristics, involvement in open disclosure training, involvement in open disclosure of PSIs and their perception with HCPs' attitudes to open disclosure of PSIs, respectively (Section 5.9). The hierarchical linear regression serves as a model comparison framework to assess if specific variables account for a statistically significant portion of variance in the dependent variable after accounting for the influence of control variables. This framework involves building regression models by sequentially adding variables at each step of the process. The primary focus of this modelling approach is to compare the outcomes of these regression models. By comparing the results of these models, it becomes possible to ascertain whether the inclusion of new variables significantly enhances the proportion of explained variance in the criterion variable by the overall model (Du et.al., 2019; Shaffer et al., 2017). By constructing sequential linear regression models and adding blocks of variables in stages, it enabled the researcher to determine if the inclusion of perceptions as an independent variable significantly contributed to explaining the variance in attitude, while considering the influence of age, gender, current position, and duration of work in the healthcare sector. The assumptions (Appendix 22) associated with hierarchical regression analysis such as linearity using scatterplots, homoscedasticity with scatterplots of standardised residuals against predicted values, normality (using histogram and Q-Q plot) for each subscale and multicollinearity was verified using the Variance Inflation Factor (VIF).

4.8.1.2 Phase 2

The interviews were conducted between December 2022 and January 2023 and audio-recorded with explicit consent from the participants and lasted approximately 30-90 minutes. The interview recording helped the researcher to remain focused on the interview rather than on making notes. The recorded interviews were transcribed, coded, and thematic analysis was undertaken (Braun & Clarke 2006; DiCicco-Bloom 2006; Vaismoradi et al., 2013; Clarke & Braun 2017). Interviews were carried out either via telephone or zoom, online approved platform by TCD during the pandemic and the date and time identified by the interviewee. The qualitative data was grouped, organised and analysed thematically using computer-assisted software (NVIVO) (Bonello & Meehan, 2019) and schematic visualisation (Bonello & Meehan, 2019; Brailas, 2020) (Appendix 23). Audio recordings from the interview were pseudonymised at source and stored on encrypted, password protected and secure server (School of Nursing and Midwifery, Trinity College Dublin) and transcribed. HCPs were allowed to review the transcribed data and to validate the content. The audio-recordings are deleted on completion of the analysis. Any potentially identifying information is removed from the transcribed data before analysis. Each study participant was assigned a

unique identification code, accessible only to the researcher. To ensure confidentiality, these codes were securely stored separately from the data.

Thematic analysis is an umbrella term for various approaches to identifying patterns of codes, themes and meaning within qualitative data (Braun & Clarke). It provides a structured yet flexible approach to identifying, organising, and interpreting data (Braun & Clarke, 2021b). Given the exploratory nature of the study, sensitivity of the subject and the role of the researcher, reflexive thematic analysis is selected as the most appropriate approach. It acknowledges that themes are actively constructed through iterative process rather than predetermined codes, highlighting the interpretive role of the researcher and the value of theoretical pluralism in the analysis (Braun & Clarke, 2019). This approach aligns with the study's emphasis on understanding participants' perspectives, lived experiences, and meaning-making processes. By employing reflexive thematic analysis, this study enables a rich and contextually grounded understanding of HCPs' experiences and perspectives.

The analytical process followed Braun and Clarke's (Braun & Clarke, 2006, 2019) six-phase framework: (1) familiarisation with the data, where transcripts were read multiple times and initial reflections were recorded; (2) generating initial codes, developed openly and iteratively refined; (3) searching for themes, in which codes were grouped based on conceptual similarities; (4) reviewing themes to ensure coherence and internal consistency; (5) defining and naming themes, ensuring they captured patterns of shared meaning rather than serving as mere topic summaries (Braun & Clarke, 2021a); and (6) producing the final analysis, where themes are combined into a cohesive narrative, supported by representative data excerpts. An inductive approach to coding was used during the iterative process incorporating both explicit and implicit coding, ensuring the identification of not only surface-level discussions of open disclosure but also the underlying assumptions, emotions, and tensions related to the practice. The analysis was further enriched through collaborative engagement with the supervisory team and peers. While seeking agreement on emerging codes and themes, wider discussions and peer review facilitated reflection on assumptions, potential bias, interpretive process and contextual influences, thereby strengthening the depth and reflexivity of the analysis (Braun & Clarke, 2019). This process ensured the study captured the complexity of HCPs' experiences of PSI disclosures, acknowledging the emotional, ethical, and systemic challenges involved.

4.9 Integration

In this study, a sequential explanatory design within a pragmatic paradigm facilitated the structured integration of quantitative and qualitative data across multiple levels, including research design, data collection, analysis, interpretation, and reporting (Figure 3). This integration ensured that the findings were not only complementary but also mutually informative, allowing for a more comprehensive exploration. By systematically linking the numerical trends from the quantitative phase with the contextual depth provided by qualitative insights, the study maximised the strengths of both approaches to address the research aim and answer the research questions effectively.

At the design level, the conceptualisation of this study was accomplished through explanatory sequential design, where qualitative phase of the study built upon the preceding quantitative phase of the study (Fetters et al., 2013). Initially, the researcher collected and analysed the quantitative survey data which later informed the qualitative data collection through semi-structured interviews (Ivankova et al., 2006).

At the method level, integration was achieved by linking the approaches used for data collection and analysis (Creswell et al., 2011) through connecting, building, merging and embedding (Fetters et al., 2013). In this study, connecting occurred through sampling frame where the interview participants were selected from the population of HCPs who responded to the survey. The baseline survey data was analysed, and participants sampled for the interview based on the findings from the analysis by applying a stratified and maximum variation sampling strategy. The building approach was evident when results obtained from one method are used as a foundation for the subsequent method to create a more holistic and robust research design. This integration through building aided the researcher to utilise the findings from quantitative survey to inform the interview guide of the qualitative phase of the study (Fetters et al., 2013). While the combination of both quantitative and qualitative methods has been debated, this approach has enabled to build upon the strengths of each method to gain more comprehensive understanding into the open disclosure of PSIs than either method alone (Creswell & Creswell, 2018; Doyle et al., 2016; Moffatt et al., 2006). This would not have been possible if integration through merging of data was not considered, because it involves collecting and analysing both types of data separately and then integrating them to identify confirmation, discordance or expansion between the findings (Fetters et al., 2013). It is important to note that integration through embedding was also not relevant to this study as it involves recurrent linking of data collection and analysis at multiple points, which not the focus of this study.

At the Interpretation and Reporting Level,

The quantitative findings from Phase 1 and qualitative findings from Phase 2 were integrated using a joint display (Fetters et al., 2013), facilitating side-by-side comparison and synthesis of data. Following mixed-methods principles (Creswell & Inoue, 2025; Fetters et al., 2013; Younas et al., 2023), data convergence, divergence, and expansion were examined to ensure a comprehensive interpretation of Open Disclosure practices. Qualitative interview data were mapped onto key survey themes with expansion providing new insights, convergence reinforcing aligned themes, and divergence highlighting discrepancies for deeper analysis (Creswell & Clark, 2017; Creswell & Inoue, 2025). Meta-inferences were drawn by systematically linking quantitative trends with qualitative narratives enabling a deeper analysis of attitudes, experiences, and behavioural tendencies in Open Disclosure (Creswell & Inoue, 2025; Tashakkori & Teddlie, 2010). This process identified patterns of agreement, contradiction, and elaboration across datasets, thereby strengthening the validity of findings. This integration enhanced the study's overall coherence, offering deeper insight into the complexities associated with Open Disclosure practices within this mixed-methods study (Chapter 7).

4.10 Ethical Considerations

According to the World Medical Association (WMA 2013), medical research involving human participants must adhere to the ethical principles outlined in the Declaration of Helsinki. The researcher has carefully considered and addressed all ethical issues in planning, conducting, and reporting of this research study (Ross 2015). Furthermore, the basic ethical principles such as ‘respect for persons’, ‘beneficence’, and ‘justice’ identified within Belmont report (1979) (National Commission for the protection of human subjects of biomedical and behavioural research) guided the conduct of this mixed method research study.

As a part of the ethical approval process, a Data Protection Impact Assessments (DPIA) were carried out in consultation with Data Protection Officer (DPO) affiliated with the university and hospital sites. This was to identify and minimise the data protection risks, to ensure compliance with data protection laws, regulations (EU General Data Protection Regulation 2016 (GDPR), Data Protection Acts 1988-2018) and Trinity College Dublin’s ‘Good Research Practice’. In accordance with the Health Research Regulations under the Data Protection Act 2018 (Section 36(2), ethical approval was secured prior to the commencement of this study. Approval was granted by the following ethics committees: TCD Faculty Research Ethics Committee on 22nd December 2021, Connolly Hospital Research Ethics Committee on 16th December 2021, Rotunda Hospital Ethics Committee on 26th October 2021, HSE North-East Area Research Ethics Committee on 5th July 2021, and Beaumont Hospital Ethics (Medical Research) Committee on 25th May 2021 and 9th May 2022 (Appendix 7).

4.10.1 Respect for Persons

The principle of ‘respect for persons’ as outlined in the Belmont report, 1979 (Miracle, 2016) has been adhered to in the following aspects of this research study. Study participants received study Information through gatekeepers along with an invitation to participants. In order for the participants to partake in this research study voluntarily and with adequate information, an invitation letter with Participation Information Leaflet (PIL) was provided (Appendix 5). The PIL detailed information regarding the purpose of the research study, potential benefits and risks, autonomy, right to withdraw, anonymity, data management and protection measures, contingency plan, and the contact details of the researcher to make an informed decision. Additionally, funding received for the study and Research Ethics Committee (REC) approval was included. The return of a completed survey questionnaire was considered as consent to participate in the quantitative phase of this study.

Information related to the subsequent interview was included in the PIL and consent form for the survey participants who wished to partake in the qualitative phase of this study. Survey participants were provided with an option to express their willingness to receive potential future contact about participating in a follow-up interview. Survey participants who indicated their willingness and returned their contact information were contacted regarding the interview. The researcher assessed each potential participant’s eligibility and recruited interview participants as outlined in section 4.6.2. The researcher offered further information explaining the purpose of the interview, the process, and answered any questions. A minimum of 1 week was given between providing information and seeking informed consent for the semi-structured

interview process and audio-recording. Potential participants returned signed consent forms to the researcher via email. The researcher countersigned the consent form before commencing the interview process. All participants were given a signed copy of the consent form for their records via email. The signed copy of this consent form was retained by the researcher and stored securely in a double encrypted password protected folder accessible only to the research team. Subsequently, a convenient date, time, and platform for the interview was confirmed as per the participant's choice and availability. The signed consent was verbally confirmed before starting the interview. Throughout the interview, the researcher upheld participant's right to privacy, confidentiality, dignity, respect and withdraw at any time.

4.10.2 Beneficence

The principle of beneficence is concerned with researcher's obligation to safeguard participants' wellbeing (Miracle, 2016). Beneficence advocates for 'do not harm' and to 'maximise possible benefits and minimise possible harms. In this study, provision of comprehensive information through PIL assisted study participants to be cognisant of benefits and risks, anonymity, right to withdraw without any repercussions, which enabled them to make informed decisions. Even though there was no expectation of benefit for individual HCPs by participation in this research study, it provided an opportunity to express their views, concerns, and experiences of open disclosure of PSIs which will benefit everyone involved in the future processes. Given the potential for psychological distress when discussing their experiences with open disclosure of PSIs during the interview phase, the researcher approached participants with sensitivity, empathy, and a non-judgemental attitude. Furthermore, the researcher actively listened while maintaining eye contact with undivided attention. In this regard, attendance at various qualitative training programmes, masterclasses, webinars, mock interviews, and discussions with a supervision team assisted in planning and execution of interview process. Also, the researcher encouraged interview participants to voice any distress or discomfort they may have experienced during the interview process. As detailed in the PIL (Appendix 5), they were reassured and offered contact details of relevant support services such as mental health crisis helplines and services, Samaritans telephone service, Minding Your Wellbeing Programme, Employee Assistance Counselling Services (EACS), Occupational Health or telephone emergencies services. A modified Research Interview and Distress Protocol was established to manage psychological distress, discomfort, or change of mind at any stage during the interview process (Draucker et al., 2009) (Boland 2024; Draucker et. al., 2009) (Appendix 21).

4.10.3 Justice

The principle of justice is concerned with fairness and moral equality which has been adhered to throughout this research study (Miracle, 2016). All eligible multidisciplinary HCPs were given equal opportunity for participation. Protection of participants' privacy and confidentiality in phase 1 was achieved through the anonymous survey questionnaire. In compliance with Health Research Regulations (2018), the researcher did not hold any 'internet protocol' (IP), tracking address for the digital platforms. For the paper-based questionnaire, the provision of a written envelope assisted with anonymity and confidentiality of the survey participants. Care was taken with the storage and access of both survey and interview data through

a secured password-protected, encrypted computer. Data entry was managed solely by the researcher and could only be accessed by the research team. Interviews were audio-recorded on a dictaphone and were immediately uploaded and stored on the password-protected, encrypted computer by the researcher. The audio recordings from the interview were pseudonymised at the sources, transcribed and all the identifying information except consent forms deleted on completion of the analysis. Participants' diversity strengthened the study by accounting diverse experiences and perspectives. The study findings are disseminated through conference presentations, peer reviewed articles, stakeholder engagement events at various organisations and further informs training programmes on Open Disclosure of PSIs.

4.11 Quality Criteria in Mixed Methods Research

The quality of the mixed methods design in this research is evaluated using a structured framework with six core quality criteria for mixed methods research (Hirose & Creswell, 2022). The Good Reporting of a Mixed Methods Study (GRAMMS) framework, developed by O'Cathain et al. (2008) have been applied to this study to promotes high-quality reporting in mixed methods research (Appendix 25). This evaluation highlights how a well-executed design can provide a comprehensive understanding of HCPs' experiences with open disclosure of PSIs. The integration of qualitative and quantitative data was conducted in a way that ensured methodological rigour, transparency, and meaningful interpretation. Below is an evaluation of the study based on the six criteria.

4.11.1 Justifying the Use of Mixed Methods

The study employs a mixed methods approach to gain a comprehensive understanding of HCPs' attitudes, perceptions, facilitators, barriers, and strategies to improve open disclosure of PSIs. The quantitative phase offers measurable insights into attitudes, perceptions, and demographic variables while the qualitative phase provides an in-depth understanding of the contexts, HCPs perceptions, their experiences and systemic factors. The rationale for mixed methods is clearly justified (Chapter 3), as it bridges subjective experiences with broader trends in practice, enhancing both depth and breadth in analysis (Creswell & Clark, 2017; Fetters et al., 2013).

4.11.2 Formulating Mixed Methods Research Questions

In formulating research questions for this mixed methods study, the quantitative phase aimed to assess patterns in disclosure behaviours, attitudes (Popkess et al., 2017), and perceptions (Lee & Kim, 2020) using survey instruments (Section 4.7.1). Qualitative questions explore the underlying emotions, ethical dilemmas, systemic barriers to disclosure, and institutional support. An overarching mixed methods question integrates both strands, ensuring a holistic perspective (Bryman, 2016; Flick, 2014; Tashakkori & Teddlie, 2010).

4.11.3 Report the Quantitative and Qualitative Data Separately

The study maintains clarity by distinctly reporting quantitative and qualitative findings before synthesising them. The qualitative analysis, conducted using Reflexive Thematic Analysis, highlights emergent themes from interviews (Chapter 6), while the quantitative findings present descriptive and inferential statistics related to disclosure attitudes and perceptions (Chapter 5). This separation ensures transparency and prevents methodological conflation (Braun & Clarke, 2019; Sandelowski, 2000).

4.11.4 Identifying the Mixed Methods Design with a Diagram

The study explicitly identifies its mixed methods design, specifying whether it follows a convergent parallel, explanatory sequential, or exploratory sequential framework (Section 3.3, Figure 3). A diagram visually represents the integration process, illustrating how qualitative and quantitative phases inform each other through sequential explanatory design (Creswell & Clark, 2017).

4.11.5 Integrating Data in a Joint Display

The joint display is used to synthesise quantitative and qualitative data, allowing for a side-by-side comparison of findings. This integration highlights points of confirmation (e.g., alignment between self-reported confidence and actual disclosure rates), discordance (e.g., discrepancies between institutional policies and perceived support) and expansion (e.g. experience improves process) (Fetters et al., 2013; Younas et al., 2023). Joint displays enhance interpretative clarity and facilitate meta-inferences (Fetters et al., 2013; Guetterman et al., 2015) (Chapter 7 and Chapter 8).

4.11.6 Meta inferences and Value from the Integrated Analysis

The study generates meta inferences, higher-order conclusions drawn from integrating qualitative and quantitative insights (Creswell & Clark, 2017; Fetters et al., 2013) (Chapter 7 for meta inferences). These meta inferences provide a deeper understanding of how HCPs, patients, relevant persons, organisations and systems interact in the context of open disclosure of PSIs. The integration adds value (Bryman, 2016; Creswell & Clark, 2017) by offering in-depth understanding of multidisciplinary perspectives, various components and interactions in the disclosure process and practical recommendations for improving disclosure training, policy refinement, and emotional support systems for HCPs (Chapter 7 and Chapter 8).

4.12 Conclusion

This chapter outlines the mixed methods approach employed in this study, emphasising the integration of both quantitative and qualitative data to investigate multidisciplinary HCPs attitudes, perceptions, facilitators, barriers, and strategies regarding open disclosure of PSIs. The research design is structured to address the study objectives through clearly defined research questions and distinct data collection phases, ensuring that quantitative and qualitative methods complement one another to provide a comprehensive understanding of the open disclosure practice. The application of reflective thematic analysis, descriptive and inferential statistical analysis in respective phases, alongside adherence to key quality criteria for mixed methods research, ensured methodological rigour and transparency.

Chapter 5 Quantitative Survey Results

5.1 Introduction

This chapter presents the analysis of the survey findings, phase 1 of this explanatory mixed methods research design. The findings are presented in tables, figures and texts corresponding to the relevant sections. The missing values are represented in the tables (11-13) to provide transparency to the outcome of results and why percentages do not add up to 100% for some of the demographic variables.

The specific objectives achieved in the quantitative phase of this study are:

- I. To explore multidisciplinary professionals' attitude and perception towards open disclosure of patient safety incidents within the healthcare practice.
- II. To identify facilitators and barriers to open disclosure practice and training within the healthcare practice.
- IV. To inform open disclosure training programmes for healthcare professionals within the healthcare practice

5.2 Sample and Study Participants

The anonymous survey data was obtained from 417 HCPs recruited from eight study sites from a selected hospital group in Ireland. The survey data was analysed using IBM Statistical Package for the Social Sciences (SPSS) Statistics 26. This section presents the findings related to recruitment of HCPs to the quantitative phase of the study, socio-demographic characteristics of HCPs, involvement of HCPs in the open disclosure training and PSIs.

5.2.1 Recruitment of Survey Participants

The recruitment for Phase 1 of the study commenced on 4th March 2022. Based on a census population sample of 6,322 WTE staff excluding others and students (HSE, Sept 2020) from eight study sites, 417 HCPs participated in the quantitative phase of the study.

Among the Census population sample of HCPs, Medical Professionals accounted for 23.23% ($n = 1469$), Nursing and Midwifery for 58.08% ($n = 3672$) and Health and Social Care Professionals for 18.68% ($n = 1181$). The data included in the analysis are from Medical Professionals ($n = 33$), Nursing and Midwifery professionals ($n=282$) and Health and Social Care Professionals ($n = 82$) who completed and returned an anonymous survey questionnaire.

5.2.2 Socio-Demographic Characteristics of HCPs

The socio-demographic characteristics of survey participants are presented in this section. The data provides insight into distribution of HCP's age, gender, current position, and years of experience. Participants were asked to identify themselves in one of three professional groupings: Medical Professionals, Nursing and Midwifery and Health and Social Care Professionals. Therefore, further details regarding their professional

role are unavailable. Furthermore, data displays the responses of HCPs regarding their involvement in open disclosure training, benefits of open disclosure training, involvement in PSI and their nature of involvement.

The following table illustrates the age distribution groups among the HCPs who participated in the study. The majority of HCPs were aged 31-40 Years ($n = 122$, 30.7%) and 41- 50 years ($n = 114$, 28.6%) in comparison to a small proportion of HCPs >61 years ($n = 13$, 3.3%). A very small percentage (0.8%) preferred not to disclose their age (Table 11).

Table 11 Age Groups

HCPs Socio- Demographic Characteristics	Category	Frequency	Percent (%)
Age groups	21 – 30 Years	80	(20.1%)
	31 – 40 Years	122	(30.7%)
	41 – 50 Years	114	(28.6%)
	51 – 60 Years	66	(16.6%)
	>61 Years	13	(3.3%)
	Prefer Not to Say	3	(0.8%)
	Total	398	
	Missing	19	

The majority of HCPs who participated in the study were females ($n = 341$, 85.7%), while only 13.3% ($n = 53$) were males (Table 12).

Table 12 Gender

HCPs Socio- Demographic Characteristics	Category	Frequency	Percent (%)
Gender	Male	53	(13.3%)
	Female	341	(85.7%)
	Prefer Not to Say	4	(1.0%)
	Total	398	
	Missing	19	

The largest group of HCPs were from the Nursing and Midwifery profession ($n = 282$, 71%), followed by Health and Social Care Professionals ($n = 82$, 20.7%). Medical Professionals constituted the smallest group among the three categories ($n = 33$, 8.3%) (Figure 4).

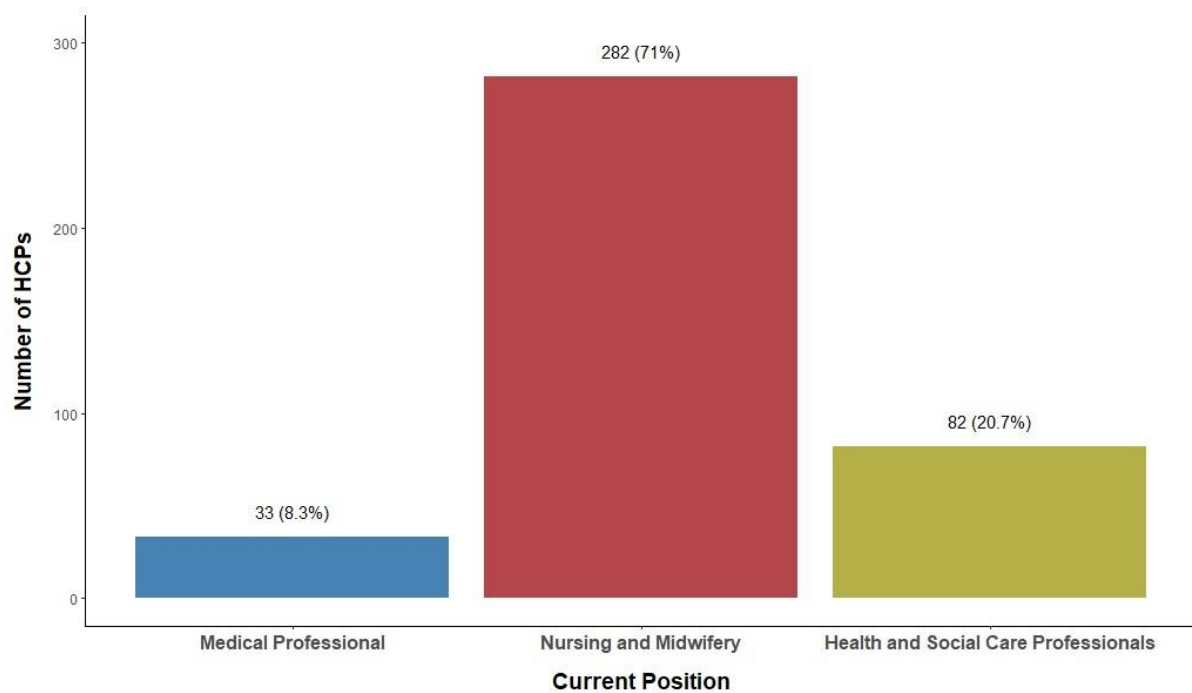


Figure 4 Current Position

The largest proportion of HCPs ($n = 122$, 34.9%) have 11-20 years of experience, followed closely by those with less than 10 years of experience ($n = 112$, 32.0%). HCPs ($n = 72$) with 21-30 years of experience make up the minority (20.6%) of the sample, while those with >31 years ($n = 44$) represent 12.6%. (Table 13).

Table 13 Years of Experience

HCPs Socio- Demographic Characteristics	Category	Frequency	Percent (%)
Years of Experience	<10 years	112	(32.0%)
	11-20 years	122	(34.9%)
	21-30 years	72	(20.6%)
	>31 years	44	(12.6%)
	Total	350	
	Missing	67	

5.2.3 Open Disclosure Training

The findings reveal HCPs involvement in various forms of open disclosure training. A significant proportion of HCPs had availed of online open disclosure training ($n = 299$, 50.2%). While 16.6% ($n = 99$) of respondents attended a seminar, webinar, conference, or presentation on open disclosure training. A total of 15.4% ($n = 92$) of HCPs received the open disclosure training as a part of their professional degree programme. A minority of 10.9% ($n = 65$) of HCPs have participated in the interactive open disclosure workshops and 5.9% ($n = 35$) completed the national open disclosure facilitator training (Figure 5).

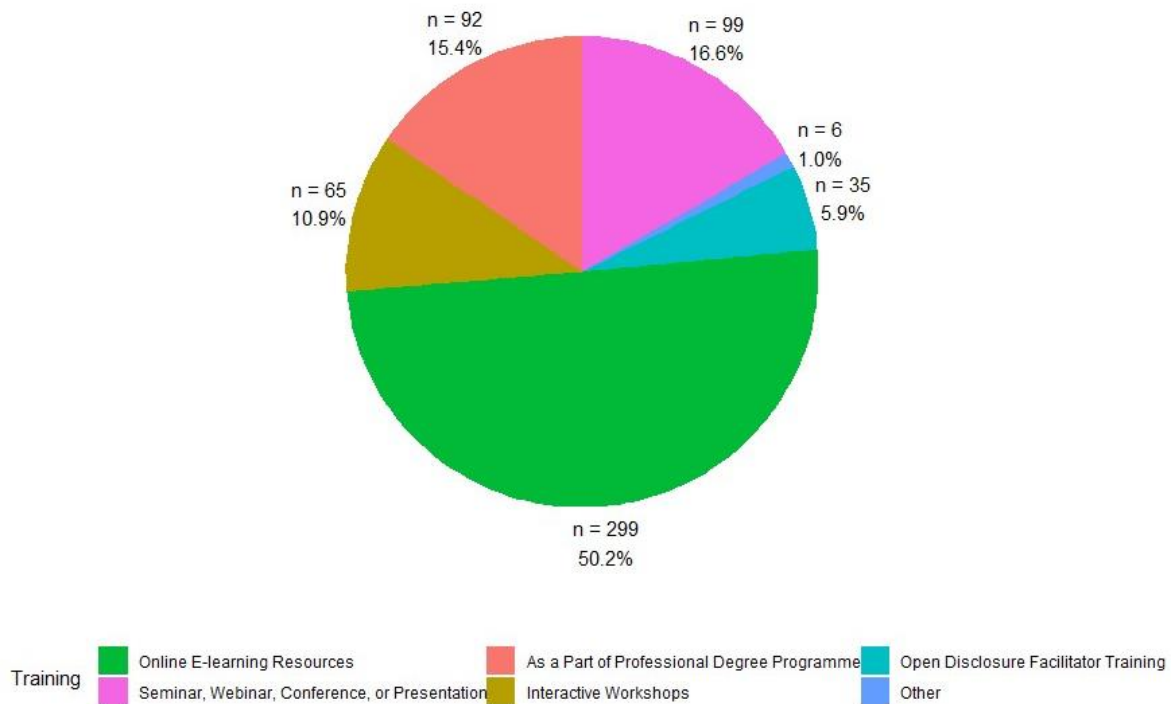


Figure 5 Involvement in Open Disclosure Training

Among those participants who reported they had been exposed to open disclosure training, 57% ($n = 238$) attended a single session, while 21% ($n = 86$) attended two sessions and 9% ($n = 37$) participated in three different types of open disclosure training. However, 9% ($n = 38$) of HCPs did not attend any open disclosure training. A small minority of participants (4%, $n = 15$) reported experiencing four different types of exposure to open disclosure training (Figure 6).

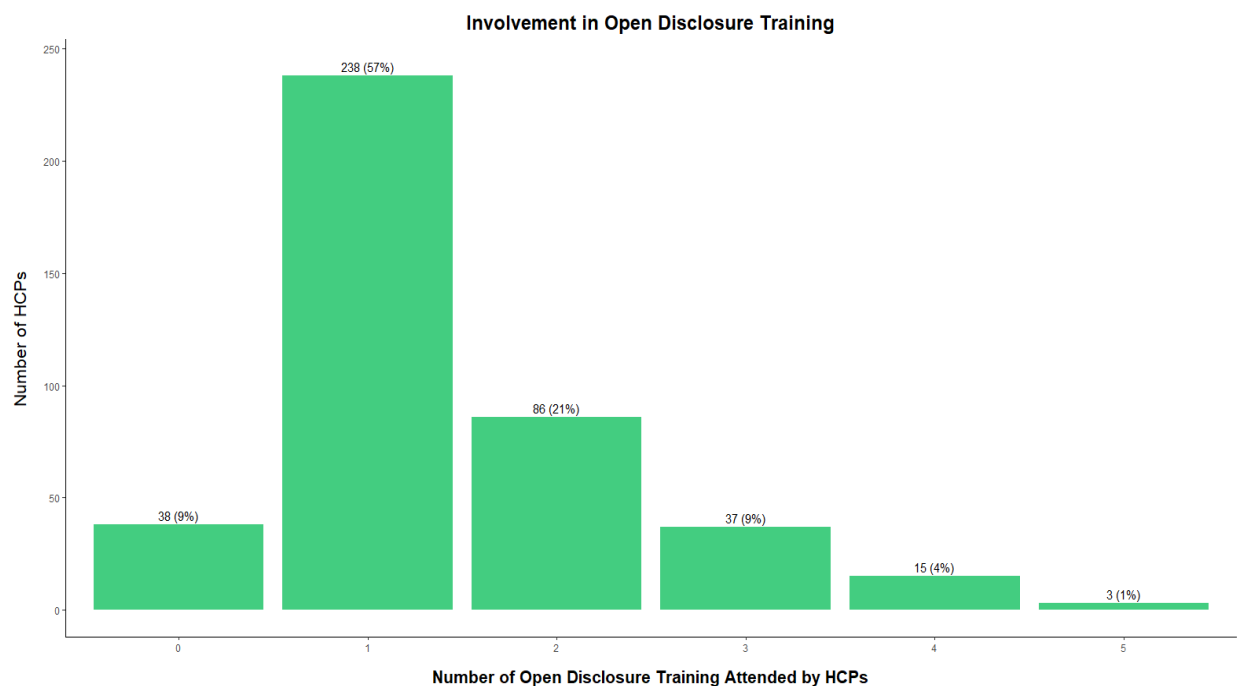


Figure 6 Number of Open Disclosure Training Undertaken by HCPs

5.2.3.1 Benefits of Open Disclosure Training

Figure 7 presents HCPs' perspectives on the benefits of open disclosure training in healthcare settings. The majority of HCPs (83.2%, $n = 347$) agree that open disclosure training is critical to the successful implementation of open disclosure policies. Likewise, most respondents (81.3%, $n = 339$) believe that a multidisciplinary approach to open disclosure training enhances the learning experience for HCPs. Three quarters of HCPs (75.1%, $n = 313$) acknowledge that a multidisciplinary training environment offers valuable insights into challenges faced by other HCPs around open disclosure. While 64.2% ($n = 267$) of HCPs credit the training with raising their awareness of protective legislation for HCPs engaged in the open disclosure process, a significant proportion 35.8% ($n = 149$) of participants were not aware of this protection. A slight majority (54.7%, $n = 228$) of HCPs reported being comfortable disclosing PSIs to patients and/or their relevant persons after completing the training.

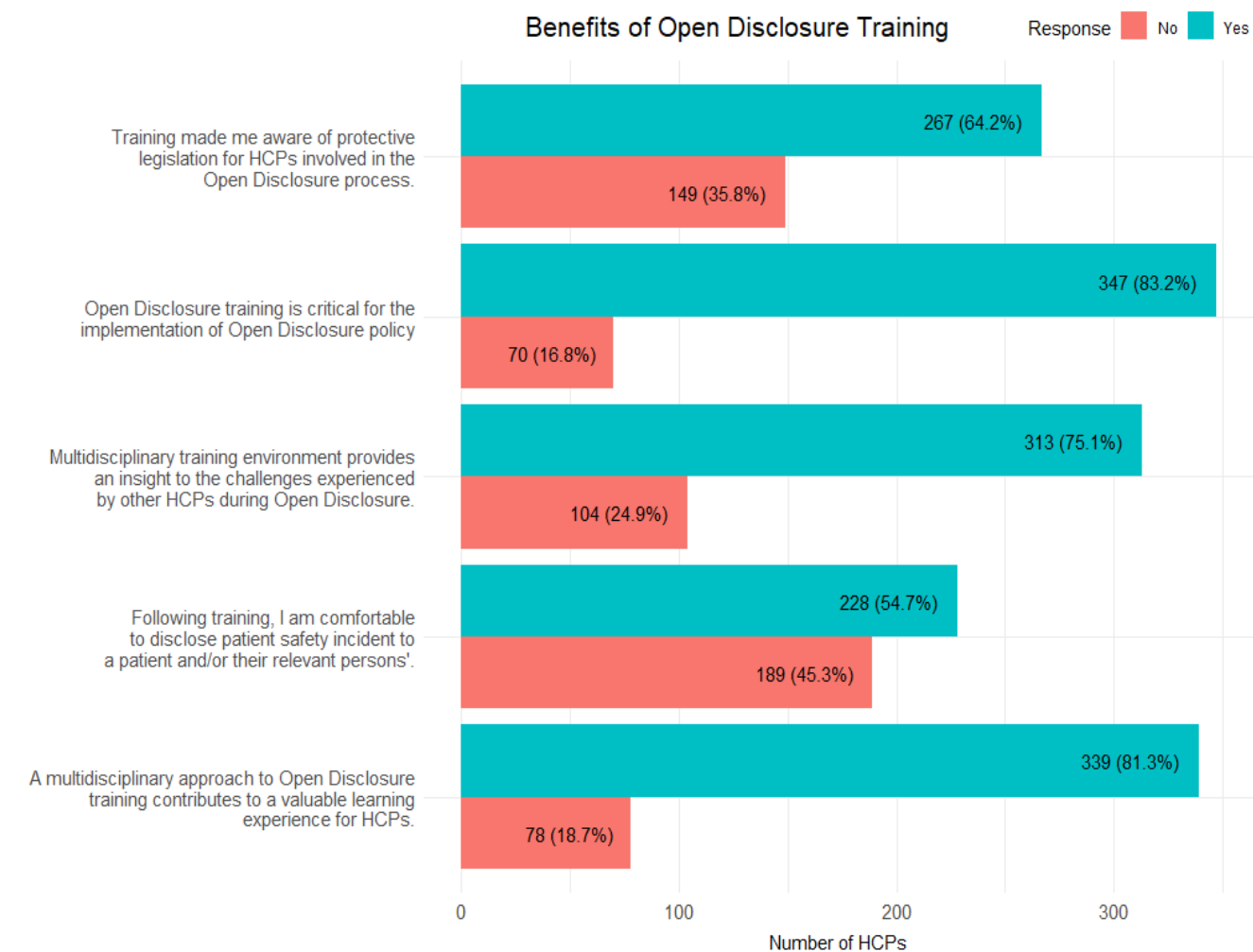


Figure 7 Benefits of Open Disclosure Training

5.2.4 Patient Safety Incident

This section outlines HCPs involvement in PSIs, categorised into "No" and "Yes." The frequencies and percentages are provided for each response. Significantly more HCPs (54.6%, $n = 207$) had experienced involvement in PSIs, but a large proportion of 45.4% ($n = 172$) reported they had not been involved in PSIs (Figure 8).

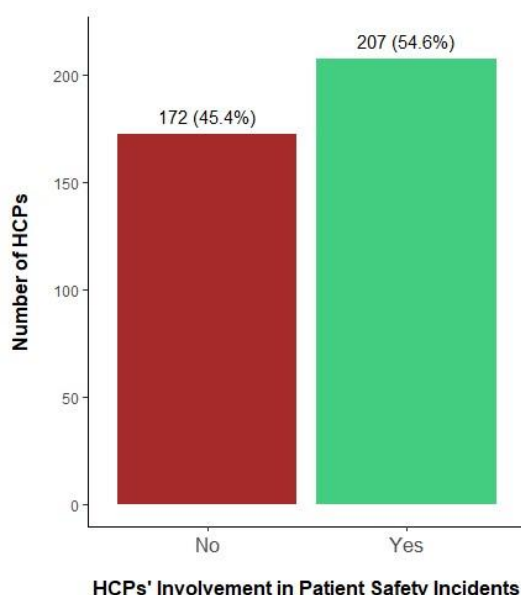


Figure 8 Involvement in Patient Safety Incident

5.2.4.1 Nature of Involvement in the Open Disclosure of Patient Safety Incident

The presented data outlines the nature of HCPs involvement in PSIs, specifically focusing on their engagement in various aspects of patient discussions and meetings. A significant portion of HCPs (38.02%, $n = 119$) actively participated in the initial discussions with patients and/or their families following a PSI. A notable proportion (29.71%, $n = 93$) engaged in open disclosure discussions, which involve honestly addressing incidents with patients and their families. About 19.17% ($n = 60$) of HCPs were involved in pre-meeting discussions related to PSIs. A smaller group (13.10%, $n = 41$) did not participate in patient meetings following safety incidents. The responses below are presented in terms of frequency and percentages for each type of involvement (Table 14).

Table 14 Nature of Involvement in the Open Disclosure of PSI

Nature of Involvement	Frequency	Percent (%)
Initial discussion with the patient and/or their family or significant others	119	38.02%
Pre-meeting discussions	60	19.17%
Open Disclosure discussions	93	29.71%
I did not participate in patient meetings	41	13.10%
Total	313	42.1%

5.3 Attitudes of HCPs towards Disclosure of PSIs

This section presents HCPs attitudes toward disclosing PSIs. The responses were collected on a five-point scale ranging from "Absolutely Agree" to "Absolutely Disagree."

5.3.1 Values or Ethics for Interprofessional Practice

The large majority of HCPs expressed disagreement with withholding information about a medical error (93.3%, $n = 388$) and the notion that disclosing an error is unnecessary if it does not harm the patient (92.5%, $n = 383$). An overwhelming majority believed disclosing medical errors as a health care team improves patient trust (80.8%, $n = 333$) and demonstrates a patient safety culture (89.7%, $n = 371$) (Figure 9).

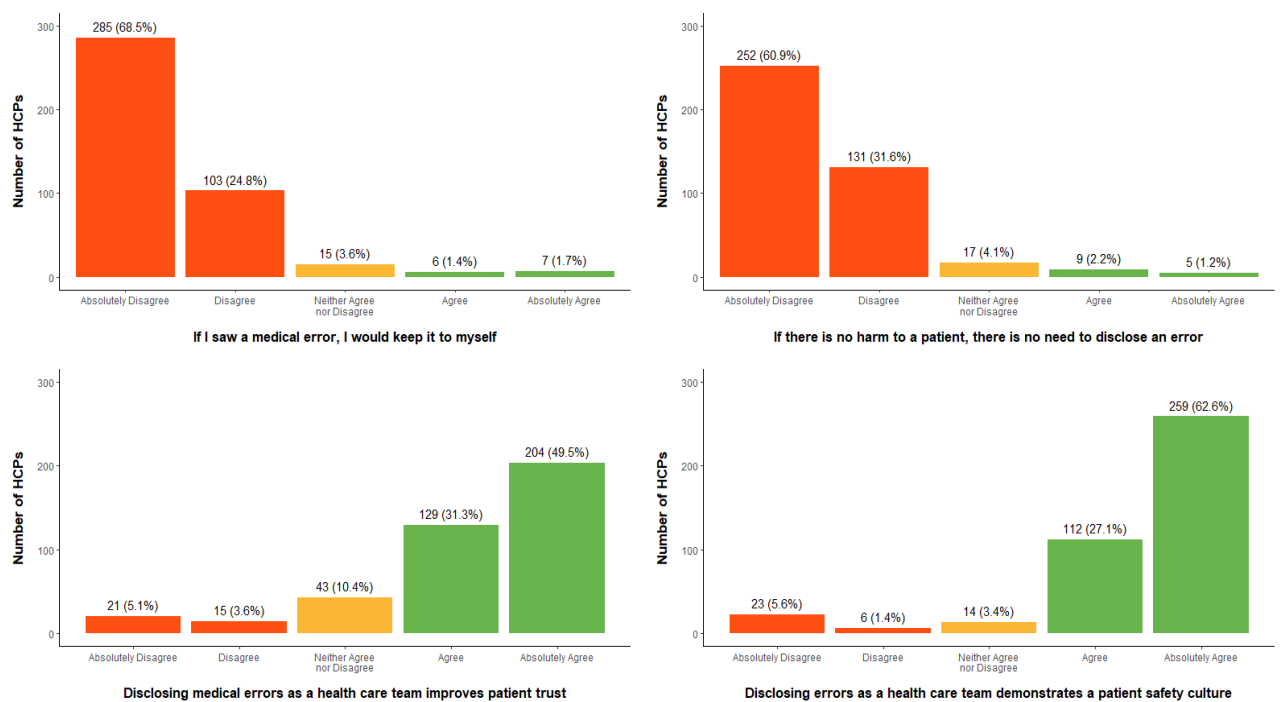


Figure 9 Values or Ethics for Interprofessional Practice

5.3.2 Roles or Responsibilities

A significant number of HCPs (87.5%, $n = 363$) held a differing view on whether only the medical team could determine if a PSI occurred during patient care. Concerning the disclosure of PSIs, 62.2% ($n = 257$) opposed the notion that it should be done only by the person directly involved, while 21.3% agreed. The majority, 85.9% ($n = 355$), affirmed that disclosing PSIs is everyone's responsibility (Figure 10).

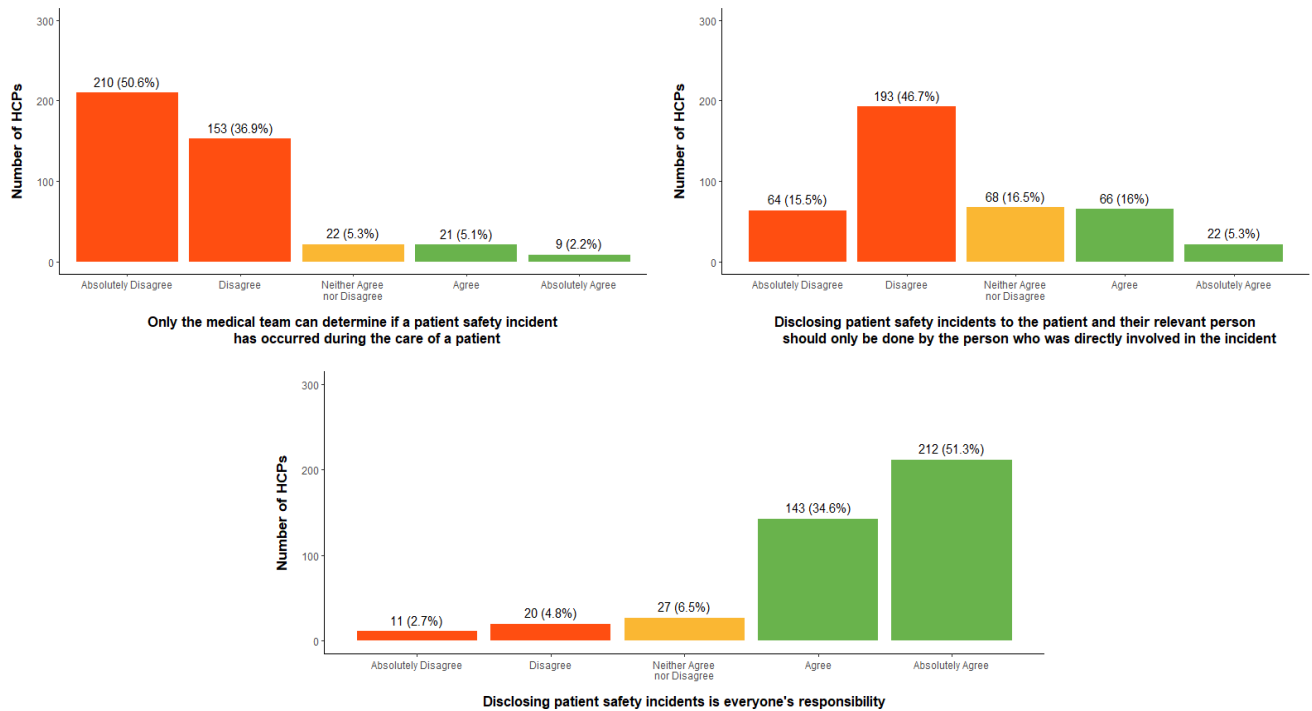


Figure 10 Roles or Responsibilities

5.3.3 Interprofessional Communication

A significant majority of HCPs (80.7%, $n = 330$) felt comfortable supporting and advising a peer on how to respond to an error. However, 24.8% ($n = 101$) expressed fear that other HCPs might doubt their professional ability if made aware of their involvement in a PSI. The large majority, 78.4% ($n = 320$) of HCPs demonstrated awareness of policies and guidelines to assist them in effectively communicating patient safety concerns (Figure 11).

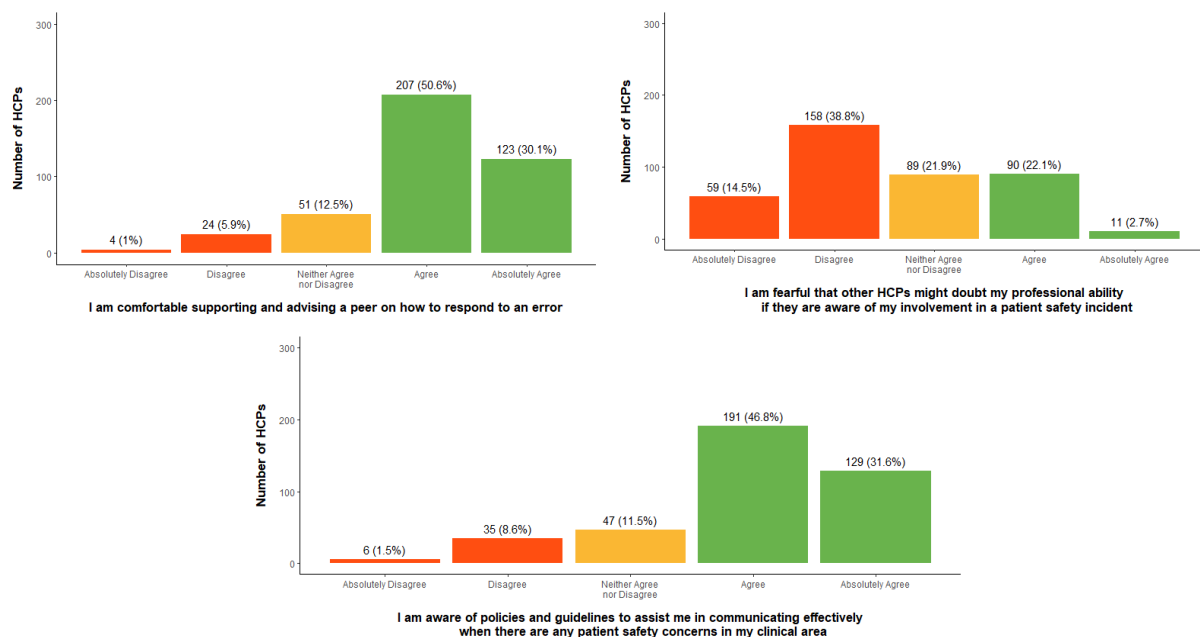


Figure 11 Interprofessional Communication

5.3.4 Teams and Teamwork

The importance of disclosing PSIs as a healthcare team to promote a patient safety culture was strongly recognised by HCPs (95.3%, $n = 389$). The HCPs (94.4%, $n = 385$) also believed that disclosing PSIs as a team demonstrates a patient-centred approach to health care. Most HCPs (77.4%, $n = 316$) agreed that the multidisciplinary team worked well together and resolved disagreements when managing and responding to PSIs (67.6%, $n = 275$) by focusing on ‘*not who is right but what is best for the patient*’ in their clinical area. However, a small portion of HCPs (9.1%, $n = 37$) and (12.4%, $n = 38$) were not in agreement (Figure 12).

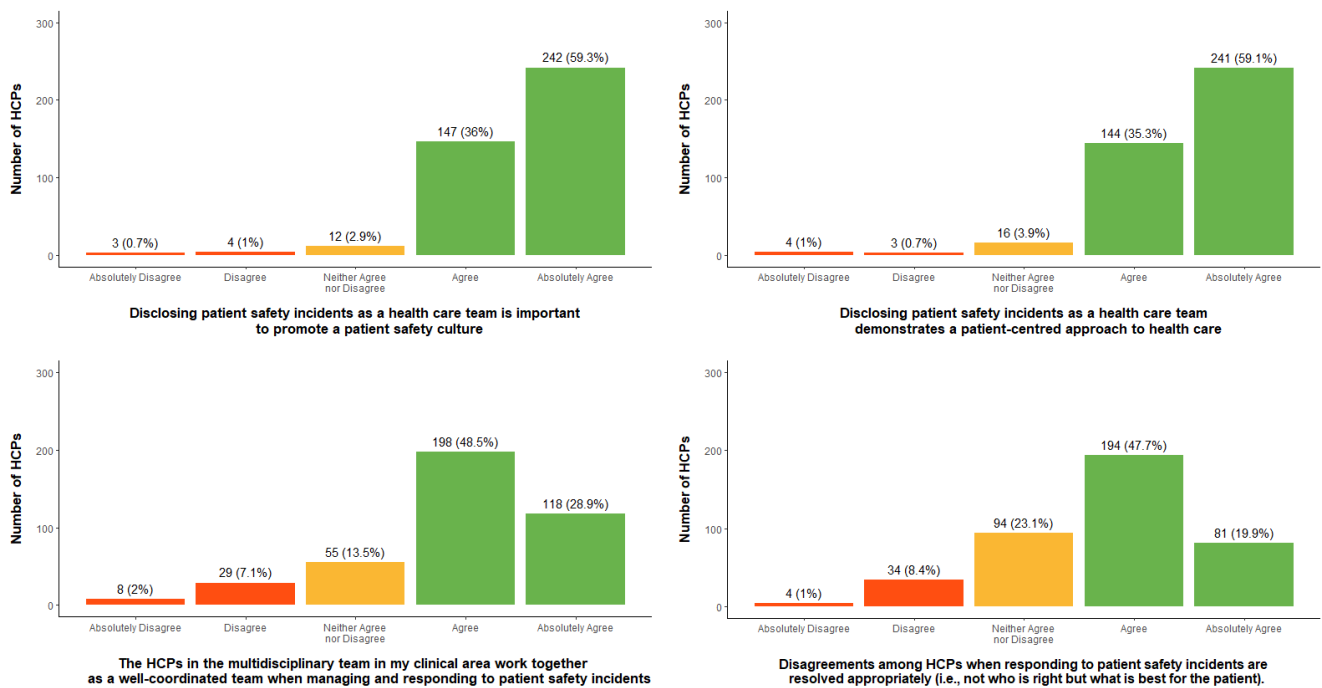


Figure 12 Teams and Teamwork

5.4 Perceptions of Healthcare Professionals toward Disclosure of PSIs

This section presents the findings on the perception of HCPs toward disclosing PSIs. The responses were collected on a five-point scale ranging from "Absolutely Agree" to "Absolutely Disagree."

5.4.1 Open Disclosure across Harm Levels

The data outlines the perception of HCPs about disclosing PSIs to the patient and/or their relevant person(s), depending on whether the error led to serious harm, minor harm, or no harm.

The large majority of HCPs strongly endorsed the notion that, in the event of a medical error causing serious harm (95.6%; $n = 391$) or minor harm (96.1%; $n = 393$), patients and/or their relevant person(s) should be notified.

Only a small number of HCPs disagreed with notifying patients and/or their relevant person(s) in the event of a medical error causing serious harm (1.7%, $n = 7$) or minor harm (1.0%, $n = 4$) in comparison to no harm events

($n = 16$, 3.9%). Around 16.4% ($n = 67$) of HCPs demonstrated neutrality with their responses to open disclosure across harm levels (Figure 13).

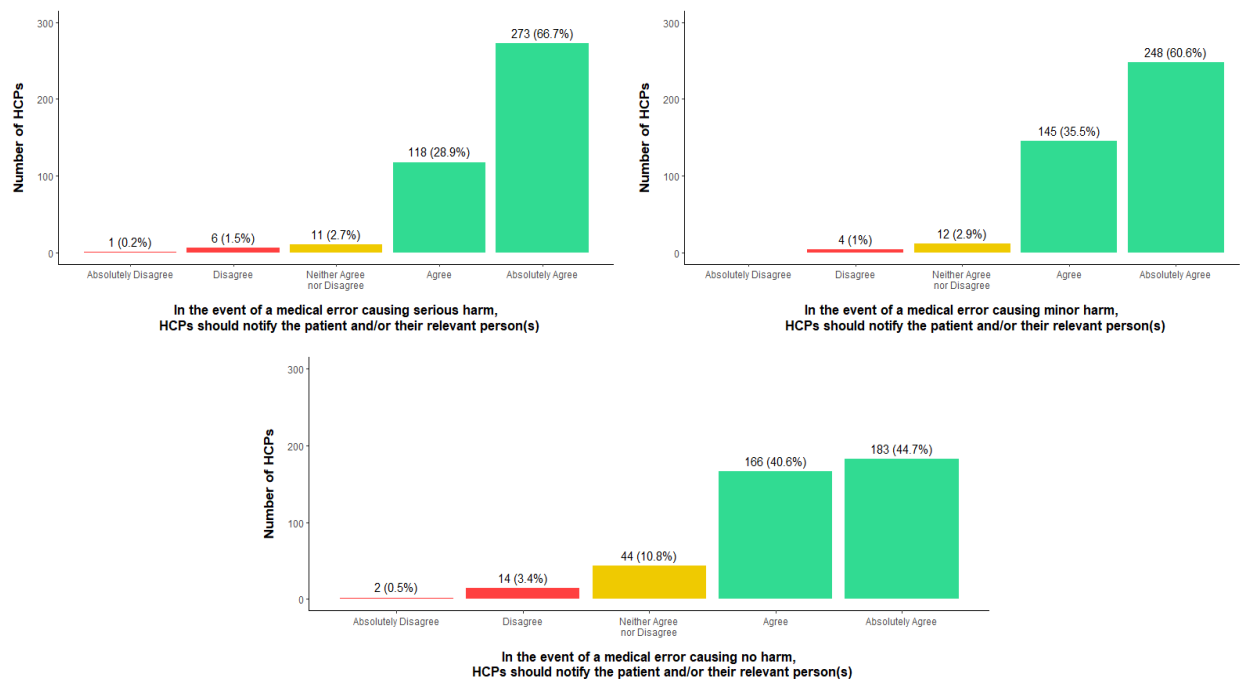


Figure 13 Open Disclosure across harm levels

5.4.2 Open Disclosure across Situations

The majority of HCPs (81.2%, $n=333$) believed that PSIs should be disclosed even when the patient or their relevant person(s) might not fully understand the explanation. A minority of HCPs remained neutral (11.7%, $n = 48$) or disagreed (7.1%, $n = 29$). About 75.4% ($n = 309$) of HCPs expressed consensus with disclosing incidents even if the patient or their relevant person(s) may not want to know about them.

According to 85.6% ($n = 351$) and 75.1% ($n = 308$) of HCPs, PSIs should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would never know about the incident or that it would not be beneficial for them to find out about the incident. However, 70.4% of HCPs ($n = 288$) strongly disagreed that disclosure should be determined based on the severity of error or depending on whether it would benefit the patient or family (69.6%, $n = 285$) (Figure 14).

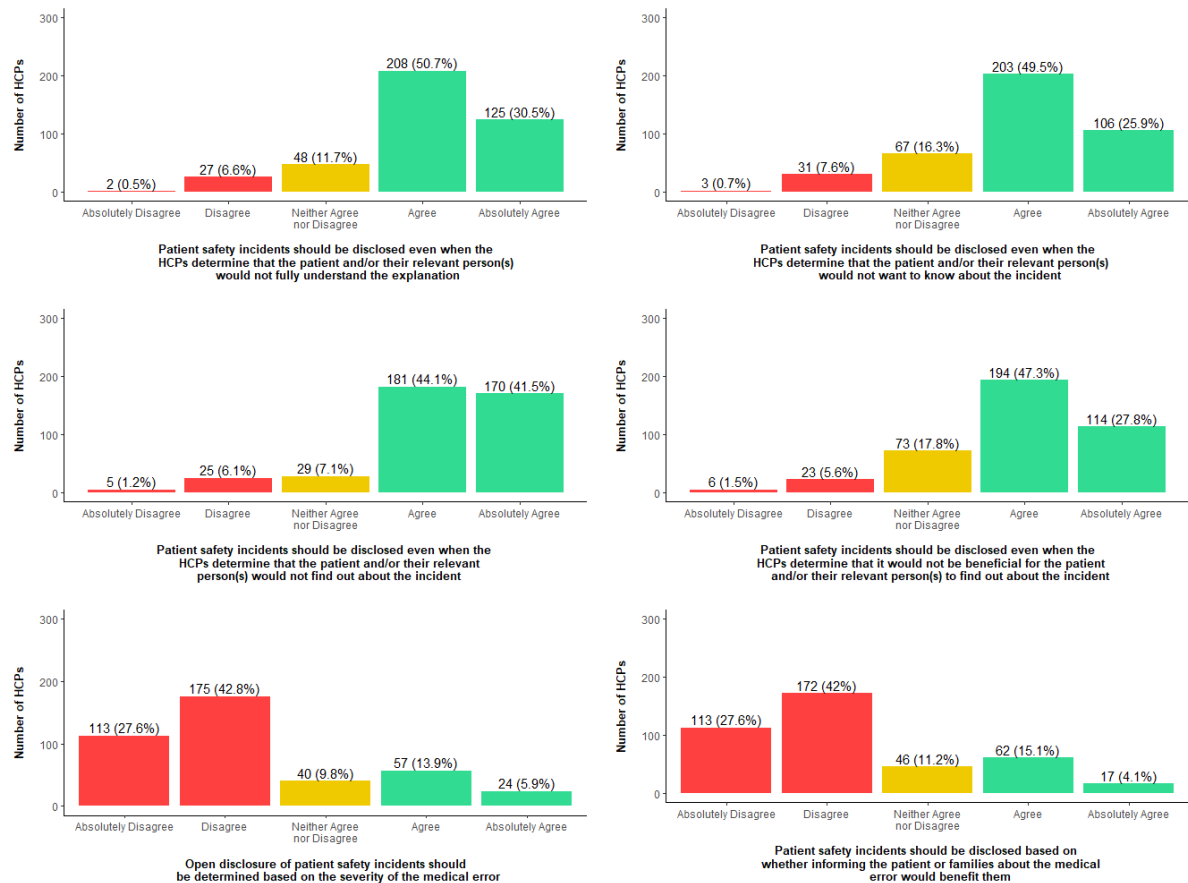


Figure 14 Open Disclosure across Situations

5.4.3 Justification of Open Disclosure

The majority of HCPs (95.6%, $n = 389$) valued apologising for PSIs. A substantial portion of HCPs (85.5%, $n = 348$) believed that disclosure is necessary because patients want to know about incidents. A small number of HCPs expressed disagreement (3.2%, $n = 13$), while 11.3% ($n = 46$) remained neutral with their response. At the same time, a notable number of HCPs (93.2%, $n = 379$) believed that disclosure should occur even if it causes loss for the hospital and HCPs.

The large majority of HCPs (91.9%, $n = 374$) in agreement that they are responsible for informing patients about their or their team's errors. About 5.4% ($n = 22$) of HCPs remained neutral in their responses for open disclosure even if it caused a loss to themselves and for the hospital and even though they have responsibility to inform their patients and/or their relevant person(s) about their or their team's errors (Figure 15).

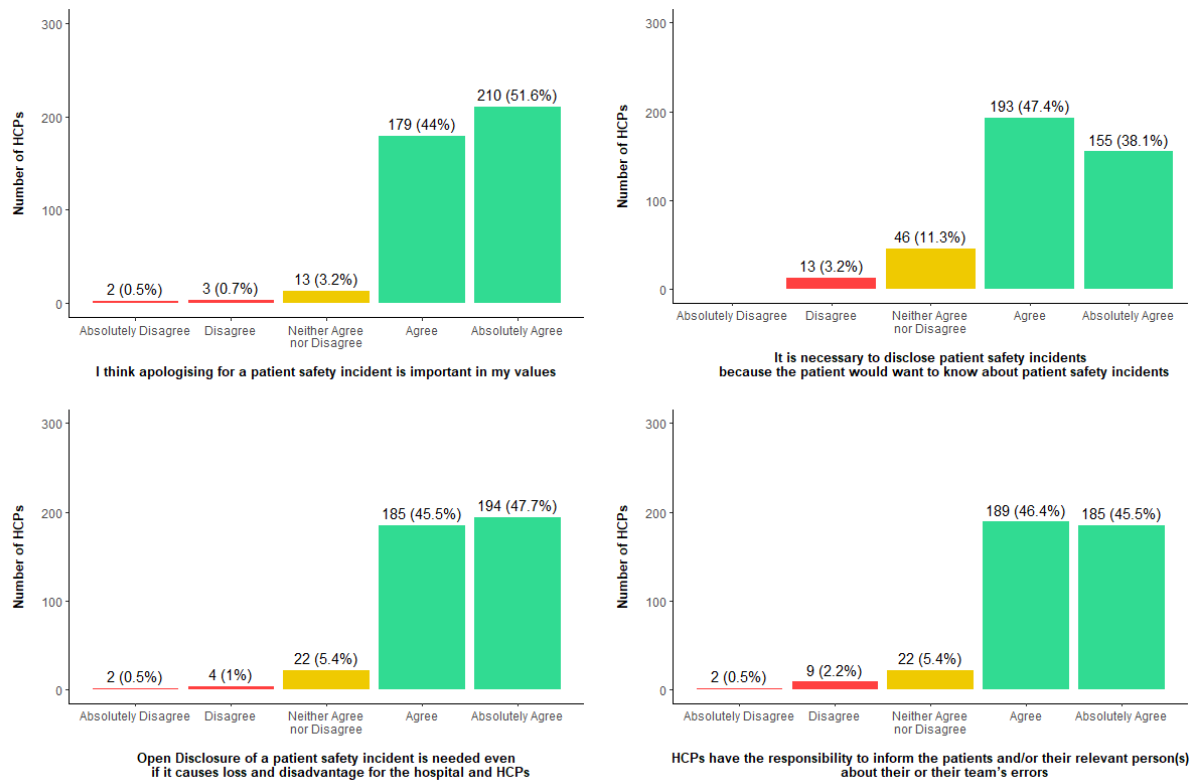


Figure 15 Justification of Open Disclosure

5.4.4 Negative Consequences of Open Disclosure

A minority of HCPs (29.1%, $n = 118$) believed that patients and families would not react negatively to disclosure, while 53.1% ($n = 215$) neither agreed nor disagreed. Meanwhile, 17.8% ($n = 72$) expressed concern about potential negative reactions from patients and families to open disclosure of PSIs.

Respondents were largely neutral (47.9%, $n = 194$) on whether open disclosure would lead to increased medical litigation. While 26.7% ($n = 108$) agreed that litigation would increase, 25.4% ($n = 103$) of HCPs disagreed. Regarding the impact of disclosing PSIs on the reputation of HCPs, 50.9% ($n = 206$) disagreed, 34.3% ($n = 139$) were neutral, and 14.8% ($n = 60$) agreed that it could damage their reputation.

The perceived risk of disciplinary action was more pronounced. While more than half of HCPs (58%, $n = 235$) disagreed, 26.7% remained neutral and 15.3% ($n = 62$) of HCPs agreed. HCPs also had varied opinions about criticism from colleagues, with 18.7% ($n = 76$) agreeing, 24.2% ($n = 98$) remaining neutral and 57.1% ($n = 231$) disagreed (Figure 16).

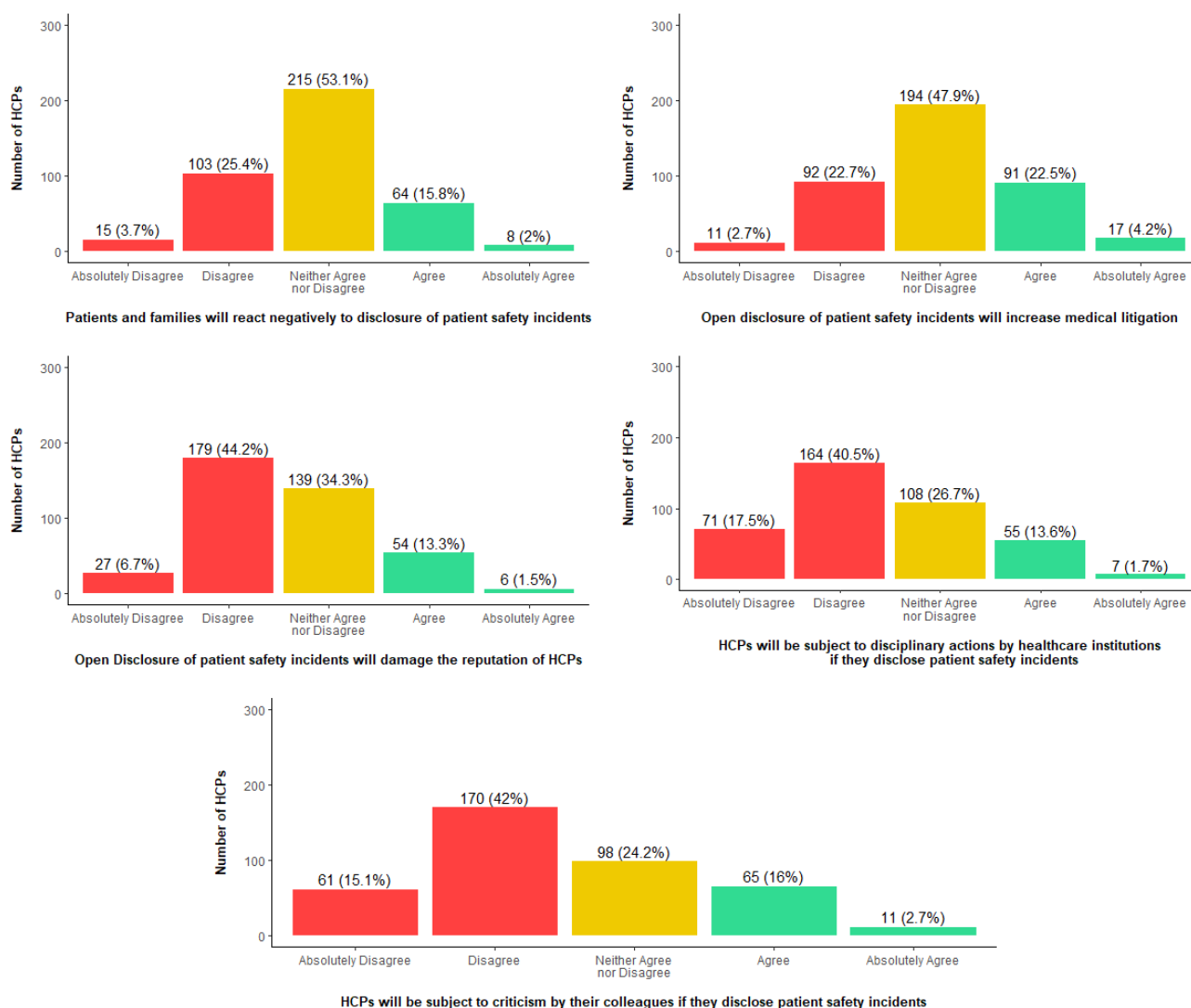


Figure 16 Negative Consequences of Open Disclosure

5.4.5 Positive Consequence of Open Disclosure

Most HCPs recognised positive outcomes, including increased trust (70.7%, $n = 283$) and recommendation of HCPs (51.8%, $n = 207$) who disclose PSIs. HCPs who remained neutral in their response and who believed patients would return to them for treatment if they disclosed PSIs were equal in number (38.8%, $n = 155$).

Moreover, a substantial percentage (76.8%, $n = 307$) of HCPs perceived that open disclosure would improve services and increase HCPs' interest in patient safety (86.9%, $n = 347$). The HCPs were largely in agreement that guilt would be reduced from open disclosure of PSIs (58.6%; $n = 234$). However, about 11.0% ($n = 44$) disagreed (Figure 17).

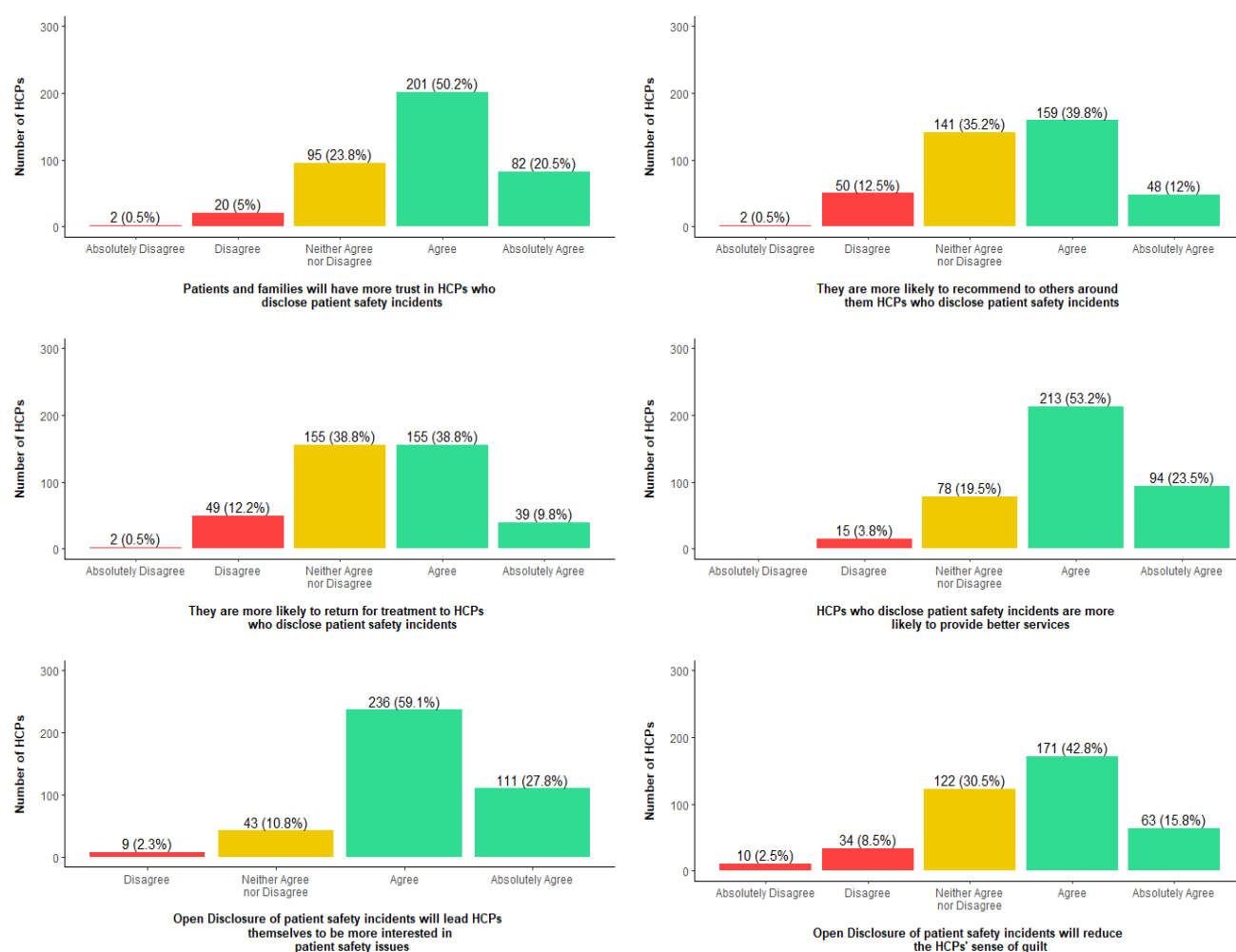


Figure 17 Positive Consequences of Open Disclosure

5.4.6 Facilitators of Open Disclosure

Many respondents (74.7%, $n = 295$) recognised that open disclosure requires higher ethical awareness among HCPs, while 7.6% ($n = 30$) disagreed. A large majority of HCPs (92.4%, $n = 367$) believed that education and training programmes are essential for promoting open disclosure.

The majority of HCPs strongly agreed (91.7%, $n = 364$) that healthcare institutions need personnel to support open disclosure. The highest consensus among HCPs (95.7%, $n = 379$) was about the need for a positive culture that supports open disclosure. Similarly, HCPs (95%, $n = 377$) overwhelmingly supported the provision of guidelines for open disclosure.

The majority of HCPs agreed (75.0%, $n = 298$) regarding the establishment of apology laws to protect healthcare providers, while 22.7% ($n = 90$) neither agreed nor disagreed (Figure 18).

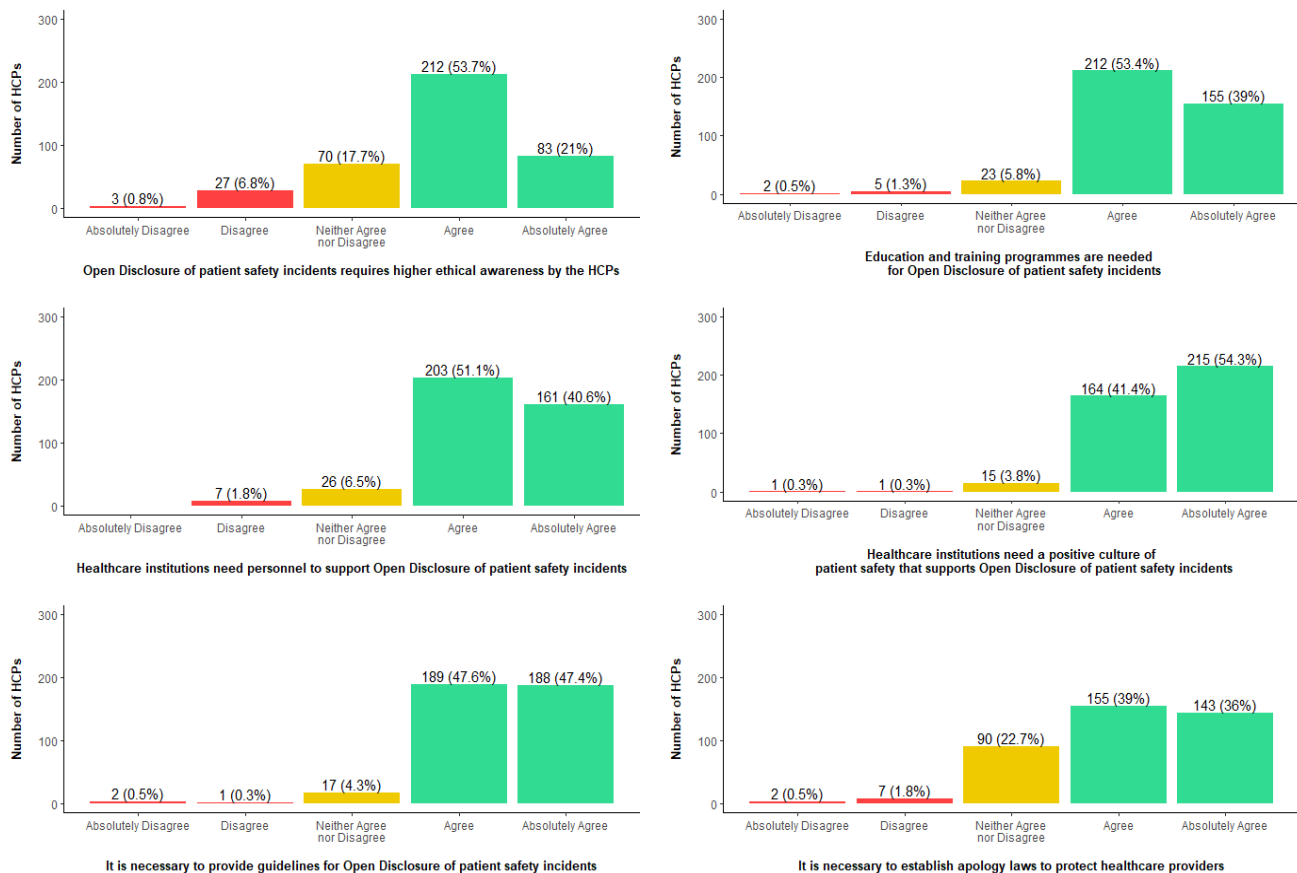


Figure 18 Facilitators of Open Disclosure

5.5 Survey instrument Scales

This section presents the scale variable derived from the survey instruments for attitudes and perceptions, which will be used in subsequent analysis.

The survey examining HCPs' attitudes toward the open disclosure of PSIs comprised 14 items divided into four sub-categories, including Values / Ethics for Interprofessional Practice (4 items), Roles / Responsibilities (3 items), Interprofessional Communication (3 items) and Teams and Teamwork (4 items).

The survey assessing HCPs' perceptions on open disclosure of PSIs comprised 30 items across six sub-categories. These sub-groups encompassed open disclosure across harm levels (3 items), open disclosure across situations (6 items), justification of open disclosure (4 items), negative consequences of open disclosure (5 items), positive consequences of open disclosure (6 items), and facilitators of open disclosure (6 items). The respondents rated each item on a 5-point Likert-type scale, ranging from 1 ("absolutely disagree") to 5 ("absolutely agree").

The analysis of the single Likert items would be unreasonable, leading to over-analysis of single-item data. Therefore, a scale variable was created for each sub-category by summing the responses to each Likert item, while also considering reverse-coded items. The aggregation of these Likert items for each sub-category is supported by Cronbach's alpha for each group, as detailed in Table 15. This analysis of Cronbach's alpha serves as a statistical indicator of the consistency of the items included in the attitude and perception scale sub-categories.

Table 15 Scale Variable with Cronbach analysis

Scale Variables	Mean ±SD	Cronbach Alpha	Scale Variables	Mean ±SD	Cronbach Alpha
Perception			Attitude		
Open Disclosure across harm levels	13.42 ±2.06	0.819	Values / Ethics for Interprofessional Practice	13.05 ±3.68	0.657
Open Disclosure across situations	23.55 ±5.86	0.754	Roles/ Responsibilities	12.07 ±3.01	.336
Justification of Open Disclosure	17.38 ±2.82	0.783	Interprofessional Communication	11.42 ±2.02	0.627
Negative consequences of Open Disclosure	16.61 ±4.51	0.793	Teams and Teamwork	16.75 ±3.22	0.749
Positive consequence of Open Disclosure	22.51 ±4.92	0.835			
Facilitators of Open Disclosure	25.44 ±4.27	0.825			

This approach, adapted by Lee and Kim (2020), has numerous benefits. Firstly, it reduces the number of variables to analyse in the quantitative section from 14 individual Likert items to 4 sub-categories in the attitude scale and from 30 individual Likert items to 6 sub-categories in the perception scale in the study. Secondly, combining multiple Likert items together produces discrete scale variables, to which non-parametric hypothesis testing procedures can be easily applied. Furthermore, combining multiple Likert scale items into sub-category totals provides a more granular scale by which to differentiate between sample participants (e.g., participants responses can take values in the range (4-20) for Values/Ethics for Interprofessional Practice as opposed to (1-5) for individual items.

In the next section, the scale variables corresponding to each subcategory will be explained. Guided by Cronbach's alpha analysis, the range of these variables along with their mean values and standard deviations, will be presented. Finally, an interpretation of each subcategory's scale variable will be provided to facilitate a deeper understanding in the context of future analyses.

5.5.1 HCPs' Attitudes to Open Disclosure of PSIs

The attitude scale was divided into four sub-categories: Values/Ethics for Interprofessional Practice, Roles/Responsibilities, Interprofessional Communication, and Teams and Teamwork. Each of these sub-categories has been discussed in greater detail relevant to this research study. The mean responses for each item were calculated measuring attitudes of HCPs towards open disclosure of PSIs (Table 16). The higher scores indicated a more favourable attitude of disclosure of PSIs.

The 'Values / Ethics for Interprofessional Practice' consists of four items. These statements capture varying values and ethical perspectives within interprofessional practice regarding the open disclosure of PSIs in healthcare. These differing viewpoints highlight the ongoing ethical discussion in healthcare, emphasising transparency, patient-centred care, and a patient safety culture. HCPs' responses can take values in the range of 4-20 for Values/Ethics for Interprofessional Practice.

The 'Role and Responsibilities' consists of three items. The statements reflect diverse perspectives on roles and responsibilities in the context of open disclosure of PSIs in healthcare. One perspective suggests a centralised role for the medical team in determining incidents. Another assigns the responsibility of disclosure to those directly involved in the incident. In contrast, the third statement emphasises a shared responsibility for disclosure among all HCPs. These viewpoints underscore ongoing discussions about the distribution of roles and responsibilities in ensuring transparency and patient safety. HCPs' responses can take values in the range of 3-15 for Role and Responsibilities.

The 'Interprofessional Communication' consists of three items. The statements capture different dimensions of interprofessional communication concerning the open disclosure of PSIs. These statements highlight a positive peer support, concerns about professional judgment following a safety incident, and stresses the importance of adhering to policies for effective communication in clinical settings. HCPs' responses can take values in the range of 3-15 for Interprofessional Communication.

The 'Teams and Teamwork' consists of four items. The statements highlight the crucial role of teams and teamwork in the open disclosure of PSIs. They underscore the importance of promoting a patient safety culture, adopting a patient-centred approach, ensuring coordination in multidisciplinary teams, and resolving disagreements with a focus on what is best for the patient. Together, these aspects emphasise the collaborative and coordinated efforts of healthcare teams in managing and responding to PSIs. HCPs' responses can take values in the range of 4-20 for Teams and Teamwork.

Table 16 HCPs' Attitudes to Open Disclosure of Patient Safety Incidents

Categories	Items	Mean ±SD	Cronbach Alpha
Values / Ethics for Interprofessional Practice	If I saw a medical error, I would keep it to myself. *	4.57 ±0.78	0.657
	If there is no harm to a patient, there is no need to disclose an error. *	4.48 ±0.78	
	Disclosing medical errors as a health care team improves patient trust.	4.17 ±1.09	
	Disclosing errors as a health care team demonstrates a patient safety culture.	4.40 ±1.03	
	Total	13.05 ±3.68	
Roles / Responsibilities	Only the medical team can determine if a patient safety incident has occurred during the care of a patient. *	4.29 ±0.94	.336
	Disclosing patient safety incidents to the patient and their relevant person should only be done by the person who was directly involved in the incident. *	3.51 ±1.10	
	Disclosing patient safety incidents is everyone's responsibility.	4.27 ±0.97	
	Total	12.07 ±3.01	
Interprofessional Communication	I am comfortable supporting and advising a peer on how to respond to an error.	4.03 ±0.87	0.627
	I am fearful that other Health Care Professionals might doubt my professional ability if they are aware of my involvement in a patient safety incident. *	3.40 ±1.07	
	I am aware of policies and guidelines to assist me in communicating effectively when there are any patient safety concerns in my clinical area.	3.99 ±0.95	
	Total	11.42 ±2.02	
Teams and Teamwork	Disclosing patient safety incidents as a health care team is important to promote a patient safety culture.	4.52 ±0.68	0.749
	Disclosing patient safety incidents as a health care team demonstrates a patient centred approach to health care.	4.51 ±0.70	
	The HCPs in the multidisciplinary team in my clinical area work together as a well-coordinated team when managing and responding to patient safety incidents.	3.95 ±0.94	
	Disagreements among HCPs when responding to patient safety incidents are resolved appropriately (i.e., not who is right but what is best for the patient).	3.77 ±0.90	
	Total	16.75 ±3.22	

*Reverse coded items

Findings:

Based on the mean responses for each item measuring attitude of HCPs on open disclosure of PSIs (Table 16), in the category of Values / Ethics for Interprofessional Practice, all four items yielded a highest mean score from 4.17 to 4.57.

In the category of roles and responsibilities, the statements “Only the medical team can determine if a PSI has occurred during the care of a patient” and “Disclosing PSIs is everyone's responsibility” had mean scores 4.29 and 4.27.

In the category of Interprofessional Communication, the statement “I am comfortable supporting and advising a peer on how to respond to an error” had the highest mean score at 4.03 (range 1-5).

In the category of Teams and Teamwork, both statements “Disclosing PSIs as a health care team is important to promote a patient safety culture” and “Disclosing PSIs as a health care team demonstrates a patient centred approach to health care” had a similar score of 4.51 and 4.52.

The summing of items within the sub-category was further justified by Cronbach alpha analysis and will be used for further analysis in the subsequent sections. For the sub-category ‘Values / Ethics for Interprofessional Practice’ was 0.657, Roles/Responsibilities was 0.336, Interprofessional Communication was 0.627 and ‘Teams and Teamwork’ was 0.749 respectively. The overall Cronbach alpha analysis for attitude scale is 0.775 ($N = 417$).

5.5.2 HCPs Perception on Open Disclosure of PSIs

The perceptions scale was divided into six sub-categories: open disclosure across harm levels (3 items), open disclosure across situations (6 items), justification of open disclosure (4 items), negative consequences of open disclosure (5 items), positive consequences of open disclosure (6 items), and facilitators of open disclosure (6 items). Each of these sub-categories has been discussed in greater detail relevant to this research study. The mean responses for each item were calculated measuring perception of HCPs towards open disclosure of PSIs (Table 17). The higher scores indicated a more favourable perception of disclosure of PSIs.

The ‘open disclosure across harm levels’ consists of three items. These statements capture varying perceptions about the necessity of open disclosure across different harm levels. The perspectives underscore an overarching commitment to communicate openly with patients and relevant individuals, irrespective of the level of harm resulting from a PSI. HCPs’ responses can take values in the range of 3-15 for open disclosure across harm levels.

The ‘open disclosure across situations’ consists of six items. These statements reflect diverse perspectives on open disclosure across situations related to PSIs aiming to prioritise patient well-being and maintain trust through clear and honest communication. These perspectives underscore the commitment to open disclosure even in situations where factors such as understanding, desire to know, awareness, perceived benefit, or severity might vary. HCPs’ responses can take values in the range of 6-30 for open disclosure across situations.

The 'Justification of open disclosure' consists of four items. These statements articulate various justifications for open disclosure in the context of PSIs. They encompass personal values, emphasising the importance of apologising; patient preferences, highlighting the necessity based on the patient's desire to know; ethical imperatives, asserting the need for disclosure despite potential loss for the hospital and HCPs; and professional responsibility, emphasising the duty of HCPs to inform patients and relevant individuals about errors. HCPs' responses can take values in the range of 4-20 for justification of open disclosure.

These statements outline perceived negative consequences linked to open disclosure of PSIs. Concerns include potential negative reactions from patients and families, increased medical litigation, damage to the reputation of HCPs, the risk of disciplinary actions from institutions, and the possibility of facing criticism from colleagues. HCPs' responses can take values in the range of 5-25 for negative consequences of open disclosure.

The 'Positive consequence of open disclosure' consists of six items. These statements outline positive consequences linked to open disclosure of PSIs. They include increased trust between patients and HCPs, greater likelihood of recommendations, higher patient retention, improved service quality, heightened interest in patient safety issues among healthcare providers, and potentially a reduction in the sense of guilt. HCPs' responses can take values in the range of 6-30 for positive consequences of open disclosure.

The 'Facilitators of open disclosure' consists of six items. The statements highlight key facilitators for open disclosure of PSIs, including the importance of higher ethical awareness among HCPs, the need for education and training programmes, the role of dedicated personnel within institutions, the significance of a positive safety culture, the necessity of clear guidelines, and the establishment of apology laws for legal protection. These facilitators collectively contribute to creating an environment supportive of transparent communication in healthcare settings. HCPs' responses can take values in the range of 6-30 for facilitators of open disclosure.

Table 17 HCP's' Perceptions of Open Disclosure of PSIs

Categories	Items	Mean ±SD	Cronbach Alpha
Open disclosure across harm levels	In the event of a medical error causing serious harm, HCPs should notify the patient and/or their relevant person(s).	4.60 ±0.64	0.819
	In the event of a medical error causing minor harm, HCPs should notify the patient and/or their relevant person(s).	4.56 ±0.60	
	In the event of a medical error causing no harm, HCPs should notify the patient and/or their relevant person(s).	4.26 ±0.82	
	Total	13.42 ±2.06	
Open disclosure across situations	Patient safety incidents should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not fully understand the explanation.	4.04 ±0.85	0.754
	Patient safety incidents should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not want to know about the incident.	3.92 ±0.89	
	Patient safety incidents should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not find out about the incident.	4.19 ±0.90	

	Patient safety incidents should be disclosed even when the HCPs determine that it would not be beneficial for the patient and/or their relevant person(s) to find out about the incident.	3.94 ±0.90	
	Open disclosure of patient safety incidents should be determined based on the severity of the medical error.*	3.72 ±1.18	
	Patient safety incidents should be disclosed based on whether informing the patient or families about the medical error would benefit them.*	3.74 ±1.14	
	Total	23.55 ±5.86	
Justification of Open Disclosure	I think apologising for a patient safety incident is important in my values.	4.45 ±0.65	0.783
	It is necessary to disclose patient safety incidents because the patient would want to know about patient safety incidents.	4.20 ±0.76	
	Open Disclosure of a patient safety incident is needed even if it causes loss and disadvantage for the hospital and HCPs.	4.39 ±0.68	
	HCPs have the responsibility to inform the patients and/or their relevant person(s) about their or their team's errors.	4.34 ±0.73	
	Total	17.38 ±2.82	
Negative consequences of Open Disclosure	Patients and families will react Negatively to disclosure of patient safety incidents. *	3.13 ±0.79	0.793
	Open disclosure of patient safety incidents will increase medical litigation. *	2.97 ±0.85	
	Open disclosure of patient safety incidents will damage the reputation of HCPs. *	3.41 ±0.86	
	HCPs will be subject to disciplinary actions by healthcare institutions if they disclose patient safety incidents. *	3.59 ±0.99	
	HCPs will be subject to criticism by their colleagues if they disclose patient safety incidents. *	3.51 ±1.02	
	Total	16.61 ±4.51	
Positive consequence of Open Disclosure	Patients and families will have more trust in HCPs who disclose patient safety incidents.	3.85 ±0.81	0.835
	They are more likely to recommend to others around them HCPs who disclose patient safety incidents.	3.50 ±0.88	
	They are more likely to return for treatment to HCPs who disclose patient safety incidents.	3.45 ±0.85	
	HCPs who disclose patient safety incidents are more likely to provide better services.	3.97 ±0.76	
	Open disclosure of patient safety incidents will lead HCPs themselves to be more interested in patient safety issues.	4.13 ±0.68	
	Open disclosure of patient safety incidents will reduce the HCPs sense of guilt.	3.61 ±0.94	
	Total	22.51 ±4.92	

Facilitators of Open Disclosure	Open disclosure of patient safety incidents requires higher ethical awareness by the HCPs.	3.87 ±0.85	0.825
	Education and training programmes are needed for open disclosure of patient safety incidents.	4.29 ±0.68	
	Healthcare institutions need personnel to support open disclosure of patient safety incidents.	4.30 ±0.67	
	Healthcare institutions need a positive culture of patient safety that supports open disclosure of patient safety incidents.	4.49 ±0.61	
	It is necessary to provide guidelines for open disclosure of patient safety incidents.	4.41 ±0.63	
	It is necessary to establish apology laws to protect healthcare providers.	4.08 ±0.83	
	Total	25.44 ±4.27	

*Reverse coded items

Findings:

Thus, mean responses for each item were calculated measuring perception of HCPs towards open disclosure of PSIs. The higher scores indicated a more favourable perception towards open disclosure of PSIs.

Based on the mean responses for each item measuring perception of HCPs on open disclosure of PSIs, in the category of 'open disclosure across harm levels', all three items had similar mean scores from 4.26 to 4.60.

In the category of 'open disclosure across situations', the statement "PSIs should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not find out about the incident" had the highest mean score at 4.19. Followed by PSIs should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not fully understand the explanation had a mean score of 4.04.

In the category of 'justification of open disclosure', all four items had similar mean scores ranging from the statement 'It is necessary to disclose PSIs because the patient would want to know about PSIs' with a mean score of 4.20 to 'I think apologising for a PSIs is important in my values' with a mean score of 4.45.

In the category of 'negative consequences of open disclosure', all five items had mean scores below 3.59. The statement 'open disclosure of PSIs will increase medical litigation' had the lowest mean score of 2.97.

In the category of 'Positive consequence of open disclosure', all items had mean score between 3.45 to 3.97 except for the statement 'open disclosure of PSIs will lead HCPs themselves to be more interested in patient safety issues' with the highest mean score of 4.13.

In the category of 'facilitators of open disclosure' all five items had mean score above 4 except for 'open disclosure of PSIs requires higher ethical awareness by the HCPs' with a mean score 3.87.

The summing of items within the sub-category of perception scale was further justified by Cronbach alpha analysis and will be used for further analysis in the subsequent sections. For the sub-category 'Open disclosure across harm levels' was 0.819, 'Open disclosure across situations' was 0.754, 'Justification of open disclosure' was 0.783, 'Negative consequences of open disclosure' was 0.793, 'Positive consequence of open disclosure' was 0.835 and 'Facilitators of open disclosure' was 0.825 respectively. The overall Cronbach alpha analysis for perceptions scale is 0.902 ($N = 417$).

5.6 Univariate Analysis of HCPs Attitudes to Disclosure of PSIs

Univariate analysis examined variables such as age, gender, position, years of experience, open disclosure training, and involvement in PSIs to assess their association with attitudes towards open disclosure of PSIs.

To compare differences between two independent sample groups with an ordinal or non-normally distributed dependent variable, the Mann-Whitney U test is used. As the scale variables computed in the section 5.5 are not continuous, nonparametric test is employed as an alternative to the t-test. This is crucial for understanding whether attitudes towards open disclosure of PSIs differ based on HCP's gender, involvement in open disclosure training and patient safety incident.

Simultaneously, the Kruskal-Wallis H test is a rank-based nonparametric test is employed to assess whether there are statistically significant differences between two or more groups of an independent variable, specifically when analysing a continuous or ordinal dependent variable. It is considered as a nonparametric alternative to the one-way ANOVA, when the data is discrete, ordinal, and non-normally distributed. This is important to understand whether attitude towards open disclosure of PSIs differ based on HCP's age, current position, years of experience in the healthcare sector.

The statistically significant associations between HCPs' socio-demographic characteristics and their attitude towards open disclosure of PSIs are outlined in the following section (Table 18). As the data was non-normally distributed upon visual inspection, the mean rank score was used for both Mann-Whitney U test and Kruskal-Wallis H tests. As each data point is assigned a rank based on its position within the overall distribution, this allows for assessment about the distributional differences and comparisons without assuming a specific shape of the distribution. For instance, a higher mean rank suggests that HCPs who attended interactive workshops on open disclosure tended to score higher on the measured variable compared to those who did not.

The next section provides an exploration of the relationship between age, gender, current position, and years of experience with values or ethical perspectives within interprofessional practice, roles, and responsibilities, interprofessional communication and the crucial role of teams and teamwork in the context of Open Disclosure of patient safety incidents among HCPs.

5.6.1 HCPs Attitudes to Disclosure of PSIs and Socio-Demographic Characteristics

5.6.1.1 Values or Ethics for Interprofessional Practice

The Kruskal-Wallis 'H' test revealed a significant difference in values or ethical perspectives for Interprofessional Practice (Section 5.5) related to opinions on open disclosure across different age groups ($\chi^2(4) = 27.602, p < 0.001$). Specifically, HCPs aged 21-30 reported the highest mean rank of 167.49 for values or ethical perspectives related to Interprofessional Practice. However, no significant differences were found among Medical Professionals, Nursing and Midwifery, and Health and Social Care Professionals ($\chi^2(2) = 2.849, p = 0.241$ in terms of gender or years of experience. These findings suggest that age may influence perceived values or ethics in Interprofessional Practice, while gender, current position, and years of experience do not appear to be significant factors, as indicated by the reported statistical values.

5.6.1.2 Roles or Responsibilities

The Kruskal-Wallis and Mann Whitney U tests were conducted to examine differences in roles and responsibilities (Section 5.5) concerning the open disclosure of patient safety incidents among HCPs across different socio-demographic characteristics. The results indicate age may influence a centralised role for the medical team in determining incidents or assign responsibility to those directly involved in the incident or emphasise it as a shared responsibility among all HCPs, $\chi^2 (4) = 20.259$, $p < 0.001$, with the highest mean rank score of 224.76 for HCPs aged 41-50 years, 199.45 for those 51-60 years, 196.19 for 21-30 years, 176.37 for 31-40 years and 103.23 for over 61 years.

The age group 41-50 years emerges with the highest mean rank, suggesting a comparatively greater emphasis on these responsibilities, while the age group over 61 years registers the lowest mean rank, indicative of reduced involvement in these responsibilities among HCPs. Univariate analysis revealed no statistically significant effect of gender, current position, and years of experience in determining roles and responsibilities related to the Open Disclosure of patient safety incidents.

5.6.1.3 Interprofessional Communication

The Kruskal-Wallis Test was conducted to evaluate differences in Interprofessional communication (Section 5.5) related to open disclosure among HCPs in different age groups, current position, and years of experience. While the Mann-Whitney U test was performed between the gender groups concerning the open disclosure of patient safety incidents. The results indicate a statistically significant effect of age on Interprofessional communication, $\chi^2 (4) = 33.088$, $p < 0.001$, with a highest mean rank score of 234.02 for HCPs aged 41-50 years ($n = 114$), 210.55 for 51-60 years ($n = 64$), 183.64 for 31-40 years ($n = 119$), 156.92 for over 61 years and 146.54 for 21-30 years ($n = 79$).

The univariate analysis also showed a significant effect of the type of profession on Interprofessional communication, with a chi-square value of $\chi^2 (2) = 16.969$ and a $p\text{-value} < 0.001$. Nursing and Midwifery professionals ($n = 278$) had a significantly higher mean rank of 210.26 compared to medical professionals ($n = 32$), with a mean rank of 157.95. While Health & Social Care Professionals category ($n = 80$) had a mean rank of 159.22, which is higher than Medical Professionals and still relatively lower than Nursing and Midwifery professionals.

This suggests that HCPs aged 41-50 years ($n = 114$) and Nursing and Midwifery professionals ($n = 278$) expressed comfort in supporting and advising peers on responding to errors. However, they also conveyed a fear that other HCPs might doubt their professional ability if aware of their involvement in a patient safety incident. Despite this concern, they acknowledged their awareness of policies and guidelines to facilitate effective communication regarding patient safety concerns in their clinical practice areas.

5.6.1.4 Teams and Teamwork

The Kruskal-Wallis H test revealed a statistically significant difference in promoting a patient safety culture, patient centred approach to care, managing and responding to patient safety incidents and resolving disagreements among HCPs based on their current position, $\chi^2 (2) = 10.411$, $p = 0.005$, with a mean rank score

of 207.89 for Nurses and Midwives, 174.70 for Medical Professionals and 165.89 for Health and Social Care Professionals. However, there were no statistically significant differences between the different age groups, gender, and years of experience with regards to teams and teamwork concerning Open Disclosure of PSIs.

Table 18 Univariate Analysis of Association between HCPs Attitude to Disclosure of PSIs and Socio-Demographic Characteristics

	Values / Ethics for Interprofessional Practice			Roles / Responsibilities			Interprofessional Communication			Teams and Teamwork		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Age^b			< 0.001*			< 0.001*			< 0.001*			0.189
21-30 years	78	167.49		80	196.19		79	146.54		79	177.00	
31-40 years	119	185.21		118	176.37		119	183.64		121	192.64	
41-50 years	114	236.12		114	224.76		114	234.02		114	214.27	
51-60 years	66	191.49		66	199.45		64	210.55		64	194.50	
>61 years	13	121.96		13	103.23		12	156.92		12	173.13	
Gender^a			0.114			0.057			0.164			0.606
Male	52	172.18		52	168.15		51	173.91		51	202.38	
Female	336	197.95		338	199.71		336	197.05		338	193.89	
Current Position^b			0.241			0.462			<0.001*			0.005*
Medical Professional	32	190.11		33	184.08		32	157.95		32	174.70	
Nursing and Midwifery	279	201.69		279	201.48		278	210.26		279	207.89	
Health & Social Care Professionals	80	178.52		81	186.85		80	159.22		81	165.89	
Years of Experience^b			0.376			0.418			<0.001*			0.812
<10 years	109	161.60		111	165.21		111	142.23		111	167.19	
11-20 years	122	177.91		121	174.52		121	180.07		121	175.72	
21-30 years	72	186.33		72	190.34		72	203.40		72	180.84	
>31 years	44	173.72		44	171.95		42	185.98		42	171.18	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.6.2 HCPs Attitudes to Disclosure of PSIs and Involvement in Open Disclosure Training

Univariate analysis of HCPs involvement in open disclosure training was conducted to explore possible association with the HCPs attitude on Disclosure of PSIs (Table 19).

5.6.2.1 Values or Ethics for Interprofessional Practice

The Mann-Whitney U Test was conducted to examine the differences in values or ethics for Interprofessional practice based on HCPs' involvement in different types of open disclosure training. HCPs who attended open disclosure training as part of their professional degree programme ($n = 91$) had a significantly higher mean rank (225.99) for values or ethics for Interprofessional practice compared to those who received training through other means. However, the Mann-Whitney U Test result for this comparison suggested a marginal significant difference ($p < 0.1$), $U = 12740.500$, $z = -1.865$, $p = 0.062$.

HCPs who participated in the interactive workshops ($n = 64$), Online/E-learning ($n = 293$) and open disclosure facilitator training ($n = 35$) had a varying level of mean rank 242.46, 213.28 and 254.74 respectively. The Mann-Whitney U Test result revealed a significant higher values and ethics for Interprofessional practice for the interactive workshops, Online/E-learning and open disclosure facilitator training with a p -value of 0.006, 0.045, 0.009 indicating a statistically significant difference ($p < 0.05$).

5.6.2.2 Roles or Responsibilities

HCPs who completed open disclosure facilitator training ($n = 35$) had a slightly higher mean rank of 241.07. $U = 5387.0$, $z = -1.818$, $p = 0.069$ compared to HCPs who received other type of learning. The Mann-Whitney U Test result for this comparison had a p -value of 0.069, indicating no statistically significant difference ($p > 0.05$). HCPs who had open disclosure training as part of their professional degree programme ($n = 91$) had a mean rank of 219.03 for roles and responsibilities. A Mann-Whitney U test found marginal statistically significant difference ($p < 0.01$) for the Interactive workshops on open disclosure, indicating that interactive workshops might have a slightly different influence on roles and responsibilities. ($U = 9570.0$, $z = -1.962$, $p = 0.050$).

5.6.2.3 Interprofessional Communication

HCPs who completed open disclosure facilitator training ($n = 35$) had a significantly higher mean rank of 262.37 compared to HCPs involved in the interactive workshops on open disclosure ($n = 64$), mean rank of 258.54 for Interprofessional communication compared to those who received other types of training. The Mann-Whitney U Test result showed a statistically significant difference in Interprofessional communication for HCPs who attended interactive workshops on open disclosure ($p < 0.001$) and Facilitator training ($p < 0.002$).

5.6.2.4 Teams and Teamwork

The Mann-Whitney U Test was conducted to assess the impact of different types of involvement in open disclosure training on HCPs' attitude to teams and teamwork in the context of open disclosure of PSIs. HCPs who had open disclosure training as part of their professional degree programme ($n = 92$) had a significant mean rank score of 232.62 for teams and teamwork in the open disclosure of PSIs. The Mann-Whitney U Test result for this comparison had a p -value of 0.008, indicating a statistically significant difference ($p < 0.05$). On the other hand, HCPs who completed open disclosure facilitator training ($n = 35$) had a significantly higher mean rank of 245.97

for teams and teamwork in the open disclosure of PSIs compared to those with other types of training. The Mann-Whitney U Test result for this comparison also had a p -value of 0.026, indicating a statistically significant difference ($p < 0.05$). Even though, HCPs who attended interactive workshops on open disclosure ($n = 64$) had a significantly higher mean rank of 230.36, their Mann-Whitney U Test result had a p -value of 0.050, indicating a marginally significant difference ($p < 0.1$).

Table 19 Univariate Analysis of Association between HCPs Attitudes to Disclosure of PSIs and Involvement in Open Disclosure Training

Involvement in Open Disclosure Training	Values / Ethics for Interprofessional Practice			Roles / Responsibilities			Interprofessional Communication			Teams and Teamwork		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Involvement in any Open Disclosure Training ^a			.160			.444			.870			.910
Yes	373	208.57		376	207.87		373	204.28		375	204.69	
No	38	180.82		36	192.15		34	200.88		33	202.33	
As a part of Professional Degree programme			0.062			0.250			0.803			0.008*
Yes	91	225.99		91	219.03		92	206.66		92	232.62	
No	320	200.31		321	202.95		315	203.22		316	196.31	
Seminar, Webinar, Conference or Presentations on Open Disclosure			0.575			0.422			0.489			0.480
Yes	97	211.77		99	214.77		97	211.13		97	211.70	
No	314	204.22		313	203.88		310	201.77		311	202.26	
Interactive Workshops on Open Disclosure			0.006*			0.050			<0.001*			0.050
Yes	64	242.46		65	232.77		64	258.54		64	230.36	
No	347	199.28		347	201.58		343	193.82		344	199.69	
Online/E-learning resources for Open Disclosure training			0.045*			0.596			0.533			0.837
Yes	293	213.28		297	208.41		294	206.23		296	205.22	
No	118	187.91		115	201.57		113	198.19		112	202.59	
Open Disclosure Facilitator training			0.009*			0.069			0.002*			0.026*
Yes	35	254.74		35	241.07		35	262.37		35	245.97	
No	376	201.46		377	203.29		372	198.51		373	200.61	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.6.3 HCPs Attitudes to Disclosure of PSIs and Benefits of Open Disclosure Training

Univariate analysis of benefits of open disclosure training was conducted to explore possible association with the HCPs attitude on Disclosure of PSIs (Table 20).

5.6.3.1 Values or Ethics for Interprofessional Practice

The Mann-Whitney U Test was conducted to examine the impact of different benefits associated with open disclosure training on HCP' values and ethics for Interprofessional practice. The results reveal the following significant findings:

HCPs who believe that open disclosure training is critical for the implementation of open disclosure policy ($n = 342$) reported significantly higher values and ethics (Mean Rank = 212.36), $U = 9624$, $z = -2.476$, $p = 0.013$, indicating a statistically significant difference ($p < 0.05$).

HCPs who stated that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 335$) reported a highly significant difference in values and ethics for Interprofessional practice (Mean Rank = 219.51), $U = 8205$, $z = -4.960$, $p = < 0.001$ compared to those who mentioned other benefits.

HCPs who highlighted that a multidisciplinary training environment provides insight into the challenges experienced by other HCPs during open disclosure training ($n = 308$) had significantly higher values and ethics (Mean Rank = 219.49), $U = 11707.500$, $z = -4.079$, $p = < 0.001$ indicating a highly significant difference ($p < 0.001$).

HCPs who mentioned that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 261$) reported a highly significant difference in their values and ethics for Interprofessional practice (Mean Rank = 229.21), $U = 13255.500$, $z = -5.496$, $p = < 0.001$.

HCPs who indicated that following training, they are comfortable disclosing PSIs to patients and/or their relevant persons ($n = 223$) had significantly higher values and ethics (Mean Rank = 241.78), $U = 12984.000$, $z = -6.814$, $p = < 0.001$, indicating a highly significant difference ($p < 0.001$).

5.6.3.2 Roles or Responsibilities

HCPs who indicated that following training, they are comfortable disclosing PSIs to patients and/or their relevant persons ($n = 226$) had a significantly higher mean rank of 227.63, $U = 16241.0$, $z = -4.020$ for roles and responsibilities compared to those who mentioned other benefits. The Mann-Whitney U Test result for this comparison had a p-value of < 0.001 , indicating a highly significant difference ($p < 0.001$). HCPs who emphasised that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 337$) had a mean rank of 212.49 for roles and responsibilities that they will have a more favourable view of roles and responsibilities. The Mann-Whitney U Test result for this comparison had a p-value of 0.028, indicating a statistically significant difference ($p < 0.05$).

5.6.3.3 Interprofessional Communication

The Mann-Whitney U Test was conducted to examine the impact of different benefits associated with open disclosure training on HCPs' perceived Interprofessional Communication.

HCPs who indicated that following training, they are comfortable disclosing PSIs to patients and/or their relevant persons ($n = 225$) had a significantly higher mean rank of 241.55, $U = 16241$, $z = -7.238$, $p < 0.001$ for Interprofessional communication compared to those who mentioned other benefits. HCPs who mentioned that training made them aware of protective legislation for HCPs involved in the process ($n = 263$) also had a significantly higher mean rank of 221.70, $U = 14019$, $z = -4.283$, $p < 0.001$ for Interprofessional communication. The Mann-Whitney U Test result for both had a p -value of <0.001 , indicating a highly significant difference ($p < 0.001$).

5.6.3.4 Teams and Teamwork

HCPs who believed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 335$) had a mean rank of 214.51 for teams and teamwork in the open disclosure of PSIs compared to those who perceived other benefits.

The Mann-Whitney U Test result had a p -value < 0.001 , indicating a highly significant difference ($p < 0.001$) for HCPs who believed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 335$) with a mean rank of 214.5, HCPs who felt that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 265$) with a mean rank of 217.85 and HCPs who reported being comfortable disclosing PSIs to patients and/or their relevant persons following training ($n = 226$) had a significantly higher mean rank of 233.78 for teams and teamwork in the open disclosure of PSIs compared to those who perceived other benefits.

Table 20 Univariate Analysis of Association between HCPs Attitude to Disclosure of PSIs and Benefits of Open Disclosure Training

Benefits of Open Disclosure Training ^a	Values / Ethics for Interprofessional Practice			Roles / Responsibilities			Interprofessional Communication			Teams and Teamwork		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Open Disclosure training is critical for the implementation of Open Disclosure policy			0.013*			0.254			0.925			0.862
Yes	342	212.36		344	209.44		343	203.77		344	204.93	
No	69	174.49		68	191.63		64	205.25		64	202.20	
A multidisciplinary approach to Open Disclosure training contributes to a valuable learning experience for HCPs			<0.001*			0.028*			0.052			<0.001*
Yes	335	219.51		337	212.49		334	209.24		335	214.51	
No	76	146.46		75	179.57		73	180.03		73	158.56	
Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during Open Disclosure			<0.001*			0.063			0.090			0.094
Yes	308	219.49		311	212.65		309	209.51		310	209.87	
No	103	165.67		101	187.56		98	186.63		98	187.51	
Training made me aware of protective legislation for HCPs involved in the Open Disclosure process			<0.001*			0.065			<0.001*			0.001*
Yes	261	229.21		264	213.96		263	221.70		265	217.85	
No	149	163.96		147	191.70		143	170.03		142	178.16	
Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'			<0.001*			<0.001*			<0.001*			<0.001*
Yes	223	241.78		226	227.63		225	241.55		226	233.78	
No	188	163.56		186	180.82		182	157.58		182	168.15	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.6.4 HCPs Attitudes to Disclosure of PSIs and Involvement in PSIs

Univariate analysis of HCPs involvement in PSIs was conducted to explore possible association with the HCPs attitude on Disclosure of PSIs (Table 21).

5.6.4.1 Values or Ethics for Interprofessional Practice

5.6.4.1.1 Involvement in PSIs

HCPs who reported being involved in PSIs ($n = 204$) had a mean rank of 186.31 for values and ethics in comparison to those who reported no involvement in PSIs ($n = 169$) with a slightly higher mean rank of 187.83. The Mann-Whitney U Test results showed no statistically significant difference between these two groups ($U = 17098$, $z = -0.139$, $p = 0.890$) suggesting that involvement or non-involvement in PSIs does not have a significant impact on HCPs' reported values and ethics for Interprofessional practice.

5.6.4.1.2 Nature of Involvement

HCPs who were involved in the initial discussion with patients and/or their family or significant others ($n=118$) had a mean rank of 223.89, $U = 15176.000$, $z = -1.986$, $p = 0.047$ for values and ethics. This group reported significantly higher values and ethics compared to those involved in pre-meeting discussions ($n = 60$) and those who did not participate in patient meetings ($n = 39$). The Mann-Whitney U Test result for this comparison had a p -value of 0.047, indicating a statistically significant difference ($p < 0.05$).

HCPs involved in pre-meeting discussions ($n= 60$) reported significantly higher values and ethics for Interprofessional practice with a mean rank of 235.13, $U = 8722.500$, $z = -2.147$, $p = 0.032$, indicating a statistically significant difference ($p < 0.05$) compared to those who did not participate in patient meetings (mean rank = 157.78), $U=5373.500$, $z = -2.730$, $p = 0.006$.

HCPs involved in open disclosure discussions ($n = 92$) had a mean rank of 223.42 ($U = 13071.00$, $z = -1.636$, $p = 0.102$) for values and ethics for Interprofessional practice. However, there was no statistically significant difference in values and ethics between this group and those involved in initial discussions, pre-meeting discussions, or those who did not participate in patient meetings.

5.6.4.2 Roles or Responsibilities

5.6.4.2.1 Involvement in patient safety incident

The Mann-Whitney U Test revealed that HCPs who reported being involved in PSIs ($n = 206$) had a mean rank of 204.17, $U = 14283$, $z = -3.115$, $p = 0.002$ for roles and responsibilities indicating a statistically significant difference ($p < 0.05$) in comparison to those who reported no involvement in PSIs ($n = 170$).

5.6.4.2.2 Nature of Involvement

HCPs who were involved in the initial discussion with patients and/or their family or significant others ($n = 118$) had a significantly higher mean rank of 234.90, $U = 13995$, $z = -3.104$, $p = 0.002$ for roles and responsibilities. The Mann-Whitney U Test result for this comparison had a p -value of 0.002, indicating a highly significant difference ($p < 0.01$). HCPs involved in open disclosure discussions ($n = 93$) had mean rank of 229.39, $U = 12704.500$, $z = -2.133$, $p = 0.033$ for roles and responsibilities. This group reported significantly higher roles

and responsibilities compared to those who did not participate in patient meetings ($p = 0.033$). Even though the mean rank were similar to HCPs involved in pre-meeting discussions, p -value for this cohort were insignificant (mean rank=229.90, $z = -1.707$, $p = 0.088$). There was no statistically significant difference in roles and responsibilities between HCPs who did not participate in patient meetings group and those who were involved in pre-meeting discussions ($p = 0.400$).

5.6.4.3 Interprofessional Communication

5.6.4.3.1 Involvement in patient safety incident

The Mann-Whitney U Test revealed that HCPs who reported being involved in PSIs ($n = 203$) had a mean rank of 198.38, $U = 14742$, $z = -2.360$, $p = 0.018$ for Interprofessional communication indicating a statistically significant difference ($p < 0.05$) in comparison to those who reported no involvement in PSIs ($n = 169$).

5.6.4.3.2 Nature of Involvement

HCPs who were involved in initial discussions with the patient and/or their family or significant others ($n = 118$) had a significantly higher mean rank of 243.19, $U = 12426.000$, $z = -4.342$, $p < 0.001$ for Interprofessional communication compared to those with other levels of involvement. Also, HCPs who were involved in open disclosure discussions ($n = 92$) had a significantly higher mean rank of 250.16, $U = 10243$, $z = -4.325$, $p < 0.001$ for Interprofessional communication. The Mann-Whitney U Test result for both had a p -value of <0.001 , indicating a highly significant difference ($p < 0.001$). HCPs who were involved in pre-meeting discussions ($n = 60$) had a mean rank of 230.14, $U=8664.500$, $z = -1.907$, $p = 0.057$ for Interprofessional communication. While this group had a higher mean rank compared to those who did not participate in patient meetings ($n = 40$, mean rank 171.65) the difference was marginally statistically significant ($p = 0.057$).

5.6.4.4 Teams and Teamwork

5.6.4.4.1 Involvement in patient safety incident

HCPs who reported being involved in PSIs ($n = 204$) had a mean rank of 189.66 $U = 16900$, $z = -0.433$, $p = 0.665$ for teams and teamwork in the open disclosure of PSIs compared to HCPs who were not involved in PSIs ($n = 170$) had a slightly lower mean rank of 184.91. However, the difference in mean ranks between these two groups was not statistically significant ($p > 0.05$).

5.6.4.4.2 Nature of Involvement

HCPs who were involved in the initial discussion with the patient and/or their family or significant others ($n = 118$) and those involved in open disclosure discussions ($n = 92$) had a significantly higher mean rank of 225.34 and 230.24 respectively for teams and teamwork in the open disclosure of PSIs compared to those who had other types of involvement in the PSIs. The Mann-Whitney U Test results showed a p -value of 0.020 and 0.015, indicating a statistically significant difference ($p < 0.05$).

Table 21 Univariate Analysis of Association Between HCPs Attitudes to Disclosure of PSIs and Involvement in PSIs

	Values / Ethics for Interprofessional Practice			Roles / Responsibilities			Interprofessional Communication			Teams and Teamwork		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Involvement in Patient Safety Incident^a			0.890			0.002*			0.018*			0.665
Yes	204	186.31		206	204.17		203	198.38		204	189.66	
No	169	187.83		170	169.52		169	172.23		170	184.91	
Nature of Involvement^a												
Initial Discussion with the patient and/or their family or significant others			0.047*			0.002*			<0.001*			0.020*
Yes	118	223.89		118	234.90		118	243.19		118	225.34	
No	293	198.80		294	195.10		289	188.00		290	196.02	
Pre-meeting Discussions			0.032*			0.088			0.057			0.905
Yes	60	235.13		60	229.90		59	230.14		59	205.65	
No	350	200.42		351	201.91		347	198.97		348	203.72	
Open Disclosure Discussions			0.102			0.033*			<0.001*			0.015*
Yes	92	223.42		93	229.39		92	250.16		92	230.24	
No	319	200.97		319	199.83		315	190.52		316	197.01	
I did not participate in patient meetings			0.006*			0.400			0.064			0.237
Yes	39	157.78		40	221.38		40	171.65		41	184.33	
No	372	211.06		372	204.90		367	207.53		367	206.75	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.7 Univariate Analysis of HCPs Perceptions of Disclosure of PSIs

Univariate analysis of HCPs socio-demographic characteristics such as age, gender, current position, duration of work in healthcare sector, involvement in open disclosure training and nature of involvement in PSI was conducted to explore their association with the HCPs perception on Disclosure of PSIs.

In order to compare differences between two independent sample groups, when the dependent variable is ordinal or continuous and non-normally distributed, the Mann-Whitney U test is used. As the scale variables computed in section 5.5 are not continuous, nonparametric test is employed alternative to the t-test. This is crucial for understanding whether perceptions towards open disclosure of PSIs differ based on HCP's gender and involvement in open disclosure training and PSI.

Simultaneously, the Kruskal-Wallis H test is a rank-based nonparametric test is employed to assess whether there are statistically significant differences between two or more groups of an independent variable, specifically when analysing a continuous or ordinal dependent variable. It is considered as a nonparametric alternative to the one-way ANOVA, when the data is discrete, ordinal and non-normally distributed. This is important to understand whether perception towards open disclosure of PSIs differ based on HCP's age, current position, years of experience in the healthcare sector.

As the data was non-normally distributed upon visual inspection, the mean rank score was used for both Mann-Whitney U test and Kruskal-Wallis H tests to assess whether there are significant differences between groups without assuming a specific distribution of the data. The 'mean rank' represents the average rank of values within each group. Each test ranks the data across groups and compares the average ranks to determine if there are significant differences. The use of ranks is particularly valuable when dealing with non-normally distributed data or when there are concerns about the homogeneity of variances, which are assumptions often required by parametric tests. As each data point is assigned a rank based on its position within the overall distribution, this allows for assessment about the distributional differences and comparisons without assuming a specific shape of the distribution.

The next section explores significant differences in age, gender, current position, and years of experience concerning open disclosure across various dimensions, including harm levels, situations, justification, negative consequences, positive consequences, and facilitators.

5.7.1 HCPs Perceptions of Disclosure of PSIs and Socio-Demographic Characteristics

Univariate analysis of Socio-Demographic Characteristics (age, gender, current position, years of experience) was conducted to explore possible association with the HCPs perception on Disclosure of PSIs (Table 22).

5.7.1.1 Open Disclosure across Harm Levels

A Kruskal-Wallis H test showed that there was a statistically significant difference in HCPs' perceptions of open disclosure across different harm levels among the age groups, $\chi^2(4) = 12.023, p = 0.017$, with significantly higher mean rank of 214.96 for 41-50 years, 200.84 for 31-40 years, 196.49 for 51-60 years, 169.84 for 21-30 years and the lowest mean rank of 138.88 for over 61 years.

Also, there are significant differences in HCPs' perceptions of open disclosure across harm levels depending on their current position or role, $\chi^2(2) = 22.272, p < 0.001$. Nursing and Midwifery professionals ($n = 280$) had a significantly higher mean rank of 213.01 compared to medical professionals ($n = 32$) with a mean rank of 171.20 and Health and Social care professionals ($n = 81$) with a lower mean rank of 151.85 for perceptions of open disclosure across harm levels.

This suggests that HCPs should notify the patient and/or their relevant person(s) in the event of a medical error, irrespective of the degree of harm, ranging from serious to minor or none. However, univariate analysis revealed no statistically significant effect of gender and years of experience in determining HCPs' perceptions of open disclosure across harm levels.

5.7.1.2 Open Disclosure across Situations

A Kruskal-Wallis H test indicates that there is a statistically significant difference in HCPs' perceptions of open disclosure across different situations among the different age groups, $\chi^2(4) = 22.039, p < 0.001$, with significantly higher mean rank of 233.95 for 41-50 years ($n = 114$), 210.51 for 51-60 years ($n = 66$), 175.48 for 31-40 years ($n = 122$) and the mean rank of 174.43 for 21-30 years ($n = 79$) and 158.65 for over 61 years ($n = 13$).

Additionally, test results showed that years of experience significantly influenced HCPs' perceptions of open disclosure across different situations, $\chi^2(3) = 9.570, p = 0.023$, with significantly higher mean rank of 203.32 for 21-30 years ($n = 72$), 188.94 for over 31 years ($n = 44$), 164.35 for less than 10 years ($n = 111$) and the mean rank of 162.95 for 11-20 years ($n = 122$).

This suggests that individuals in the 41-50 age group ($n = 114$) and HCPs with 21-30 years of experience ($n = 72$) expressed the view that PSIs should be disclosed irrespective of perceived understanding of patient's preferences. Open disclosure decisions should prioritise the severity of the medical error, ensuring that patients and their families benefit from the information. However, there was no statistically significant effect of gender and current position in determining HCPs' perceptions of open disclosure across situations.

5.7.1.3 Justification of Open Disclosure

The Kruskal-Wallis H Test and Mann-Whitney U Test results indicated that there were no statistically significant differences in HCPs' perceptions of the justification of open disclosure based on their age groups, gender, current positions, and years of experience (Table 22).

5.7.1.4 Negative Consequences of Open Disclosure

A Kruskal-Wallis H test indicates that there is a statistically significant difference in HCPs' perceptions of the negative consequences of open disclosure across different age groups, $\chi^2(4) = 21.885$, $p < 0.001$, with significantly higher mean rank of 231.73 for 41-50 years ($n = 114$), 206.82 for 51-60 years ($n = 66$), 191.00 for 31-40 years ($n = 122$), 176.27 for over 61 years ($n = 13$) and 156.86 for 21-30 years ($n = 80$). This suggests that there are notable variations in how different age groups perceive the negative consequences associated with open disclosure, and these differences are statistically significant.

The Kruskal-Wallis H test showed that there is a statistically significant difference in HCPs' perceptions of the negative consequences of open disclosure based on their years of experience, $\chi^2(3) = 14.867$, $p = 0.002$, with higher mean rank of 195.55 for HCPs more than 31 years of experience ($n = 44$), range of 188 for both 11-20 years ($n = 122$) and 21-30 years of experience ($n = 72$). HCPs with less than 10 years of experience ($n = 112$) had a mean rank of 145.44 for perceptions of the negative consequences of open disclosure. This suggests that there are significant variations in how HCPs with different levels of experience perceive the negative consequences associated with open disclosure. HCPs with more extensive experience appear to express higher mean ranks, indicating potentially greater concern or awareness of negative consequences. On the other hand, those with less years of experience have a lower mean rank, suggesting they may perceive less negative impact associated with open disclosure. The specific nature of these differences would require further investigation or qualitative exploration.

5.7.1.5 Positive Consequence of Open Disclosure

The Kruskal-Wallis Test reveals significant differences in HCPs' perceptions of the positive consequences of open disclosure across various factors. Notably, age groups exhibit variations ($\chi^2 = 10.777$, $p = 0.029$), with mean ranks ranging from 174.56 for 31-40 years ($n = 121$) to 216.83 for 41-50 years ($n = 113$).

Simultaneously, current position also influenced perceptions significantly ($\chi^2(2) = 7.147$, $p = 0.028$), with a higher mean rank of 203.98 for Nursing and Midwifery professionals ($n = 282$), 197.22 for Health & Social care professionals ($n = 81$) and 147.33 for Medical professionals ($n = 32$).

Furthermore, years of experience play a role ($\chi^2(3) = 11.379$, $p = 0.010$), as evidenced by mean ranks ranging from 160.28 for HCPs with less than 10 years of experience ($n = 112$) to 206.32 for HCPs with more than 31 years of experience ($n = 44$).

These findings suggest that HCPs' perceptions of the positive consequences of open disclosure vary significantly based on age, current position, and years of experience. Understanding these variations is crucial during open disclosure process as patients and families tend to have greater trust in HCPs who disclose PSIs, leading to increased likelihood of recommending those HCPs to others and a higher probability of returning for future treatment. Additionally, the open disclosure of PSIs may contribute to a reduction in HCPs' sense of guilt and enhance the overall quality of services provided.

5.7.1.6 Facilitators of Open Disclosure

The Kruskal-Wallis Test results indicate that there is a statistically significant difference in HCPs' perceptions of the facilitators of open disclosure across different age groups, $\chi^2 (4) = 9.927$, $p = 0.042$ with a mean rank of 219.55 for 41-50 years ($n = 111$), 194.80 for 21-30 years ($n = 79$), 189.46 for 51-60 years ($n = 66$), 185.23 for 31-40 years ($n = 122$) and 136.42 for aged over 61 years ($n = 13$). The findings imply that 41-50 years age group, appears to influence perceptions of open disclosure facilitators among HCPs. However, no statistically significant differences were observed based on gender, current position, or years of experience, suggesting how HCPs perceive the facilitators of open disclosure in clinical practice.

The assumptions, including linearity and homoscedasticity using scatterplot, normality for each subscale using p-p plots and multicollinearity using Variance Inflation Factor (VIF) values was verified.

Table 22 Univariate Analysis of Association Between HCPs Perceptions of Disclosure of PSIs and Socio-Demographic Characteristics

	Open Disclosure across harm levels			Open Disclosure across situations			Justification of Open Disclosure			Negative Consequences of Open Disclosure			Positive consequence of Open Disclosure			Facilitators of Open Disclosure		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Age^b			0.017*			<0.001*			0.338			<0.001*			0.029*			0.042*
21-30 years	80	169.84		79	174.43		80	209.59		80	156.86		80	189.68		79	194.80	
31-40 years	121	200.84		122	175.48		122	191.52		122	191.00		121	174.56		122	185.23	
41-50 years	114	214.96		114	233.95		114	201.02		114	231.73		113	216.83		111	219.55	
51-60 years	64	196.49		66	210.51		66	201.46		66	206.82		66	216.30		66	189.46	
>61 years	12	138.88		13	158.65		13	143.38		13	176.27		13	180.54		13	136.42	
Gender^a			0.351			0.125			0.430			0.122			0.284			0.316
Male	51	182.51		53	174.80		53	186.29		53	175.11		52	180.89		52	181.01	
Female	339	197.45		340	200.46		341	199.24		341	200.98		340	198.89		338	197.73	
Current Position^b			<0.001*			0.065			0.343			0.071			0.028*			0.189
Medical Professional	32	171.20		33	154.50		33	177.65		33	159.50		32	147.33		33	172.94	
Nursing and Midwifery	280	213.01		281	203.51		282	203.83		282	199.38		282	203.98		280	203.34	
Health & Social Care Professionals	81	151.85		82	199.04		82	190.99		82	213.59		81	197.22		80	184.74	
Years of Experience^b			0.333			0.023*			0.557			0.002*			0.010*			0.596
<10 years	112	163.24		111	164.35		112	179.14		112	145.44		112	160.28		111	166.92	
11-20 years	121	176.67		122	162.95		122	168.55		122	188.16		120	163.42		120	173.68	
21-30 years	72	188.85		72	203.32		72	171.59		72	188.55		72	195.65		71	186.80	
>31 years	42	169.56		44	188.94		44	191.91		44	195.55		44	206.32		44	168.17	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.7.2 HCPs Perceptions of Disclosure of PSIs and Involvement in Open Disclosure Training

Univariate analysis of HCPs involvement in open disclosure training was conducted to explore possible association with the HCPs attitude on Disclosure of PSIs (Table 23).

5.7.2.1 Open Disclosure across Harm Levels

The Mann-Whitney U Test was conducted to assess whether HCPs' perceptions of open disclosure across different harm levels are influenced by their involvement in various types of open disclosure training. HCPs who received any open disclosure training ($n = 376$) had a mean rank of 201.62 and the Mann-Whitney U Test result showed a p-value of 0.039, indicating a statistically significant difference ($p < 0.05$).

HCPs who had open disclosure training as part of their professional degree programme ($n = 92$) had a significantly higher mean rank of 228.86 $U = 12387$, $z = -2.323$, $p = .020$, indicating a statistically significant difference ($p < 0.05$) compared to those who received other types of training. It is important to note that even though HCPs who underwent open disclosure facilitator training ($n = 35$) had a higher mean rank of 229.03 for perceptions of open disclosure across harm levels, the difference in mean ranks between this group and those who received other types of training was not statistically significant ($p = 0.184$).

5.7.2.2 Open Disclosure across Situations

The Mann Whitney U Test was conducted to assess whether there are significant differences in HCPs' perceptions of open disclosure across different situations based on their involvement in open disclosure training.

HCPs who received open disclosure training as part of their professional degree programme ($n = 91$) had a mean rank of 227.03 and the Mann-Whitney U Test result showed a p-value of 0.043, indicating a statistically significant difference ($p < 0.05$). HCPs who received training as part of their degree programme had significantly different perceptions compared to those who received other types of training.

HCPs who participated in interactive workshops for open disclosure training ($n = 65$) had a significantly higher mean rank of 249.67 for perceptions of open disclosure across situations. The Mann-Whitney U Test result for this comparison had a p-value of 0.001, indicating a statistically significant difference ($p < 0.05$).

HCPs who received open disclosure facilitator training ($n = 35$) had a significantly higher mean rank of 243.83 for perceptions of open disclosure across situations compared to those who received other types of training. The Mann-Whitney U Test result for this comparison had a p-value of 0.041, indicating a statistically significant difference ($p < 0.05$).

5.7.2.3 Justification of Open Disclosure

The Mann-Whitney U Test was conducted to assess whether HCPs' perceptions of the justification of open disclosure are influenced by their involvement in various types of open disclosure training. The Mann-Whitney U Test results indicated that HCPs who received any open disclosure training ($n = 379$) had a mean rank of 200.50 and the Mann-Whitney U Test result showed a p-value of 0.024, indicating a statistically significant difference ($p < 0.05$).

HCPs who underwent open disclosure training as a part of their professional degree programme ($n = 92$) had a higher mean rank of 227.61 for perceptions of the justification of open disclosure. The difference in mean ranks between this group and those who received other training methods was statistically significant ($p = 0.025$) compared to those who received training through other methods.

5.7.2.4 Negative Consequences of Open Disclosure

The Mann-Whitney U Test was conducted to assess if there are significant differences in HCPs' perceptions of the negative consequences of open disclosure based on their involvement in different types of open disclosure training.

HCPs who participated in interactive workshops on open disclosure ($n = 65$) had a mean rank of 230.22 and showed a statistically significant difference in HCPs' perceptions of the negative consequences of open disclosure, $U = 9281$, $z = -2.056$, $p = 0.040$. However, there were no statistically significant differences in perceptions of the negative consequences of open disclosure for HCPs who participated in other types of training (professional degree programme, seminar/webinar/conference, online/e-learning resources).

5.7.2.5 Positive Consequence of Open Disclosure

The Mann-Whitney U Test results indicate that there are statistically significant differences in HCPs' perceptions of the positive consequences of open disclosure based on their involvement in different types of open disclosure training ($p < 0.05$).

HCPs who participated in open disclosure training as part of their professional degree programme ($n = 91$) had significantly higher perceptions of positive consequences (mean rank = 223.85) compared to those who utilized online/e-learning resources for training, $U = 11844$, $z = -2.255$, $p = 0.024$. There are no statistically significant differences in perceptions of positive consequences for the other training methods (seminar/webinar/conference, online/e-learning, or being a part of a professional degree programme).

5.7.2.6 Facilitators of Open Disclosure

The Mann-Whitney U Test results indicate that there is no statistically significant difference in HCPs' perceptions of the facilitators of open disclosure based on their involvement in different types of open disclosure training ($p > 0.05$).

Table 23 Univariate Analysis of Association Between HCPs Perceptions of Disclosure of PSIs and Involvement in Open Disclosure Training

	Open Disclosure across harm levels			Open Disclosure across situations			Justification of Open Disclosure			Negative Consequences of Open Disclosure			Positive consequence of Open Disclosure			Facilitators of Open Disclosure		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Involvement in any Open Disclosure Training^a			.039*			.355			.024*			.119			.453			.559
Yes	376	201.62		378	203.46		379	200.50		379	205.36		377	201.04		375	196.75	
No	33	243.56		31	223.81		28	251.43		26	168.54		22	182.16		19	212.29	
As a part of professional degree programme			0.020*			0.043*			0.025*			0.610			0.024*			0.506
Yes	92	228.86		91	227.03		92	227.61		92	208.45		91	223.85		92	204.36	
No	317	198.08		318	198.69		315	197.10		313	201.40		308	192.95		302	195.41	
Seminar, Webinar, Conference or Presentations on Open Disclosure			0.063			0.115			0.739			0.154			0.056			0.253
Yes	97	186.54		99	221.21		99	207.35		99	217.51		99	219.14		99	208.73	
No	312	210.74		310	199.82		308	202.92		306	198.31		300	193.68		295	193.73	
Interactive workshops on Open Disclosure			0.716			0.001*			0.594			0.040*			0.074			0.718
Yes	64	209.67		65	249.67		65	210.96		65	230.22		65	223.28		65	202.13	
No	345	204.13		344	196.56		342	202.68		340	197.80		334	195.47		329	196.59	
Online/E-learning resources for Open Disclosure training			0.689			0.251			0.981			0.054			0.110			0.674
Yes	297	203.64		298	209.08		299	203.92		299	209.63		298	205.35		295	198.89	
No	112	208.61		111	194.05		108	204.22		106	184.29		101	184.21		99	193.36	
Open Disclosure Facilitator training			0.184			0.041*			0.252			0.102			0.099			0.388
Yes	35	229.03		35	243.83		35	225.29		35	233.73		35	230.56		34	213.49	
No	374	202.75		374	201.37		372	202.00		370	200.09		364	197.06		360	195.99	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.7.3 HCPs Perceptions of Disclosure of PSIs and Benefits of Open Disclosure Training

Univariate analysis of Benefits of open disclosure training was conducted to explore possible association with the HCPs perception on Disclosure of PSIs (Table 24)

5.7.3.1 Open Disclosure across Harm Levels

A majority of HCPs believed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 336$). They had a higher mean rank of 211.47 for perceptions of open disclosure across harm levels compared to those who did not hold this belief. The Mann-Whitney U Test result for this comparison had a p -value of 0.012, indicating a statistically significant difference ($p < 0.05$).

HCPs who believed that a multidisciplinary training environment provides insight into the challenges experienced by other HCPs during open disclosure ($n = 311$) also had a higher mean rank of 211.55 for perceptions of open disclosure across harm levels. The Mann-Whitney U Test result for this comparison had a p -value of 0.035, indicating a statistically significant difference ($p < 0.05$).

HCPs who believed that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 266$) had a higher mean rank of 217.19 for perceptions of open disclosure across harm levels. The Mann-Whitney U Test result for this comparison had a p -value of 0.002, indicating a statistically significant difference ($p < 0.05$).

HCPs who believed that following training, they are comfortable disclosing patient safety incidents to patients and/or their relevant persons ($n = 227$) had a significantly higher mean rank of 230.09 for perceptions of open disclosure across harm levels. The Mann-Whitney U Test result for this comparison had a p -value of less than 0.001, indicating a highly statistically significant difference ($p < 0.001$).

5.7.3.2 Open Disclosure across Situations

HCPs who strongly agreed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 338$) and HCPs who strongly agreed that they are comfortable to disclose patient safety incidents to patients and/or their relevant persons following training ($n = 227$) had a significantly higher mean rank of 214.84 and 229.36 for perceptions of the benefits of open disclosure training compared to those who perceived other benefits. The Mann-Whitney U Test result for both had a p -value of less than 0.001, indicating a statistically significant difference ($p < 0.001$). In addition, HCPs who agreed that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 266$) had a significantly higher mean rank of 213.82 for perceptions of the benefits of open disclosure training compared to those who perceived other benefits. The Mann-Whitney U Test result for this comparison had a p -value of 0.028, indicating a statistically significant difference ($p < 0.05$).

5.7.3.3 Justification of Open Disclosure

HCPs who believed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience for HCPs ($n = 339$) had a mean rank of 209.53 and was statistically significant ($p = 0.030$). Similarly, HCPs who believed that a multidisciplinary training environment provides insight into the challenges

experienced by other HCPs during open disclosure ($n = 313$) had a mean rank of 210.34 for perceptions of the justification of open disclosure and was statistically significant ($p = 0.042$). Likewise, HCPs who believe that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 267$) had a mean rank of 213.50 and was statistically significant ($p = 0.015$). Also, HCPs who believe that following training, they are comfortable to disclose PSIs to patients and/or their relevant persons ($n = 228$) had the highest mean rank of 227.36 for perceptions of the justification of open disclosure. The difference in mean ranks between this group and those who hold other beliefs about the benefits of open disclosure training was statistically significant ($p < 0.001$). However, HCPs who believe that open disclosure training is critical for the implementation of open disclosure policy ($n = 347$) had a mean rank of 207.45 for perceptions of the justification of open disclosure but the difference in mean ranks between this group and those who hold other beliefs about the benefits of open disclosure training was not statistically significant ($p > 0.05$).

5.7.3.4 Negative Consequences of Open Disclosure

HCPs who believed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 339$) had a mean rank of 211.49 for perceptions of the negative consequences of open disclosure, $U = 8309$, $z = -3.325$, $p < 0.001$ with a statistically significant difference. Similarly, those who believe that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 267$) had a mean rank of 212.99, $U = 15488$, $z = -2.534$, $p = 0.011$ with a statistically significant difference. Likewise, HCPs who believed that following training, they are comfortable disclosing PSIs to patients and relevant persons ($n = 228$) had a mean rank of 225.22, $U = 15112$, $z = -4.357$, $p = 0.001$.

5.7.3.5 Positive Consequence of Open Disclosure

HCPs who believed that a multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 337$) had a mean rank of 209.37 for perceptions of the positive consequences of open disclosure, $U = 7290$, $z = -3.801$, $p < 0.001$ with a statistically significant difference. Similarly, HCPs who strongly agreed that multidisciplinary training environment provides an insight into the challenges experienced by other HCPs during open disclosure ($n = 311$) had a mean rank of 207.91, $U = 11224.500$, $z = -2.587$, $p = 0.010$ indicating a statistically significant difference. Also, those who believe that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 265$) had a mean rank of 218.46, $U = 12598$, $z = -4.663$, $p < 0.001$ with a statistically significant difference. Likewise, HCPs who believed that following training, they are comfortable disclosing PSIs to patients and relevant persons ($n = 226$) had a mean rank of 234.39, $U = 11777.500$, $z = -6.839$, $p = 0.001$ indicating statistically significant differences for perceptions of the positive consequences of open disclosure.

5.7.3.6 Facilitators of Open Disclosure

HCPs who believed that open disclosure training is critical for the implementation of open disclosure policy ($N=344$) had a mean rank of 204.02 for the facilitators of open disclosure, $U = 6358$, $z = -3.003$, $p = 0.003$ indicating a statistically significant difference. Similarly, HCPs who strongly agreed that multidisciplinary approach to open disclosure training contributes to a valuable learning experience ($n = 336$) had a mean rank of 207.36 for the facilitators of open disclosure, $U = 6431.500$, $z = -4.168$, $p < 0.001$ with a statistically significant

difference. Likewise, HCPs who believed that multidisciplinary training environment provides an insight into the challenges experienced by other HCPs during open disclosure ($n = 310$) had a mean rank of 209.75, $U = 9223$, $z = -4.133$, $p < 0.001$ indicating a statistically significant difference. Also, those who believe that training made them aware of protective legislation for HCPs involved in the open disclosure process ($n = 263$) had a mean rank of 211.29, $U = 13338$, $z = -3.574$, $p < 0.001$ with a statistically significant difference. Moreover, HCPs who believed that following training, they are comfortable disclosing PSIs to patients and relevant persons ($n = 225$) had a mean rank of 214.03, $U = 15293$, $z = -3.351$, $p = 0.001$ indicating statistically significant differences for facilitators of open disclosure.

Table 24 Univariate analysis of Association Between HCPs Perceptions of Disclosure of PSIs and Benefits of Open Disclosure Training

	Open Disclosure across harm levels			Open Disclosure across situations			Justification of Open Disclosure			Negative Consequences of Open Disclosure			Positive consequence of Open Disclosure			Facilitators of Open Disclosure		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p
Benefits of Open Disclosure Training ^a																		
Open Disclosure training is critical for the implementation of Open Disclosure policy			0.630			0.397			0.146			0.414			0.131			0.003*
Yes	345	206.15		346	207.10		347	207.45		347	204.93		345	203.43		344	204.02	
No	64	198.82		63	193.44		60	184.06		58	191.43		54	178.08		50	152.66	
A multidisciplinary approach to Open Disclosure training contributes to a valuable learning experience for HCPs			0.012*			<0.001*			0.030*			0.001*			<0.001*			<0.001*
Yes	336	211.47		338	214.84		339	209.53		339	211.49		337	209.37		336	207.36	
No	73	175.23		71	158.13		68	176.46		66	159.39		62	149.08		58	140.39	
Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during Open Disclosure			0.035*			0.056			0.042*			0.068			0.010*			<0.001*
Yes	311	211.55		312	211.21		313	210.34		313	208.72		311	207.91		310	209.75	
No	98	184.23		97	185.02		94	182.89		92	183.54		88	172.05		84	152.30	
Training made me aware of protective			0.002*			0.028*			0.015*			0.011*			<0.001*			<0.001*

legislation for HCPs involved in the Open Disclosure process																	
Yes	266	217.19		266	213.82		267	213.50		267	212.99		265	218.46		263	211.29
No	142	180.74		142	187.04		139	184.28		137	182.05		133	161.73		130	168.10
Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'			<0.001*			<0.001*			<0.001*			<0.001*			<0.001*		0.001*
Yes	227	230.09		227	229.36		228	227.36		228	225.22		226	234.39		225	214.03
No	182	173.71		182	174.62		179	174.24		177	174.38		173	155.08		169	175.49

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.7.4 HCPs Perceptions of Disclosure of PSIs and Involvement in PSIs

Univariate analysis of HCPs involvement in PSI was conducted to explore possible association with the HCPs perception on Disclosure of PSIs (Table 25).

5.7.4.1 Open Disclosure across Harm Levels

5.7.4.1.1 Involvement in patient safety incident

The Mann-Whitney U Test results suggest that HCPs' involvement in PSIs does not have a statistically significant impact on their perceptions of open disclosure across different harm levels ($p > 0.05$).

5.7.4.1.2 Nature of Involvement in the Open Disclosure of patient safety incident

HCPs who had initial discussions with the patient and/or their family or significant others ($n = 119$) had a significantly higher mean rank of 226.13 for perceptions of open disclosure across harm levels compared to those who were not involved in initial discussions. The Mann-Whitney U Test result for this comparison had a p -value of 0.014, indicating a statistically significant difference ($p < 0.05$).

HCPs who were involved in open disclosure discussions ($n = 92$) had a significantly higher mean rank of 235.10 for perceptions of open disclosure across harm levels compared to those who were not involved in such discussions. The Mann-Whitney U Test result for this comparison had a p -value of 0.003, indicating a statistically significant difference ($p < 0.05$).

5.7.4.2 Open Disclosure across Situations

5.7.4.2.1 Involvement in patient safety incident

The Mann Whitney U Test results suggest that HCPs' involvement in PSIs significantly influences their perceptions of open disclosure across different situations. HCPs who were involved in PSIs ($n = 207$) had a significantly higher mean rank of 202.07, $U = 15096$, $z = -2.471$, $p = 0.013$ for perceptions of open disclosure across situations compared to those who were not involved in PSIs ($n = 171$). The Mann-Whitney U Test result showed a p -value of 0.013, indicating a statistically significant difference ($p < 0.05$). HCPs involved in PSIs had significantly different perceptions compared to those not involved.

5.7.4.2.2 Nature of Involvement in the Open Disclosure of patient safety incident

The Mann Whitney U Test was conducted to assess whether there are significant differences in HCPs' perceptions of open disclosure across different situations based on the nature of their involvement in PSIs.

HCPs who were involved in the initial discussion with the patient and/or their family or significant others ($n = 119$) had a significantly higher mean rank of 232.9. While, HCPs who were involved in open disclosure discussions ($n = 93$) also had a significantly higher mean rank of 229.22 for perceptions of open disclosure across situations compared to those who were involved in other aspects of the process. The Mann-Whitney U Test result for both comparisons had a p -value of 0.002 and 0.024, indicating a statistically significant difference ($p < 0.05$). Thus, HCPs involved in initial discussion with the patient and/or their family or significant others and open disclosure discussions had significantly different perceptions compared to those with other types of involvement.

5.7.4.3 Justification of Open Disclosure

5.7.4.3.1 Involvement in patient safety incident

The Mann-Whitney U Test results indicate that there are no significant differences in HCPs' perceptions of the justification of open disclosure based on their involvement or non-involvement in PSIs ($p > 0.05$).

5.7.4.3.2 Nature of Involvement in the Open Disclosure of patient safety incident

HCPs who were involved in the initial discussion with the patient and/or their family or significant others regarding PSIs ($n = 119$) had a mean rank of 226.84 for perceptions of the justification of open disclosure. There is a statistically significant difference in HCPs' perceptions of the justification of open disclosure between those who had initial discussions with the patient and/or their family or significant others ($p = 0.010$) compared to those who did not participate in patient meetings. However, there were no significant differences in perceptions between those who had pre-meeting or open disclosure discussions and those who did not participate in patient meetings.

5.7.4.4 Negative Consequences of Open Disclosure

5.7.4.4.1 Involvement in patient safety incident

The Mann-Whitney U Test result showed a statistically significant difference among HCPs' perceptions of the negative consequences of open disclosure based on their involvement in PSIs ($n = 207$) with a mean rank of 201.28, $U = 15468$, $z = -2.209$, $p = 0.027$ for perceptions of the negative consequences of open disclosure.

5.7.4.4.2 Nature of Involvement in the Open Disclosure of patient safety incident

The Mann-Whitney U Test showed a significant difference in HCPs' perceptions of the negative consequences of open disclosure based on the nature of their involvement in PSIs. HCPs who were involved in the initial discussion with the patient and/or their family or significant others ($n = 119$) had a mean rank of 227.87, $U = 14057$, $z = -2.773$, $p < 0.006$. Those HCPs who were involved in pre-meeting discussions ($n = 60$) had a mean rank of 237.97, $U = 8192$, $z = -2.563$, $p = 0.010$. Similarly, HCPs who were involved in open disclosure discussions ($n = 93$) had a mean rank of 226.94, $U = 12282$, $z = -2.258$, $p = 0.024$ compared to those who did not participate in patient meetings ($n = 41$).

5.7.4.5 Positive Consequence of Open Disclosure

5.7.4.5.1 Involvement in patient safety incident

The Mann-Whitney U Test results indicate that there is no statistically significant difference in HCPs' perceptions between those involved and those not involved in PSIs regarding the positive consequences of open disclosure. ($p > 0.05$).

5.7.4.5.2 Nature of Involvement in the Open Disclosure of patient safety incident

HCPs who were involved in open disclosure discussions ($n = 93$) had a mean rank of 235.39 for perceptions of positive consequences of open disclosure. The Mann-Whitney U Test results indicate that there is a statistically significant difference in HCPs' perceptions of the positive consequences of open disclosure based on the nature of their involvement in PSIs ($U = 10937$, $z = -3.395$, $p = 0.001$). This suggests that there is a significant difference in perceptions of positive consequences between different levels of involvement in PSIs during open

disclosure discussions. Specifically, HCPs who were involved in open disclosure discussions perceived more positive consequences compared to those who were involved in initial ($n = 118$) or pre-meeting discussions ($n = 59$) or did not participate in patient meetings ($n = 41$).

5.7.4.6 Facilitators of Open Disclosure

5.7.4.6.1 Involvement in patient safety incident

The Mann-Whitney U Test results indicate that there is no statistically significant difference in HCPs' perceptions between those involved and those not involved in PSIs regarding the facilitators of open disclosure. ($p > 0.05$).

5.7.4.6.2 Nature of Involvement in the Open Disclosure of patient safety incident

The Mann-Whitney U Test results indicate that there are statistically significant differences in HCPs' perceptions of the facilitators of open disclosure based on the nature of their involvement in PSIs. HCPs who were involved in the initial discussion with the patient and/or their family or significant others ($n = 118$) had a mean rank of 215.76 and have significantly different perceptions of the facilitators of open disclosure compared to those who did not participate in patient meetings ($U = 14129$, $z = -2.097$, $p = 0.036$). HCPs who were involved in pre-meeting discussions ($n = 60$) had a mean rank of 223.95 for perceptions of facilitators of open disclosure. They have significantly different perceptions compared to those who did not participate in patient meetings ($U = 8373$, $z = -2.012$, $p = 0.044$). This suggests that participation in pre-meeting discussions may influence their perceptions as well. HCPs who were involved in open disclosure discussions have significantly different perceptions of the facilitators of open disclosure compared to those who did not participate in patient meetings ($U = 10994$, $z = -3.152$, $p = 0.002$). This suggests that active involvement in open disclosure discussions may influence their perceptions of what facilitates open disclosure.

Table 25 Univariate Analysis of Association Between HCPs Perceptions of Disclosure of PSIs and Involvement in PSIs

	Open Disclosure across harm levels			Open Disclosure across situations			Justification of Open Disclosure			Negative Consequences of Open Disclosure			Positive consequence of Open Disclosure			Facilitators of Open Disclosure		
	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	p	N	Mean Rank	P
Involvement in patient safety incident ^a			.161			.013*			.284			.027*			.137			.056
Yes	205	194.77		207	202.07		207	195.37		207	201.28		206	196.58		205	197.68	
No	170	179.83		171	174.28		172	183.54		172	176.43		171	179.87		170	176.33	
Nature of Involvement ^a																		
Initial discussion with the patient and/or their family or significant others			0.014*			0.002*			0.010*			0.006*			0.068			0.036*
Yes	119	226.13		119	232.91		119	226.84		119	227.87		118	216.20		118	215.76	
No	290	196.33		290	193.55		288	194.56		286	192.65		281	193.20		276	189.69	
Pre-meeting Discussions			0.189			0.162			0.540			0.010*			0.054			0.044*
Yes	60	222.00		60	224.06		60	211.87		60	237.97		59	225.97		60	223.95	
No	348	201.48		348	201.13		346	202.05		344	196.31		339	194.89		333	192.14	
Open Disclosure Discussions			0.003*			0.024*			0.098			0.024*			0.001*			0.002*
Yes	92	235.10		93	229.22		93	221.30		93	226.94		93	235.39		93	229.78	
No	317	196.26		316	197.87		314	198.88		312	195.87		306	189.24		301	187.53	
I did not participate in patient meetings			0.104			0.401			0.494			0.418			0.675			0.925
Yes	41	178.09		41	190.37		41	192.37		41	189.05		41	192.89		41	199.07	
No	368	208.00		368	206.63		366	205.30		364	204.57		358	200.81		353	197.32	

* $p < 0.05$, ^a Mann-Whitney U Tests for binary categorical variables, ^b Kruskal-Wallis H tests for more than two categorical variables.

5.8 Canonical Correlation Between HCPs' Attitudes to and Perceptions of the Disclosure of PSIs

A Canonical Correlation Analysis (CCA) is a multivariate statistical technique to discover and quantify the associations between multidimensional variables (Hotelling, 1935; Hotelling, 1936; Hotelling, 1992; Hardoon, 2004; Sherry & Henson, 2005). It serves as a dimensionality reduction method that identifies linear combinations of synthetic or latent variables in each set, often referred to as 'canonical variates,' in a way that maximises the correlation between these canonical variables (Sherry & Henson, 2005; Härdle et al., 2015; Abdi et al., 2018). Consequently, each set can represent an array of variables or attributes, and the goal is to determine if and how these two sets of variables are related. This process facilitates identifying canonical variables, understanding the inherent patterns of canonical correlations and assessing the strength of the relationship between the two sets of variables.

In this study, CCA was performed to assess the shared multivariate relationship between two sets of variables: the Perception and Attitude variables. The number of canonical variate pairs is determined by the smaller set of variables. Since there are six variables in the Perception set and four in the Attitude set, four pairs of canonical variates were derived and related to each other. The first set of synthetic variates summarises the proportion of the variation in the original set of measured variables and maximises the correlation between canonical variates for each pair.

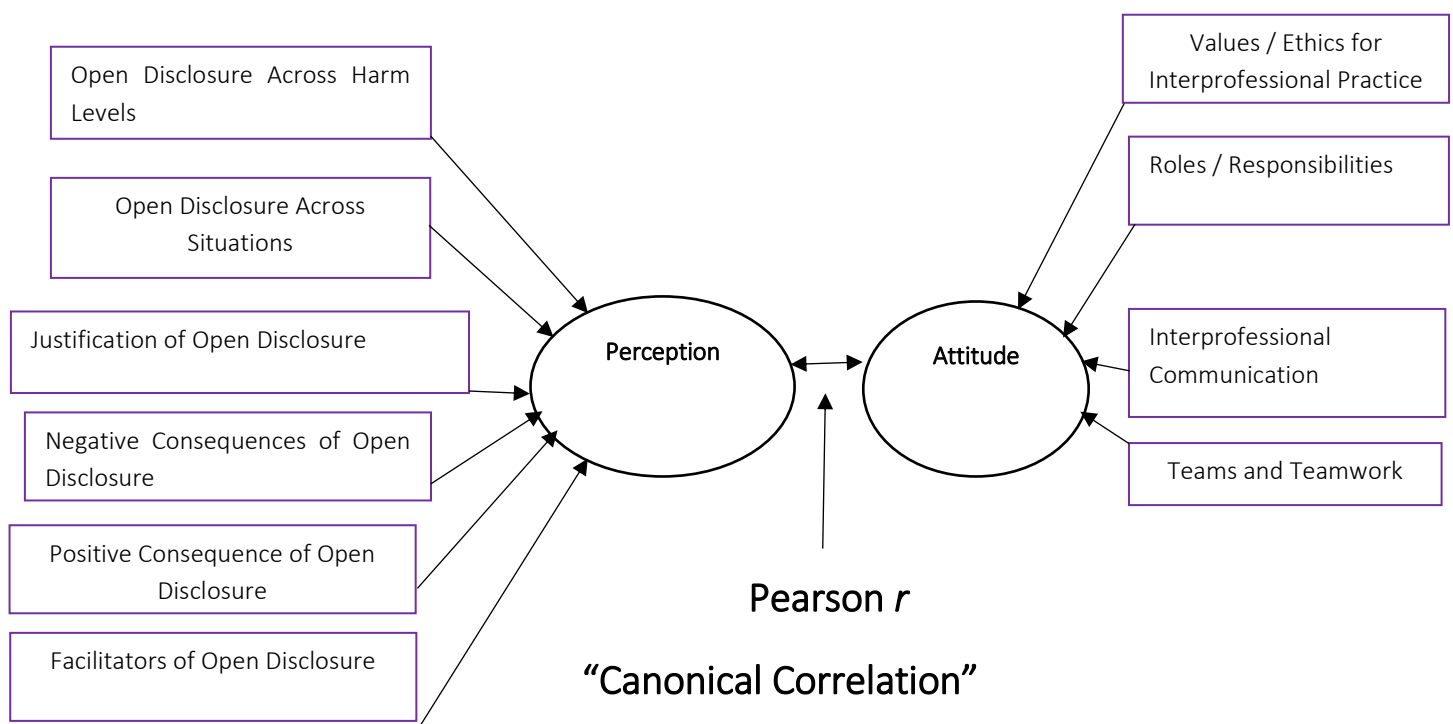


Figure 19 Illustration of Canonical Correlation Analysis (CCA) between the canonical variates of Perception and Attitude of HCPs regarding Open Disclosure of Patient Safety Incidents

The attitude variables are the sum of the survey constructs discussed in the previous section. These are 'Values or Ethics for Interprofessional Practice', 'Roles or Responsibilities', 'Interprofessional Communication' and 'Teams and Teamwork'. The perception variables are the sum of the survey constructs: 'Open Disclosure Across Harm Levels', 'Open Disclosure Across Situations', 'Justification of Open Disclosure', 'Negative Consequences of Open Disclosure', 'Positive Consequence of Open Disclosure' and 'Facilitators of Open Disclosure'. An illustration of CCA variables is shown in Figure 19. The assumptions, including linearity and homoscedasticity, normality and multicollinearity were verified. The summing of the ordinal question variables into continuous features is justified by using Cronbach's alpha analysis of section. Table 26, below, depicts the sample's descriptive statistics for the Attitude and Perception scales.

Table 26 Descriptive Statistics of Perceptions and Attitudes Subscales

Subscales	N	Mean	SD
Perception			
Open Disclosure Across Harm Levels	409	13.41	1.78
Open Disclosure Across Situations	409	23.55	3.94
Justification of Open Disclosure	407	17.38	2.19
Negative Consequences of Open Disclosure	405	16.60	3.34
Positive Consequence of Open Disclosure	399	22.49	3.66
Facilitators of Open Disclosure	394	25.47	3.14
Attitude			
Values / Ethics for Interprofessional Practice	411	17.62	2.60
Roles/ Responsibilities	412	12.07	1.97
Interprofessional Communication	407	11.41	2.19
Teams and Teamwork	408	12.98	1.89

5.8.1 Evaluation of the Full Canonical Model

The first step is to determine the statistical significance of the entire canonical model through multivariate tests. These tests examine the extent to which perception and attitude variables collectively share variance across all canonical functions (Sherry & Henson 2005). Also, the computation F statistic facilitates the assessment of its statistical significance. In this study, the most common Wilk's lambda (λ) method is used.

Table 27 Canonical Correlation Analysis with its Canonical Functions

Canonical Function	Canonical Correlation	Canonical (R_c^2)	Wilk's	F Statistic	p
1	0.639	0.408	0.529	10.739	<0.001
2	0.295	0.087	0.895	2.806	<0.001
3	0.125	0.016	0.980	0.961	0.465
4	0.069	0.005	0.995	0.594	0.619

Table 27 presents four canonical correlations, with the first (0.639) being notably stronger than the others. A statistically significant relationship was observed between the HCPs' Perception and Attitude canonical variates, using Wilk's $\lambda=0.529$, $F(24, 1288.5) = 10.739$, $p < 0.001$. As the statistical significance test does not provide information about the magnitude of their relationships, effect size measures must be considered in conjunction with p-values to gauge the practical significance of study findings (Sherry & Henson 2005). Conveniently, Wilks's Lambda (λ) is a useful indicator, like an inverse effect size, representing the proportion of variance that is not shared between the variable sets. An overall effect of $1 - 0.529 = 0.471 = R_c^2$ for the full canonical model was found by calculating $1 - \lambda$. This implies that the complete model demonstrated statistical significance and possessed a moderate effect size. Additionally, a test of the overall model was carried out using MANOVA to find the sum of Attitude variables with Perception variables within the CCA.

5.8.2 Evaluation of Individual Canonical Functions

The CCA resulted in four canonical functions with squared correlations R_c^2 of 0.408, 0.087, 0.016 and 0.005 respectively. Based on the number of variables in the smaller of the two sets, there will be an equal number of canonical functions or variates. In this study, the Attitude scale had four variables leading to four canonical functions or variates. Therefore, each function must be scrutinised to ensure the interpretation of the results is justified. Hence, the first two canonical functions or variates with reasonable variance between their variable sets were considered (CV1 and CV2). The first two canonical functions explain variances of 40.8% and 8.7% within their functions and represent squared canonical correlations (Sherry & Henson 2005), as shown in Table 27. However, the third and fourth canonical functions, each explaining a variance of 1.6% and 0.5%, were excluded from the interpretation because they accounted for less than 10% of the variance, signifying their relative weakness and lack of statistical significance (Sherry & Henson 2005). Furthermore, the cumulative sum of squared canonical correlations ($40.8\% + 8.7\% = 49.5\%$) for the first two functions exceeded the overall effect size, as determined by Wilks's Lambda (47.1%). This observation provides valuable insights into how the variance is explained by the full model compared to its canonical variates.

5.8.3 Hierarchical Statistical Significance and Dimension Reduction Analysis

The CCA adopts a hierarchical testing approach, commencing with the full model and sequentially assessing each subsequent function. The final canonical function often lacks robust interpretability. The common pitfalls in CCA reporting stem from assuming that tests of the full model evaluate individual functions, which is not the case. Therefore, it is essential to accurately interpret the statistical significance of CCA functions and extend beyond incorporating effect sizes and the collective influence of functions. Table 28 provides the dimension reduction analysis, showcasing the hierarchical statistical significance tests.

Table 28 Measures of Overall Model Fit for Canonical Correlation Analysis

Canonical Function	Canonical Correlation	Canonical (R_c^2)	Wilk's	F Statistic	p
1	0.639	0.408	0.529	10.739	<0.001
2	0.295	0.087	0.895	2.806	<0.001

The full model (functions 1 to 4) and the cumulative effects (functions 2 to 4) were statistically significant. The cumulative effects (Functions 3 to 4) and canonical function 4 in isolation lacked statistical significance result. Functions 3 and 4 were not interpreted as they only explained 1.6% and 0.5% of the variance individually and cumulatively. This is important when considering replicability for future studies. Thus, a significant and substantial relationship was found between the sets of variables, supported by statistical significance and effect sizes, which was predominantly explained by the first two functions of the canonical model.

5.8.4 Interpretation of the Canonical Correlations and Canonical Variates

An interpretation of the canonical correlations and canonical variates is essential for understanding the degree and direction of relationships between the Perception and Attitude variables in this multivariate analysis. This involves examining patterns of associations and identifying which variables contribute most to the canonical correlations between the variable sets across the two functions. Based on the squared correlations (R_c^2) effects, the first two canonical functions or variates were considered. The interpretation of the first canonical function or variate was carried out through the examination of the Standardised Canonical Function Coefficient (Standardised Weights) and Structure Coefficients (Correlation).

The Standardised Canonical Function Coefficients (Coeff) are the coefficients used to create canonical variates in CCA. They are the weights assigned to each variable when constructing the canonical variates, which are linear combinations of the original variables. These coefficients provide information about how each Perception or Attitude variable contributes to the canonical variates (CV1 and CV 2) and the strength and direction of that contribution. They help identify which variables have a stronger or weaker influence on the canonical relationship, which is essential for understanding the underlying structure and observed patterns in the data.

The Structure Coefficients (r_s) is the Pearson correlation between the observed variables examined within this study, such as the predictor variable (Perception variable) or criterion variable (Attitude variable) and their corresponding canonical function scores. A coefficient correlation of 0.45 is considered significant for the canonical loadings (Sherry & Henson 2005).

The Squared Canonical Structure Coefficients (r_s^2) represent the percentage of shared variance between the observed variables and the synthetic variable generated from the set of observed variables. They measure how much of the variance in the observed variable is accounted for by its canonical function.

The Canonical Commuality coefficients (h^2) represent the proportion of variance in an observed variable (Perception or Attitude) that is accounted for across all the analysed canonical functions.

The Commuality Coefficients (h^2) are important for understanding the contribution of individual variables to the canonical correlations and assessing their relevance for the entire analysis. They are calculated by summing the squared structure coefficients (r_s^2) across all relevant canonical functions, as illustrated in Table 29. As reported by Sherry and Henson (2005), structure coefficients above 0.45 are considered to highlight the coefficient correlations or loadings that contribute most significantly to the model. In this study, 'Interprofessional Communication' ($h^2 = 88.19$), 'Teams and Teamwork' ($h^2 = 72.98$) and 'Values or Ethics

for Interprofessional Practice' ($h^2 = 67.26$) from the Attitude criterion variable and 'Justification of Open Disclosure' ($h^2 = 82.37$), 'Negative Consequences of Open Disclosure' ($h^2 = 65.83$) and 'Open Disclosure Across Situations' ($h^2 = 64.35$) were considered useful for the model. Table 29 illustrates the CCA results for all variables across both functions.

Table 29 Canonical Correlations and Standardised Canonical Function Coefficient for the first and second canonical variates

	CV1 (Function 1)			CV2 (Function 2)			
Variable	Coef	r_s	r_s^2 (%)	Coef	r_s	r_s^2 (%)	h^2 (%)
Attitude							
Values or Ethics for Interprofessional Practice	-0.473	-0.801*	64.16	0.196	0.176	3.10	67.26
Roles or Responsibilities	-0.224	-0.545*	29.70	-0.066	-0.107	1.14	30.84
Interprofessional Communication	-0.329	-0.700*	49.00	-1.016	-0.626*	39.19	88.19
Teams and Teamwork	-0.359	-0.750*	56.25	0.787	0.409	16.73	72.98
Perception							
Open Disclosure Across Harm Levels	-0.308	-0.719*	51.70	-0.260	-0.031	0.10	51.80
Open Disclosure Across Situations	-0.252	-0.751*	56.40	-0.454	-0.282	7.95	64.35
Justification of Open Disclosure	-0.286	-0.787*	61.94	0.657	0.452*	20.43	82.37
Negative Consequences of Open Disclosure	-0.329	-0.681*	46.38	-0.655	-0.441	19.45	65.83
Positive Consequence of Open Disclosure	-0.111	-0.687*	47.20	0.428	0.238	5.66	52.86
Facilitators of Open Disclosure	-0.133	-0.484*	23.43	0.335	0.526*	27.67	51.10

***Significant correlations $\geq .45$.** Coef = standardised canonical function coefficient (standardised weights); r_s = structure coefficient (canonical loadings); r_s^2 = squared structure coefficient; h^2 = communality coefficient.

5.8.5 Interpretation and Reporting of Canonical Function 1

Table 29 provides the findings from a CCA with two canonical functions (CV1 and CV2) for the Attitude and Perception variables.

For CV1, the Canonical Function Coefficients which dominated were Values or Ethics for 'Interprofessional Practice' (-0.473), 'Teams and Teamwork' (-0.359), 'Interprofessional Communication' (-0.329), 'Negative

consequences of Open Disclosure' (-0.329) and 'Open Disclosure Across Harm Levels' (-0.308). These variables are positively related to each other.

For CV2, the Canonical Function Coefficients which dominated were 'Interprofessional Communication' (-1.016) and 'Teams and Teamwork' (0.787) within Attitude variable; 'Justification of Open Disclosure' (0.657) and 'Negative Consequences of Open Disclosure' (-0.655) in the Perception variable and are negatively related to each other.

The relevant Attitude variables for Canonical Function 1 were primarily influenced by the structure coefficient (r_s) 'Values or Ethics for Interprofessional Practice' (-0.801), 'Teams and Teamwork' (-0.750), 'Interprofessional Communication' ($r_s = -0.700$), while 'Roles or Responsibilities' ($r_s = -0.545$) made secondary contributions to the synthetic criterion variable. The Squared Structure Coefficients (r_s^2) showed the proportion of variance in the observed variables that could contribute to the synthetic criterion variable. The Canonical Function Coefficients exhibited substantial function coefficients for 'Values or Ethics for Interprofessional Practice' and a moderate function coefficient for other attitude variables, except for the 'Roles or Responsibilities'. This shows that certain attitudes are important for interprofessional practice, particularly 'Values or Ethics for Interprofessional Practice,' which has the strongest influence. While 'Teams and Teamwork,' 'Interprofessional Communication,' and 'Roles or Responsibilities' are also important, they have a lesser impact. Notably, all the structure coefficients of the criterion attitude variables shared the same sign, signifying a positive relationship among them. This implies that improving one can enhance the others, fostering better teamwork and collaboration among HCPs.

The relevant Perception variables for Canonical Function 1 were primarily influenced by 'Justification of Open Disclosure' ($r_s = -0.787$), 'Open Disclosure Across Situations' ($r_s = -0.751$), 'Open Disclosure Across Harm Levels' ($r_s = -0.719$), 'Positive Consequence of Open Disclosure' ($r_s = -0.687$), 'Negative Consequences of Open Disclosure' ($r_s = -0.681$), while 'Facilitators of Open Disclosure' (-0.484) made secondary contributions to the synthetic predictor variable. This finding, supported by the Squared Structure Coefficients (r_s^2), highlights how HCPs perceive and justify open disclosure. It also addresses their willingness to share information in various situations and levels of harm, the positive and negative consequences of being open, along with factors that encourage openness among HCPs.

However, the Canonical Function Coefficients, which represent the relationships between the original variables and the canonical functions, revealed a moderate negative relationship for variables such as 'Negative Consequences of Open Disclosure' (-0.329), 'Open Disclosure Across Harm Levels' (-0.308), 'Justification of Open Disclosure' (-0.286), 'Open Disclosure Across Situations' (-0.252) and weak negative relationship for the variables the 'Positive Consequence of Open Disclosure' (-0.111) and 'Facilitators of Open Disclosure' (-0.133) with the Canonical Function 1. The results suggest that concerns about negative consequences, variations in disclosure across harm levels and situations, and justification for disclosure are associated with less favourable disclosure outcomes. The weak negative relationship of positive consequences and facilitators suggests that while they may present some challenges, there is still room for improvement in supporting open disclosure practices.

In conclusion, as the standardised canonical function coefficient for all of the perception variable was negative, it was positively related to all of the attitude variable. In other words, as these negative factors increase, the overall effectiveness of open disclosure tends to decrease. The statistical results indicate that attitudes toward ethics, teamwork, and communication have a strong influence on open disclosure practices, but concerns about negative consequences play a greater role in influencing HCPs behaviour.

The first significant canonical variate revealed that, 'Values or Ethics for Interprofessional Practice' within the attitude variables displayed a strong negative relationship ($r_s = -0.801$) with various perception variables, particularly, 'Justification of Open Disclosure' ($r_s = -0.787$), 'Open Disclosure Across Situations' ($r_s = -0.751$) and 'Open Disclosure Across Harm Levels' ($r_s = -0.719$). Also, moderate negative relationship was noted with 'Negative Consequences of Open Disclosure' ($r_s = -0.681$) and 'Positive Consequence of Open Disclosure' ($r_s = -0.687$). This relationship accounted for approximately 64.16% of the shared variance. This suggests that HCPs with a more positive attitude toward values and ethics for interprofessional practice tend to have more favourable perceptions regarding open disclosure of PSIs because when the value of one variable increases, the value of the other tends to decrease producing a downward slope.

The 'Interprofessional Communication' in the Attitude variables exhibited a moderate negative relationship ($r_s = -0.700$) with 'Open Disclosure Across Situations' ($r_s = -0.751$) from the Perception variables. This relationship explained approximately 49% of the shared variance. This implies that HCPs with a positive attitude toward interprofessional communication are more likely to have favourable perceptions of open disclosure of PSIs across various situations.

'Teams and Teamwork' from the attitude variables had a moderately negative relationship ($r_s = -0.750$) with the Perception variables, explaining approximately 56.25% of the shared variance. This indicates that HCPs with a positive attitude toward healthcare teams and teamwork tend to have more positive perceptions regarding open disclosure of PSIs.

5.8.6 Interpretation and Reporting Canonical Function 2

The Attitude variables for the Canonical Function 2 were primarily influenced by the structure coefficient (r_s) 'Interprofessional Communication' ($r_s = -0.626$) which is supported by its Squared Structure Coefficients ($r_s^2 = 39.19$) and the Canonical Function Coefficients (-1.016) as illustrated in Table 5.29. The structure coefficient (r_s) for 'Interprofessional Communication' ($r_s = -0.626$) was negative but was positively related to 'Justification of Open Disclosure' ($r_s = 0.452$) and 'Facilitators of Open Disclosure' ($r_s = 0.526$). This analysis provides insight into how 'Interprofessional Communication' influences attitudes related to open disclosure. 'Interprofessional Communication' has a strong negative association with Canonical Function 2 (CV2), indicating that weaker communication contributes to greater challenges in open disclosure. However, 'Interprofessional Communication' positively correlates with the justification (0.452) and facilitators (0.526) of disclosure, suggesting that improving communication can help professionals better justify and support disclosure practices.

The relevant perception variables for the Canonical Function 2 were primarily influenced by the structure coefficient (r_s) 'Facilitators of Open Disclosure' ($r_s = 0.526$), while 'Justification of Open Disclosure' ($r_s = 0.452$) made a secondary contribution to the predictor variable.

The Canonical Function Coefficients that represent the relationships between the original variables and the canonical functions revealed a moderate Canonical Function Coefficients for 'Justification of Open Disclosure' (0.657). However, a weak Canonical Function Coefficient was noted for the 'Facilitators of Open Disclosure' (0.335) with its corresponding large Squared Structure Coefficients (r_s^2) (27.67). This suggests that 'Justification of Open Disclosure' plays a more significant role in the overall understanding of Canonical Function 2 compared to 'Facilitators of Open Disclosure.' It indicates that while both factors are important, the reasons for open disclosure have a stronger influence on the perceptions being measured.

Summary

The primary findings of CCA indicate significant relationships between Attitude and Perception variables. The changes in any areas related to HCPs' attitudes toward open disclosure of PSIs were associated with corresponding influences on how they perceive open disclosure. The secondary finding suggests an intriguing relationship between interprofessional communication standards, HCPs' perceptions of open disclosure and its justification, which may require further exploration. Notably, 'Interprofessional Communication' and 'Negative Consequences of Open Disclosure' align, while 'Justification of Open Disclosure' and 'Facilitators of Open Disclosure' diverge.

5.9 Hierarchical Regression Analysis of Factors Influencing HCPs' Attitudes to Disclosure of PSI

The Hierarchical Linear Regression serves as a model comparison framework to assess if specific variables account for a statistically significant portion of variance in the dependent variable after accounting for the influence of control variables. In this study, Hierarchical Linear Regression model was developed to examine unique associations of HCPs' socio-demographic characteristics, involvement in open disclosure training, involvement in open disclosure of PSIs and their perception with HCPs' attitude on open disclosure of patient safety incidents, respectively. By constructing sequential linear regression models and adding blocks of variables in stages, we can determine if the inclusion of perceptions as an independent variable significantly contributes to explaining the variance in attitude, while considering the influence of age, gender, current position, and duration of work in the healthcare sector. The assumptions associated with hierarchical regression analysis such as linearity, homoscedasticity, normality for each subscale and multicollinearity was verified.

In the first model (Model 1) unique associations of HCPs' socio-demographic characteristics, including age, gender, current position, and duration of work in the healthcare sector to HCPs' attitude on open disclosure of PSIs were examined.

In the subsequent step (Model 2), Involvement and Benefits of open disclosure training were introduced, examining unique associations of Involvement and Benefits of open disclosure training with HCPs' attitude on open disclosure of PSIs beyond the effects of HCPs' socio-demographic characteristics.

In the next step (Model 3), Involvement in PSIs and the nature of involvement in open disclosure of PSIs were included to examine their unique associations with HCPs' attitude on open disclosure of PSIs beyond the effects of HCPs' socio-demographic characteristics, Involvement and Benefits of open disclosure training.

Finally, (Model 4), the perception of HCPs regarding open disclosure of PSIs is incorporated, examining unique associations of perception of HCPs regarding open disclosure of PSIs with HCPs' attitude on open disclosure of PSIs beyond the effects of HCPs' socio-demographic characteristics, Involvement and Benefits of open disclosure training and Involvement in PSIs and the nature of involvement in open disclosure of PSIs.

In the context of categorical variables in regression analysis, the 'base' or 'reference' category serves as the point to which all other categories are compared. This is crucial for interpretability, providing a reference for understanding the coefficients of other categories. It enables meaningful comparisons across different levels of a categorical variable and mitigates issues related to collinearity, thereby enhancing the stability and efficiency of the estimation process. The Variance Inflation Factor (VIF) was used to assess the potential presence of multicollinearity among the explanatory variables. The VIF value <5 indicated the absence of significant multicollinearity.

As age, gender, current position, duration of work in the healthcare sector and involvement in open disclosure training and PSIs are categorical variables, the 'base' or 'reference' category is established based on the most common or frequent occurrences. Specifically, the reference categories are 31–40 years in age, female in

gender, nursing and midwifery professionals in the current position, 11-20 years in the duration of work in the healthcare sector, and no involvement in open disclosure training and PSIs. These selections aim to provide a benchmark for interpretation and comparison in this study.

The results from the hierarchical linear regression model examining the independent associations between HCPs' socio-demographic characteristics, involvement in open disclosure training, involvement in open disclosure of PSIs and their perception with HCPs' attitude on open disclosure of PSIs are displayed (Table 30, Table 31, Table 32, and Table 33). The residual plots for all of the models are included in the1.1 Appendix 22. In the regression model, statistical significance was determined at $p < 0.05$.

5.9.1 Hierarchical Regression for variables predicting Values or Ethics for Interprofessional Practice

Table 30 summarises the results of the first dependent variable, Values or Ethics for Interprofessional Practice.

Model 1 was statistically significant ($R^2 = .110$, $F(12, 322) = 3.315$, $p = 0.000$; adjusted $R^2 = (0.077)$), explaining 11.0% variance in the Values or Ethics for Interprofessional Practice domain. Age 41-50 years ($\beta = 1.479$, $p = 0.001$) and Male ($\beta = -.987$, $p = 0.022$) categories were significant. HCPs aged 41-50 years exhibited a positive association ($\beta = 1.479$, $p = 0.001$), while being male showed a negative impact ($\beta = -0.987$, $p = 0.022$) on interprofessional values or ethics related to open disclosure of PSIs.

In Model 2, including open disclosure training variables to predict Values or Ethics for Interprofessional Practice led to a statistically significant increase in R^2 of 0.269, $F(12, 310) = 5.612$, $p = 0.000$; adjusted $R^2 = (0.212)$, explaining 26.9% of the variance in the interprofessional values or ethics domain. The sociodemographic characteristics such as Age 41-50 years ($\beta = 1.283$, $p = 0.002$), Male ($\beta = -0.870$, $p = 0.032$) and 21-30 years of duration of work in healthcare sector ($\beta = -.892$, $p = 0.029$) emerged as statistically significant predictors of interprofessional values. Among, involvement in open disclosure training, the open disclosure Facilitator Training ($\beta = 1.179$, $p = 0.016$) indicated that this specific training programme enhanced the participants' commitment to interprofessional ethics. Among the benefits, both multidisciplinary approach as a valuable learning experience ($\beta = 1.095$, $p = 0.011$) and HCPs increased comfort in disclosing PSIs to patients and their relevant persons ($\beta = 0.765$, $p = 0.015$) showed a positive influence on interprofessional values.

For Model 3, the inclusion of involvement in PSI and the nature of involvement variables led to a statistically non-significant increase in R^2 of .285, $F(6, 304) = 1.134$, $p = 0.342$; adjusted $R^2 = 0.214$, explaining 28.5% of the variance in the interprofessional values or ethics domain.

In Model 4, the addition of HCPs perception towards disclosure of PSIs variable yielded a significant increase in R^2 of 0.379, $F(6, 298) = 7.519$, $p = 0.000$; adjusted $R^2 = (0.304)$, explaining 37.9% of the variance in the interprofessional values or ethics domain. Among the factors examined, age (41–50 years), gender (male), duration of work in healthcare sector (21-30 years) and a multidisciplinary approach to open disclosure training as a valuable learning experience and justification of open disclosure emerged as statistically significant predictors of interprofessional values. Specifically, justification for open disclosure was positively associated with interprofessional values ($\beta = 0.270$, $p = 0.001$), emphasizing the critical role of ethical reasoning in shaping these values. In addition, it's worth noting that HCPs increased comfort in disclosing PSIs to patients in became statistically non-significant in model 4 ($\beta = 0.355$, $p = 0.252$).

Table 30 Summary of Hierarchical Regression for Variables Predicting Values or Ethics for Interprofessional Practice

Values or Ethics for Interprofessional Practice	Model 1		Model 2		Model 3		Model 4	
	β	p	B	p	B	p	β	p
Constant	17.708	.000**	16.209	.000**	16.077	.000**	8.145	.000**
Age								
21-30 years	-.470	.301	-.511	.233	-.421	.338	-.526	.218
31-40 years	-	-	-	-	-	-	-	-
41-50 years	1.479	.001*	1.283	.002*	1.233	.003*	.889	.024*
51-60 years	.274	.635	.402	.459	.312	.575	.139	.792
>61 years	-1.790	.072	-1.526	.103	-1.567	.098	-1.194	.182
Prefer not to say	-2.708	.270	-3.842	.101	-4.119	.079	-2.980	.181
Gender								
Male	-.987	.022*	-.870	.032*	-.903	.028*	-.889	.023*
Female	-	-	-	-	-	-	-	-
Prefer not to say	-4.403	.074	-3.153	.176	-3.318	.155	-1.738	.435
Current Position								
Medical Professional	.135	.800	.488	.333	.527	.306	.729	.138
Nursing and Midwifery	-	-	-	-	-	-	-	-
Health & Social Care professionals	-.305	.371	.075	.818	.081	.804	-.094	.775
Duration of Work in Healthcare Sector								
<10 Years	.299	.491	.230	.571	.089	.832	.003	.993
11-20 Years	-	-	-	-	-	-	-	-
21-30 Years	-.805	.059	-.892	.029*	-.964	.020*	-.884	.025*
>31 Years	.055	.932	-.116	.848	-.026	.966	-.269	.647

Involvement In Open Disclosure Training								
Yes			-.893	.195	-.740	.286	.076	.909
No			-	-	-	-	-	-
Involvement In Open Disclosure Training								
As a part of Professional Degree Programme			.454	.171	.399	.236	.086	.790
Seminar, Webinar, Conference or Presentations on Open Disclosure			-.398	.203	-.380	.228	-.346	.252
Interactive Workshops on Open Disclosure			.618	.086	.632	.092	.526	.143
Online/E-learning resources for Open Disclosure Training			.634	.065	.593	.085	.320	.330
Open Disclosure Facilitator Training			1.179	.016*	1.145	.020*	.800	.088
Other, please specify _____			-1.313	.190	-1.266	.213	-1.155	.232
Benefits of Open Disclosure Training								
Open Disclosure training is critical for the implementation of Open Disclosure policy			-.445	.347	-.472	.322	-.434	.335
A multidisciplinary approach to Open Disclosure training contributes to a valuable learning experience for HCPs			1.095	.011*	1.176	.007*	.892	.034*
Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during Open Disclosure			.359	.376	.361	.380	.464	.236
Training made me aware of protective legislation for HCPs involved in the Open Disclosure process			.573	.083	.503	.134	.474	.137
Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'			.765	.015*	.794	.012*	.355	.252

Have you been involved in a Patient Safety Incident								
Yes					.467	.419	.607	.268
No					-	-	-	-
What Was the Nature of Involvement								
Initial discussion with the patient and/or their family or significant others					.190	.648	-.126	.753
Pre-meeting discussions					.249	.542	.358	.357
Open Disclosure discussions					-.300	.449	-.404	.288
I did not participate in patient meetings					-.759	.159	-.852	.094
Not applicable					-.192	.752	-.364	.525
Perception								
Open disclosure across harm levels							.000	.998
Open disclosure across situations							.056	.154
Justification of Open Disclosure							.270	.001*
Negative consequences of Open Disclosure							.054	.235
Positive consequence of Open Disclosure							.036	.437
Facilitators of Open Disclosure							.017	.715
R²	.110		.269		.285		.379	
Adjusted R²	.077		.212		.214		.304	
ΔR²	.110		.159		.016		.094	
ΔF	3.315		5.612		1.134		7.519	
p-value	0.000**		0.000**		0.342		0.000**	
Durbin-Watson Score	1.997							

* $P < 0.05$. ** $p < 0.01$. β =Standard Coefficient. -Reference Level.

5.9.2 Hierarchical Regression for variables predicting Role and Responsibilities

Table 31 summarises the results of the second dependent variable, Roles or Responsibilities.

Model 1 with socio-demographic characteristics was statistically significant ($R^2 = .086$, $F(12, 323) = 2.525$, $p = 0.003$; adjusted $R^2 = (0.052)$, explaining 8.6% variance in the Roles or Responsibilities domain. Age over 61 years ($\beta = -2.105$, $p = 0.006$) and Gender with 'Prefer not to say' ($\beta = -0.4.182$, $p = 0.027$) categories were significant.

The addition of open disclosure Training to **Model 2** led to a statistically significant increase in R^2 of 0.153, $F(12, 311) = 2.049$, $p = 0.020$; adjusted $R^2 = (0.087)$, explaining 15.3% of the variance in the Roles or Responsibilities domain. In age category, over 61 years ($\beta = -2.038$, $p = 0.007$) continued to be a statistically significant. Also, the open disclosure Facilitator Training ($\beta = 0.996$, $p = 0.011$) indicated that this specific training programme enhanced the HCPs' commitment to their role and responsibility towards open disclosure of PSIs. Among the benefits, HCPs increased comfort in disclosing PSIs to patients and their relevant persons ($\beta = 0.599$, $p = 0.019$) showed a significant positive influence on their Roles or Responsibilities.

For Model 3, the inclusion of involvement in PSI and the nature of involvement variables led to a statistically non-significant increase in R^2 of .167, $F(6, 305) = 0.843$, $p = 0.537$; adjusted $R^2 = 0.085$, explaining 16.7% of the variance in the Roles or Responsibilities domain.

In **Model 4**, the inclusion of the variable pertaining to HCPs' perception of PSI disclosure resulted in a statistically significant increase in the R^2 of 0.211, $F(6, 299) = 2.785$, $p = 0.012$; adjusted $R^2 = (0.116)$, explaining 21.1% of the variance in the in the Roles or Responsibilities domain. However, none of the perception variables demonstrated statistically significant results concerning roles and responsibilities in open disclosure of PSIs within this model. Among the factors examined, age over 61 years ($\beta = -1.643$, $p = 0.031$) and involvement in open disclosure Facilitator Training ($\beta = 0.860$, $p = 0.028$) still continued to be a statistically significant. It's essential to highlight that the increased comfort of HCPs' in disclosing PSIs to patients following training became statistically non-significant in Model 4 ($\beta = 0.446$, $p = 0.090$).

Table 31 Summary of Hierarchical Regression for Variables Predicting Role and Responsibilities

Roles or Responsibilities	Model 1		Model 2		Model 3		Model 4	
	β	<i>p</i>	β	<i>p</i>	B	<i>p</i>	β	<i>P</i>
Constant	12.066	.000**	11.222	.000**	11.192	.000**	6.571	.000**
Age								
21-30 years	.511	.140	.593	.087	.530	.136	.624	.081
31-40 years	-	-	-	-	-	-	-	-
41-50 years	.573	.081	.520	.112	.549	.098	.347	.299
51-60 years	-.453	.304	-.526	.234	-.370	.413	-.414	.354
>61 years	-2.105	.006*	-2.038	.007*	-1.872	.015*	-1.643	.031*
Prefer not to say	-.814	.540	-1.322	.323	-1.106	.411	-1.196	.370
Gender								
Male	-.372	.259	-.424	.201	-.325	.337	-.280	.402
Female	-	-	-	-	-	-	-	-
Prefer not to say	-4.182	.027*	-3.449	.068	-3.276	.085	-2.667	.158
Current Position								
Medical Professional	-.008	.983	.157	.699	.011	.979	.200	.632
Nursing and Midwifery	-	-	-	-	-	-	-	-
Health & Social Care professionals	.116	.654	.282	.286	.294	.268	.328	.238
Duration of Work in Healthcare Sector								
<10 Years	-.504	.130	-.526	.110	-.397	.244	-.454	.180
11-20 Years	-	-	-	-	-	-	-	-
21-30 Years	.055	.865	-.023	.944	-.084	.802	-.045	.892
>31 Years	.778	.112	.708	.149	.490	.331	.422	.396
Involvement In Open Disclosure Training								
Yes			.522	.361	.481	.405	.859	.138
No			-	-	-	-	-	-

Involvement In Open Disclosure Training								
As a part of Professional Degree Programme			-.089	.740	-.054	.842	-.222	.420
Seminar, Webinar, Conference or Presentations on Open Disclosure			-.169	.500	-.189	.456	-.122	.629
Interactive Workshops on Open Disclosure			.420	.147	.335	.270	.285	.348
Online/E-learning resources for Open Disclosure Training			-.119	.668	-.079	.777	-.220	.428
Open Disclosure Facilitator Training			.996	.011*	.998	.012*	.860	.028*
Other, please specify_____			-1.226	.132	-1.268	.125	-1.185	.148
Benefits of Open Disclosure Training								
Open Disclosure training is critical for the implementation of Open Disclosure policy			-.214	.579	-.167	.668	-.108	.778
A multidisciplinary approach to Open Disclosure training contributes to a valuable learning experience for HCPs			.356	.303	.349	.320	.161	.648
Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during Open Disclosure			.084	.799	.010	.977	-.001	.998
Training made me aware of protective legislation for HCPs involved in the Open Disclosure process			-.245	.361	-.258	.345	-.278	.304
Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'			.599	.019*	.600	.020*	.446	.090
Have you been involved in a Patient Safety Incident								
Yes					-.290	.536	-.177	.703
No					-	-	-	-
What Was the Nature of Involvement								
Initial discussion with the patient and/or their family or significant others					.233	.490	.032	.924
Pre-meeting discussions					.188	.570	.230	.484

Open Disclosure discussions					-.019	.952	-.095	.769
I did not participate in patient meetings					.380	.383	.268	.534
Not applicable					.103	.834	-.030	.951
Perception								
Open disclosure across harm levels							.097	.184
Open disclosure across situations							.040	.226
Justification of Open Disclosure							.053	.413
Negative consequences of Open Disclosure							.043	.262
Positive consequence of Open Disclosure							-.022	.575
Facilitators of Open Disclosure							.052	.188
R^2	.086		.153		.167		.211	
Adjusted R^2	.052		.087		.085		.116	
ΔR^2	.086		.067		.014		.044	
ΔF	2.525		2.049		.843		2.785	
p-value	0.003*		0.020*		0.537		0.012*	
Durbin-Watson Score	1.986							

* $P < 0.05$. ** $p < 0.01$. β =Standard Coefficient. -Reference Level.

5.9.3 Hierarchical regression for variables predicting Interprofessional Communications

Table 32 summarises the results of the third dependent variable, Interprofessional Communication.

Model 1 was statistically significant ($R^2 = .118$, $F(12, 324) = 3.613$, $p = 0.000$; adjusted $R^2 = (0.085)$, explaining 11.8% variance in the Interprofessional Communication domain. Among, socio-demographic variables considered, the age group of 41-50 years ($\beta = 0.760$, $p = 0.042$) and Health and Social Care Professionals ($\beta = -.947$, $p = 0.001$) were found to have a statistically significant positive impact on interprofessional communication, indicating HCPs within this age range and current position exhibited better communication practices related to open disclosure of PSIs.

In **Model 2**, including open disclosure training variables to linear regression analysis examining Interprofessional Communication in healthcare related to open disclosure of PSIs led to a statistically significant increase in R^2 of 0.296, $F(12, 312) = 6.577$, $p = 0.000$; adjusted $R^2 = (0.242)$, explaining 29.6% of the variance in the Interprofessional Communication domain.

The results indicate that the 'Prefer not to say' age group displayed a statistically significant negative impact ($\beta = -3.318$, $p = 0.020$), indicating lower communication scores among HCPs' who chose not to disclose their age. Furthermore, the 'Health & Social Care professionals' having a significant positive effect on interprofessional communication ($\beta = -0.566$, $p = 0.044$), signified that this group exhibited better communication practices. Participation in interactive workshops on open disclosure ($\beta = 0.948$, $p = 0.002$) and open disclosure facilitator training ($\beta = 1.061$, $p = 0.011$) positively impacted interprofessional communication.

Among the Benefits of open disclosure Training, HCPs' who recognised the critical importance of open disclosure training for the implementation of open disclosure policies displayed significantly improved interprofessional communication ($\beta = -0.881$, $p = 0.031$). Additionally, following open disclosure training, HCPs' reported an increased comfort level in disclosing PSIs to patients and their relevant persons, which had a highly significant positive impact on interprofessional communication ($\beta = 1.349$, $p = 0.000$) in fostering effective communication among HCPs' and enhancing transparency in patient care.

For **Model 3**, the inclusion of involvement in PSI and the nature of involvement variables led to a statistically non-significant increase in R^2 of 0.320, $F(6, 306) = 1.810$, $p = 0.097$; adjusted $R^2 = 0.254$, explaining 32.0% of the variance in the interprofessional values or ethics domain.

In **Model 4**, the addition of HCPs perception towards disclosure of PSIs variable yielded a significant increase in R^2 of 0.409, $F(6, 300) = 7.503$, $p = 0.000$; adjusted $R^2 = (0.338)$, explaining 40.9% of the variance in the interprofessional values or ethics domain. Among the sociodemographic factors examined, HCPs' who chose not to disclose their age ($\beta = -3.577$, $p = 0.008$) and Health & Social Care professionals ($\beta = -0.657$, $p = 0.019$) still continued to be statistically significant.

It's important to highlight that training made HCPs aware of protective legislation for those involved in the open disclosure process was statistically significant within this model ($\beta = 0.547$, $p = 0.045$). Furthermore,

HCPs' who reported that training made them comfortable in disclosing PSIs to patients and their relevant persons demonstrated significantly improved communication ($\beta = 1.054, p = 0.000$).

In terms of the nature of HCPs' involvement in PSI, engaging in open disclosure discussions had a positive effect on interprofessional communication, with a statistically significant impact ($\beta = 0.732, p = 0.025$), indicating that actively participating in these discussions contributes to better communication practices.

Additionally, the perceptions of open disclosure across various situations was associated with enhanced interprofessional communication ($\beta = 0.079, p = 0.019$), emphasising the importance of recognising the diverse contexts in which open disclosure occurs. Conversely, negative consequences of open disclosure were significantly correlated with decreased interprofessional communication ($\beta = -0.169, p = 0.000$), highlighting the potential challenges and concerns that may hinder effective communication.

Table 32 Summary of Hierarchical Regression for variables predicting Interprofessional Communication

Interprofessional Communication	Model 1		Model 2		Model 3		Model 4	
	β	p	β	P	B	p	β	P
Constant	11.591	.000**	10.938	.000**	10.575	.000**	6.527	.000**
Age								
21-30 years	-.499	.205	-.390	.287	-.281	.451	-.020	.956
31–40 years	-	-	-	-	-	-	-	-
41–50 years	.760	.042*	.502	.146	.509	.144	.144	.668
51–60 years	.090	.857	-.072	.877	.058	.902	-.076	.865
>61 years	-.542	.531	-.635	.428	-.530	.511	-.371	.627
Prefer not to say	-2.513	.099	-3.318	.020*	-3.131	.027*	-3.577	.008*
Gender								
Male	-.179	.630	-.311	.368	-.284	.414	-.193	.560
Female	-	-	-	-	-	-	-	-
Prefer not to say	-.645	.764	-.522	.794	-.632	.751	-.490	.796
Current Position								
Medical Professional	-.854	.064	-.520	.225	-.758	.082	-.572	.169
Nursing and Midwifery	-	-	-	-	-	-	-	-
Health & Social Care professionals	-.947	.001*	-.566	.044*	-.500	.073	-.657	.019*
Duration of Work in Healthcare Sector								
<10 Years	-.157	.675	-.152	.660	-.159	.654	-.267	.430
11-20 Years	-	-	-	-	-	-	-	-
21-30 Years	.148	.691	.201	.566	.104	.768	.163	.627
>31 Years	.354	.527	.427	.411	.198	.708	.134	.788

Involvement In Open Disclosure Training								
Yes			.266	.653	.274	.643	.620	.276
No			-	-	-	-	-	-
Involvement In Open Disclosure Training								
As a part of Professional Degree Programme			.089	.754	.013	.963	-.216	.434
Seminar, Webinar, Conference or Presentations on Open Disclosure			-.225	.398	-.203	.446	-.038	.882
Interactive Workshops on Open Disclosure			.948	.002*	.731	.022*	.562	.066
Online/E-learning resources for Open Disclosure Training			.254	.386	.275	.347	.059	.831
Open Disclosure Facilitator Training			1.061	.011*	.903	.030*	.649	.100
Other, please specify_____			-.314	.715	-.480	.579	-.323	.695
Benefits of Open Disclosure Training								
Open Disclosure training is critical for the implementation of Open Disclosure policy			-.881	.031*	-.764	.061	-.608	.114
A multidisciplinary approach to Open Disclosure training contributes to a valuable learning experience for HCPs			.004	.992	-.047	.898	-.332	.348
Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during Open Disclosure			-.448	.199	-.524	.136	-.415	.214
Training made me aware of protective legislation for HCPs involved in the Open Disclosure process			.510	.072	.490	.087	.547	.045*
Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'			1.349	.000**	1.311	.000**	1.054	.000**
Have you been involved in a Patient Safety Incident								
Yes					-.638	.196	-.354	.449
No					-	-	-	-

What Was the Nature of Involvement								
Initial discussion with the patient and/or their family or significant others					.634	.072	.446	.187
Pre-meeting discussions					-.287	.415	-.338	.314
Open Disclosure discussions					.625	.066	.732	.025*
I did not participate in patient meetings					.130	.776	.127	.770
Not applicable					.920	.076	.747	.127
Perception								
Open disclosure across harm levels							.082	.261
Open disclosure across situations							.079	.019*
Justification of Open Disclosure							.028	.664
Negative consequences of Open Disclosure							.169	.000**
Positive consequence of Open Disclosure							-.054	.162
Facilitators of Open Disclosure							-.023	.564
R²	.118		.296		.320		.409	
Adjusted R²	.085		.242		.254		.338	
ΔR^2	.118		.178		.024		.089	
ΔF	3.613		6.577		1.810		7.503	
p-value	0.000**		0.000**		0.097		0.000**	
Durbin-Watson Score	1.848							

* $P < 0.05$. ** $p < 0.01$. β =Standard Coefficient. -Reference Level.

5.9.4 Hierarchical regression for variables predicting Teams and Teamwork

Table 33 summarises the results of the fourth dependent variable, Teams and Teamwork.

Model 1 was not statistically significant ($R^2 = 0.054$, $F(12, 324) = 1.542$, $p = 0.108$; adjusted $R^2 = (0.019)$, explaining 5.4% variance in the Teams and Teamwork domain.

Adding Open Disclosure training variables to **Model 2** led to a statistically significant increase in R^2 of 0.162, $F(12, 312) = 3.364$, $p = 0.000$; adjusted $R^2 = (0.098)$, explaining 16.2% of the variance. Among the factors examined, HCPs involvement in Open Disclosure training as a part of professional degree programme ($\beta = 0.536$, $p = 0.042$) and HCPs' who reported that training made them comfortable in disclosing PSIs to patients and their relevant persons' ($\beta = 0.690$, $p = 0.006$) yielded a significant result for their Team and Teamwork related to Open Disclosure of PSIs.

For **Model 3**, the inclusion of involvement in PSI and the nature of involvement variables led to a statistically non-significant increase in R^2 of 0.186, $F(6, 306) = 1.489$, $p = 0.182$; adjusted $R^2 = (0.106)$, explaining 18.6% of the variance in the in the Teams and Teamwork domain.

In **Model 4**, the addition of HCPs perception towards disclosure of PSIs variable yielded a significant increase in R^2 of 0.331, $F(6, 300) = 10.869$, $p = 0.000$; adjusted $R^2 = (0.251)$, explaining 33.1% of the variance in the Teams and Teamwork domain. Several significant findings can be observed in this linear regression analysis. Firstly, HCPs' justifications for Open Disclosure practices yielded a statistically significant result with ($\beta = 0.188$, $p = 0.002$) suggesting a positive impact on their Teams and Teamwork towards Open Disclosure of PSIs. Secondly, the Positive consequence of Open Disclosure variable also yielded a statistically significant result ($\beta = 0.074$, $p = 0.035$) which implies that HCPs' who perceive positive consequences related to Open Disclosure tend to engage in improved Teams and Teamwork related to Open Disclosure of PSIs.

Table 33 Summary of Hierarchical Regression for Variables Predicting Teams and Teamwork

Teams and Teamwork	Model 1		Model 2		Model 3		Model 4	
	β	p	β	p	B	p	β	P
Constant	13.182	.000**	13.133	.000**	12.658	.000**	4.786	.000**
Age								
21-30 years	-.323	.351	-.387	.255	-.324	.351	-.326	.315
31–40 years	-	-	-	-	-	-	-	-
41–50 years	.510	.122	.345	.281	.422	.193	.141	.643
51–60 years	.123	.781	.142	.742	.211	.633	.105	.797
>61 years	-.283	.711	-.098	.895	-.163	.828	.211	.761
Prefer not to say	-.261	.845	-.418	.751	-.373	.777	-.082	.946
Gender								
Male	.316	.334	.388	.228	.429	.186	.478	.111
Female	-	-	-	-	-	-	-	-
Prefer not to say	-2.514	.185	-2.104	.257	-2.318	.212	-.833	.628
Current Position								
Medical Professional	-.819	.044*	-.672	.092	-.802	.048*	-.502	.183
Nursing and Midwifery	-	-	-	-	-	-	-	-
Health & Social Care professionals	-.669	.011*	-.435	.095	-.404	.120	-.480	.058
Duration of Work in Healthcare Sector								
<10 Years	.158	.633	.111	.730	.069	.834	.026	.932
11-20 Years	-	-	-	-	-	-	-	-
21-30 Years	-.393	.230	-.396	.223	-.463	.158	-.403	.185
>31 Years	-.364	.460	-.417	.387	-.509	.302	-.755	.097

Involvement In Open Disclosure Training								
Yes			-.765	.164	-.855	.121	-.167	.745
No			-	-	-	-	-	-
Involvement In Open Disclosure Training								
As a part of Professional Degree Programme			.536	.042*	.584	.029*	.297	.234
Seminar, Webinar, Conference or Presentations on Open Disclosure			-.020	.935	-.023	.927	.040	.862
Interactive Workshops on Open Disclosure			.222	.436	.222	.454	.218	.431
Online/E-learning resources for Open Disclosure Training			.157	.565	.172	.527	-.050	.844
Open Disclosure Facilitator Training			.604	.117	.552	.154	.313	.379
Other, please specify_____			-1.513	.059	-1.594	.049*	-1.454	.052
Benefits of Open Disclosure Training								
Open Disclosure training is critical for the implementation of Open Disclosure policy			-.339	.370	-.283	.454	-.234	.501
A multidisciplinary approach to Open Disclosure training contributes to a valuable learning experience for HCPs			.490	.147	.401	.241	.167	.601
Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during Open Disclosure			-.336	.299	-.437	.182	-.397	.190
Training made me aware of protective legislation for HCPs involved in the Open Disclosure process			.352	.181	.360	.178	.280	.255
Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'			.690	.006*	.662	.009*	.263	.271
Have you been involved in a Patient Safety Incident								
Yes					-.189	.681	-.126	.766
No					-	-	-	-

What Was the Nature of Involvement								
Initial discussion with the patient and/or their family or significant others					.854	.010*	.570	.063
Pre-meeting discussions					-.258	.431	-.203	.505
Open Disclosure discussions					.233	.461	.037	.900
I did not participate in patient meetings					.807	.059	.646	.100
Not applicable					.859	.075	.678	.126
Perception								
Open disclosure across harm levels							.047	.477
Open disclosure across situations							.012	.697
Justification of Open Disclosure							.188	.002*
Negative consequences of Open Disclosure							.051	.150
Positive consequence of Open Disclosure							.074	.035*
Facilitators of Open Disclosure							.057	.115
R²	.054		.162		.186		.331	
Adjusted R²	.019		.098		.106		.251	
ΔR^2	.054		.108		.024		.145	
ΔF	1.542		3.364		1.489		10.869	
p-value	0.108		0.000**		0.182		0.000**	
Durbin-Watson Score	1.976							

* $P < 0.05$. ** $p < 0.01$. β =Standard Coefficient. -Reference Level.

5.10 Summary

This chapter presented the quantitative findings of phase one analysis. The analysis has revealed the attitudes and perceptions of 417 multidisciplinary HCPs towards open disclosure, across eight study sites from a selected hospital group in Ireland. Descriptive statistics were used to organise, summarise, and visualise the data, providing meaningful insights into HCPs' experiences and perspectives on open disclosure. The study sample represented Nursing and Midwifery professionals (71%), Health and Social Care Professionals (20.7%) and Medical Professionals (8.3%). Most HCPs had attended open disclosure training and found it beneficial for policy awareness, multidisciplinary collaboration, and patient-centred approaches. Around 55.8% had experience with open disclosure at various stages of PSIs. HCPs strongly disagreed with withholding information as disclosure improves patient trust and safety culture. There was a consensus that the medical team should lead disclosure but also seen as a shared responsibility among all HCPs. Notably, 67.6% of respondents believed the focus should be on "not who is right, but what is best for the patient." Open disclosure was largely supported, regardless of harm level, and was considered important for awareness, understanding, and transparency, even if it posed potential risks to the organisation or individual HCPs. HCPs showed a neutral view on the legal implications, with a minority concerned about reputation, criticism and disciplinary action. Nevertheless, 76.8% believed open disclosure would improve healthcare services, while 58.6% felt it could reduce guilt and help patients reconnect with their healthcare team. Even though most HCPs were comfortable supporting colleagues in disclosure conversations, they requested increased ethical awareness, training, positive culture, guidelines, and legal protection to facilitate effective open disclosure.

Univariate Analysis illustrated statistically significant differences in HCPs attitude towards open disclosure in several areas. While HCPs aged 21-30 emphasised ethical principles in interprofessional practice, those aged 41-50 focused on the centralised role of the medical team, shared responsibility, and interprofessional communication in determining and resolving PSIs. HCPs aged 41-50, particularly nurses and midwives, felt comfortable advising peers on errors but were concerned about judgment from others, while recognising the importance of policies in effective disclosure communication. Nurses and midwives also placed the highest emphasis on patient safety culture, patient-centred care, and PSI management compared to others. Attendance at facilitator training and workshops enhanced ethical values and interprofessional communication, while training as part of the professional degree programme had a stronger impact on teams and teamwork. A multidisciplinary approach, a supportive multidisciplinary environment, awareness of protective legislation, and confidence in engaging in open disclosure were key factors influencing HCPs' overall attitudes towards disclosure. In terms of perceptions, HCPs aged 41-50, nurses and midwives, and those with 21-30 years of experience showed a higher influence on various aspects of disclosure. HCPs who received open disclosure training as part of their professional degree programme showed strong support for open disclosure across harm levels, situations, and positive consequences.

The primary findings from the Canonical Correlation Analysis (CCA) revealed significant relationships between attitudes and perceptions related to open disclosure. Specifically, changes in HCPs' attitudes to open disclosure of PSIs are mirrored by corresponding shifts in how they perceive open disclosure. A secondary finding revealed an interesting relationship between interprofessional communication standards and HCPs' perceptions of open disclosure and its justification. The interprofessional communication and negative consequences of open disclosure align, while justification for open disclosure and facilitators of open disclosure diverge. This indicates that those working in poorer interprofessional communication environments tend to justify open disclosure more strongly, which may reflect a need for greater transparency and accountability in such settings.

Hierarchical Linear Regression analysis revealed the effect of HCPs' perceptions on attitudes. The hierarchical modelling allowed to view the effect of adding each group of variables to each model and assess the significance jointly. Overall, across the four models, the socio-demographic variables, involvement in open disclosure training and perception-related variables significantly influenced attitudes. Notably, HCPs aged 41-50 years exhibited a stronger belief in a multidisciplinary approach to open disclosure, while those who participated in facilitator training demonstrated a heightened sense of roles and responsibilities. For the 'Roles & Responsibilities', the age effect was reminiscent of the univariate analysis. Nurses and Midwives displayed higher interprofessional communication values compared to other HCPs, with awareness of protective legislation and comfort in disclosing patient safety incidents contributing to this trend. Importantly, attitudes toward open disclosure were found to be situation-dependent ($\beta = .079, p = .019$), varying based on incident severity, institutional policies, and patient expectations. Furthermore, fear of negative consequences ($\beta = .169, p = .000$) emerged as a significant barrier, with concerns over legal risks, blame culture, and professional repercussions leading to hesitation. However, ethical justifications, perceived benefits, and institutional support do not strongly influence HCPs attitude about open disclosure.

Chapter 6 Qualitative Findings

6.1 Introduction

This chapter presents qualitative findings generated from interviews with HCPs with regards to their experience with open disclosure of PSIs. The narratives constitute an account of the barriers and facilitators of open disclosure practices and training. Moreover, interviews with HCPs yielded various strategies for addressing and overcoming the identified barriers.

6.2 Participant Characteristics

Forty-two HCPs participated in in-depth one-on-one interviews between December and February 2022-23. These comprised of 9 medical professionals, 24 nursing and midwifery professionals, and 9 health and social Care professionals (Figure 20), representing a subset of the survey participants from phase 1 of the study. Among them, the majority were aged 41-50 years, and female ($n = 30$) and there were 12 males. Table 34 illustrates the proportion of staff across professional groups. Table 35 outlines the characteristics of the HCPs who participated in the interviews.

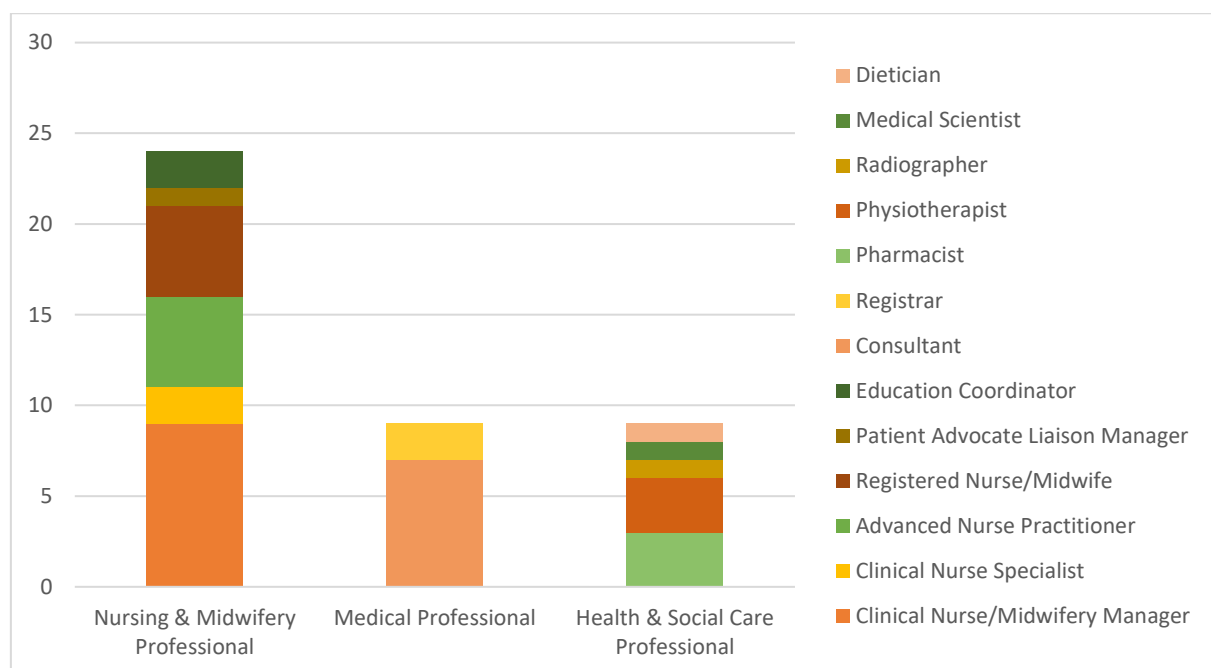


Figure 20 Professional Categories of Participants

Table 34 Proportion of Staff by Professional Group

Medical Professionals	Consultant x 7 Registrars x 2
Nursing & Midwifery	Registered General Nurses (RGN) x 3 Registered Midwives (RM) x2 Clinical Nurse Managers (CNM) x 8 Clinical Nurse Specialists (CNS) x 2 Advanced Nurse Practitioners (ANP) x 5 Director of Midwifery Patient Advocate Liaison Manager Education Coordinators x 2
Health & Social Care Professionals	Senior Clinical Pharmacists x 2 Clinical Pharmacist Physiotherapists x 3 Dietician Medical Scientist Radiographer

Table 35 Characteristics of Interview Participants (N = 42)

Variable	Frequency (n)	Percent (%)
Age		
21 – 30 Years	4	9.5%
31 – 40 Years	10	23.8%
41 – 50 Years	16	38.1%
51 – 60 Years	9	21.4%
>61 Years	3	7.1%
Gender		
Male	12	28.6%
Female	30	71.4%
Current Position		
Medical Professional	9	21.4%
Nursing and Midwifery	24	57.1%
Health and Social Care Professionals	9	21.4%
Years of Experience		
<10 years	7	16.7%
11-20 years	13	31.0%
21-30 years	12	28.6%
>31 years	10	23.8%
Open Disclosure Training		
Yes	38	90.5%
No	4	9.5%
Involvement in PSI		
Yes	42	100.0%
No		0.0%
Open Disclosure of PSI		
Yes	35	83.3%
No	7	16.7%

6.3 Facilitators of Open Disclosure of PSIs

This section examines various factors that enhance patient trust and safety through transparency, compassion, and continuous improvement during the open disclosure processes. Additionally, it examines HCPs' experiences from preparation through post-disclosure. The focus is on providing ongoing support that nurtures healing for patients, families, and providers beyond the disclosure itself.

6.4 General Facilitators

6.4.1 Felt Obligation

HCPs strongly believed that open disclosure is an ethical, professional, and legal responsibility of every HCP. It is the *'Right thing to do'*, irrespective of intentional or unintentional error or pending outcome, to build a therapeutic relationship between clinicians, the patients, and their relevant person(s). It aligns with the principles of honesty, transparency, and commitment to personal and professional integrity when things go wrong in healthcare.

"My personal impression is that ethically, morally, and legally.....it is our responsibility to inform the patient. This is their right...If something happens, which is intentional or not intentional, it's always either due to miscommunication or negligence. So, we should always disclose any error to our patients." (Med. Cons.-012)

HCPs emphasised the necessity of accepting responsibility by maintaining openness and transparency, offering sincere apologies, and acknowledging errors regardless of their impact and outcome. It was reflected in participants' statements, such as *'putting your hands up'*, *being honest*, *'I'm really sorry'*, and *'I made a mess of this'* when disclosing information to patients. Nevertheless, a mixed response was noted among HCPs regarding the issue of open disclosure during near misses. Some believed it would have minimal or no consequences and might burden patients with concerns, causing undue stress to families and healthcare providers. On the other hand, many clinicians advocated for open disclosure, emphasising transparency with statements like, *'you don't keep secrets,' 'you can't hide anything,'* and *'you have to openly discuss it.'* They stressed that open disclosure is crucial for enhancing trust and fostering a therapeutic relationship between patients, HCPs, and healthcare systems.

"It's important to put your hand up and say something has happened...However, some people have a different expectation from the disclosure. Some people appreciate it, and some people think there's an avenue to get remunerated or compensated for something that has caused no damage." (ANP-025)

"It's part and parcel of their journey and it's important that we do it, disclose these incidences. Even the near misses, or the potential harms. ... for their trust in us and the system." (Med. Cons.-040)

Experienced HCPs shared how their views on open disclosure have evolved throughout their career. Initially, hierarchical and patriarchal structures in healthcare limited their involvement, but over time, they adopted a

more egalitarian view, recognising open disclosure as a professional duty and responsibility. Increased confidence in open disclosure stemmed from experience and exposure to PSIs, enabling them to be more open and honest. Nevertheless, participants acknowledged that *'new nurses', 'inductees', and 'adaptees'* often lack the confidence and experience necessary for effective disclosure due to the complexities of communication skills, apologies, and emotional management. Moreover, it takes years to build on the layers of experience related to *'skills of language and interaction,' 'to apologise,' and 'to remain calm and vigilant'* to various emotions that arise during the open disclosure of PSIs.

"If incidents are occurring then, it's good to reflect on what happened and why it happened. Is there any shortcomings in our professionalism and our duty of care that can be flagged up? Or was it just an accident that happened." (Physio.-069)

Many HCPs highlighted how adherence to national professional standards, legislation, and policies facilitated their involvement in the open disclosure process. Some participants were aware of their legislative and ethical responsibility while disclosing information to patients. For others, familiarity with established open disclosure protocols and guidelines enhanced consistency and professionalism in promoting a culture of accountability and continuous improvement. Additionally, protection under the State Claims Agency reassured HCPs, encouraging them to respond efficiently: *'they're not there in a personal capacity, they're representing the hospital. So, under state claims we're all covered.'* (DOM-030).

HCPs acknowledged *'its current policy to disclose to the patient'* and the significance of adhering to these policies. It emphasises their profound sense of responsibility and accountability towards patients and relevant person(s) while complying with open disclosure policies and guidelines.

6.4.2 Culture and Leadership

Mentorship plays a vital role in supporting HCPs in developing the necessary skills and confidence for effective open disclosure. Experienced mentors provide guidance, share their insights, and offer emotional support, which is crucial for navigating the challenges of open disclosure and for wellbeing. The involvement of mentors helps to maintain a culture of openness and accountability, as illustrated by multidisciplinary teams who confidently lead open disclosure even in traumatic situations. HCPs explained that leadership of the disclosure processes depended on individual confidence levels, experience, skills, and training in open disclosure practices.

Additionally, organisational culture and support systems influenced how effectively open disclosure was practised, leading to variations across different contexts and situations. They emphasised that disclosure should be a team rather than individual responsibility. A multidisciplinary approach to open disclosure meetings and training underlines the teamwork in effectively responding to PSIs.

"If it had to be done it should be done as a team. It shouldn't be one person in isolation. It should be part of a team. It could involve like medics, pharmacists, whoever whatever that situation is but it should be a team doing it not one individual." (Snr. Pharm.-026)

HCPs with international experience shared insights on open disclosure, emphasising openness, approachability, and responsiveness. They noted disparities in embracing open disclosure across national and international health systems. A *'no blame culture'* in the UK, America and Australia focused on *'incidents and learning'*, reducing stigma, and enabling disclosure through incident reporting. Moreover, the disclosure meetings were centred on *'what had occurred?'*, *'How did it occur?'* and *'What could we do to improve it?'*. However, this process was not always the norm in Ireland and often lacked consistent follow-up. Accounts from Australia, UK, and America highlighted more robust and effective open disclosure practices embedded in daily routines. HCPs felt supported and less incriminated abroad. In the UK, open disclosure was part of risk management and clinical governance, with immediate, systematic responses and legislative mandates. It was instilled and encouraged by their line managers, providing a *'human face to the issue'*, and the focus was on managing the incident, addressing patient concerns immediately and preventing it from happening in the future. Legislatively, everyone was aware that they had a responsibility to disclose and did not depend on the medical team to decide whether to do it or not. Whereas in Ireland, HCPs were surprised by the *'watch and wait'* strategy, where Clinicians were mainly the *'gatekeepers'* who decided on disclosure. Culturally, the attitude was that HCPs *'do not make mistakes'*, *'make very few mistakes'* or *'do not make serious mistakes'*, reflecting a cultural reluctance to admit mistakes. This contrasts with automatic disclosure systems, revealing a critical gap.

"I trained in the UK and when we found or when we made medication error, we immediately carried out Open Disclosure. What I found when I came to Ireland was that it's not the same in that you speak to the medical team, and they make the decision about whether to disclose the error or not to the patient if it hasn't caused harm there's kind of 'watch and wait strategy'." (Snr. Clin. Pharm.-039)

Integrated organisational practices fostered multidisciplinary collaboration in incident disclosure and resolution. Participants highly valued the managerial support, which included guidance, moral and emotional support, and practical assistance during open disclosure meetings. Several HCPs believed that informing their line manager enhanced their communication with patients and families, leading to more confident engagement in the process: *"...I've been very lucky that managers I have had were very understanding.... they are very supportive."* (Med. Scientist-014). They were also able to discuss with their managers on how to address this situation, what to communicate, and how to communicate as well: *"...me and manager sit down and work this out and how we're going to talk to the patient about this"* (ANP-025). Some managers remained calm and cooperative, others contacted the family and stayed with the staff involved while communicating with the patient and also reassuring the families during disclosure conversations.

"I would feel very comfortable going to my manager about an Open Disclosure incident... a person that you trust that you can go and talk to them directly and get advice from... I want them to tell me exactly what I need to do next...If they can signpost me ... to make sure the process is followed.... who to ask ... where to find the information." (Dietician-068)

"It's good to feel you weren't being disowned by your organisation as they were standing by you and that you were involved in the Open Disclosure process." (Physio.-002)

On the other hand, Senior Clinicians highlighted how their support facilitated their team during difficult disclosure meetings. Some managers addressed problems empathetically and relieved staff from duties to attend these meetings: *".... I will cover you or I'll get somebody to cover you while you're in this meeting'."* (CNM2-016). This support extended to private calls, sharing a cup of tea and assisting with risk, legal, Gardaí or, coroners' issues. Some clinicians instilled confidence through their supportive words, highlighting the importance of learning through mistakes: *"The only times mistakes don't happen is when you don't see patients...how you react and what you do after a mistake has happened which makes you a good clinician or a bad clinician."* (Med. Cons.-036). This resulted in perceiving open disclosure as a 'learning' rather than 'fault finding' which enhanced the therapeutic relationship among HCPs.

Clinicians noted that a robust governance system and the involvement of Quality and Risk personnel are crucial for effective open disclosure. These resources offer essential guidance and expertise, ensuring that HCPs understand and resolve incidents thoroughly. Quality and Risk personnel played a key role in investigating incidents, identifying root causes, and analysing trends, which supported HCPs in navigating the open disclosure process effectively. This was also reflected in their statements 'we will stand by you', 'we will support you for sure', 'we respect your honesty' and 'we will mind them'. Moreover, specific HCPs valued the information shared by the quality and safety department regarding safety measures for HCPs while engaging in the open disclosure process.

"I thought it was helpful having the relevant people there at the time... Risk management were there and that was helpful." (ANP-105)

Most participants emphasised the importance of peer support, noting that sharing open disclosure experiences and engaging in peer review encourages openness and transparency, helping prevent future PSIs. They acknowledged that 'Open Disclosure is everyone's responsibility' and viewed the process as essential for providing 'closure and encouraging participation', recognising that PSIs are inevitable.

"I want to share what I've learnt with my colleagues so that they understand how hurt I was at the time... it's that peer review and peer learning." (CNM3-041)

"I think everyone is responsible... Ultimately everybody is responsible depending on the nature of what has happened." (Dietician-068)

Structured incident reviews and root cause analyses helped HCPs understand occurrences and document relevant details, reinforcing the importance of accountability and transparency. Most HCPs emphasised that completing incident forms laid the foundation for a fact-based enquiry, ensuring that relevant details were accurately documented, providing a foundation for the open disclosure process.

“...if an incident happens you have to fill in an incident form and there’s a section in the form that talks about Open Disclosure, and have you done it and what your plans are. So, you’re prompted to do it” (Physio. -069).

Hence, the professional obligation and organisational focus on culture-based enquiry enabled HCPs to understand errors and system flaws, shifting from viewing incidents as *'problems'* to focusing on *'solutions'*. This approach provided numerous learning opportunities, identified knowledge gaps, and addressed errors in judgment.

6.4.3 Positive Previous Experiences

HCPs find that positive experiences with open disclosure boost their confidence in reporting PSIs and improve their ability to support colleagues: *“...I suppose experience, the more you do the better you get...” (Med. Cons.-040).* They viewed open disclosure as both progressive and positive, not just for addressing errors but for understanding their causes and preventing future occurrences. Additionally, when HCPs actively listened to patients' concerns and acknowledged potential near misses or adverse effects, it validated the patients' experiences, feelings, and perspectives. Regular practice enhanced their skills and effectiveness, though the impact of open disclosure varied based on the PSI and its outcome.

“If the outcome is positive, it will benefit the healthcare worker, because it promotes her in future participations and gains the confidence and also, she might educate the other colleagues as well, how to participate.” (RM-072)

Engaging in open disclosure also offered psychological benefits, as it assists with alleviating feelings of guilt or negligence that may be a natural outcome of making an error and compromising patient safety. HCPs felt that increased exposure to open disclosure processes improved their communication skills with patients and their families, making them more resilient and effective in their roles and responsibilities. Their experiences led them to realise that incidents do not define individual competence as a nurse, doctor, physiotherapist, or healthcare assistant. Therefore, the focus should extend beyond presenting incidents positively to emphasising how learning from them enhances good practices, service delivery, and patient safety.

“When you see Open Disclosure done well by others you learn from them. ...When people become senior enough to be talking to patients about serious events.... You build up layers of experience in dealing with patients as to how you speak to them...its layers of learning over years of experience.” (DOM-030)

Hence, HCPs were positively disposed to the open disclosure process due to their acquired knowledge, learning, and experience. They felt comfortable, resilient, and not threatened by the process because they understood it as *'it's not about a mistake or finding mistakes'* but rather a process of communicating about the PSIs to those affected. This helped HCPs to learn from mistakes, recognise the positive outcomes of the disclosure process, and support the implementation of open disclosure in clinical practice.

6.5 Facilitators Prior to Open Disclosure

6.5.1 Training

Education of HCPs about the open disclosure process was found to be helpful in dealing with patients in a non-judgmental manner, and it reinforced their ability to be confident in their decision-making. By receiving education on this process, HCPs develop the skills to approach patients without judgment and communicate effectively about incidents. This training has not only enhanced their confidence in decision-making but also improved their ability to handle challenging conversations with patients and their families. Training sessions were commended for providing practical strategies for managing difficult emotions and delivering challenging messages effectively. It gave them an opportunity to listen to how other HCPs handled open disclosure especially with challenging PSI situations. Participants appreciated learning techniques for de-escalating tensed situations and understanding diverse professional perspectives, which are crucial for handling sensitive disclosures. These elements of training highlight the importance of equipping HCPs with both the emotional and communicative skills needed for effective open disclosure.

“How to deescalate and slowly, slowly and really you know little tricks that I think I found very helpful” (Med. Cons.-009)

The facilitator's personal examples of open disclosure during the session proved to be highly beneficial for the attendees. By sharing their experiences honestly and transparently, they provided a relatable and concrete illustration of the open disclosure process. This approach likely resonated with the participants, encouraging them to reflect on their own professional practices and identify similar incidents that they may have encountered. This introspection could lead to a deeper understanding of the importance of open communication in healthcare settings, particularly when addressing errors or unexpected outcomes. By prompting self-reflection, the facilitator's example may have inspired the participants to consider how they could apply the principles of open disclosure in their future practice, potentially leading to improved patient care and stronger professional relationships.

“That session did help in that the facilitator had an example of her own of her own personal experience of an open disclosure and she discussed it very honestly. I think for most people who attended the session, they'd probably look back on their own practice and maybe find an incident in their heads.” (Physio. -002)

The majority of HCPs acknowledged the role of simulation in open disclosure training in enhancing their knowledge and skills regarding open disclosure practices. Simulation-based training for open disclosure has proven to be a valuable tool for HCPs offering a safe environment to practice and refine their skills. This approach allowed HCPs to experience realistic scenarios, enabling them to identify both strengths and areas for improvement in their open disclosure practices. The feedback mechanism inherent in simulation training provided immediate insights, helping participants to reflect on their performance, and make necessary adjustments. This iterative process of practice and feedback contributed significantly to the overall enhancement of knowledge and competence in open disclosure procedures. Furthermore, participants

highlighted the benefits of cross-disciplinary training, such as in GDPR, mediation, conflict management, and incident reporting, which helped to enhance open disclosure practice and highlighted the value of integrating open disclosure training with broader professional development efforts.

“We actually went through simulated video classes...we put ourselves through various different scenarios and then we looked back through with various different tutors and ourselves at how we reacted to those particular situations. And we pointed out the good aspects and the not so good aspects and we did that on a number of different occasions. I think that simulation worked out quite well, it was quite a good process to go through.” (Med. Cons.-029)

A participant drew comparisons between the integration of open disclosure training in Ireland and other countries, such as the UK. It was noted that in the UK, open disclosure practices are more systematically embedded in daily professional activities, reflecting a deeper cultural commitment to transparency and disclosure. In contrast, open disclosure practices in Ireland were perceived as less ingrained, suggesting a need for enhanced efforts to integrate these principles into routine healthcare practices.

“But the main difference that I felt was that it was culturally embedded into our daily practice. From a junior member to a senior member of staff, it was drilled into everybody that one of the things that we do following an incident, or an error is alongside checking and monitoring of the patient, completing an incident form, open disclosure, it was just so systematic, and it was just part of the process” (Clin. Pharm.-033).

Training was widely recognised as crucial for empowering HCPs to overcome the prevailing culture of secrecy and to build confidence in disclosing PSIs. Participants highlighted that comprehensive knowledge and strong team dynamics are essential for effective open disclosure practice. They emphasised that training played a pivotal role in fostering a supportive and transparent healthcare environment, thereby reinforcing the need for ongoing development and integration of open disclosure principles within the healthcare system.

“I think from the training. You're able to understand that there's a mechanism in place that once you identify an error that you can follow it through.” (Education Coordinator-052)

The combination of communication tools, simulation-based training, and cross-disciplinary education not only enhances individual HCP's performance but also fosters a culture of openness, transparency, and continuous improvement within healthcare settings. This integrated training approach emphasises the interconnected nature of various competencies related to open disclosure practices and create a synergistic learning environment that strengthens HCPs' knowledge and skills, ultimately prioritising patient safety and care quality.

6.5.2 Preparation for Open Disclosure

Most participants agreed that contacting the family and identifying their needs was a priority. Additionally, they considered the patient's wishes regarding which family members would attend the open disclosure meeting. Some HCPs prepared for open disclosure meetings by notetaking of the chronology of events,

patient's narration, and delegating tasks. Others emphasised on reviewing patient charts, healthcare records, clinical incident forms, and speaking with witnesses to ensure accuracy and understanding of the situation's complexity. HCPs felt that simultaneous '*clarification*' and '*Open Disclosure with the team first*' during notetaking and planning helped them prepare better for the open disclosure meeting. This allowed them to learn and address key questions, confirm the accuracy of their message, agree on who would lead the meeting and identify areas needing expert advice from senior managers or consultants. Pre-meeting consultations provided HCPs with confidence, reinforcing that open disclosure was the '*right thing to do*' during the occurrence of PSIs. This helped them to stay focused on the actual event rather than being deflected by other issues.

"I wrote down the whole incident...What happened first, what happened next, who was involved, who was not involved" (Med. Cons.-012)

HCPs justified the importance of identifying who will lead the discussion prior to the meeting. This allowed them to learn and understand how they would approach the patient during open disclosure meeting and address questions such as '*Who's going to do the talking?*' '*Do you feel okay to talk to the family and explain what's going on?*'. This allowed them to prepare for their role, anticipate questions, and address patients and their relevant person's concerns during the meeting.

"The biggest learning, I have had from Open Disclosure meetings is that there's good preparation prior to the meeting and that everybody knows 'who's speaking at the meeting and who's going to answer the questions.' They need the one-to-one training before they go into the meeting. Just going back over it again, 'what's going to happen here, how are we going to run the meeting'. I think that's very useful." (Patient Advocate Liaison Manager-044)

Thus, HCPs recognised that preparation prior to the open disclosure meetings was one of the primary reasons for the successful disclosure process. The patient-focused, accurate, organised, balanced and solution-driven approach enhanced the experience for both parties, ultimately fostering trust and confidence in the healthcare system.

6.6 Facilitators During Open Disclosure

6.6.1 Appropriate Setting

Most HCPs emphasised that a conducive environment for the open disclosure meeting helped them safeguard patient dignity and confidentiality. Some HCPs could facilitate open disclosure meetings in quiet spaces away from the clinical setting which fostered a sense of safety for all involved. However, the availability of suitable spaces for open disclosure meetings varied among healthcare facilities. While some HCPs reported having access to dedicated rooms or areas for these sensitive discussions, others faced challenges in securing appropriate venues. This disparity highlights the need for healthcare organisations to prioritise the allocation of suitable spaces for open disclosure meetings.

“We would do it in a quiet space to maintain confidentiality.... Be very forthright and honest with them from the outset and then set up a meeting in a place that is most suitable so that you can maintain confidentiality throughout.” (CNM3-020)

“We had a private environment to meet them, and it was organised.... little bit removed from where the incident happened....an environment that was not in a clinical setting. It was in a meeting room rather than in a ward environment. (CMM2-019)

When open disclosure was conducted in an optimal environment, it enhanced the conversation and provided a valuable opportunity to engage with patients and their relevant person(s) without any hinderances. This uninterrupted dialogue can lead to better understanding, improved patient satisfaction, and potentially reduced likelihood of legal action. Moreover, it enables HCPs to demonstrate empathy, take responsibility, and outline clear steps for resolution or future prevention, all of which are essential components of effective open disclosure practices.

6.6.2 Empathetic and Patient-Centred Communication

HCPs' communication of open disclosure varied significantly based on patients and their relevant person(s) responses. Some patients preferred to *'leave it and let it go,'* others *'accept the apology,'* while some seek *'further resolution'.* This necessitated high adaptability and skill from HCPs, as effective communication is influenced by their experience, emotional responses, and understanding of patients and families. HCPs described the communication process as an *'art form'* requiring diplomacy and judgment. They emphasised the importance of empathy, active listening, and non-verbal cues in ensuring patients felt heard and respected. Transparency and clear communication from HCPs about PSIs helped them to build trust and enhance patient-centered care. However, the attitude of HCPs in delivering this information matters greatly. They said that patients appreciated an empathetic and forthright approach, which helped them to understand their treatment, make informed decisions, and feel involved. Therefore, highlighting and addressing poor practices is essential for improving healthcare quality and patient safety, ensuring better care for all patients.

“I always believe in communication, ‘what's happened, why happened, we assured the patient we will change something to prevent this could happen again’.... So, I think its [Open Disclosure] important and it's safe. It is good ...for the patient, and the family.” (Med. Cons.-009)

An empathetic, compassionate approach, choosing the right words and tone, and being honest, even when uncertain, facilitated an effective open disclosure. Some HCPs emphasised that it is not *'what you communicate but also how you communicate'* in an effective disclosure process. They believed that the communication style and tone significantly influenced the outcome of the open disclosure meetings, particularly in conflict situations. During open disclosure conversations, they emphasised the importance of saying *'I am sorry'.* This enabled them to express remorse and establish patient-centred relationships based on mutual understanding and collaboration. Additionally, this practice fostered empathy and accountability,

essential for building better provider-patient relationships. As a result, HCPs who demonstrated diplomacy and empathy were perceived as more effective communicators when disclosing PSIs.

"I think there is an understanding the cultural piece. Some people like to hold hands. Some people don't. Some people like hands on the shoulder, some people don't." (Med. Cons.-013)

"In the day-to-day practice.... people who have better empathy, better way of getting a message across...the better clinical knowledge you have, the better communication you can hold with the person. If you have analysed a situation which went wrong very well before you go to do Open Disclosure, be meticulous at the information you are gathering, and empathy is probably one of the biggest things that HCPs need." (Med. Cons.-036)

Some HCPs preferred to say 'I don't know' instead of assuming, blaming, or creating an answer during open disclosure conversations. This approach enabled patients to understand the human side of errors and the measures undertaken by Senior Clinicians or Managers to rectify those errors during open disclosure meetings. Most HCPs emphasised including family members in the patient's care journey enhanced connection and rapport. Flexibility and adjustment to individual needs were necessary, with skills assessment and plain English explanations to facilitate understanding. Participants acknowledged the influence of external factors such as fact findings, staff availability and readiness of the patient and their relevant person(s) on communication process.

"If there was something you don't know, be open and be honest and say, 'you don't know, I'll be there to support you and if I don't know something I will tell them I don't know in that moment, and I will gather that information further and come back to them'. But don't create an answer or don't assume an answer and give an answer because you think it's the right answer, so be open and be honest." (Med. Cons.-036)

"I think families can get too much information sometimes and they don't know how to process it. So, we have to be very careful and gauge the type of people that we're talking to...you have to break it down very slowly... They have to be able to process it and understand it." (RGN-079)

Many HCPs agreed that using 'right and simple language', 'avoiding medical jargon', 'open communication', and 'clear information' helped engage patients and their relevant person(s) in distressing situations. Some HCPs emphasised that effective communication stemmed from professional ethics rather than open disclosure training. Being straightforward and sincere, without being aggressive or defensive, facilitated the process. By employing 'right and simple language' and 'avoiding medical jargon', HCPs can ensure that complex medical information related to the PSI is conveyed in a manner that is easily understood by patients and their families. This approach, combined with 'open communication' and providing 'clear information', helps to build trust and foster a supportive environment during challenging times.

"Some people say I'm blunt and maybe I am blunt but I'm just very straightforward. ...Whenever I explain anything...do not gloss it up or make it unclear what I'm trying to say. I try to be quite

straightforward and say and language that I think the person will understand. ...you have to answer the questions knowing what's important and what to get worried about.... Honesty and straightforwardness and sincerity.... When you explain what happens properly. You don't use jargon, or you're not very aggressive or defensive, you explain what happens and explain what you're doing to fix it or learn from it and you're not being defensive or trying to avoid blame, and you're just quite straightforward and honest.” (Med. Reg.-011)

Some participants indicated that appropriate non-verbal gestures felt prominent and useful to empathise with the patient and their relevant person(s). Many HCPs believed that by listening to their concerns and being transparent, they ‘felt listened to’ and ‘validated’ amidst of heightened emotions between both parties. Participants emphasised the importance of appropriate gestures, facial expressions, and body language in creating a supportive environment for patients and their families. These nonverbal cues helped bridge the emotional gap between HCPs and those affected by PSIs, fostering a sense of connection, compassion, and the value of active listening in open disclosure meetings. Many Nurses and Midwives explained how Clinicians managed open disclosure meetings, and their emotions as presented below.

“He did talking and explained what had happened and the cardiac arrest He was also very clear that it was a result of change in the central line and.... we sat down with them [family] and explained it. Asked if they have any questions and explained it again to them... it is a medical Error...in terms of its harm caused by an intervention and he used layman's terms...He was very good. He was very clear. He was very honest. He said ‘I'm absolutely traumatised. I'm absolutely devastated. All I can do is explain it to you. They could see in him. He was really shook and was distressed but I think what it was is. He was so explicit, and he was so clear, and he spoke to them in layman's terms. He didn't use medical jargon to try and bamboozle them. They understood straight away.” (cANP-018)

Thus, communication and an empathetic patient-centred approach were believed to be powerful tools for overcoming blame culture and providing an open and honest approach to dealing with PSIs, focusing on learning, and preventing future occurrences.

6.6.3 Following Standardised Processes

Some participants noted that using the ASSIST¹ model of communication and Safety Checklist helped structure communication and apologies, while others felt comfortable proceeding without them. The ASSIST tool guided conversations, allowed sincere apologies, and outlined plans of action: “.... I am very sorry that this is what has happened. But it was quite unintentional, and this is what you probably could suffer... and we'll take care of you” (Med. Cons.-012). This allowed the patient and their relevant person(s) to ask questions and obtain further explanation.

¹The ASSIST Model of Communication represents Acknowledge, Sorry, Story, Inquire, Solutions and Travel which was developed by the Medical Protection Society Document Reference Number: NATOD-QRG-010-02

“When the family came in, we had a full account of what had happened, and it actually went very well...Sticking to the ASSIST model was fine.... They go better than we anticipate.... you would accept that you are responsible.... You say you’re sorry that it happened.... listen to their side of the story.... identify that they knew what had happened and how it had happened...will tell them exactly what you’re going to do to prevent it happening in the future and learn from it. I think if we just be calm and tell them that this has happened; we’re doing this to alleviate it.” (CNM2-056)

6.6.4 Managing Emotions

Managing emotions was crucial during disclosure meetings. HCPs needed to remain calm, avoid defensiveness, and ‘expect the unexpected’. Even though most HCPs agreed that the open disclosure meeting went well for them, some emphasised that their knowledge and skill helped them to navigate the disappointment and anger of patients and their relevant person(s) without being defensive. For many HCPs, navigating emotional and challenging interactions required thorough team preparation and a supportive team response. This awareness helped build confidence, enhance trust, and strengthen teamwork among colleagues while communicating with patients and families.

“When something goes very wrong in a pregnancy, parents can be very angry. You have to be very calm and not respond to their anger. Sometimes they can start to blame people straight away... You have to be very careful not to be defensive. So, a lot of the learning has been from experience of ‘open that door, walking into that room and knowing what’s coming at me from parents and expecting the unexpected’ ... the partner can be really angry, or the mother can be really angry. So, you have to deal with multiple emotions....not becoming emotional yourself. Not becoming angry with them and just being professionally empathetic with them.” (DOM-030)

This approach facilitated open communication, and next of kin appreciated the HCPs' calmness, attentiveness, and honesty by saying ‘they were very calm’, ‘they listened’. They noted that the HCPs were straightforward, answered questions appropriately, and were receptive to their concerns, recognising the disclosure as an acknowledgement of human error.

6.7 Facilitators Post Open Disclosure

6.7.1 Debriefing

Most HCPs, including Senior Managers, emphasised the After-Action Review, debriefing, departmental meetings, meticulous documentation, and follow-up support services. These practices helped them review cases collectively, monitor colleagues' well-being, and provide a forum for discussing and addressing any concerns arising from the meetings.

“We sat as a team and we reviewed over how we dealt with the situation and was there anything we felt we did really well, or did we feel we needed to improve upon. We’ve made efforts to address with regard bringing in the AAR [After Action Review].” (CNM3-020)

HCPs valued post-open disclosure activities like departmental morbidity meetings, case meetings, safety hub meetings and debriefing for reflection and support. These sessions allowed teams to evaluate their performance, address questions, and discuss improvements. Some of the questions raised were: *'how do you think it went?'*, *'What would you do differently?'*. Moreover, meeting as a team without the family members allowed to express *'how they felt'*, *'how it went'*, *'clarify questions'*, *'complete incident forms'* and then to look at what they could do to avoid something like this again. Additionally, some HCPs found debriefing with a trusted friend or colleague helpful for managing stress related to the meetings.

"All of the staff that were on we sat down together quickly at the nurse's station... it was important to check in with everybody.....How is everybody? How are you feeling? and everybody was Shook."
(cANP-018)

Some HCPs felt that follow-up with patients or their relevant person(s) post- open disclosure of PSIs found to be helpful to answer any questions and to rebuild the therapeutic relationship with them: *"...it's most important revisiting it for patients. Be very open and just allowing them time to ask questions..."* (Med. Cons.-013). It was said that validating their feelings by listening and taking note of their concerns helped them to become more trusting of the HCPs. Moreover, if they wish to escalate further, it is crucial to encourage them to speak up and support them by directing them to the appropriate department with the right information as per the protocol.

"Direct the relatives, if they're angry to the appropriate department, that will walk them through how they can make a complaint and encourage them to speak up as well. If the relative wishes to lodge a complaint, allow him. Don't try and tell him not to do that but encourage him to the right department because it shows transparency and action." (CNM3-027)

6.7.2 Documentation

HCPs emphasised the critical role of documentation in the open disclosure process. Most HCPs completed incident forms and relevant notes after the meetings, with line managers reviewing these for accuracy before submission to Quality and Safety personnel. This procedure ensured the integrity of the documentation and safeguarded the *'psychological safety'* of everyone involved. Proper documentation provided a clear record of communications, informing subsequent interactions. Additionally, agreeing on follow-up interventions with patients and their families was seen as essential for progressing and concluding the disclosure process effectively. However, the lack of accurate documentation, and follow-up obscured the true nature of these PSIs, making it difficult for HCPs to fully understand and disclose them.

"I had recorded it, I read it back to them and asked them where they happy that that was an actual reflection of what had occurred. Asked them to sign it. I told them it was being reported to quality and risk and senior management." (CNM3-041)

Hence, HCPs recognised the importance of comprehensive documentation as a crucial element of the open disclosure process. It plays a pivotal role in ensuring accuracy, transparency, and accountability while communicating with patients and their relevant persons.

6.8 Barriers of Open Disclosure PSIs

6.8.1 Organisational Barriers

Participants highlighted various organisational challenges to open disclosure, which mainly focused on lack of resources and support services, breakdown in communication, and system failure. The majority of HCPs acknowledged healthcare as a stressful, challenging, high-risk, and chaotic environment. This impacted the timely review and follow-up of incidents leading to a breakdown in communication in the disclosure of PSIs. Participants also discussed a number of factors that were believed to be associated with cultural challenges which focused primarily on a culture of blame, humiliation, and repercussions.

6.8.2 Lack of Resources and Support Services

Many participants highlighted significant barriers to effective open disclosure such as insufficient resources, lack of space, time constraints, limited staff expertise, and inadequate organisational investment. Time constraints and limited expertise make it difficult for HCPs to engage in sensitive, transparent conversations with patients about PSIs. These challenges place considerable strain on HCPs, exacerbating stress and fatigue, further diminishing their ability to practice open disclosure effectively. Without adequate support systems, such as referral networks and investment in staff training or professional development, HCPs lack the necessary emotional resilience and organisational support to navigate the demands of open disclosure. This, in turn, undermines quality of communication and transparency that is essential for maintaining trust between HCPs and patients.

‘The capacity exceeding resources is the biggest challenge when making an Open Disclosure...that’s heart breaking and leads to burn out amongst physicians and any HCP.’ (Med. Cons.-036)

When engaging in open disclosure, HCPs encountered numerous environmental obstacles, as they worked in a stressful, fast-paced, and chaotic environment. Since disclosure conversations involve sensitive and personal information, majority of HCPs believed that the lack of a comfortable, private space for discussion affected privacy, and sometimes they were fearful of breaches of confidentiality related to the PSIs. Moreover, holding disclosure conversations in open, public, and busy spaces with distractions and interruptions further heightened the emotional distress for both staff, patients and their relevant person(s). Despite the concerted efforts, the strain on resources and the high-risk nature of frontline interactions posed ongoing risks to patient safety, highlighting the need for systemic improvements in the healthcare environment.

“The biggest challenge We’ve no meeting rooms, the wards are full of patients, very difficult to find a room. Even the room we were in, it was quite noisy, although it was private, and the door was closed...to do Open Disclosure.” (Patient Advocate Liaison Manager-044)

HCPs also expressed mixed expectations of managerial support. For some, support from their line managers was perceived as merely verbal, lacking tangible action, particularly during PSIs. Others found referrals to counselling or occupational health services to be more punitive than supportive, often discouraging them from accessing these resources. Some managers were seen as overly critical, fostering an atmosphere of scrutiny. These situations challenged HCPs to engage in open disclosure practices due to increased accountability, perception of distrust and pressure on their performance. They viewed this as intense or interrogative, leading to a feeling of defensiveness, impacting overall morale, and hindering the delivery of patient-centred care.

"Although the managers will say or the policy would say, we were going to support you.....were going to protect you. I don't think those words actually translate in reality... more in 'Words of consolation'... 'This could happen to anybody. Don't worry so much.... we've all been there'. The hardest bit of all came from the managers ...not even the patients or their relatives." (CNSp. -003)

In summary, the discussion highlights how inadequate resources and lack of institutional support impacts staff well-being and hampers the effectiveness of open disclosure practices. HCPs highlighted that a PSI can be a complex issue based on the factors that have influenced either the individuals involved, or the system affected.

6.8.3 Culture of Blame

Many HCPs expressed concerns over a widespread culture of blame related to open disclosure of PSIs. This blame culture, marked by *'pointing fingers and 'finding fault'*, was not only from managers, colleagues, and the organisation but also from patient's families and the general public, complicating open disclosure. This imposed a layer of complexity related to professional expectations, familial concerns, and societal perceptions regarding the open disclosure of PSIs. This undermines the ethos of open disclosure, leading to distrust amongst staff members and a negative impact on their well-being: *"Don't make the staff feel like it's their fault...we already feel that it's our fault, you don't have to rub it in..."*. (RGN-023). Furthermore, the Clinical Nurse Specialist observed that when things go right, people seek recognition; when things go wrong, blame is directed at the staff involved. This prevalence of blame culture discouraged HCPs from communicating errors or suggesting improvements. It impacted teamwork and collaboration essential for engaging patients and their relevant persons during disclosure conversations.

Senior HCPs observed that the tendency to assign blame affects both internal dynamics and interactions with patients and families. It prompted HCPs to reflect on their actions and their involvement in open disclosure practices. From individual interactions to departmental dynamics, blame culture has influenced HCPs' attitudes and behaviours related to disclosure conversations. An example of this is provided by an ANP, who described a case where blame was disproportionately placed on a nurse: *"It was disgusting... they did everything to blame us for the incident... it was very traumatic"* (ANP-025). Similarly, a Clinical Nurse Manager recounted how staff were vilified for a pressure sore incident, even though open disclosure was practiced. *"There was nothing we could do... we did tell the relatives, but we told them why we couldn't, and they completely understood"* (CNM2-056). Despite efforts to implement open disclosure practices, blame and

shame remain prevalent, revealing gaps in perception, communication, or systemic issues that need a careful examination and resolution.

The blame culture extended to inter-professional relations, where HCPs sometimes avoided engaging in open disclosure due to fear of criticism. Additionally, HCPs who did not appreciate the value of open disclosure were found to be indignant about any activities promoting it, viewing these efforts as a hindrance to patients' recovery. This culture of blame creates a divisive atmosphere, negatively impacting teamwork and the effectiveness of patient care. As one consultant remarked, *'It's all about finding the scapegoat... Whose fault was that?'* (CNSp. -003). Although the majority of HCPs recognised the value of open disclosure, engaging with it was considered to be challenging and stressful in a demanding, blame-oriented healthcare environment. A Patient Advocate Liaison Manager highlighted the need for a collective approach. *'HSE and the Department of health need to stop blaming staff... we need to engage'* (Patient Advocate Liaison Manager-044). Emphasising a collective approach to addressing PSIs, rather than singling out individuals, could help mitigate the harmful effects of this blame culture.

A number of HCPs involved in the open disclosure often experienced or witnessed criticism from others. This criticism may take the form of *'accusing', 'talking down', 'belittling', 'use of thick words' or 'not to admit to anything'*, which often leads to keeping the PSIs undisclosed or resulting in poor disclosure outcomes: *"I can't say anything, and I get in serious trouble, and I might lose my job... 'you're rubbish nurse', or 'you're rubbish doctor'... don't admit to anything and keep quiet."* (cANP-018). The use of criticism as a form of control fosters a toxic environment where individuals fear reputational damage or job loss as evidenced by the comments such as *'don't admit to anything and keep quiet'*. This, in turn, discourages HCPs from disclosing PSIs but also undermines their psychological safety, leading to the concealment of errors. Additionally, a Senior Clinician illustrated mutual criticism between a Medical Consultant and a Nursing colleague: *"The nurse never told me [about medication],"* and later, the Consultant faced criticism: *"Why weren't you present when the injection was given?"* (Med. Cons.-012). In such a blame-focused environment, open disclosure becomes an even more intimidating process for HCPs, which could deepen consequences to the extent that it inadvertently may lead to harmful outcomes among HCPs. This culture of criticism could intensify stress and undermine the open disclosure process, highlighting the need for a more supportive and holistic approach to addressing PSIs.

"If the culture of blaming people is still present ... this will be the most important barrier [to Open Disclosure], because if you're worried ... people will give out to you.... people will say ... I won't give you this and that'... Obviously, this causes significant stress and next time when they do a mistake, will say. 'OK, I'm not going to tell anybody their mistake'". (Med. Cons.-009)

6.8.4 Culture of Repercussions

The culture of repercussions also poses significant challenges for HCPs engaged in open disclosure. Many reported facing negative consequences such as complaints, loss of trust, disciplinary actions, reputational damage, being reprimanded or legal repercussions: *"You'll still find that patients will say to you, 'Will this staff member be sacked?'"* (Patient Advocate Liaison Manager-044). It fosters an environment where HCPs fear personal and professional consequences for acknowledging errors or adverse events. Additionally, concerns

about negative repercussions, such as job loss or professional censure, further inhibit open disclosure. *"It could be fear... losing one's job, or 'pulled through the coal' or 'losing license'... what could be the outcome?" (RM-072).* This fear extends to potential complaints or difficult interactions with patients or families: *"It's fear...afraid of it coming back... fear of the reaction, even though, it's the right thing to do" (Dietician-068).* The issues related to involvement of regulatory bodies and their career progression caused undue stress and anxiety among HCPs. This fear massively impacted HCPs' well-being, job satisfaction, and their overall quality of patient care.

"I fear of being reprimanded, fear of losing the patient or the family's confidence, fear of losing the confidence of colleagues. Fear has a lot to do with all those things... the fear maybe of the repercussions of Open Disclosure and find it hard to say Sorry." (Physio. -002)

Some participants specifically highlighted that the fear of litigation was a significant barrier to open disclosure in Ireland. HCPs often hesitated to engage in disclosure meetings due to potential legal consequences associated with revealing information about PSIs: *"Litigation is huge... if there's a bad case in midwifery you could stumble into a case that you could be sued for a lot of money." (RM-057).* HCPs were uncertain whether their honest disclosure would lead to consequences, or how the patient or their caregivers would react to the disclosure team or the system: *"no one knows that what will be the consequences of disclosure to the patient and how would they take on to the doctor or to the system? Many people are afraid of the disclosure. So, they tend, not to disclose...." (Med. Cons.-012).* Hence, it led to a fear of the unknown and non-disclosure among HCPs. This fear inhibited transparent communication with patients and their families and hindered collaborative team efforts needed for an effective resolution and improvement in patient care. Nevertheless, newer HCPs are less concerned about litigation and understand the importance of *'doing things right'* through open disclosure.

"People fear that they'll be sued but culture is changing. The newer generation of doctors are less concerned about being sued and they understand the importance of being honest and up front and an apology isn't an admission of liability." (Med. Cons.-038)

6.9 Human Factors Barriers

6.9.1 Breakdown in Communication

Majority of participants identified poor communication or miscommunication as a significant issue within the open disclosure process. This breakdown was attributed to several factors, including inadequate communication skills, language barriers, extensive use of medical jargon, poor listening, defensiveness, and lack of awareness of non-verbal gestures. As a result, both patients and HCPs felt *"uninformed"* and *"kept in the dark,"* which led to a serious consequence such as lack of clarity to the disclosure process, emotional distress, failure to apologise, loss of trust, risk of litigation, reputational damage, and ultimately, breakdown in the patient-provider relationship. In cases where hospitals or HCPs were not at fault, the complexity of explaining the outcome often required extensive and challenging discussions.

“...how difficult it is to listen, the family members...how they feel about the way we deliver care and about our poor communication and staff found that challenging.....how difficult it is to sit and to not interject and to not cut in on a conversation.” (Patient Advocate Liaison Manager-044)

“It’s very difficult to tell a family there was no fault here. It takes a lot of communicating with the family when the hospital is not responsible for the negative outcome for a patient. That can be very challenging.” (Patient Advocate Liaison Manager-044)

Participants expressed frustration that patients were not informed about PSIs, and that staff were often unaware of open disclosure meetings. Moreover, staff frequently lacked awareness of incident-related policies, leading to missed opportunities for discussion. This contributed to the difficulty of addressing patient and family concerns, which was also exacerbated by inadequate communication from senior management or the HSE: *“...a lot of stuff is not communicated...There may have been an incident that I wouldn’t even know about it.” (Radiogr-006)*. The focus on individual blame, rather than systemic causes, discouraged HCPs from openly discussing errors, contributing to a culture of secrecy and fear. Many participants reported that limited access to communication tools further worsened the situation, leading to miscommunication or negligence. Additionally, some participants feared the repercussions of disclosing errors, with some opting for non-disclosure due to concerns about punitive consequences. On the other side, some participants felt that even when patients or their families attended disclosure meetings, they might not feel empowered to ask questions or might be intimidated by the HCPs leading the disclosure process.

“There’s a lot of...who made this error? and why did they make it? rather than focusing on what caused this error? or what allowed that person to make this error? It’s very individual focused rather than system focused.” (Snr. Clin. Pharm.-039)

“We know the facts and the information is there in the medical charts, but the patients aren’t being told. If they are being told, it might be just brushed off and they don’t get a chance to question it or they don’t feel they have the opportunity to question it, they might feel intimidated by the person doing the Open Disclosure.” (Physio. -060)

In summary, the breakdown in communication during the open disclosure process, as highlighted by participants, reveals deep-rooted issues in healthcare communication and policy awareness. Key factors such as poor communication skills, lack of awareness of policies and fear of punitive repercussions have contributed to a culture of secrecy, fear, and mistrust in clinical practice.

6.9.2 Emotional and Psychological Challenges

During open disclosure of PSIs, HCPs faced a multitude of emotional and psychological challenges influenced by various factors: *“Everybody gets back to work...very little time to talk to a colleague afterwards..... ‘How do you feel about that? Are you worried? you’re concerned?’” (Med. Cons.-013)*. Majority of HCPs’ narrations reflected fear, nervousness, hesitancy, burn out, flashbacks, lack of self-awareness, driven by concerns about personal accountability, potential disciplinary actions, lack of support from management or colleagues and the

perceived impact on their professional reputation: *For most people 'Oh my God... I'm a terrible nurse and I'm not fit for practice, and I did this.'*" (cANP-018) Additionally, environmental constraints such as limited time, multitasking demands, and the lack of a dedicated space for open disclosure discussions contributed to heightened stress levels. Overall, these complex factors posed a challenge for HCPs in navigating the process of open disclosure.

"These incidents...sometimes you recall them in your mind and although you think, you have them closed off; Often times they come back as flashbacks when you're in the middle of another Open Disclosure meeting and you can recall some of the events that happened and you're wondering is this going to happen here. So, I am aware of that. So yes, it is challenging and sometimes it does impact on me." (Patient Advocate Liaison Manager-044)

Furthermore, HCPs express concerns about distressing patients and their families, which may deter them from disclosing PSIs: *"The challenge is the service user...some may not accept it"* (CNM2-031). Some HCPs felt uneasy, upset, or threatened, while others worried about the potential negative impact on patients or their families, noting that open disclosure could sometimes be more detrimental than beneficial. *"You worry about upsetting the patient, upsetting their family"* (RM-057). The emotional impact of patient and family reactions can significantly affect HCPs' psychological well-being, leading some to avoid disclosure altogether despite acknowledging its ethical importance.

"There are times when Open Disclosure may be very stressful to a family, if in the situation where there's no benefit in the Open Disclosure to the patient or the family and there may be specific occurrences when Open Disclosure could be considered to be more damaging to a patient or the family." (Med. Cons.-029)

The majority of HCPs acknowledged a lack of awareness, preparation, and indecisiveness surrounding the disclosure process can lead to emotional turmoil. When HCPs were not fully aware of the protocols, policies and expectations surrounding open disclosure, they felt uncertain and anxious about how to handle difficult conversations. There exists a large gap between *'getting there and getting where we want to be'*. Without adequate preparation, HCPs felt ill-equipped especially when it necessitates one communicate or manage the sensitive nature of open disclosure. HCPs often cited occasions where there was a tendency to *"sweep things under the carpet"* rather than adopting an open and honest approach with the affected families. This inclination was often expressed in the clinical staff's desire for self-preservation, as they might be reluctant to acknowledge mistakes or indecisive of the best course of action, preferring to avoid any discussion about the PSIs. For instance, Health and Social Care Professionals highlighted the apprehension, distress, sentiment of anxiety and uncertainty that many staff conceal on how to approach such situations: *"It could be distressing to participate in Open Disclosure."* (Med. Snr. Reg.-015). This emphasises the need for cohesive understanding of emotional burden and psychological strain among HCPs involved in critical situations_during the open disclosure.

"It can be quite an upsetting environment for everybody depending on the gravity of the situation. So, it can be quite a frightening situation to have to step into and you're kind of worried about what you how you say, is it going to come back and you're going to get yourself in trouble by your approach to something or how you say how you say something not that you want to hide anything but it's just how to approach it. I think a lot of staff are frightened about that they kind of don't know how to approach it" (Snr. Pharm.-026)

HCPs frequently reported fears of criticism from both peers and the organisation. The fear of judgment from peers and management often discouraged open communication among HCPs. Some clinicians recognised the emotional challenges faced by their colleagues such as distress, fear, worry, anxiety, and emotions, others perceived a judgmental attitude among fellow professionals: *"I was disappointed...even those who know me well were judgmental"* (Med. Cons.-012). Some participants expressed fear of their colleagues' opinions and reactions to say something that they were not supposed to say during the disclosure meetings: *"One of the biggest fears going into the room is if we going to say something we shouldn't have said."* (CNM3-020)". This culture of fear and silence emphasises the need for a "just culture" where errors are openly discussed without fear of unjust punishment: *"It was the fear of not speaking up...people become engrossed in the code of silence"* (CNM3-027). This culture of silence indicates that addressing errors is discouraged, often due to fears of reprisal or emotional challenges. Such an environment undermines the principles of transparency, supportive atmosphere, and accountability essential for improving patient safety and care quality.

6.9.3 Interprofessional Dynamics

HCPs perceived the power imbalance as paternalistic and hierarchical with some senior practitioners relating their roles were overly stressful. *"For me it can be stressful.... I'm the Head of the Department...all incidents come to me, and I end up discussing even colleague's incidences with patients"* (Med. Cons.-013). Besides, HCPs highlighted inconsistency and disparities in reporting practices and how they are being treated depending on their professions. For instance, an ANP specifically commented that if a situation arose between the ANP and the Registrar regarding open disclosure of PSIs, they both would be treated differently (ANP-025). Therefore, this emphasised the importance of teamwork, consultant support and meticulous documentation in open disclosure process.

"What the doctor said went and everything had to run past them. It was very hierarchical, patriarchal in a lot of ways, and then even within nursing itself, it was very much....do what the manager says and you do what the matron says, or whatever happens to be...it was very kind of they'll deal with it." (CANP-018)

The biggest challenge identified by the Patient Advocate Liaison Manager (044) was when the open disclosure team are unaware of the disclosure process and the patient's journey prior to the meetings. Additionally, the lack of preparation by the disclosure team, failure to attend, resulting in the meeting cancellation or postponement, compromises the integrity and effectiveness of the process. Moreover, when HCPs tell patients or their families, *"I haven't got any more time. I have to do a round, I need to leave, I have another*

appointment," it can lead to ambiguity and diminish the quality of open communication. Furthermore, managing a family member's anger and aggression during a meeting, especially when staff are already challenged by the PSI, can be particularly difficult for HCPs during open disclosure.

Multiple HCPs voiced concerns about the changing workforce and its implications on Interprofessional dynamics related to open disclosure. These include safety issues, difficulty in instilling ethos of open disclosure, a reluctance to complete incident forms and inadequate training inhibiting Interprofessional disclosure. Many HCPs voiced specific concerns over the involvement of junior HCPs in the open disclosure process, emphasising the importance of maintaining professional boundaries. They emphasised that Junior staff were under-prepared for the process and lacked necessary open disclosure knowledge and skills. Nonetheless, the majority of HCPs acknowledged that it was important for junior staff to observe, learn and participate in disclosure meetings.

"The only issue I have is the expectation of more junior staff to be involved where they may not feel that they have the background or knowledge to be involved in Open Disclosure." (DOM-030)

"It's a massive risk always, our staff are changing, the doctors in our department change six times a year. So, it's incredibly hard to embed learning and ethos when your staff change." (Med. Cons.-038)

6.9.4 Patient and Family related Challenges

The emotional responses, such as unanticipated reactions from patients or families were described as 'stressful', 'difficult' 'worrying,' and 'hurtful'. Also, they experienced 'aggression' or were 'threatened' by patients and their families, where they could end up losing the plot, blaming, suing the hospital, and/or taking it to a higher level. Moreover, these heightened, intense emotions from everyone involved were attributed to the cause, impact and outcome of the PSI. Additionally, the lack of time and the inability to contact patients were also highlighted as significant challenges.

"We had a very difficult situation where a patient had died as a result of attending the hospital. We were unsure in the beginning as to why the patient had passed away so quickly and a review had to happen. The first Open Disclosure meeting, the family were very aggressive with both myself, and with the consultant and the other team member that was present in the room and 'threatened us personally because we had given our names and threatened to go to the papers and give our names' because we were only saying, 'we don't know what happened'. We were trying to explain as part of the Open Disclosure that there was a process we were going through, and we had already explained that a review was happening." (Patient Advocate Liaison Manager-044)

Even though HCPs tried to engage in open disclosure, they often spoke with a degree of frustration and dissatisfaction when discussing the unrealistic expectations of patients and their families. This was predominantly evident in undertaking disclosure meeting immediately after the PSIs, but also evident when participants required to undertake meetings without relevant preparation and information. However, HCPs seldom communicated a negative perception of patients or their family's unrealistic expectation considering the impact of these disclosure meeting on their physical and emotional wellbeing.

“Sometimes it’s dealing with the families who want a timeline that’s not realistic. You meet them after an event that has just happened. We try and do Open Disclosure as near to the event but the information you have is very limited.....trying to get families to understand you’re not hiding anything, that you literally do not have the information because you haven’t spoken to staff... They may have an expectation of answers straight away...Because they’re upset and angry, families want somebody fired, they want somebody blamed.” (DOM-030)

There were meaningful arguments as to why the breach of trust and the subsequent challenge of rebuilding trust with families acted as a significant obstacle in an effective open disclosure meeting. While HCPs acknowledged the role of family members as advocates for their loved ones, it was demanding to make them understand the unexpected outcome of a complex circumstance surrounding the PSI. Many HCPs found it challenging when colleagues had to disclose information to a grieving family regarding unexplained death or existing risks during their care interventions: *“...colleagues who've had to disclose the incidents around an unexplained death... that's a huge challenge because you're dealing with a grieving family.” (CNM2-016)*. The situation became even more complex due to factors such as unawareness about occurrences of PSIs, lack of understanding and knowledge on explanation given by HCPs, reluctance to accept responsibility, failure to express regret or extend an apology and lack of appreciation for the disclosure process posed a significant barrier for HCPs to carry out an open disclosure of PSIs.

It was also widely reported that as Irish healthcare system is becoming increasingly multicultural, and HCPs expressed concerns about cultural appropriateness to disclosure conversation. Participants expressed uncertainty about their linguistic skills with use of right language and specific words to disclose PSIs with patients and their relevant person(s) from diverse backgrounds. HCPs found it extremely challenging to respond to their questions, clarify their concerns, or to provide solutions through their interpreters. On the other hand, HCPs who were trained abroad had to be familiarised with the open disclosure process as it was not the norm in their country or place of work. Hence, both patients and HCPs had to be mindful with careful selection of appropriate words, without using technical language during disclosure conversations.

6.10 Legal and Regulatory Barriers

Many HCPs reported how Medico-Legal factors posed challenges to the open disclosure process. HCPs found themselves under pressure to provide quick responses, and managers faced overwhelming pressures and grief. The fear of the unknown further exacerbated their challenges, and heightened concerns about the legislative responsibility to disclose incidents to patients. Some HCPs were reluctant to complete incident forms and documentary evidence of open disclosure which impacted both patient care and safety. The reluctance is often evident during near misses or when there is no patient harm and also depends on managers or decision makers. HCPs believed that addressing these medico-legal factors requires a careful balance between timely responses and comprehensive disclosure to meet both patient expectations and legal obligations.

“Most families it’s a reassurance that they have a legal framework that supports them. So, if they don’t feel they’re strong enough to ask questions, the legal system will ask for them. but it is always challenging...because patients now want answers immediately, they don’t want to wait to get answers and then staff are under pressure to provide those answers.” (DOM-030)

“There’s a big reluctance to even to do incident forms even before you get to the Open Disclosure ...It’s going to be reflected badly on us....and my nurses and no harm came so we won’t say anything.” (cANP-018)

Some HCPs were concerned about how the open disclosure of PSIs might impact their professional registration status with the regulatory body: *“Staff are terrified of being reported to NMBI” (DOM-030)*. Participants used terms such as ‘worried’, ‘distressed’, and ‘terrified’ to express their anguish about being involved in the open disclosure of PSI. They felt that they were leaving themselves wide open to criticism or repercussions and that it might put their registration at risk: *“People are afraid that if they admit that they’ve made a mistake, they’re leaving themselves wide open... for losing their registration,” (Senior Education Coordinator-050)*. Besides, many HCPs perceive that admitting fault during open disclosure could be seen as an admission of liability, increasing their exposure to malpractice claims. This perception discouraged full participation in the disclosure process, even in cases where open communication could improve trust and mitigate legal action.

“Some people [Colleagues] might be worried or anxious or distressed about any professional consequences, for example, disciplinary action, or reporting to the regulator like the Medical Council or the nursing regulator, etc... might be concerned that it may affect their training or career progression or their employment if they were to disclose that they made a mistake.” (Med. Snr. Reg.-015)

Some HCPs expressed that the strong societal expectation of perfection from HCPs, cultural norms around blame and accountability and fear of eroding trust with the patient and their families interfered with the effective disclosure process. Additionally, the societal context where PSIs are equated with professional incompetence, organisational reputation, and self-preservation over what is the ‘Right thing to do’ created a barrier to full disclosure. Addressing these barriers requires a shift towards a more supportive legal, cultural, and regulatory framework that encourages learning from errors and promotes openness without punitive consequences.

6.11 Open Disclosure Training Barriers

Some HCPs voiced a disconnection between theoretical knowledge, open disclosure policy and practical application of open disclosure in practice. This further widened the gap, rendering open disclosure practices inconsistent and potentially ineffective. Similarly, unfamiliarity with these protocols and guidelines lead to uncertainty and hesitation in initiating open and transparent conversations about PSIs or adverse outcomes with patients or their relevant person(s) effectively. HCPs also emphasised the need for coherence and consistency between organisational policies and the educational resources offered to staff. They also mentioned that merely having open disclosure policies in place is insufficient if the training modules fail to

adequately prepare HCPs for real-world disclosure situations. Additionally, a clinical pharmacist shared challenges in implementing the open disclosure protocol in her clinical practice, despite being trained. This was due to resistance from multi-disciplinary colleagues, hindering the effective execution of the protocol (Snr. Clin. Pharm.-039).

“The module in my workplace says it is mandatory and it’s everybody’s responsibility ...Then I actually read the HSE Open Disclosure policy which was very different to the mandatory training module. So, the policy outlines how the decision on Open Disclosure is made by the team ..., I do find the HSE guidelines difficult to interpret and also very different from what is our mandatory training.” (Snr. Clin. Pharm.-039)

For those HCPs who attended the training, they recognised the need for their learning to be reflected in clinical practice. Despite acquiring relevant knowledge and skills, implementing open disclosure in real-world scenarios proved to be a challenging task. Some nursing professionals acknowledged that the principles of open disclosure resonated with the core principles and values of nursing profession. However, in reality, they felt there was an incentive not to disclose as opposed to an incentive to disclose. A nurse practitioner (ANP-017) emphasised the importance of embracing open disclosure in nursing practice and the need for continuous awareness and reinforcement. A Clinical Nurse Specialist (CNSp-003) acknowledged the theoretical alignment between open disclosure and nursing values but noted that in practice, the incentive to disclose is often outweighed by the fear of repercussions. The lack of tangible incentives for HCPs to participate in mandatory training sessions outside of regular working hours further complicated the implementation of open disclosure. Clinical Advanced Nurse Practitioners (cANP-018) noted that there is little incentive for people to participate on their days off, and another ANP (ANP-017) emphasised the challenge of consistently applying open disclosure in practice.

“I say there is an incentive not to openly disclose as opposed to the incentive being on openly disclosing. So, I don't think it has fully developed in practice. No.” (CNSp. -003)

6.11.1 Inconsistent Training

Participants highlighted inconsistencies in the levels and types of open disclosure training they received, with some only attending basic sessions during induction or completing standard online modules. This variability presents the need for more standardised training to ensure that all healthcare staff receive comprehensive and consistent education on open disclosure practices. Additionally, there was disparity in access to training opportunities, with senior staff and open disclosure leads more frequently participating in extensive sessions. This highlights the necessity for early and equitable introduction of open disclosure training, such as during internships or initial training phases, to cultivate a culture of safety and openness from the outset. Additionally, participants advocated for more inclusive training approaches involving multidisciplinary teams to enhance learning and foster a collaborative environment.

“I think if we can start with our new nurses and our new adaptees that over time then it will become enculturated because they will encourage the nurses below them” (Senior Education Coordinator-050).

The duration and delivery of open disclosure training also varied widely, ranging from brief overviews to extended sessions lasting over an hour, and being conducted by various departments such as Quality and Risk. This lack of standardisation in training delivery may contribute to uneven preparedness and confidence levels among HCPs when applying open disclosure practices. A clear preference emerged for workshop-based formats in open disclosure training, which are valued for their participatory nature and ability to foster interaction and active engagement. Participants highlighted that workshop provided opportunities for facilitators and attendees to share personal experiences, particularly regarding PSIs and disclosures. This sharing was seen as highly impactful, encouraging reflection on personal practice, and creating a safe, open space for meaningful discussion and learning. The use of simulated scenarios and videos in workshops was appreciated for prompting reflection and improving responses to real-life situations.

“the facilitator had an example of her own of her own personal experience of a open disclosure and she discussed it very honestly and I think for most people in who attended the session, they'd probably look back on their own practice and maybe find an incident in their heads” (Physio.-002)

In contrast, the content delivered through online modules was often viewed as lacking in depth and engagement when compared to in-person training. Many participants felt that online platforms like HSeLanD did not adequately address the complexities of open disclosure, limiting the opportunity for comprehensive understanding and interaction. However, it was acknowledged by some that online training could still effectively communicate the fundamental values of openness and transparency, serving as a basic introduction to open disclosure principle. These insights point to a strong preference for face-to-face training formats, which are perceived to offer richer, more engaging educational experiences and foster a deeper understanding of open disclosure principles and enhance practice.

“The training in open disclosure is essential. And I find the open disclosure training at the moment, online is not enough. They need the one-to-one training before they go into the meeting” (Patient Advocate Liaison Manager-044)

Mandatory open disclosure training, such as the modules provided through HSeLanD, received mixed feedback from participants. While some appreciated that mandatory training ensures broad exposure to open disclosure principles, others criticised it for being overly dense and difficult to retain. This suggests that while compulsory training can be beneficial, it needs to be designed in a way that enhances understanding and retention, rather than simply fulfilling a requirement.

6.11.2 Limited Access

Many HCPs highlighted that the absence or insufficiency in open disclosure training had created a significant gap in their understanding and application of local protocols, guidelines, and policies regarding disclosure practices: *"I haven't received any training. I don't even know if there is any training face to face training available"* (CNSp. -003). Without proper training, some HCPs lacked confidence in executing open disclosure processes, leading to potential errors or omissions in disclosing adverse events to patients and their relevant person(s). Moreover, the frustration stemming from the inability to access suitable open disclosure training, whether due to lack of availability or suitability of online modules, exacerbated the issue. This lack of training also perpetuated a cycle where HCPs remained unaware or unskilled in the nuances of open disclosure, hindering their ability to address PSIs transparently and professionally. However, a few HCPs have acknowledged improvements in the open disclosure process within their clinical practice in the past few years.

"I've been working in HSE for 15years, and I've only ever attended one session on Open Disclosure and I'm not sure if that's my fault or whether it's the system fault. I'm not sure how much is available to us as regards training or sessions." (Physio. -002)

"Back then there was no support, there was no training, there was nothing. You got your policy, wrote your policy, you put it in a folder, you made sure it was there, there was no risk assessing, there was no risk register, there was none of that and things have changed for the better because all of that sort of stuff is in place." (ANP-025)

The awareness and preparation for open disclosure practices among HCPs varied significantly. Some HCPs reported having no formal training in open disclosure, instead relying on their clinical experiences to guide them through these sensitive conversations. This experiential learning approach, while valuable, may lead to inconsistencies in how open disclosure is implemented across different healthcare settings and potentially result in suboptimal outcomes for patients and families. On the other hand, HCPs who have undergone formal open disclosure training have identified several shortcomings in the preparation they received. These issues include inadequate practical application of theoretical concepts, insufficient role-playing scenarios, and a lack of guidance on handling emotionally charged situations: *"People don't feel that they have enough training or confidence to provide the Open Disclosure."* (Clin. Pharm.-033). Addressing these training deficiencies could lead to more confident and competent HCPs, ultimately improving the quality and consistency of open disclosure practices in healthcare settings.

"We'd never have had training. I suppose it's only through experience of dealing with families that in particular and the area I work in.... When I was doing, my training would never have done any of that. It would have been of help maybe some role plays?" (CNM2-016)

"It's the staff need training and support in how to do it. At the moment.... we're told to Give Open Disclosure...that's OK.... that's fine, but how should you approach it what, what should you do, what should you say, how should we document it, should there be witnesses? It's all a bit vague and none of us feel we're kind of adequately trained." (Snr. Pharm.-026)

The release of staff for training presented a significant dilemma for senior managers in the clinical care setting. They recognised the importance of ongoing knowledge and skill enhancement for their staff regarding open disclosure process. Continuous training is crucial for maintaining high standards of patient care, staying updated with the advancements in open disclosure policies and guidelines, and ensuring compliance with evolving healthcare regulations. Nevertheless, senior managers expressed their genuine concern about releasing staff for the face-to-face open disclosure training amidst numerous other challenges to meet immediate patient needs and operational demands in the clinical care setting. These challenges likely included staff shortages, increasing patient loads, budget constraints, and the need to maintain quality care standards. Hence, senior managers found it challenging to balance the long-term benefits of a well-trained workforce with the immediate need for efficient clinical services while ensuring uninterrupted patient care.

“The hospitals are bursting at the seams. Staff they barely can get enough staff for day shift or night shift? Never mind release staff for training? There's no time.... or little time for them to be released. There's very little time for them to get a coffee break, never mind the lunch break, never mind to get released to go for an hour Open Disclosure, simulation training or whatever manual handling training, the basic life support, manual handling, fire training.” (cANP-018)

A number of HCPs had attended the mandatory online open disclosure training programme. They felt that it was just one among many required training offerings. While online education is intended to educate HCPs on this important topic, its implementation and effectiveness was challenging. Many HCPs viewed it as just another addition to the already extensive list of online educational requirements they must complete. This perception potentially diminished the perceived value and impact of the training. Furthermore, HCPs reported difficulties in maintaining focus and completing the course due to frequent interruptions, which are common in the fast-paced healthcare environment. These interruptions likely hindered their ability to fully engage with and absorb the material, potentially compromising the training's effectiveness. In light of these challenges, HCPs suggested that a classroom-based approach might be more beneficial for learning about open disclosure. They believed that face-to-face instruction, where they could listen to and interact with a trainer in person, could lead to better engagement and retention of the material.

“I'm very conscious about and we have ‘rafts of online education’ to do mandatory for work.... You're sitting on in your own kitchen, or you're sitting in work trying to tune into something. In my work there's thousands of interruptions in the day. So, you're not totally focused. Whereas you should be in that room and listen maybe to a patient experience or to other experienced staff talking about it.” (CNM3-001)

6.11.3 Impact of COVID-19

With restrictions on in-person gatherings, the availability of open disclosure courses primarily shifted to virtual platforms, demanding adjustments in content delivery and participant engagement. Additionally, workplace protocols underwent significant changes, prompting open disclosure practitioners to adapt interventions to

support organisations in navigating remote work, social distancing measures, and health protocols while maintaining productivity and morale among employees.

“COVID put a spanner...not having a face to face-practical sessions when it comes to Open Disclosure....I can't even remember how many sessions were offered by the team.... you didn't get a space ...You had to wait for the next time it was offered. So really the availability of the course or the time to do it could have been improved on” (CNM2-016)

Some HCPs noted that COVID-19 introduced various communication challenges, both face to face and virtually. In-person communication was hindered by social distancing measures and the requirement to wear face masks, which limited the expression of emotions by HCPs (CNM2-016). For some senior managers, *the most difficult part in relation to the pandemic was that Open Disclosure took place over a phone, wasn't even face to face: “...there wasn't the opportunity to make eye contact with the family members...to show empathy unless you were able to do that through your voice...certainly couldn't do it through facial expression or making a cup of tea and trying to get a rapport with the relative....that was very difficult.” (CNM3-041)* Additionally, HCPs also perceived an increased reliance on digital communication tools and encountered difficulties in conveying complex or sensitive information remotely: *“Trying to do things over zoom, or phone calls lead to a breakdown” (ANP-105).* Furthermore, HCPs recognised the need to be mindful of these challenges and adapt their communication approaches accordingly to ensure clarity, transparency, and understanding among stakeholders. Therefore, many HCPs found that even though open disclosure conversations were facilitated virtually, they posed several challenges amidst the COVID-19 pandemic crisis. They felt there was a breakdown in communication, leading to ambiguity and despair for both HCPs and patients, as well as their relevant person(s).

“During COVID...we would have prioritised having these conversations in person rather than virtually.... It is harder with face masks for communication on all sides.... Face masks make HCPs look like they don't have emotion about what they're talking about. So it can be very hard for family members when they're receiving any kind of news or talking about sensitive issues, when face masks are involved.....I think the fact that everyone was much more distant in the room, it was probably harder, it made things feel much more formal than before COVID times when you didn't have to have such social distancing in the room. So, it very much put a barrier between HCPs and the family members.” (CMM2-019)

In some cases, HCPs highlighted that family members might traditionally be involved in open disclosure discussions, but due to restrictions on visits, this dynamic had been disrupted. Open disclosure practitioners needed to find alternative ways to engage with patients, particularly those with foreign languages and ensure that their perspectives were still considered in decision-making while adhering to open disclosure processes. At times, these decisions had to be made with patients in the absence of family members. HCPs felt that amidst the busyness of the ward and acuity of patients with COVID, establishing rapport with the patient and their family members was limited.

"We only had the patient here, we couldn't have other family members in. There was a very odd occasion where we definitely brought the partner in because it was just had to happen...when it came to people with foreign languages, and it just was so difficult. It was so hard to get the point across that you were trying to be empathetic, honest with them. The use of the translators, you hope that they are telling them what we want them to be told." (CNM3-020)

"We had no rapport built with the family.... So, it was very difficult, and you were very limited with your time because the people were so sick. You weren't able to go to the phone that often. It was very much a one phone call a day kind of a situation... we were in a situation that was unknown. It was very difficult in every way with the patients and with the families. The families were getting very distressed that they couldn't come in..... We couldn't show them anything. They weren't in beside with the patient. They were relying on us a lot more." (RGN-079)

In summary, the COVID-19 pandemic significantly disrupted open disclosure practices and training, highlighting the need for flexible, resilient communication and education strategies in healthcare settings. The nature of these obstacles involved significantly disrupting established protocols and processes, tracking relevant events for open disclosure processes to adapting to disease management protocols. Many HCPs, especially Clinicians, often found themselves having to engage in open disclosure conversations regarding hospital acquired COVID infections, which proved to be challenging on some occasions. Moving forward, it will be crucial to incorporate lessons learned during the pandemic into future open disclosure training programmes, emphasising adaptability, effective communication in challenging circumstances, and the use of technology to facilitate open disclosure when face-to-face interactions are not possible.

6.12 Recommendations

6.12.1 Compassionate and Multidisciplinary Approach

6.12.1.1 Collaborative Compassionate Communication in Open Disclosure

While some HCPs recognised how empathetic communication facilitated an effective open disclosure process, the majority stressed the key elements within collaborative and compassionate communication. Most HCPs agreed that patients and their relevant person(s) must be informed and supported early, with PSIs, and that action should be taken collaboratively to prevent recurrence. HCPs criticised the HSE for lawsuits arising from inadequate disclosure and consequent escalating situations: *"If you do tell the patient, hopefully early on, that will reduce the likelihood of them trying to sue you or the hospital."* (Med. Snr. Reg.-015). Regardless of the circumstances, HCPs are obliged professionally and ethically to be open, honest, and transparent in their communication with patients and their relevant person(s) to ensure they understand the situation and the context. Those HCPs working in maternity services suggested that communication with the mother and family is vital as the situation could change unpredictably. Thus, open disclosure conversations provide a platform to work together and an opportunity to listen, clarify, explain, and understand the perspectives of patients and their families.

"We need to.... engage early and communicate consistently and constantly with them and let them know what the processes are involved and how long it's going to take and be as reasonably accurate in our assessments of how these processes will occur and how quickly they will occur." (Med. Cons.-029)

Honest, truthful, open communication where everything is explained with an effort to ensure that they understand relevant information and avoidance of a perception of 'being pushed under the carpet' was considered much better for patients, HCPs, and the organisation. This enables awareness of what happened, managing their frustrations, facilitating moving forward and ultimately aids the healing process for both patients and families. Moreover, collaborative communication between Senior and Junior HCPs in addressing queries or questions is welcomed, creating a conducive environment for expressing their concerns or worries.

"... instead of them being 'swept under the carpet or pushed up the hierarchy to deal with it', it's healing for the person and their family. It's also really important for staff" (cANP-018).

Some HCPs explained that the application of appropriate language in open disclosure varied from person to person. It is always important to check whether family members are prepared to hear about the PSIs. Hence, breaking information into smaller parts, being logical, and using clear, concise language while adhering to the facts is crucial as certain disclosures may be complex, overwhelming, traumatising or may cause long-term consequences for either or both parties: *'If you stick to the facts and the logic while still being as empathetic as possible... Some people don't need an arm on the shoulder they just want facts.'* (Med. Scientist-014). For example, a participant stated it is not just collecting the existing data, understanding what has happened or writing the report. Instead, communicating *'what you know'* while also knowing *'how much to communicate'*, meaning *'what to say and what not to say'*, *'not too much to say, not too less to say'* (RM-072) is very important. Therefore, HCPs strongly advocated to say, *'what exactly as it is'* and to be a good listener to patients and their relevant person(s). Based on HCP's experience, they suggested using techniques such as pointers, visible posters, checklists, frameworks, prompts, acronyms, or standardised scripts to guide them during the open disclosure. They emphasised the need for clear guidelines *'what should and shouldn't be said'*, how to address a volatile situation, aggressive patient, or family, *'what to do' and 'how to deal with it'* while engaging in open disclosure of PSIs.

"Trying to break it down for a person who doesn't know the ins and outs of what's going on. It was the language, the words...to get straight to the point, without having a long-winded answer. Maybe give some pointers about the language that could be used...maybe could do bullet points and explain, there is policy, procedures, and these are adhered to." (CNM2-016)

Most HCPs emphasised the importance of focusing on *'It's not what but how HCPs communicate'* during disclosure meetings. Therefore, attention to HCPs tone, gestures, and body language was considered necessary for facilitating open-ended discussions: *"It's not what you say, it's your tone.... You could say the same thing, but it depends on your tone...that would be important for Open Disclosure because someone's listening to you or they're not."* (ANP-042). HCPs who deliver information with compassion, empathy and

understanding could make a greater impact than the actual words they use. However, some HCPs felt that certain PSIs or the resulting harms are very hard to cope with and, at the same time, to communicate with empathy. For instance, in perinatal care, the loss of babies or mothers can be emotional for HCPs, especially if they are directly involved in a case. They described it as '*feeling burdened*' and found it difficult to separate their emotions from their professional responsibilities. They suggested separating emotions while remaining objective yet empathetic. This was referred to as '*Professional Empathy*' and was considered a useful way to prevent burnout and support HCPs during discussions about complex patient journeys during open disclosure. So, having the '*right attitude*' and '*system in place*' would be important before these meetings. Moreover, the senior clinicians and managers highlighted the caring attitude of HCPs, saying that instead of reacting swiftly or imperviously, HCPs needed to step back, think, and act accordingly during disclosure conversations.

"It's very much a 'professional empathy' and while you feel really sorry for parents going through this...I have learned to sustain in this job, long term you have to learn not to take on the emotion of every patient you come across, you can't, it's not possible." (DOM-030)

"Empathy is probably one of the biggest things that HCPs need... if you try to make sure our clinicians do not lose their empathy, they don't burn out, their clinical knowledge stays up to date with CPDs or CMEs.... good training of communication of skills. They don't have to understand, they don't have to put themselves in the shoe of the person they are talking to, but even trying to understand or trying to predict what emotions they would be facing against. They would probably be able to deal with it better if they had no understanding of the emotions." (Med. Cons.-036)

Some Senior Clinicians specifically highlighted Doctors with higher emotional intelligence do better when communicating with patients or their relevant person(s) during open disclosure. Even though various levels of emotional intelligence were noted among HCPs, Clinicians highlighted this as a '*skill*' that can be '*learnt*' and '*acquired*' throughout their career. This will help HCPs involved in open disclosure to identify the emotional triggers reflected in the tone, pitch, rate, or content of patients' conversations with healthcare providers. Moreover, emotional intelligence plays a crucial role in enhancing self-reflection and self-awareness among HCPs, prompting them to acknowledge their emotions and what those emotions mean to them. Additionally, they can pause, identify, and rationalise how those emotions affect their behaviour and those involved in the disclosure process. This will assist HCPs in determining their strength and areas for skilful communication, which will benefit them in communicating effectively with clear and relevant information and with undivided attention when listening to the patient and their families during disclosure conversations.

"So, in the day-to-day practice, the doctors who have higher emotional intelligence, they do better when they go to the patient to talk to them about open disclosure...emotional intelligence is a skill that can be learned...that can be acquired." (Med. Cons.-036)

This Collaborative Compassionate Communication approach effectively addresses patients' concerns, acknowledges their emotions, works together to find constructive solutions. This holistic approach has the potential to improve patient satisfaction, reduce litigation risks, and ultimately lead to better health outcomes.

6.12.1.2 Multidisciplinary and Partnership Approach

Multidisciplinary teamwork and a partnership approach are vital for the successful practice of open disclosure. HCPs emphasised that open disclosure is everybody's responsibility and should not be the duty of one person or discipline alone; instead, it should be approached as a multidisciplinary team effort. For open disclosure to be successful, everybody needs to foster and strengthen multidisciplinary relationships and work as a team. Depending on the type, impact, and significance of the PSI, HCPs emphasised it as '*everybody's responsibility*'.

"It's not just the nurse's responsibility. It's not just the doctor's responsibility, it's everybody's responsibility.... Getting everybody on the same page on the same team..." (Med. Scientist-014)

Hence, several HCPs recommended appointing a dedicated '*Open Disclosure team*' of HCPs specifically to plan, coordinate, and support open disclosure meetings within the organisation. This will enhance self-confidence among the HCPs, knowing that the '*Open Disclosure team*' will support and advise the way forward with the process. In contrast, others feared a dedicated '*Open Disclosure team*' would become mechanical, handling PSIs around the hospital with limited insight into individual PSIs. To ensure an effective disclosure process, the team should include experienced professionals with relevant background such as labour ward, critical care unit or theatre and have a thorough understanding of events which led to PSI. Besides, it promotes a '*shared leadership*' where everybody has the opportunity to speak, discuss, and propose something. Therefore, HCPs proposed an '*Open Disclosure team*' comprising of experts from various backgrounds, especially medical, legal and psychology, depending on the nature of the PSI and the significance of the event. This would help the '*Open Disclosure team*' feel safer and move away from blame and shame to openness and transparency while adhering to the open disclosure guidelines and protocols.

"I think for Open Disclosure, there should be a team of people dedicated to that, who come when something happens, chat to the staff in a non-confrontational way and support them then to help sort out whatever went wrong...So, I think it depends on the level of the disclosure that's needed. I think it needs to be more of a team effort... involve everybody...whatever the incident is... it should be more of an open thing rather than this blame situation that goes on. (ANP-025)

While some HCPs were concerned with the number of attendees in open disclosure meetings, others focused on who should disclose the PSIs to the patient. Study participants stated that open disclosure delivered by the entire team, or multiple staff members from the ward, it may feel '*confrontational*', '*overwhelming*' and '*intimidating*' for a patient or their relevant person(s). Hence, they suggested that a senior team member should conduct an open disclosure if the event is serious. It can be a Consultant, Senior Nurse/Midwife, or Manager. It is important to select the right person to speak to that patient or their relevant person prior to the meeting. Moreover, it is vital to identify to the patient and their family who will be speaking with them about the event during the meeting.

"I think the Open Disclosure should come from a senior member of the team who has an understanding of the incident and accountability for the incident without necessarily being the person who actually made the mistake rather than expecting the person who was distantly involved in the issue." (Med. Snr. Reg.-015)

However, clinicians stressed that they should not be used as a *'scapegoat'* for clinical incidents. They recommended focusing the cultivation of an ethos within departments where the *'quality of patient care'* is considered a fundamental right, which significantly influences how open disclosure is carried out. They advocated for a *'top-down approach'* to maintain a high standard of care, emphasising the importance of appropriate staffing levels, fair and equitable working conditions, and adequate infrastructure. Additionally, they highlighted the need for a supply of resources that enables efficient task performance and adherence to best practices in open disclosure. Their rationale stems from the belief that encountering multiple small obstacles or deficits during care delivery can lead to a drop in the standard of care and contribute to HCPs' fatigue, ultimately influencing the disclosure process. Therefore, HCPs recommended a senior-led, *'top-down approach to openness and transparency regarding PSIs, understanding the reasons behind their occurrence, and prioritising actions necessary to ensure the delivery of optimal care: "...to change the culture of the workplace, you need to start from the top people managing the hospital and going down....They must be good in clinical leadership and have good communication and relationships with the rest of the team."* (Med. Cons.-009). Nonetheless, HCPs want the hospital's senior management to work alongside clinicians and not work against them. Hence, HCPs suggested a leadership course for senior management to assist them in understanding the importance of the way they communicate while approaching the team during open disclosure meetings.

"If the starting premise for health care is to treat people as you would like to be treated yourself. Whenever you have to make a decision, you say would I accept that for myself or my family...I would see ethos and culture will have the biggest impact on how we do Open Disclosure and should reduce the amounts of Open Disclosure needed if you focus resources on ethos and culture." (Med. Cons.-038)

HCPs recommended a more structured approach to patient and family engagement through 'Service User Group involvement.' They emphasised the importance of hospital committees that include service user representatives, ensuring that feedback is gathered directly from patients and their relevant person(s) based on their lived experiences. Additionally, opportunities for HCPs to interact with these user groups at the ward and ground levels is required. Furthermore, HCPs emphasised the importance of face-to-face engagement with patients and their relevant persons whether they had positive or negative experiences with open disclosure. Positive feedback from patients on how an issue was managed through open disclosure need to be shared with the Head of Department but also in meetings or Schwartz rounds². On the other hand, if a patient had a negative experience and only received open disclosure because they knew something had gone wrong and they had to fight to find the answers, those stories also need to be heard. Listening to the patient's story helps HCPs remember that open disclosure is not just about PSIs, staff, or the organisation's reputation, but

² Schwartz rounds: Schwartz Rounds provide an evidenced based framework which has been proven to reduce psychological distress and improve staff well-being and teamwork which ultimately has an impact on person-centred care (HSE, 2021).

about the well-being of individual patients. Additionally, HCPs suggested that patients or their relevant person(s) who had an issue or complaint about disclosure meetings should have the opportunity to address the disclosure team directly sharing their experiences and feelings, *'This is how I felt'* or *'This is what I experienced'*. Moreover, HCPs also stressed the importance of understanding the impact of their decisions, both actions taken and those not taken on families and patients. Recognising the human effect of PSIs and risks requires the direct involvement of patient user groups.

"In our hospital, where there was an issue with a patient and a family member, subsequently came and spoke to all of the CNM2s. It was via teleconference meeting, but that member of the family got to relay her story from where she seen it. It really had a huge impact on every person that listened to it. I think more of that is what's needed. That it's seen as, it's a human nature that the patient gets the opportunity to say the impact of what happened on them and how it's affected their life. I think that brings empathy with it because if you hear somebody's story like that you empathise with it. Then when you're going to other patients, you empathise with how scared that they can be."
(CNM3-041)

In conclusion, a multidisciplinary and partnership approach involving HCPs, patients, and their relevant person(s) is crucial for improving open disclosure in healthcare settings. This collaborative effort ensures all stakeholders are involved in the process, fostering trust and open communication. HCPs from different disciplines can share their unique insights and experiences, leading to more effective disclosure practices. Additionally, partnering with patients and their families to develop and implement open disclosure protocols can help ensure that the process is patient-centered and responsive to their needs.

6.12.1.3 Multifaceted and Multi-level Approach

Open Disclosure by its nature, can be very complex at an individual, organisational and societal level. So, it is a multi-layered process requiring a multifaceted, multidisciplinary, and multi-level approach from HCPs who find the PSI and knows who to report it to, when and how to engage in the open disclosure process. Hence, it necessitates enforcement of open disclosure at all levels, including their department, hospital level, government level, and council level.

Many HCPs highlighted the importance of *'educating the public'* about the open disclosure process as a top priority as it helps to enhance the trust and confidence in the healthcare system. They recommended media involvement in raising public/societal awareness and understanding regarding open disclosure. They also advocated for increased visibility of open disclosure through electronic and social media, journals, and letters to the editor, emphasising the need for continuous public engagement and awareness: *"I'd like to see a lot more engagement with families about national advertisements to what is Open Disclosure."* (Patient Advocate Liaison Manager-044). This needs to continue until there is awareness and a change of perception regarding the open disclosure of PSIs. Moreover, when PSI occur in hospitals and are disclosed, it is crucial to understand that such disclosures are not intentional misconduct. Instead, it is everyone's responsibility to support all parties involved. Furthermore, increased public awareness can enhance vigilance and provide societal support for open disclosure.

"I don't think they [the public] understand, I don't think the public have been trained enough in Open Disclosure...I think we need to educate the public about incidents in healthcare. We need to do a lot more campaigns around this.... structures and processes and the education of the public will change" (Patient Advocate Liaison Manager-044)

"It [Open Disclosure] can be done. We have to involve all the medias. Electronic media could be very helpful. So, there could be shows which can be conducted in which we can bring the lawyers which we can bring in the doctors and other relevant people. They can bring their own information and opinions, so it can be openly discussed in the society." (Med. Cons.-012)

Many HCPs recommend legal support as patients and their relevant persons may demand immediate answers and resort to legal action whilst HCPs still gather information to address their questions. They stressed the importance of supporting staff with their responses for the disclosure meetings. Also, HCPs highlighted the need for the healthcare system to assess the legal and regulatory implications of PSIs. Moreover, some HCPs suggested raising awareness about multicultural and social differences among HCPs, patients, and their relevant persons, as these differences could significantly impact the outcome of open disclosure meetings. Nevertheless, HCPs advocated for a multifaceted approach to the open disclosure process with patients rather than considering it a legal battleground.

"The health care system in the HSE is very multicultural where we have doctors and nurses from several countries and several cultures working here. I think a know-how of the social cultural differences among the HCPs would also be helpful." (Med. Cons.-036)

Some HCPs also emphasised the importance of pastoral support, suggesting that having a friend present can provide valuable emotional support and foster a more empathetic approach to coping with the situation for HCPs, patients, and their relevant person(s). They emphasised how the family and HCP were supported while the message was delivered without blaming anyone during the open disclosure conversations. Pastoral support played a crucial role by providing emotional and spiritual assistance to all those involved especially during sensitive and difficult disclosure conversations. This implies that pastoral care providers can facilitate open communication, promote healing, and assist in reconciliation between affected parties. Their non-judgmental approach and expertise in addressing existential concerns during open disclosure can help to alleviate anxiety, guilt, and confusion. Thus, engaging with these stakeholders provides valuable insights, enhances communication, and promotes shared decision-making, thereby enhancing the effectiveness and patient-centeredness of open disclosure practices.

"I remember that she was just distraught and she was asking all these questions and you know the priest came and....I remember the priest was just so lovely, he just said the 'people who are so frustrated and can't go on are the ones that are closer to God'. I just thought what a phenomenal way of supporting this friend of mine and colleague that her son had died. So, I think there's a certain way of saying thing that you couldn't blame anyone and just holding that space for them to vent. Maybe about three or four months later I met her, and she thanked me and gave me a hug, saying

thanks for being there that day. I just remember you being there and with me.... I think if you treat people the way you'd like to be treated, then if you're empathetic you can't go wrong. (ANP-042)

Hence, a multifaceted, multidisciplinary, and multi-level approach assists in finding better ways to manage incidents when things go wrong in healthcare.

6.12.2 Organisational Cultural Shift

HCPs expressed promoting a just culture in healthcare is crucial for effective open disclosure practice, patient safety, and care quality. They highlighted that this approach creates a non-punitive, blame-free environment that encourages open communication, continuous learning, and shared responsibility essential for managing and preventing PSIs. Additionally, by implementing measures to support a just culture, healthcare organisations can enhance transparency, accountability, and improvement, leading to better patient outcomes and a resilient healthcare system.

6.12.2.1 Creating a Non-punitive and No-blame Culture within the Organisation

The participants acknowledged that a cultural shift towards open disclosure has begun, with HCPs moving away from a culture of blame and guilt. They expressed that while progress is gradual—"we're doing it slowly"—there is an increasing emphasis on transparency. Alleviating fear when mistakes occur enables HCPs to *"admit and say sorry"*, *"We have to make people less afraid. If we make a mistake, we admit to it... We say we're sorry for it. We acknowledge that it has happened"* (CNM2-056). HCPs highlighted the importance of non-punitive measures in clinical practice to encourage openness and transparency. In order to create a non-punitive, blame-free, supportive and protective environment, the change of mentality of HCPs is necessary. In discussions with managers from various wards and departments, participants noted that incident reporting was often viewed negatively, as it was perceived to reflect poorly on ward management. However, during a governance meeting in the critical care department, quality and risk personnel praised the diligent completion of incident forms, expressing appreciation for the commitment to patient safety. *'Thank you for all the incident forms that you fill out (cANP-018)'*. They emphasised that reporting minor incidents and engaging in the open disclosure process reflects positively on the organisation by demonstrating a serious commitment to transparency and safety.

"Because the culture of medicine shifting towards being more open and more engaged with patients because it's all about... trying to shift away from the blame culture and the guilt culture, which I think we're doing slowly. The culture from doctors is slowly changing and they can only really change from training and going all the way up." (Med. Reg.-011)

Participants viewed a shift in mind-set as a key strategy for enhancing open disclosure practices, but reported there is a significant gap between getting there and getting where they want to be. Therefore, changing the narrative from negative, harmful, blame-focused to a positive approach is critical for the benefit of staff, patients, and their families.

Most respondents emphasised the need for a more comprehensive assessment of the *'culture of an organisation'* so that they foster kindness and understanding toward HCPs involved in open disclosure. This includes avoiding harsh language, practising verbal etiquette, listening, and fostering a sense of belonging, which will create a conducive environment for HCPs where they need to feel that they have a voice and what they do is important. Such an environment would enable HCPs to feel valued and confident in their roles. Moreover, considering the chaotic and stressful nature of the healthcare, participants highlighted the importance of a *'supportive and protective'* organisational ethos that reassures staff they will not be blamed or stigmatised if something goes wrong. Besides, a culture that reflects on what is done and puts a *'human face'* to the situation, where everybody has an opportunity to voice and clarify their concerns with their Consultant or Clinical Manager and they listen to them. This, in turn, gives an HCP to engage confidently with patients during the open disclosure process. Also, HCPs highlighted open disclosure as an open and positive approach to learning from PSIs, rather than seeing them as allegations or reflections on their competence *'...an open approach, a positive approach how we can learn through these experiences and that it's not an accusation, or it's not a reflection of your ability.'* (ANP-105).

For the *'supportive and protective'* disclosure process, HCPs highlighted measures such as support from their line manager and organisation, which are considered hugely significant. Furthermore, HCPs stated that *'we do blame each other; we blame each other all the time instead, we have to stand up for each other'*. Some HCPs acknowledged that there may not be a possibility of incentivising HCPs through a monetary basis by engaging in open disclosure. Still, they suggested commending HCPs for their honesty in doing the right thing and enabling the *'culture of speaker for safety'* which is essential to enhance open disclosure in clinical practice. When the open disclosure policy is implemented within the organisation, HCPs feel empowered to speak up for patient safety. At the same time, they receive support, ensuring that their careers are not negatively impacted. HCPs emphasised that the goal is not to incentivise the reporting of PSIs but rather to encourage and support HCPs in actively engaging in open disclosure. This encourages HCPs to conduct open disclosure efficiently without undue pressure and shortcuts.

"I would expect for my line manager to listen first of all to the event itself. To listen to my side of the story and not to judge and then to give me the guidance as to the next steps to take in relation to how to disclose...If it was a big disclosure, maybe my line manager be present at that meeting to assist with any questions about the processes." (Physio. -002)

"Make sure they feel ok after that. If they don't what can I do to make them feel better. Are they ok to work? Are they not ok to work? If they're ok to work, do they need supervision? Are they ok to do independent work? Then how do we prevent this from happening again? Do we need to do education? or do we need to change practice? Do we need to introduce guidelines or pathway or policy? Do we need to have a multidisciplinary involvement to have a multidisciplinary pathway for patient care in those circumstances? So that's usually my approach towards dealing with an incident that requires Open Disclosure." (Med. Cons.-036)

It has been argued that the identification of the cause, management of the situation, and support for those involved in overcoming the blame culture need to be the focus of open disclosure. Most HCPs said the question should be *'How rather than Who': "you focus on, to overcome the blame culture, on why and how rather than who"* (CNM2-056). The rationale is that different staff could be involved in PSIs at any given time. Sometimes, it is not easy to point the finger at any particular incident or person as it is usually a culmination of or is influenced by various factors of diverse nature. For instance, participants highlighted an issue when a nurse got injured by a patient; the first thing asked was, *'Why did the nurse do this?'* which should not have been the first question. The first question should have been, *'Is the Nurse OK?' 'Has she been medically assessed?' 'Has she been counselled?'* but the question was *'why did she do this?'* (CNSp. -003) The participant strongly voiced that this question should have been part of a review of the incident and sadly said that it was the first question. This implies that questions asked by management can determine whether or not HCPs will feel supported by them. Hence, the whole focus should be on 'what' led up to it instead of 'who' as a part of a root cause analysis. Participants stressed the importance of separating blame from responsibility, noting that HCPs must be accountable for their actions and learn from them. *"If they've done something wrong, they have to own up to it. We can't use people as scapegoats"* (Physio-069). It acknowledges the value of supportive and protective environment while emphasising the need for personal responsibility among HCPs during open disclosure.

HCPs also identified the need to address the *'second victim'* impact, where those involved in PSIs may feel personally affected. HCPs urged that thorough processes should encourage those involved to openly acknowledge errors, report them to patients and prevent its recurrence. Hence, participants advocated for a just culture, where sense of responsibility to be communicated to line managers, who play a pivotal role in cultivating this culture and passing it on to junior staffs.

"It's important that if we are disclosing something that it's not going to be a blame game...It's not going to be 'you're the one who's responsible for it'. It has to be a collective you work as a team...You have to have the Support of your colleagues and your management, and it won't be a case where one person is to blame." (RGN-079)

Most respondents emphasised the need for a governance structure that clearly defines the process for open disclosure, including when and how it should be conducted. Moreover, the reasons for not doing it must be standardised to protect HCPs involved in open disclosure and to uphold a no-blame culture. By moving away from pleading someone guilty to a supportive, conducive environment where HCPs feel safe, HCPs can disclose errors with the assurance of support rather than punishment. Establishing clear policies and a supportive, non-judgemental atmosphere would ensure consistency across the organisation and encourage transparent reporting.

When PSI occurs, the pre-disclosure conversation within the team informs how to go about discussing PSI with the patient or their relevant person(s). Senior managers should provide guidance on how to approach open disclosure meetings, addressing potential outcomes and learning from incidents to prevent recurrence: *"I had to explain my team ... you do an open disclosure with your team first and clarify what's happened and how to avoid to say that to the patient."* (Med. Cons.-009). Therefore, psychological support for HCPs involved in PSIs

was deemed essential. Some participants suggested mandatory counselling, debriefing, or flexible working hours especially when they are dealing with difficult situations.

“Be as open and as flexible as we can, during times, when staff have gone through incidents. So, adjusting working hours, who they’re working with, reducing hours for a short period of time..... being mindful that they need to look after themselves. They need to recover from the incident that’s happened.” (CMM2-019)

Most respondents strongly recommended the need for a conducive physical environment for open disclosure discussions. They suggested dedicated, comfortable spaces where all parties feel secure and encouraged to disclose facts without fear. Furthermore, attention to details such as proper room ventilation, the arrangement of chairs, and selecting a location away from where the PSI occurred while ensuring privacy was considered important. Additionally, managing external factors, such as turning off phones or pagers to prevent interruptions, minimising distractions, and allowing sufficient time for HCPs to attend open disclosure meetings, was regarded as essential for maintaining privacy and demonstrating respect during disclosure conversations.

“I suppose a dedicated space because sometimes one of the challenges is finding a space to do it....I suppose a place to meet the people.” (Med. Cons.-040)

In conclusion, HCPs identified number of measures to facilitate cultural shift towards a just culture. Firstly, accepting responsibility for their actions during open disclosure of PSIs was an important indication of progress in clinical practice. Therefore, ‘Truth telling’ and ‘how you approach the process’ is crucial while paying attention to what patients and their families were saying rather being emotional during open disclosure meeting.

6.12.2.2 Enhancing Organisational Priorities and Policies Supporting Open Disclosure Practice

HCPs proposed several strategies to strengthen the change management process and emphasised the need for greater investment in open disclosure at all levels within hospitals. They recommended an open disclosure department within the hospital with trained personnel as ‘Champions’ in clinical practice. This individual would serve as a point of contact for staff seeking honest conversations, accurate advice, and verification of their disclosure plans. Their role would involve assessing situations, overseeing the process, reassuring staff, and ensuring that the appropriate procedures and policies are followed. HCPs should have access to a dedicated contact person and a confidential helpline (*Radiogr-006*) for guidance on the disclosure process, allowing them to seek support and advice when needed. ‘Open Disclosure Champions or Facilitators need to maintain their visibility to support, investigate and increase the confidence of HCPs. Creating a supportive and non-judgmental environment where all team members, from porters to consultants, feel safe and encouraged knowing what they are doing, is the ‘right thing to do’. Hence, training of these Champions with the right knowledge and skills is required to promote and sustain open disclosure for the future.

“Possibly...maybe human resources or the Open Disclosure department itself or Complaints Department who will assist or observe or give advice on how to approach Open Disclosure. ... have an advocate for the patient and for the staff to ensure that the correct procedures are followed regarding the Open Disclosure and involve senior clinicians but also senior nursing and multidisciplinary team members in the Open Disclosure plan and in the actual consultation with the patient or the service user.” (Med. Snr. Reg.-015)

To ensure open disclosure is effectively measured, resourced, and valued, attention must be given to organisational ethos, culture, and regular audits. HCPs described an *‘ethos of a good culture’* as a positive workplace culture, where staff feel heard, have a sense of belonging, and recognise the importance of their roles. Also, it should provide opportunities for staff to network and share their open disclosure experiences. In order to achieve the *‘ethos of a good culture’*, some HCPs identified a *‘top-down approach’*, while others recommended a *‘Top-Down and Bottom-Up Approach’* to the open disclosure process. This dual approach encourages HCPs to feel supported in acknowledging and apologising for mistakes, fostering a culture of responsibility within the organisation. So, open disclosure should be led by a senior team member who understands the incident and is accountable, even if not directly involved, rather than placing responsibility on someone distantly connected. Otherwise, *‘if a pharmacist found a medication error, they could disclose it to the patient’* (Snr. Clin. Pharm.-039). Therefore, HCPs advocated for a standardisation of open disclosure practices across all disciplines with evidence of its benefits, alongside mechanisms for monitoring compliance and ongoing training should be implemented to overcome resistance and foster a culture of openness and trust.

“Change the culture within the teams that is more a ‘top-down kind of approach’. It has to start from the top down that the culture is changed and that the managers show that Support for the nurse that openly disclose an issue.” (CNSp.-003)

When PSIs occur, it is not sufficient for HCPs to simply state that they have disclosed the incident. What was disclosed to the patient and their family must be thoroughly documented in the incident reporting form and patient notes to ensure transparency in the disclosure process. HCPs, therefore, strongly recommend precise and comprehensive documentation of the entire open disclosure process.

“Documentation is the key. So, what has to be documented by who, how much detail should there be.... and how to do it properly so that if things do go right down the line, that the correct documentation is in place.” (Snr. Pharm.-026)

HCPs suggested for a clear, focused, and precise information, along with adequate time, are crucial for all participants in open disclosure meetings. Even though patient and their families are upset, angry and hurting, as it is a human thing, study participants warned HCPs to be very careful not to absorb the blame at the time and not to try and become too defensive because the reality is that no one might know what had happened until all the facts are at hand and review has been completed. It is necessary for HCPs to be calm, composed, and professional as they have to deal with multiple emotions without becoming emotional themselves. Also,

not to become distressed or respond to their anger; instead, step out and ask somebody else to take over during the open disclosure meetings.

"I had to collect myself first, I had to take a break for a couple of minutes. When I was calm, I didn't want to shout back, I wanted to maintain my composure and be professional. Instead of going with my emotions and just giving out directly.... I had to take a deep breath for a while. I know it's emotional, but I had to do it. I just had to listen to them first and then had to tell them, to listen to me." (RGN-023)

Moreover, initiatives encouraging HCPs to 'speak up for safety', 'clarify and verify' and 'Stop the line' can help them recognise that they are more than just a number in the workforce. Instead, they are 'a Voice and an advocate' for patients and their families. This happens when the focus shifts from '*name to the problem than face to the problem*' during disclosure conversations. This not only alleviates the fear factor of doing open disclosure among HCPs but also teaches them how similar events could be dealt with in a more controlled and systematic manner. Then, there would be some closure for everyone involved: "*It has to be seen. It has to be portrayed and sold as a positive for the person, their family, but also for the health professional that's involved that that is the bottom line.*" (cANP-018). Some participants also recommended reassurance from hospitals to ensure the safeguarding mechanisms are in place. However, considering the chaotic nature of healthcare, most HCPs refused the notion of a 'zero harm policy' and recognised the importance of open disclosure in healthcare.

6.12.3 Supportive mechanisms and Sustainability

The importance of supportive mechanisms for system redesign, improvement, and sustainability in healthcare is essential in the pursuit of excellence in the open disclosure process. HCPs identified mechanisms for creating resilient and adaptable healthcare environments capable of effectively responding to evolving challenges related to open disclosure practices. By incorporating professional, organisational, and societal strategies, HCPs can foster a culture of transparency and continuous improvement in open disclosure practices. This approach ensures that improvements are sustained over time, resulting in a more efficient, patient-centered, and sustainable healthcare system.

6.12.3.1 Support System to Enhance Open Disclosure Practice

HCPs emphasised that the support mechanism should not be automatic but should be flexible and responsive to individual needs, ensuring it is available for staff when needed. It is important to note that HCPs might not need the support with every open disclosure and cognisant of their mental health either during or following the disclosure of an incident. Therefore, HCPs involved in the open disclosure process must be made aware of the support networks available within the organisation. They do not necessarily expect to follow up with them but are certainly informed of their availability. It is important for the manager to approach them rather than wait for them to approach, as they may be unsure of how anyone will react to it or what Support might be available or offered to them. Therefore, a referral pathway must be considered to support the staff during the open disclosure process.

“Staff aren't always aware of supports that are available and may simply be unavailable if they haven't been offered. If their expectations to find themselves, may compromise the Support. The staff member who has been involved in open disclosure should be informed of any support networks, but not necessarily expect to follow up with them, but certainly informed of their availability.” (Med. Snr. Reg.-015)

HCPs strongly recommended psychological support and counselling services for HCPs at various stages of the disclosure process. This included coaching sessions, employment assistance programmes, debriefing sessions, and awareness meetings at personal and departmental levels. However, some HCPs considered peer support, friends, and family as a means to sustain their psychological well-being depending on the nature of their involvement in the process: *“I think peer support is important really, and it matters a lot when we know our peers are there to stand by us and to support us.” (Med. Cons.-036)*. This promoted resilience among HCPs to continue and engage in the disclosure process, knowing the organisation is more protective of the staff rather than the good name or prestige of an organisation.

“It depends on the severity of the Open Disclosure... might need counselling if the open disclosure has negatively affected you psychologically. It is affected physically, then you have occupational health to support you. It's good to feel like you weren't being disowned by your organisation as they were standing by you as you were involved in the Open Disclosure process that process wasn't taken away from you and dealt with solely by your manager.” (Physio.-002)

A number of legal perspectives were proposed by HCPs to support engagement with open disclosure. These included how open disclosure needs to be delivered to patients and their relevant person(s) while ensuring the safety and protection of HCPs involved. Additionally, HCPs suggested sharing of experiences by those who have previously openly engaged with this process through Schwartz rounds. However, it must be ‘encouragement’ rather than an ‘enforcement’ providing constructive feedback to HCPs in a safe environment. This aids HCPs in moving away from a culture that is secretive and fearful to a routine, no-blame, and safe-to-disclose environment.

“The Schwartz rounds where people who have had experience of doing open disclosures, whether the disclosures that went really well or the disclosures that didn't go well, people can learn from those in a non-judgemental constructive feedback point of view. (Med. Cons.-036)

The study participants largely appreciated the support from quality and risk management departments. The areas of focus have been on feedback on incident forms, decisions made by health and safety, quality and risk about changes to practice and what information is being passed onto the patient during the open disclosure process. This requires commitment from all levels of the organisation, including effective risk management and education. Besides, HCPs consider risk managers to be experts with the necessary expertise and experience as investigators of PSIs in the organisation and they are in a position to support all parties involved.

"I think there should be supports from quality and risk, patient safety department who would come and speak to the staff, if they're going to have to go and speak to family, to support them...They should come together and sit down and explain what happened. What we need to tell the family, why we need to tell the family...that they're supported in telling the family...." (CNM3-041)

As multiple factors contribute towards open disclosure of PSIs, HCPs emphasised the need to look after the 'second victims' rather than just referring them to employee assistance programmes: *"we have to mind people, and we have to mind each other."* (Med. Cons.-038). HCPs recommended a clear structure, policy, staff education, and empowerment within the organisation to support those involved. Additionally, staff must be provided a complete picture of what has happened through an 'after-action review' with the HCP involved.

6.12.3.2 Humanistic Approach towards Open Disclosure

In relation to adopting a humanistic approach to open disclosure, HCPs highlighted that nurses, as proficient communicators, are well-positioned to lead these discussions with patients while adhering to relevant policies and protocols. When some HCPs face challenges, others can step in to guide the conversation more effectively. A culture of openness and respect for the difficult conditions under which staff operate fosters a collective sense of responsibility rather than placing blame on individuals alone: *'we all will take responsibility, not just one person'* (DOM-030). This approach ensures that HCPs feel supported by senior colleagues throughout the open disclosure process, reinforcing the practice as a constructive rather than punitive measure.

"I mean, you guys [Nurses] are the most skilled communicators in healthcare, frontline nursing staff. I mean you're very good at it. We could learn a lot from you guys." (Med. Scientist-014)

"The nurses are the team that carries this [Open Disclosure] and make sure that policy is followed. So, they're the team people who need to be more trained in my opinion." (CNM3-001)

Regarding the values or ethics for interprofessional practice, most HCPs acknowledge that open disclosure as a 'sense of duty' and 'power to make it right' if something goes wrong in healthcare. They recognise that expressing an apology through statements such as 'saying sorry,' 'we've investigated,' and 'we've taken action to prevent recurrence' can help strengthen the relationship between clinicians and patients. However, some HCPs perceive 'saying sorry' as implying an admission of fault or carrying medico-legal implications. Nonetheless, ongoing training in open disclosure continues to support HCPs in developing a clearer understanding of what constitutes an appropriate apology and how to effectively communicate it during disclosure meetings. Most HCPs strongly advise that an 'apology' should be provided on several occasions during open disclosure conversations to show a humane and empathetic approach to patients and their relevant person(s). However, the delivery of that 'apology' was highlighted as vital by HCPs, implying that some people might prefer to hold their hands or hands on their shoulders. In contrast, others may need a formal apology in writing.

"By saying sorry, we've investigated, we've taken actions to make sure it doesn't happen again, I think that would build up a bit more trust in the general public" (Med. Scientist-014)

The majority of HCPs addressed that the humanistic approach does not mean refraining from accepting responsibility, instead, it enhances '*relationship of trust*' with everyone involved: "...*encourage it as a humane approach rather than a legislation or a policy....*" (Med. Snr. Reg.-015). Moreover, it provides '*psychological safety*' for HCPs, empowering them to openly communicate and address any concerns without '*arrogance*', '*hiding*' or '*cover up*' or '*being defensive*' and also without fear of any negative repercussions. Besides, patients and their families understand that HCPs are being truthful and honest about what happened and helps them deal with any outcomes when they know the truth. Demonstrating empathy, understanding their emotions, and communicating in a way that is clear and appropriate to their needs are crucial. Hence, an open disclosure team need to humanise conversations, and recognise their feelings by connecting with emotional and personal aspects of the patient's experience.

"When you are going into Open Disclosure, if you feel that in all honesty you have done everything you could then it gives you that emotional safety going in to do the talk....it benefits both the family and the clinician when Open Disclosure happens." (Med. Cons.-036)

A humane approach to open disclosure was considered important and safe, but the use of language needs to be careful as things have different meanings and can be interpreted differently. This approach will ensure the safety of both patients and help everyone involved to be vigilant in the future. Moreover, the Humanistic approach to open disclosure made HCPs reflect on themselves: "*it's only when you become a patient yourself you realise the importance of transparency and accountability and what that means to a patient.*" (CNM3-027). As human error is bound to happen, they do not think anyone commits negligence or harm intentionally. However, reminding ourselves that we are all human and we all make errors from time to time and that if we discuss it and own up to it and if we have to apologise, HCPs think it would lend a certain amount of peace with it.

'Nobody wilfully or with any intent does harm.' (Med. Scientist-014)

'You're looking for care...You look for people care about you.' If it's done properly Open Disclosure, you can improve the feeling of the patient and the family. These people, they do care.' (Med. Cons.-009)

The humanistic approach focuses on HCPs' willingness to do good to people in healthcare. However, when errors occur, it is natural for HCPs to feel distressed, as no one wishes for things to go wrong or fail to meet expectations. Facing negative emotions such as criticism, guilt, and shame can hinder the disclosure process. However, approaching open disclosure with a humanistic perspective enables HCPs to view it as an opportunity to address and learn from mistakes, fostering a culture of improvement and preventing future errors.

6.12.4 Training Content, Approaches, and Inclusivity

This theme explores the critical aspects of open disclosure training, focusing on content development, innovative approaches, and the importance of inclusivity.

6.12.4.1 Training Approaches and Content

Participants emphasised the need for training to address a broad range of skills, including effective communication skills, professional empathy, conflict resolution skills, mediation skills and managing difficult

situations involving colleagues, patients, and relatives. Communication skills form the foundation of open disclosure, enabling HCPs to convey information clearly and empathetically to patients, families, and colleagues. Professional empathy is crucial for understanding and responding to the emotional needs of those affected by PSIs. Training in handling conflict and mediation skills equips HCPs with the tools to navigate challenging conversations and find mutually acceptable solutions. Additionally, learning to manage difficult situations involving various stakeholders is vital for maintaining professionalism and trust in the healthcare environment. Furthermore, HCPs suggested that training content should also address the complexities of open disclosure meetings, including considerations for who should be present, based on the PSI, disciplines, cultural and gender factors, as well as the role of human factors.

“There should be human factors training done for all of these, just like the way the pilots or the aircraft industry has those built in the training system. So, if you have an HCP, should have human factors as part and parcel of the training as well.” (Med. Cons.-036)

The alignment of open disclosure training with relevant national and HSE guidance and legislation was deemed essential. This is crucial for preventing confusion caused by conflicting guidance between national and hospital policies. It also guarantees consistency in terminologies and reporting standards across organisations, upholding a unified and standardised practice of open disclosure throughout the country. It helps to mitigate legal risks by ensuring that HCPs are well-equipped in the legal aspects of open disclosure, thus promoting a culture of accountability and trust within the healthcare system.

“If you are able to openly disclose then part of your initial training or supervision period should allow somebody to supervise you but again it would rely on the hospital policy or the national policy.” (Snr. Clin. Pharm.-039)

There was a strong preference among participants for face-to-face learning methods, such as workshops and training sessions incorporating examples, case studies, and real-life scenario: *“actual real-life examples, they will hear you the most....” (Physio.-002)*. These methods were perceived as more effective than online modules for reinforcing learning and improving retention. The inclusion of videos and high-profile case examples was suggested to make the training more engaging, interactive, and impactful. The inclusion of scenario driven simulations, legal aspects, and simple strategies to deescalate the situation was suggested to provide a well-rounded understanding of open disclosure practices: *“Multidisciplinary simulation training would be the gold standard” (cANP-018)*. Techniques such as role plays, particularly those involving confrontational or sensitive scenarios, were highlighted as effective in enhancing the skill set and training experience of HCPs. These exercises are especially beneficial for less experienced staff, such as interns and junior doctors, as they help reflect on necessary support, manage emotions, and pay attention to verbal and non-verbal communication cues. Including a variety of case scenarios, those involving near misses, was also seen as essential for providing comprehensive training.

“Staff would benefit from an interactive situation where we could do role plays of when Open Disclosure goes badly, how staff can deal with it, what language they can use... If something needs to be escalated, do people know exactly who to call or what to do.” (Clin. Pharm.-033)

Participants also requested for a structured guidelines on conducting open disclosure with patients and families, including specific instructions on what to say, how to say it, and necessary documentation: *“Training around a structure for what information to give the patient and how to deliver it.” (Patient Advocate Liaison Manager-044)*. In order to optimise training effectiveness, participants recommended that sessions be shorter but more frequent, which would allow for regular updates and reinforcement of key concepts. The provision of supervision during open disclosure practice was also highlighted as a method to support staff in real-life situations and ensure the ongoing application of learned skills. The presence of senior experience colleague allows for a real-time guidance, enabling them to interject if any crucial information is omitted or to assist in navigating challenging questions that may arise during the conversation. The mentorship approach significantly enhances the quality of disclosure and offers a crucial learning opportunity for less experienced staff members. It provides immediate feedback, cultivates confidence, and ensures that patients and their relevant person(s) receive the most comprehensive and sensitive communication during a challenging disclosure process.

“When you’re doing your first Open Disclosure that you would have a senior member of staff with you, witnessing you, to see are you doing it appropriately or interjecting if you have left a bit out or interjecting to navigate a difficult question you mightn’t be able to answer. you need to do things under supervision a few times before you can do them well on your own.” (Snr. Clin. Pharm.-039)

Thus, open disclosure training is crucial for ethical care, better patient outcomes, enhanced emotional intelligence, and a culture of safety and transparency in healthcare. Effective training, utilising diverse teaching approaches and expertise will equip HCPs with attributes for a transparent communication in a challenging situation. The training content must include skilful communication techniques, ethical considerations, legal implications, and emotional support strategies for both patients and HCPs.

6.12.4.2 Early and Inclusive Training

This sub-theme emphasises the importance of introducing open disclosure concepts early on and training programmes should be inclusive, addressing the diverse needs of all HCPs’, their patients, and their relevant person(s). This approach aims to normalise open communication practices and reduce the barriers that may prevent adequate disclosure in the future. The inclusivity aspect focuses on tailoring training programmes to accommodate various learning styles, cultural backgrounds, and professional roles within the healthcare system.

Participants highlighted that the training must be value-based and integrated throughout the professional journey of all HCPs from their socialisation into their profession. The timing of open disclosure training is vital in laying a strong foundation of safety culture and transparency. Integrating value-based assessments with clinical assessments recognises that knowledge and skill-based competence alone are insufficient for providing

high-quality patient care. By incorporating ethical decision-making and professional values into the assessment process, educational institutions aim to foster HCPs who are not only clinically proficient but also morally grounded and patient centred.

“We need to be doing more value-based assessment, mixed with clinical assessment when we are doing professional exams...really the clinical care and the values associated with clinical care should be examined from undergraduate level, postgraduate level, professional examination, in all disciplines.” (Med. Cons.-038)

Moreover, there was a recognised need for a team approach to disclosures training as a way to foster collaboration and enhance the overall effectiveness of open disclosure practices. Open disclosure training to be inclusive with multidisciplinary teams Training sessions that bring together various HCPs’ such as doctors, nurses, healthcare assistants, and others facilitate the sharing of experiences and cross-disciplinary learning including a legal expert and psychological background. However, HCPs emphasised that an approach should be detailed, structured, and organised to explain what had happened and determine what exactly had happened.

“Generic sessions give an opportunity for the different professions to come together and understand each other’s issues. So, it can provide a platform for multidisciplinary learning.” (Med. Cons.-036)

Training accessibility and flexibility were further identified as key factors. It is essential that open disclosure training be available to all staffs, and it should be adaptable and flexible to the audience. Given the constraints and demands on clinical staff, bringing training directly to the ward was suggested as a way to minimise disruption to patient care. Additionally, providing incentives for attendance and supporting staff as educators or mentors were proposed to enhance engagement and participation. However, the variation in departmental flexibility regarding training highlighted a need for a more uniform approach. Ensuring consistent opportunities for all staff to engage in open disclosure training is crucial for maintaining a standard level of practice across healthcare organisations.

“And ideally there should be repeated training sessions, but I just know how hard it is to get people released to go to anything.... there’s you know there’s very little incentive, if any, for people to come in on their days off.” (cANP-018).

In summary, HCPs recognised the evolving nature of the healthcare and the necessity for innovative technologies to facilitate more interactive training experiences for HCPs. However, it is essential to measure the impact of these training programmes on actual disclosure practices and patient outcomes to promote a cycle of continuous improvement and adaptation.

6.13 Conclusion

The qualitative thematic analysis highlighted several key factors, barriers, and recommendations for open disclosure of PSIs. HCPs revealed that despite the complexities and blame culture influencing the system and HCPs’ behaviour, they acknowledged open disclosure of PSIs as an ethical, moral, and legal obligation,

irrespective of their personal, professional, or global experiences, and rejected secrecy, upholding the patient's right to know.

Secondly, HCPs encountered emotional and psychological challenges when engaging with open disclosure of PSIs, often feeling guilt, shame, or anxiety. Many HCPs stressed the importance of recognising everyday challenges like fatigue, staffing shortages, safety concerns, and communication barriers, which can affect the open disclosure processes. These factors inadvertently influence how and when HCPs engage in transparent discussions with patients and their relevant person(s). HCPs strongly believed that shifting the focus from fault-finding, skepticism, and fear of repercussions to transparent discussions, problem-solving, learning, fostering compassion, navigating emotions, and maintaining honesty enhances empathetic, patient-centred communication.

Thirdly, a significant gap exists between theoretical knowledge, established policies, clinical expertise, and practical implementation, resulting in inconsistent and potentially ineffective open disclosure practices. Consequently, participants emphasised the necessity of multidisciplinary collaboration for meetings and training sessions with relevant experience, skills, and confidence to facilitate an effective disclosure process. Furthermore, organisational practices such as adherence to open disclosure policies, fact-based inquiries, managerial and peer support, and the involvement of the Quality and Safety department further strengthens the disclosure process.

Fourthly, open disclosure training is viewed as valuable. HCPs acknowledged the use of tools, delivery methods, practical strategies, online training, and multidisciplinary learning to enhance their knowledge and skills related to open disclosure practices. Despite the challenges of designing programmes for diverse learning preferences, disciplines, and experiences, HCPs stressed the need for standardisation, depth, and inclusivity.

Finally, the COVID-19 pandemic further exacerbated the open disclosure practices compelling HCPs to rely on virtual communication methods that were less effective for sensitive discussions. Moreover, the shift in healthcare priorities during the pandemic often led to delays or incomplete disclosure processes, potentially eroding trust between patients, families, and healthcare providers. Overall, future healthcare delivery must address hierarchical structures and cultural norms alongside individual, organisational, and systemic factors to enhance resilience and adaptability to open disclosure practices within the Irish healthcare system.

Chapter 7 Integration

7.1 Introduction

This chapter presents the integration of quantitative and qualitative findings to develop a comprehensive understanding of open disclosure practices within the Irish healthcare context. The study followed an explanatory sequential mixed methods design, with integration occurring at key stages: during the research design, through purposive selection of phase two participants based on survey findings, and during interpretation (Section 4.9 for detailed description) (Creswell & Creswell, 2018; Hirose & Creswell, 2022). After conducting separate analyses of each dataset, points of intersection were identified, followed by the development of joint displays and the generation of meta-inferences drawing interpretive insights that extend beyond the contributions of individual data strands (Hirose & Creswell, 2022; Younas et al., 2023).

To support this process, joint displays were employed as an analytical tool to systematically align and compare results (Tables 36-40, Figure 21). These displays assess the coherence or “fit” between the two datasets, categorised as convergence (where findings align and reinforce one another), expansion (where findings diverge but offer complementary perspectives), or discordance (where findings contradict, prompting critical methodological or contextual reflection) (Fetters et al., 2013). This approach strengthens the transparency and rigour of interpretation, enabling the formulation of meta-inferences that offer a more nuanced understanding of open disclosure (Guetterman et al., 2015). As Creswell and Inoue (2025) emphasise, this stage represents the added value of mixed methods research, producing knowledge that extends beyond what either strand could achieve alone. In this study, joint displays are used to synthesise findings from the quantitative survey and qualitative interviews across five thematic domains: ethical principles and efficacy, communication, systems and infrastructure, training and education, and patient and public involvement. Each display identifies the type of integration fit and the associated meta-inference, providing a cohesive interpretation of healthcare professionals’ experiences, perspectives, and challenges related to open disclosure aligned with the study’s core objectives.

7.2 Ethical Principles and Efficacy

The joint display in Table 36 presents integrated findings related to HCPs’ ethical orientations and efficacy in open disclosure practice. Drawing on both quantitative and qualitative strands, this theme addresses all four research objectives. The survey data from Phase 1 reveal that healthcare professionals strongly associate open disclosure with ethical obligation, regardless of patient awareness, preference, or incident severity. These attitudes are complemented by qualitative findings that emphasise the moral and legal imperatives to disclose, the importance of acknowledging harm, and the role of ethical reflection in improving patient safety. The integration highlights the influence of professional values on disclosure behaviours, identifies facilitators and barriers to ethically grounded disclosure, and captures strategies to embed ethical reasoning in training and practice. Together, the findings illustrate how moral awareness and a commitment to transparency shape disclosure culture at both individual and organisational levels.

Table 36 Joint Display of Key Findings on Ethical Principles and Efficacy

Meta Inferences	Quantitative Data	Qualitative Data	Integration
HCPs attitudes, perceptions and behaviours are significantly influenced by Moral and ethical principles irrespective of type, impact, and outcome of open disclosure. Higher ethical awareness fosters transparency at individual and organisational level.	HCPs viewed open disclosure as an ethical obligation, irrespective of patient preferences (85.5%, $n = 348$) or comprehension (81.2%, $n = 333$) or want it (75.4%) or awareness of PSIs (85.6%, $n = 351$) or benefits (75.1%, $n = 308$) Open disclosure requires higher ethical awareness (74.7%). HCPs disagreed severity-based disclosure (70.4%, $n = 288$) or would benefit patients ($n = 285$, 69.6%). HCPs supported disclosure despite financial losses to hospitals (93.2%, $n = 379$).	Ethical, moral, legal responsibility, “right thing to do”. Important to accept responsibility and acknowledge errors regardless of impact and outcome. Patients must be notified, and supported early and action prevention measures. Reinforce good practices, improve service delivery and patient safety by learning from incidents.	Confirmation
Open disclosure supports service improvements, patient safety efforts, addresses psychological impact and fosters cultural change.	Open disclosure is linked to better services (76.8%, $n = 307$) and patient safety focus (86.9%, $n = 86.9\%$).	HCPs held mixed views regarding disclosure during near misses. Address PSIs positively to drive learning and improve services.	Confirmation
	Disclosing PSIs individually and as a team fosters Patient trust and patients return to them (Agree=51.8%, neutral=38.8%). Disclose PSIs as a healthcare team to promote a patient safety culture ($n = 389$, 95.3%).	Enhances relationship between patients, HCPs, and healthcare systems. Blame culture affects teamwork and collaboration.	Confirmation
	Open disclosure reduces guilt (58.6%, $n = 234$).	Open disclosure eased guilt and feelings of negligence.	Confirmation
	Justification ($\beta = 0.188$, $p = 0.002$) and Positive consequences of open disclosure ($\beta = 0.074$, $p = 0.035$) improved teamwork.	Peer feedback and prior experience enhances open disclosure process. Experienced HCPs views of open disclosure evolved throughout their career.	Expansion
	MDT worked well together and resolved disagreements when managing ($n = 316$, 77.4%) and responding to PSIs ($n = 275$, 67.6%) by focusing on ‘not who is right but what is best’.	Meeting as a team without family members helps express feelings, clarify questions, complete incident forms, and look at preventive measures.	Expansion

	Those who are involved in a PSI and participate in the disclosure, tend to have a positive view.	Increased confidence and honesty linked to experience and exposure to PSIs.	Expansion
While HCPs acknowledged open disclosure is everyone's responsibility, uncertainty existed in terms of disclosure decisions, who should lead and impact of being involved in the disclosure process.	Disclosing PSIs is everyone's responsibility (85.9%, n=355). HCPs agreed that they are responsible for informing patients about their or their team's errors (<i>n</i> = 374, 91.9%). HCPs aged 41-50 years have greater responsibilities (mean rank 224.76).	Senior practitioners viewed disclosure as a shared responsibility providing closure and foster participation.	Confirmation
		Some stated senior team members should lead open disclosure for serious events. Team-led disclosures may intimidate patients. Important to select the right person to communicate with patient beforehand.	Expansion
	HCPs (<i>n</i> = 330, 80.7%) felt comfortable supporting and advising peers on how to respond to an error (mean score-4.03 (range 1-5). HCPs aged 41-50 years (<i>n</i> =114) and Nursing and Midwifery professionals (<i>n</i> = 278) felt comfortable supporting and advising peers.	Many HCPs reported open disclosure as a daunting process.	Discordance
		Some HCPs believed that nurses were well-positioned to manage disclosure discussions and experienced HCPs step in to guide the conversation.	Confirmation
		Mentorship helps to develop required skills and confidence. HCPs face emotional and psychological challenges such as fear, nervousness, and burnout during open disclosure.	Expansion
		Debriefing with a trusted friend, peer and pastoral support encourages transparency.	
	HCPs had mixed views on colleague criticism, with 24.8% fearing doubt about their professional ability if their involvement in a PSI was known.	HCPs experienced criticism led to PSIs undisclosed, poor disclosure outcomes, and reputational damage or job loss.	Confirmation
	Open disclosure should be done by the person directly involved (62.2%, <i>n</i> = 257).	In Ireland, HCPs were surprised by a 'watch and wait' process, where Clinicians were mainly the 'gatekeepers' who decided on disclosure.	Discordance
	HCPs disagreed that the medical team alone could determine if PSI occurred (mean score-4.29).		Confirmation

7.3 Communication

This joint display (Table 37) presents integrated findings on communication in open disclosure, highlighting the central role of proactive, structured, and empathetic communication in ensuring effective disclosure practices. Quantitative findings show a strong correlation between participation in open disclosure discussions and improved interprofessional communication, particularly following targeted training interventions. These results are confirmed by qualitative insights that emphasise the importance of preparatory discussions with managers, the use of structured tools like the ASSIST model, and culturally sensitive adaptations in how information is conveyed. Expansion occurs as qualitative data further illuminate the challenges posed by emotionally charged conversations, language barriers, and virtual disclosure contexts, particularly during the COVID-19 pandemic. Communication was also influenced by professional role and experience, with nurses perceived as particularly skilled, though new staff and less experienced practitioners lacked confidence, revealing areas of discordance between perceived responsibility and communication readiness. Together, these findings support Objectives 1 through 4 (Chapter 4, Section 4.2) by demonstrating the critical need for structured training, clear communication protocols, and interprofessional collaboration to enhance the quality, consistency, and compassion of open disclosure.

Table 37 Joint Display of Key Findings on Communication

Meta Inferences	Quantitative Data	Qualitative Data	Integration
A proactive, collaborative and structured approach helps HCPs to anticipate and address uncertainties and guide disclosure communication.	Active participation in open disclosure discussions was positively correlated with enhanced communication ($\beta = 0.732, p = 0.025$).	Discussed with their managers on how to address this situation, what to communicate, and how to communicate.	Confirmation
		HCPs require specific instructions on what to say, how to say it, and necessary documentation. ASSIST model of communication and Safety Checklist helped structure communication during the conversation. COVID-19 introduced various communication challenges, both face to face and virtually for disclosures.	Expansion
Training and continuous learning have a significant impact on supporting HCPs with relevant communication skills and manage difficult conversations.	HCPs felt comfortable disclosing PSIs ($n = 225$) and were aware of protective legislation ($n = 263$) post-training, demonstrated significantly higher Interprofessional communication scores ($p < 0.001$).	Certain PSIs are hard to cope with and to communicate with empathy. Need to separate emotions, remain objective and empathetic to prevent burnout. Learn to remain calm, offer apologies when necessary, following standard processes, utilise ASSIST tool, and actively listen. HCPs described cultural awareness when disclosing incidents through examples including physical touch and the need for adapting the disclosure process according to the patients need.	Expansion
	HCPs attending interactive workshops ($p < 0.001$) and facilitator training ($p < 0.002$) showed significantly improved Interprofessional communication.	Poor communication, language barriers, medical jargon, poor listening, defensiveness, unaware of non-verbal gestures and open disclosure processes harmful to the open disclosure process. “Training around a structure for what information to give the patient and how to deliver it.”	Expansion
Addressing interprofessional communication gaps through integrated communication	Significant effect of age on Interprofessional communication, $\chi^2(4) = 33.088, p < 0.001$, with a highest mean rank score of 234.02 for health	‘New nurses’, ‘inductees’, and ‘adaptees’ lack confidence and experience due to the complexities of communication skills.	Discordance

frameworks, cultural awareness, professional empathy, and shared learning could enhance communication effectiveness across all groups.	and social care professionals aged 41-50 years ($n = 114$).		
	Significant effect of profession type on interprofessional communication ($\chi^2(2) = 16.969$, $p < 0.001$), with Nursing and Midwifery professionals (210.26) having the highest mean rank, followed by Health & Social Care Professionals (159.22) and Medical Professionals (157.95).	Nurses are proficient communicators, are well-positioned to manage these discussions and adhere to protocols	Confirmation
	HCPs involved in patient safety incidents ($n = 203$) and open disclosure discussions ($n = 92$) showed higher Interprofessional communication scores ($p < 0.001$).	Increased exposure to open disclosure improved communication skills, made HCPs more resilient and effective in their roles and responsibilities.	Confirmation
	Positive perception of open disclosure across situations ($\beta = 0.079$, $p = 0.019$) enhanced communication; negative consequences ($\beta = -0.169$, $p = 0.000$) hindered it.	An empathetic, compassionate approach is crucial. The manner of communication is more important than the subject. Appropriate gestures, facial expressions, and body language is important to support patients and their families. Check whether family members are prepared to hear about the PSIs by breaking information into smaller parts, being logical, and using clear, concise language.	Expansion
	High agreement that PSI disclosure is a shared responsibility across healthcare teams (Mean: 4.27).	Ireland's clinician-dependent model of open disclosure hinders effective communication.	Discordance
		Commend HCPs for their honesty, doing the right thing and enabling the 'culture of speaker for safety'.	Expansion

		Early and transparent communication with patients and their relevant person(s) about PSIs is crucial. Active listening, acknowledging near misses or PSIs validate patient experiences. Open communication, continuous learning, shared responsibility, listening, clarifying, explaining, and understanding the perspectives of patients and their families is important.	

7.4 Patient Focused Disclosure

This joint display (Table 38) presents integrated findings on patient-focused disclosure, highlighting how HCPs navigate open disclosure in a way that prioritises patients' needs, perspectives, and rights. Quantitative data indicate strong agreement that team-based disclosure demonstrates a patient-centred approach (94.4%) and that offering apologies is valued as part of ethical communication (95.6%). Qualitative data expand on these findings by revealing how healthcare professionals tailor disclosure based on patients' emotional responses and emphasise the value of follow-up to maintain trust. However, challenges were noted in managing patient aggression, perceived unrealistic expectations, and cultural differences, contributing to areas of expansion and discordance. Some healthcare professionals expressed concern that patients or families may feel intimidated during disclosure meetings, or in some cases, may seek compensation without clear harm. These findings suggest that while there is strong support for honest and compassionate disclosure, its implementation must be flexible, culturally sensitive, and supported by holistic measures, including emotional, psychological, and practical assistance. A just and inclusive organisational culture is essential to ensuring that patient-focused disclosure is both ethically robust and practically effective.

Table 38 Joint Display of Key Findings on Patient Focused Disclosures

Meta Inferences	Quantitative Data	Qualitative Data	Integration
Open disclosure practice is continually evolving through interactions among HCPs, patients, relevant persons(s) and health systems, seeking transparency, flexibility and advocacy while respecting autonomy.	Disclosing PSIs as a team demonstrates a patient centred approach to health care ($n=385$, 94.4%).	HCPs' communication of open disclosure varied based on patient's responses. Post open disclosure follow-up with patients or their relevant person(s) helpful to answer questions and to build a therapeutic relationship. Some HCPs felt that though patients or their families attended disclosure meetings, they may feel intimidated to ask questions.	Expansion
	HCPs valued apologising for PSIs ($n = 389$, 95.6%).	Being truthful and honest about what happened helps them deal with any outcomes. HCPs found difficulty in managing patient aggression during open disclosure. Most participants agreed that contacting the family and identifying their needs was a priority.	Expansion
Cultural sensitivity, collaborative compassionate approach, just culture and employing holistic measures such as psychological, financial, legal and situational assistance support open disclosure and boost HCP and organisational reputation.	Concerned about potential negative reactions from patients and families (Agree-17.8%, $n=72$; disagree- 29.1%, $n=118$; Neutral-53.1%, $n=215$).	HCPs felt uneasy, and worried about the potential negative impact on patients or their families. Found patient aggression and threats stressful.	Discordance
	Institutions need a positive culture that supports open disclosure of PSI.	Dissatisfaction among HCPs with patients' unrealistic expectations or unawareness. HCPs reported concerns about cultural appropriateness in disclosure conversations in a multicultural work setting and with patients from diverse backgrounds.	Expansion

		HCPs described the importance of ensuring patients and their relevant person(s) receive adequate support (financial, psychological, and clear communication of the incident). HCPs highlighted that some patients may have ulterior motives of being compensated despite no harm caused by the incident.	

7.5 Systems and Structures

This joint display (Table 39) presents integrated findings on the role of systems and infrastructure in supporting open disclosure practice. Quantitative data show strong consensus among HCPs regarding the need for dedicated personnel (91.7%) and formal guidelines (95%) to facilitate open disclosure. These findings are confirmed by qualitative insights, which emphasise the importance of preparation, structured processes, and multidisciplinary involvement in supporting effective disclosure. A positive organisational culture underpinned by professionalism, legal protection, and consistent policy adherence was seen to promote transparency and accountability. However, discordance emerged where institutional promises of support failed to materialise, particularly in the form of follow-up or safe disclosure spaces. Expansion was evident in discussions of cultural variability, pressures from staffing shortages, and evolving attitudes toward litigation and risk. Although many professionals recognised the value of disclosure in enhancing trust and learning, others remained hesitant due to fear of blame, legal consequences, and unclear roles. These findings highlight how systemic structures, organisational culture, and legal frameworks profoundly shape the delivery and sustainability of open disclosure, directly addressing all four study objectives (Chapter 4, Section 4.2) by identifying both enablers and obstacles to embedding open disclosure into routine healthcare practice.

Table 39 Joint Display of Key Findings on Systems and Structures

Meta Inferences	Quantitative Data	Qualitative Data	Integration
Structures and systems have a key role in facilitating appropriate environment and support for all stakeholders involved.	Healthcare institutions need dedicated personnel to support open disclosure ($n = 364, 91.7\%$).	Quality and risk personnel have key role in investigation, identifying root causes, analyse trends and support HCPs.	Confirmation
		Recommendation for a dedicated 'open disclosure team' to plan, coordinate, and support open disclosure meetings.	
		Lack of follow-up from the Quality and Safety department leads to ambiguity and lack of confidence among HCPs.	Discordance
		Lack quiet and safe space to maintain dignity and confidentiality.	Expansion
		Faced pressures due to staff shortages, multiple clinical emergencies, staff mentoring, patient queries, disclosure meetings requiring right time, place and person.	
	HCPs who understood reasons for open disclosure and experience positive consequences engage better in teamwork ($(R^2 = 0.331, F(6, 300) = 10.869, p < 0.001)$).	Lack of clarity as to who should do the disclosure, sometimes HCPs share the role within the team.	Expansion
	MDT worked well together ($n = 316, 77.4\%$) and resolved disagreements ($n = 275, 67.6\%$) when managing and responding to PSIs.	Helpful to have clinicians and risk management personnel present during disclosure to provide details. HCPs recognised that preparation prior to the open disclosure meetings was one of the main causes for successful disclosures.	
	HCPs with a positive attitude toward healthcare teams and teamwork have positive perceptions toward open disclosure ($r_s = -0.750$).	Team disclosures may be perceived as confrontational and overwhelming. HCPs who lacked insight into the value of open disclosure perceived it as a hindrance to patient recovery.	Discordance

The individual contexts, organisational culture and societal attitudes have significant influence on how various components of healthcare systems behave and adapt over time.	The highest consensus among HCPs (95.7%; $n = 379$) was about the need for a positive culture that supports open disclosure. Open disclosure as a team improves patient trust ($n=333$, 80.8%) and demonstrates a patient safety culture ($n=371$, 89.7%).	A 'no blame culture' in UK, Australia and America focused on 'what had occurred?', 'How did it occur?' and 'What could we do to improve it?'.	Confirmation
		Practice in Ireland lacked consistency and follow up, revealing cultural reluctance to admit mistakes, lacked managerial support, and focus on individual blame.	
		Pastoral support offered emotional and spiritual assistance.	
		Need to enhance public awareness, media involvement, improve public understanding and trust.	
		Open disclosure is not sufficiently incentivised.	Expansion
	HCPs perceived that open disclosure would improve services ($n = 307$, 76.8%) and increase HCPs' interest in patient safety ($n = 347$, 86.9%).	Honest disclosure facilitated learning among colleagues; helped them to understand the causes and prevent future PSIs.	Confirmation
Law, policy and guidelines are powerful systemic interventions however these are evolving all the time with changing social and healthcare contexts raising ethical and procedural dilemmas for HCPs and impacting trust.	78.4% ($n = 320$) were aware of policies and guidelines to assist them in effectively communicating patient safety concerns. HCPs (95%; $n = 377$) overwhelmingly supported the provision of guidelines for open disclosure.	Adherence to national professional standards, legislation, and policies supported HCPs participation in the open disclosure process. Some participants recognised their legislative and ethical responsibility when disclosing information to patients. Familiarity with established open disclosure protocols and guidelines improved consistency, professionalism, and accountability. Protection under the State Claims Agency provided legal assurances, enabling HCPs to respond more confidently.	Confirmation

		Current policy mandates open disclosure and discusses steps to prevent future incidents.	
	Disclosure would lead to litigation (neutral 47.9%, n=194, agree-26.7%, n = 108 disagree-25.4%, n = 103).	Open disclosure can lead to litigation and increase risk of HCPs losing their professional registration.	Expansion
	Risk of disciplinary action was more pronounced (n = 235, 58%).	Criticised HSE for inadequate and delayed disclosures leading to litigation.	
		Newer HCPs are less concerned about litigation and understand the importance of 'doing things right' through open disclosure.	Confirmation
	Establishment of apology laws protect healthcare providers (agree – 75.0%, n = 298, Neutral- 22.7%, n =90).	The support assured to HCPs in the policy doesn't always materialise.	Discordance
	Significant association between HCPs' perceptions of open disclosure across harm levels and their roles ($\chi^2 (2) = 22.272, p < 0.001$).	Documenting errors, meeting notes, review of documents by line managers is important for communication strategy and future improvements.	Expansion
	A statistically significant difference in HCPs' perceptions of open disclosure across different situations among the different age groups ($\chi^2 (4) = 22.039, p < 0.001$).	Line managers decide which incidents should be recorded and disclosed.	
	Disclosure decisions should prioritise the severity of the PSI, ensuring that patients and their families benefit from the information		

7.6 Training and Education

This joint display (Table 40) presents integrated findings on training and education in open disclosure, addressing all four study objectives (Chapter 4, Section 4.2) with a particular focus on equipping HCPs with the skills, confidence, and ethical grounding necessary for effective disclosure. Quantitative data show a strong belief in the importance of training to promote open disclosure (92.4%) and implement policy (83.2%), with interactive and multidisciplinary training environments linked to enhanced ethical awareness, interprofessional communication, and confidence. These findings are confirmed by qualitative insights, which emphasise the value of early induction, continuous learning, and emotional preparation. However, expansion occurs around the varied nature and quality of training experiences, ranging from brief online modules to extensive facilitator-led workshops, with many participants noting the need for reinforcement and reflection in practice. Emotional challenges, staff shortages, and operational pressures were frequently cited as barriers to training uptake and application. Discordance also emerged, particularly in perceptions of training as a routine obligation rather than a meaningful professional development activity, and in gaps between training content and real-world complexity. Overall, the integration highlights the need for training that is practical, context-sensitive, and embedded within a broader culture of multidisciplinary support and continuous improvement.

Table 40 Joint Display of Key Findings on Training and Education

Inferences	Quantitative Data	Qualitative Data	Integration
Training and ongoing learning raises awareness, confidence, empowers and equips HCPs with skills and practical mechanisms to identify and disclose PSIs effectively.	Critical for open disclosure policy implementation (83.2%, $n = 347$) and promote open disclosure practice (92.4%, $n = 367$).	Early training for new nurses can help embed open disclosure into practice.	Confirmation
		"Once you identify an error, you can follow it through." (Education Coordinator-052)	Confirmation
	Creates awareness of protective legislation (64.2%, $n = 267$).	Fear of negative reflection of HCPs abilities and lack of managerial support discourage incident reporting.	Expansion
		The need for continuous awareness and reinforcement.	confirmation
	Comfortable disclosing PSIs to patients and relevant persons following the training (54.7%, $n = 228$).	Comprehensive open disclosure training fosters confidence and transparency in addressing PSIs.	Confirmation
		HCPs face pressure to provide quick responses, fear of the unknown, and concerns about legal responsibilities in incident disclosure.	Discordance
		Families rely on legal frameworks, but immediate demands for answers add pressure on staff.	Discordance
	Diverse attendance levels and access (57%, $n = 238$ – single session; 21%, $n = 86$ – two sessions; 9%, $n = 37$ -three sessions; 9% $n = 38$ - no training; 4%, $n = 15$ experienced four types of training). Interactive workshops for open disclosure training ($n = 65$) had a significantly higher mean rank of 249.67 for perceptions of open disclosure across situations	Variability in the levels and types of open disclosure training received, ranging from basic induction sessions to standard online modules. Senior staff and open disclosure lead participated in extensive sessions	Confirmation
		Open disclosure training is just another mandatory training often interrupted by busy work demands	Confirmation
		Reluctance to complete incident forms and inadequate training inhibiting Interprofessional disclosure	Expansion
Education programmes address the emotional aspects of open disclosure to enable HCPs to deliver safe patient care, create	HCPs (75.1%; $n = 313$) acknowledge that a multidisciplinary training environment offers valuable insights into challenges and showed significantly higher values and	Empowering HCPs to feel confident in addressing questions during the open disclosure by emphasising the learning, improve future process, culture shift, and managerial support.	Expansion

empathetic learning environment, feel confident and improve clinical outcomes.	ethics (Mean Rank = 219.49, $U = 11707.500$, $z = -4.079$, $p < 0.001$).	Clinicians recognised the emotional challenges faced by their colleagues such as distress, fear, worry, anxiety, and emotions, others perceived a judgmental attitude. Techniques provided for de-escalating tensed situations and understanding diverse professional perspectives, managing difficult emotions, and delivering challenging messages effectively. Training emphasises empathetic yet fact-based and logical assessments of situations. Encourages HCPs to acknowledge their mistakes and overcome their fears.	
The social context, legal aid, cultural competency, and MDT involvement widens the understanding, support and prepares HCPs for open disclosure.	MDT environments enhance learning experience and provide valuable insights (81.3%. $n = 339$).	Fosters supportive and transparent communication and healthcare environment. Legal support and awareness of multicultural and social differences are crucial. Better understanding of challenges faced by HCPs in different roles.	Confirmation
	HCPs ($n = 367$, 92.4%) believed that education and training programmes are essential for promoting open disclosure.	Learning to be reflected in practice is a challenge as the incentives not to disclose outweigh those supporting disclosure.	Expansion
Open disclosure is a multi-layered process requiring a multifaceted, multidisciplinary, and multi-level approach to both learning and practice.	MDT worked well together and resolved disagreements (67.6%, $n = 275$) by focusing on not who is right but what is best for the patient in their clinical area.	Everyone's responsibility and not just managerial duty, requires 'multifaceted approach' to risk and resolution at all levels and cross-disciplines, not just educational or practice development initiative. Opportunities for HCPs to interact with user groups at the ward and ground levels. Important for junior staff to observe, learn and participate in disclosure meetings.	Confirmation
	A major proportion attended open disclosure training (87%, $n = 361$).	Training in areas like GDPR, mediation, conflict management, and incident reporting helped enhance open disclosure practice.	Expansion
		Senior managers faced challenges in releasing staff for training due to operational demands and staff shortages.	Discordance

	Disclosing patient safety incidents as a team demonstrates a patient-centred approach to health care (94.4%, $n = 385$).	Importance of educating the public about the open disclosure process to enhance trust and confidence in the healthcare system.	Expansion
		Opportunities for HCPs to interact with user groups at the ward and ground levels. Sharing positive and negative feedback from patients to enhance empathy and understanding among HCPs.	Expansion
	Awareness of policies and guidelines assisted in effectively communicating patient safety concerns (78.4%, $n = 320$).	Enhanced ability to communicate transparently with patients and families, fostered a culture of ethical practice and mutual respect within healthcare settings.	Expansion
		Communication tools are introduced in training but not adequately reinforced.	Discordance

7.7 Conclusion

In summary, the integration of quantitative and qualitative findings in this chapter has provided a comprehensive understanding of open disclosure practices within the Irish healthcare context. Through joint displays structured around five thematic domains, the chapter has demonstrated how ethical principles, communication practices, organisational systems, training, and patient involvement interact to shape HCPs' attitudes, behaviours, and decision-making in relation to open disclosure. The meta-inferences derived from this process reveal both convergence and divergence across data strands, highlighting areas of strength as well as gaps requiring targeted intervention. By synthesising the data in this way, the integration has advanced the study's four objectives and reinforced the value of a mixed methods approach in exploring complex healthcare processes. The following chapter will build upon these findings by critically analysing each thematic domain through the application of multiple theoretical perspectives, offering deeper insight into the relational, structural, and cultural dimensions of open disclosure.

Chapter 8 Discussion

8.1 Introduction

This chapter presents a discussion of integrated findings from both the quantitative and qualitative phases, using a sequential explanatory design. Multidisciplinary HCPs' attitudes to and perceptions of open disclosure practices are examined and further contextualised through qualitative findings. Key facilitators, barriers and strategies that shape open disclosure practices and training are highlighted, drawing on empirical and theoretical literature.

A multidisciplinary theoretical framework guides the analysis, integrating the individual factors (HCPs' confidence, beliefs and experiences), communicative factors (information delivery, uncertainty management and adaptation), and systemic factors (organisational structures, policies and team dynamics) that shape open disclosure (Figure 21). Bandura's (1995) Social Cognitive Theory explains how self-efficacy and collective efficacy influence HCPs' confidence in open disclosure, shaped by their beliefs, experiences and teamwork. Attribution Theory (Heider, 1958; Kelley, 1973; Weiner, 1985b) clarifies how patients and healthcare providers interpret and respond to PSIs, shaping their emotional and behavioural reactions. Uncertainty Reduction Theory (Berger & Calabrese, 1975) examines how HCPs manage ambiguity through communication strategies. Communication Accommodation Theory (Giles & Ogay, 2007) considers how HCPs adapt their communication styles to foster trust and understanding with diverse patients. Lastly, Complex Adaptive Systems (Turner & Baker, 2019) provides insight into the interactions within healthcare systems, illustrating how organisational behaviours, teamwork and policies influence open disclosure practices. By integrating these theoretical perspectives, a structured and multidimensional analysis of open disclosure is offered.

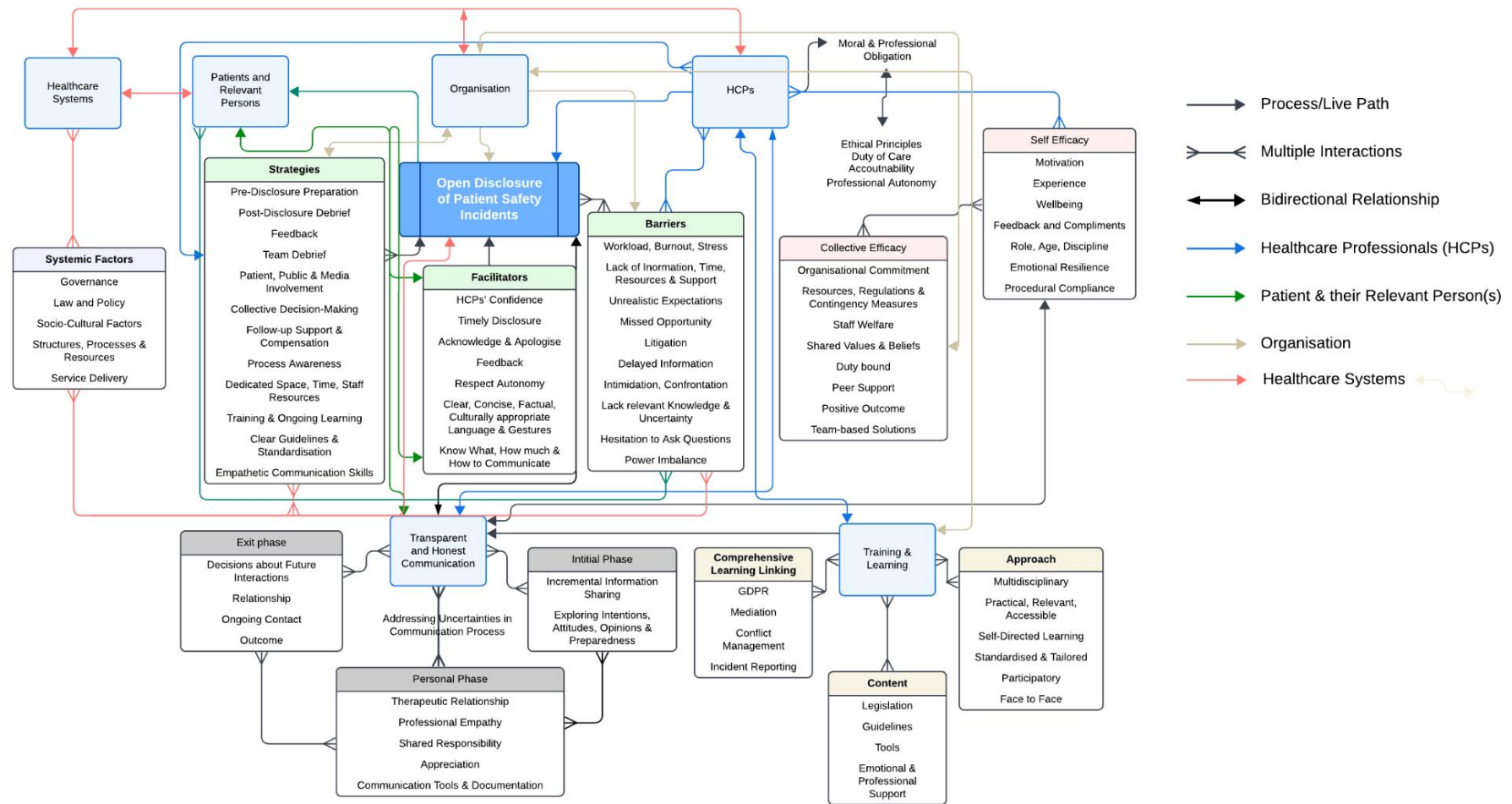


Figure 21 Open Disclosure of Patient Safety Incidents from Multidisciplinary HCPs' Perspectives: Components and Interactions

8.2 Ethical Principles and Efficacy

8.2.1 Ethical Principles

The integrated findings of this study (Chapter 7) reveal that HCPs believed in their ability to engage in open disclosure independently and collaboratively as a team within the organisation. This belief is closely associated with their ethical awareness, ethical reasoning, and the prevailing patient safety culture within the healthcare setting, as evidenced in the literature and joint display of findings (Table 36) (Kim & Lee, 2020). Data presents a positive correlation between ethical awareness and views towards open disclosure, fostering an environment that values transparency. Notably, 95% of HCPs in the current study viewed open disclosure as an ethical obligation, irrespective of patient preferences and awareness (Bernstein & Brown, 2004; Quick, 2022). They perceived informing the patients and their relevant person(s) as a moral and legal responsibility. This resonates with prior findings on critical aspects of ethical and professional practice (Bernstein & Brown, 2004; Birks, 2014; Finlay et al., 2013; Kalra et al., 2022; Kim & Lee, 2020; Liang, 2002). Moreover, HCPs argue that the disclosure process is not merely a legal requirement, but a fundamental professional and moral obligation guided by core ethical principles, which are in the best interests of the patient's well-being (beneficence), avoiding harm (non-maleficence) and respecting the patient's right to make informed decisions (autonomy) (Beauchamp & Childress, 2019; Beauchamp, 2007, 2016). This perspective aligns with Kantian moral philosophy, which is rooted in duty-based ethics (deontology) (Bernstein & Brown, 2004). Kantian ethics emphasise moral obligations, particularly truth-telling and respect for autonomy, asserting that individuals must always act according to universal moral principles, regardless of the consequences (Kant, 1996; Bernstein & Brown, 2004). In healthcare, this translates to the full disclosure of PSIs as a fundamental ethical duty (Byrth & Aromataris, 2014; Edwin, 2009; Finlay et al., 2013; Gallagher et al., 2003). Adherence to these ethical tenets enhances self-efficacy and the trust that underpins patient-centred care within complex healthcare systems.

When HCPs fail to adhere to these ethical tenets, this undermines the practice of open disclosure and the trust that underpins patient-centred care. Previous qualitative exploration among 13 doctors and 22 nurses (Harrison et al., 2017) and a focus group with 52 patients and 46 physicians (Gallagher et al., 2003) align with the present findings. According to Mavroudis (2005), ethically, one must not deceive; no utilitarian reasoning justifies lying. Thus, any reluctance or refusal to disclose PSIs would starkly contradict Kantian ethics (Bernstein & Brown, 2004; Kant, 1996). Based on both ethical and pragmatic grounds, previous empirical studies advocate that, irrespective of laws, restraints or obstacles (Kalra et al., 2022; Mavroudis, 2005), HCPs must demonstrate ethical principles with confidence, competence, compassion and care (Bourke & Lochtenberg, 2023; DoH, 2016; Parveen et al., 2020) while enhancing excellence in open disclosure practices.

8.2.2 Self-Efficacy

Self-Efficacy refers to an individual's belief in their capability to perform tasks, achieve goals and capacity to execute behaviours necessary to produce specific outcomes (Bandura, 1986, 1995; Burke et al., 2009). HCPs' efficacy is centred around self and collective beliefs (Bandura, 1997, p. 477) and shaped by key factors such as 'duty of care', 'accountability', 'professional autonomy' and the nature of the 'patient-provider relationship' as indicated in the data (Table 36 for joint display). Thus, perceived efficacy beliefs influence cognitive processes, emotions, self-motivation and behavioural patterns (Bandura, 1995). HCPs' beliefs about their self-efficacy in open disclosure are influenced by their motivation to disclose, demographic characteristics, perceived behavioural control, legal systems and sociocultural factors. Although ethical and regulatory guidelines recommend open disclosure of PSIs, HCPs' engagement and behaviour are strongly influenced by their self-belief and are shaped by cognitive, self-regulatory and self-reflective processes (Kaldjian, 2010). These beliefs act as a key motivator in their approach to open disclosure. These elements of self-organisation must be considered by managers, leaders, policymakers, academics, and researchers when developing strategies related to disclosure practices.

8.2.2.1 Experience

Reflecting self-efficacy theory (Bandura, 1995), this study reveals that HCPs' '*mastery*' of open disclosure depends on their prior experience with disclosure, which enables them to feel confident and competent in disclosing PSIs. Hence, efficacy must be nurtured to address complex open disclosure situations. In this study, HCPs gained '*vicarious experiences*' by observing their seniors, mentors, coaches, and peers carrying out disclosure processes. In both study phases, HCPs agreed that positive attitudes to open disclosure from role models increase the likelihood of developing positive self-beliefs and perceiving disclosure as a professionally rewarding experience. The opposite was true if those involved in a disclosure failed to work as a team or displayed unpredictable and unprofessional behaviours with patients and their families. However, HCPs' '*emotional, physical and psychological well-being*' influences their feelings about their capabilities and confidence in open disclosure of PSIs. Those who experience self-doubt, hesitation and uncertainty may find the process debilitating (Byrth & Aromataris, 2014; Ock et al., 2017). '*Verbal persuasion*' through feedback and compliments, incentives, expert leadership, and support systems enhances HCPs' confidence in open disclosure practices, individually and within teams. Therefore, self-management strategies for stress reduction, managing negative emotions, enhancing positive mood and promoting physical health will improve open disclosure self-efficacy.

8.2.2.2 Demographics

Several factors influence HCPs' roles and broader healthcare systems, including demographics, the nature and outcomes of PSIs, their perceived significance and HCPs' level of involvement in the open disclosure process. These elements interact, shaping individual responsibilities and wider healthcare practices. HCPs who participated in initial and pre-meeting discussions about PSIs consistently reported a stronger ethical commitment to the interprofessional practices associated with open disclosure ($p < 0.05$). This suggests that HCPs' professional and moral values enhance adherence to the ethical principles underpinning open disclosure despite the complexity of the situation and the nature of the patient-provider relationship during

the processes (Harrison, Walton, et al., 2019). Furthermore, Nurses and Midwives in the current study showed significantly better interprofessional communication and confidence than Medical, Health and Social Care Professionals. This might be because nurses represent a large segment of the healthcare workforce and the majority among study participants, serving as caring, dedicated, good communicators and a powerful resource for leading disclosure initiatives (Carpenter, 1995; Wagner et al., 2013). However, some authors have found that nurses are excluded from disclosure planning, delivery and decision-making processes (Jeffs et al., 2010; Shannon et al., 2009), which could impact on their effectiveness, given nurses' unique role in patient-centred care (Shannon et al., 2009; Wagner et al., 2013).

8.2.2.3 Involvement and Behavioural Controls

In line with prior research, a lack of clarity around involvement in the disclosure process was found, which decreased HCPs' confidence in carrying out independent disclosure and advocacy (Harrison et al., 2014). Moreover, fear of overstepping professional boundaries, inadequate disclosure education and the hierarchical nature of inter-professional practice (Harrison et al., 2014; Jeffs et al., 2011; Shannon et al., 2009) are barriers to nurses' involvement in disclosures. Hence, inter-professional practice is essential for effective disclosure, ensuring clear guidance and training on what information to provide, when to disclose it and how to communicate it to patients and their relevant person(s) (Harrison et al., 2014).

Quantitative data of this study revealed that HCPs aged 41-50 with 21-30 years of experience reported higher levels of involvement in and responsibilities for open disclosure interprofessional communication. Their extensive exposure to a wide range of PSIs and familiarity with open disclosure processes likely contributed to their distinctive perception and approach to open disclosure across various situations. This experience can be either beneficial or potentially biased, as these HCPs have an insightful understanding of systemic issues but may also struggle to adapt to innovative approaches or younger perspectives. Furthermore, qualitative insights from interviews highlight that professional experience, leadership roles and engagement in clinical decision-making significantly influenced HCPs' beliefs, efficacy, and confidence in open disclosure. These HCPs, who facilitate vicarious learning as mentors, anticipate challenges and complexities during open disclosure processes. This determines the necessity for targeted training and examination of the professional environment that fosters such competencies, tailored to the specific contexts and experiences of diverse healthcare professions.

8.2.2.4 Emotional and Psychological State

The findings on open disclosure demonstrate a dichotomy in the experiences of HCPs aged 41-50. Despite their confidence in advising and supporting their peers and justified open disclosure, these HCPs grappled with personal, emotional, and professional challenges for various reasons (Bourke & Lochtenberg, 2023; Byrth & Aromataris, 2014; Kalra et al., 2022). They feared being doubted or judged because of their involvement in PSIs. This has contributed to a culture of stigma and reputational harm that even experienced practitioners encounter, highlighting the need to address the professional and emotional vulnerabilities associated with disclosure practices (Brown et al., 2014; Perez et al., 2014). Previous studies have consistently demonstrated that emotional barriers such as fear, shame and guilt undermine the efficacy of disclosure processes (Byrth & Aromataris, 2014; Gallagher, Garbutt, et al., 2006; O'Dowd, 2015;

Ock et al., 2017). These challenges not only affect the current workforce but potentially the wider healthcare environment (Bourke & Lochtenberg, 2023). Findings from this study highlight the need to empower HCPs to embrace an attitude of candour and emotional resilience when dealing with PSIs. A comprehensive approach is recommended, incorporating targeted training and structured support systems to equip HCPs with the necessary resources for navigating these challenges without compromising patient care.

8.2.2.5 Policy Compliance

Study findings and existing literature highlight that becoming proficient in disclosure presents a significant challenge for HCPs, particularly in determining who should disclose, when, where, why disclosure is necessary and how to communicate effectively with patients and their relevant person(s) (Gallagher, Garbutt, et al., 2006; Gallagher et al., 2003; Myren et al., 2021). Hence, endorsing open disclosure guidelines and policies rooted in ethical and moral principles is critical for empowering HCPs to engage in these challenging conversations confidently (Gallagher, Garbutt, et al., 2006; Kalra et al., 2022; Perez et al., 2014). Embedding ethical rigour and procedural compliance as core elements of healthcare practice ensures that every disclosure conversation will be conducted with care and integrity (Dalton & Williams, 2014; Kalra et al., 2022).

The participants in the current study overwhelmingly recognised the necessity of apologising for PSIs, with 95.6% ($n = 389$) of survey respondents affirming this view. However, despite this consensus, the emotionally charged nature of apologies remains a significant barrier, described by many interview participants as a '*daunting*' process. A small proportion of HCPs ($n = 16$, 3.9%) expressed concerns that disclosing no-harm events may unduly stress patients and their families. However, withholding disclosure contradicts ethical obligations. HCPs who adhere to deontological (duty-based) ethics (Beauchamp, 2016; Bernstein & Brown, 2004; Kant, 1996) view open disclosure as a professional duty that upholds transparency and patient-centred care.

8.2.3 Collective Efficacy

The current research demonstrates collective efficacy through healthcare organisations commitment to supporting and investing in the quality and safety initiative despite the complexities, demands, uncertainties and consequences associated with the disclosure process (Table 36) (Birks et al., 2014; Kalra et al., 2022). This decision stems from organisations' ongoing belief in the capabilities of their human resources, statutory regulations and robust contingency measures. In Ireland, HSE has focused on the implementation and integration of open disclosure across various healthcare settings over the past decade. This endeavour is not only to promote transparency in medical practice but also to enhance patient trust and safety, ultimately leading to improved healthcare outcomes. ("CLA", 2017; DoH, 2008b, 2023b; Duffy, 2012; HSE, 2019c; Madden, 2008; Madden & Tumelty, 2019; O'Connor et al., 2010; "Patient Safety (Notifiable Incidents and Open Disclosure) Act", 2023; Pillinger, 2016; Scally, 2018, 2022).

HCPs' perceptions of their organisation's capacity to acknowledge, apologise, advocate, and accept accountability for PSIs strongly correlate with positive feelings for those involved and enhanced patient satisfaction during open disclosure processes (Finkelstein et al., 2024; Leape, 2021; Neyens et al., 2023;

Romano et al., 2022). This correlation arises from the prevalent view that hospitals are obliged to disclose errors due to societal pressures, patient complaints, or potential litigation (Chen et al., 2024). Interestingly, most HCPs in this study ($n = 379$, 93.2%) assert that open disclosure should occur even in instances where it may result in financial detriment to the hospital and healthcare providers. This highlights the essential nature of collective efficacy, since shared values, interests, motives, resources and language contribute to an organisation's robust culture of open disclosure.

For senior HCPs involved in PSI disclosure and patient safety initiatives, embracing open disclosure individually and as a team becomes a teleological (consequence-based) and deontological (duty-based) commitment (Bernstein & Brown, 2004). Their motivation is rooted in the belief that open disclosure is the '*right thing to do*' (Beauchamp, 2016; Bernstein & Brown, 2004), aligning with '*do not harm*' (veracity), '*do not deprive of freedom*' (autonomy) and '*obey the law*' (fidelity) while safeguarding patients' dignity, respect and empathy (Ashcroft et al., 2007; Bernstein & Brown, 2004; Kant, 1996). This commitment enables HCPs to be duty-bound to work as a team, reflecting on their successes and opportunities for improvement. Hierarchical regression analysis demonstrated a statistically significant result for the 'Justification for Open Disclosure' ($\beta=.188$, $p=0.002$) and 'Positive Consequences of Open Disclosure' ($\beta=.074$, $p=0.035$) indicating a positive impact on teams and teamwork towards disclosure practices. Additionally, by valuing team-based solutions to disclosure challenges, senior HCPs nurture an environment of openness and transparency while improving organisational culture. Over time, these collective efforts enhance disclosure practices and yield beneficial open disclosure strategies that support those involved within constantly evolving systems.

8.3 Disclosure Communication

This study identified key perceptions of disclosure communication among HCPs from acute care settings across various disciplines. These perceptions shaped how HCPs communicated PSIs to patients and their relevant person(s) and influenced their disclosure practices (Table 37). HCPs are mandated to communicate openly and honestly with their colleagues, managers, patients, and their relevant person(s) during open disclosure of PSIs. Such mandate is shaped by the evolving nature of disclosure, the need for accountability in patient-centred and value-based care, the diverse professional roles of HCPs, regulations and the expectations of patients and their families (Wagner et al., 2013). Patients must receive acknowledgement of PSIs, details about the incident, timely and truthful disclosures, an apology and information about preventative measures (Disclosure Working Group, 2011; McLennan et al., 2012; Philpot et al., 2024). HSE (2024a) require HCPs to communicate unexpected and complex PSIs in a clear and transparent manner. However, senior HCPs experienced significant stress when navigating difficult disclosure conversations while striving to meet standards, expectations, and regulatory requirements (Birks, 2014; Dalton & Williams, 2014). The current study distinctly highlights the interconnected role of therapeutic relationships and professional empathy as central agents in the communication of PSIs which is consistent with Complex Adaptive Systems (CAS) theory (Turner & Baker, 2019). Feedback loops, such as gestures and expressions of appreciation, reinforce trust and adaptive learning within these interactions. Communication tools serve as dynamic mechanisms for enhancing confidence and disclosure skills, fostering adaptability when addressing complex scenarios. Non-linear impacts emerge as empathetic actions and knowledge of open disclosure processes significantly improve patient-provider relationships. These elements co-emerge to improve disclosure practices and systemic growth over time.

8.3.1 Addressing Uncertainties

Most HCPs in this study reported feeling '*uninformed*' and '*kept in the dark*' about disclosure processes, which led to uncertainty about engaging and communicating with patients or their relevant person(s). This lack of clarity contributed to hesitation and inconsistency in disclosure practices. Uncertainty Reduction Theory (URT) (Berger & Calabrese, 1975) explains how individuals manage uncertain interactions through structured entry, deeper personal exchanges and decision-making phases (Knobloch, 2008). In this study, HCPs struggled with the initial phase, appearing unsure of how to communicate adverse events and anticipate patient's reactions. Trust-building in this phase is critical, as sensitive information must be shared incrementally while balancing transparency with patient concerns, emotional readiness and privacy boundaries (Carpenter & Greene, 2015; Petronio, 2002). Additionally, both literature and study findings highlighted that HCPs face ethical and legal dilemmas when decisions about information sharing are influenced by situational factors, risk-benefit assessments, patient's emotional readiness, privacy concerns (Renkema, 2017), professional accountability and legal consequences (Holmes et al., 2019; Irani et al., 2024). This highlights the complexities of disclosure, where HCPs operate within systems shaped by organisational policies, ethical considerations and professional boundaries (Iedema & Allen, 2012; Iedema, Sorensen, Manias, et al., 2008; Petronio, 2013; Serewicz & Petronio, 2007).

As disclosure conversations move to the '*personal phase*' (Berger & Calabrese, 1975), communication becomes more in-depth and behaviour may deviate from socially desired rules and norms. In this study, HCPs described how they managed their emotions, applied their knowledge and skills and prepared for unexpected behaviours to facilitate effective open disclosure. They expressed that emotional distress, language barriers, poor listening, defensiveness, and lack of awareness of non-verbal gestures impacted both patient-provider relationships (Birks et al., 2014; O'Connor et al., 2010; Wagner et al., 2013). Moreover, during complex disclosures, HCPs felt burdened to separate their emotions while fulfilling their professional responsibilities with empathy. A midwife emphasised the importance of '*professional empathy*', focusing on cognitive and affective components (Fuller et al., 2021), as a key strategy for reducing ambiguity, preventing burnout (Wilczek-Rużyczka, 2011) and supporting HCPs in navigating complex disclosure communications.

To address these complexities and reduce uncertainties, disclosure teams should collaborate effectively by engaging with patients and their relevant person(s) to understand their goals, beliefs, socio-cultural norms and values. Additionally, considering their interpersonal history (shared experiences) and relationships with others involved, both past and present, is crucial before and during the initial meeting. This knowledge helps HCPs determine whom to disclose PSIs, when to disclose them and how to do so in a way that aligns with patients' situational and cultural norms rather than solely based on relational closeness (Choi et al., 2019; Dragojevic et al., 2015). The disclosure team needs to be self-aware of their communication behaviour regarding pause and speech rate, allowing them to predict and explain the anxiety reduction of those involved in disclosure conversations (Berger & Calabrese, 1975).

The '*exit phase*' (Berger & Calabrese, 1975) of URT highlights the decisions around desirability for future interactions. Some HCPs in the current study acknowledged the importance of the ASSIST communication tool (HSE, 2020b), which allowed disclosure teams to discuss and address the decisions that lead to disclosure outcomes for both parties. Moreover, ASSIST enabled HCPs to 'travel' with the patient and their relevant person(s) during the disclosure process and into the future. The non-verbal behaviours during the exit phase were a significant indicator of either completion or escalation.

8.3.2 Communication Behaviours

When HCPs adjust communicative behaviours such as gestures, facial expressions and body language based on their perception of others' behaviours, needs and motives, they establish and maintain positive personal and professional identities (Dragojevic et al., 2015). HCPs' ability to adapt aligns with the principles outlined in Communication Accommodation Theory (CAT) (Giles & Ogay, 2007), which offers a structured lens to analyse how such adjustments, whether through convergence, divergence, or maintenance foster effective interactions.

HCPs often used convergence by adopting a shared linguistic style and avoiding medical jargon while maintaining a supportive attitude during disclosure conversations. This approach improved mutual understanding while reducing uncertainty and anxiety (Dragojevic et al., 2015). In contrast, through 'divergence,' HCPs adjusted their communication to emphasise differences, either to prevent misunderstandings or in response to negative relational dynamics like hostility, insults or impoliteness

during disclosure discussions. Both convergence and divergence can be strategically applied to improve patient comprehension. Some participants identified the 'maintenance' approach, where communication style remained unchanged without adaptation. This was evident in discussions about Ireland's clinician-dependent disclosure model, which reinforces systemic issues such as power imbalances, delayed disclosure and lack of accountability (O'Connor et al., 2010). Additionally, this approach limits patient autonomy, weakens feedback mechanisms, and contributes to team disunity, stress and burnout (Duffy, 2012; O'Connor et al., 2010).

The findings highlight that effective communication is characterised by appropriate accommodation and approximation. HCPs employ various strategies to enhance communication by adjusting their language, vocabulary, accent, posture, tone, pitch, pauses, syntax, interruptions or disclosure initiation in conjunction with the patient or their relevant person(s)' communicative characteristics (Dragojevic et al., 2015). Coupland et al. (1988) conceptualised adjustments in terms of their focus or goal relative to a patient's perceived needs and characteristics. HCPs employ approximation strategies by adjusting their verbal and nonverbal behaviours to enhance clarity and engagement. They ensure clear communication through interpretability strategies, such as simplifying syntax or modifying speech volume. Additionally, discourse management strategies, such as offering speaking turns or discussing mutually relevant topics, facilitate smoother interactions (Langer et al., 2015; Watson et al., 2015). When navigating role relationships, HCPs use interpersonal control strategies such as interruptions to assert factual information or reinforce their authority as disclosure leads. These strategies highlight the importance of adaptability in disclosure conversations, demonstrating how effective communication fosters trust and mitigate challenges in sensitive discussions. Communication perceived as over or under-accommodative (Dragojevic et al., 2015) often results in negative outcomes and conveys defensive or dismissive intentions rather than positive intentions like honesty and transparency (Gasiorek & Giles, 2013). The study participants highlighted that defensive or dismissive communication leads to poor disclosure outcomes, undermining trust and collaboration in the disclosure process. Actual disclosure conversations are complex, requiring navigation of interactional dynamics, particularly in conflict management (Gasiorek & Giles, 2013).

Understanding the need for adapting communication styles is another key factor in effective disclosure practices. The CAT (Giles & Ogay, 2007) can facilitate an understanding of how and why HCPs need to adjust to patients' and their relevant person(s)' communication styles. Given the diversity within multidisciplinary teams, communicative behaviours can be interpreted in multiple ways, influencing system dynamics (Turner & Baker, 2019) and involving both psychological and communicative responses. This awareness of '*perspective-taking*' allowed HCPs to manage disclosure interactions by listening, clarifying and addressing concerns and fostering trust through calmness, attentiveness and honesty, which was observed and appreciated by patients' families. Despite HCPs' best efforts, disclosure decisions are often hindered in high-risk situations, such as frailty, near misses, and specific patient cohorts' vulnerability to PSIs (Mullally & Corby, 2021; Sattar et al., 2020). Differing attitudes and perceptions among HCPs regarding the significance and severity of PSIs, as well as if and when they should be disclosed, were evident in this study.

8.4 Patient-Centred Disclosure

The analysis reveals that open disclosure is a complex, adaptive process influenced by interactions between HCPs, patients, organisational structures, systems, and socio-cultural environment (*Table 38*). Hence, complexity theory (Turner & Baker, 2019) can help elucidate these intricate processes and dynamic interactions between patients, HCPs and organisational systems during care provision. As interconnected agents, the patient, and their relevant person(s) interact with HCPs and organisational representatives; respective responses to open disclosure of PSIs will influence HCP's future approach to similar PSIs. HCPs demonstrated strong alignment with patient-centred principles by valuing transparent and honest conversations. HCPs in this study emphasised that feedback from patients, mentors, organisations, and regulatory bodies influenced HCPs' learning and informed changes to disclosure processes.

Patient-centred disclosure and practitioner autonomy in decision-making may drive changes in communication practices, organisational policies, and broader healthcare systems in Ireland. Participants highlighted the importance of both 'bottom-up' and 'top-down' strategies, where feedback mechanisms and evolving structures contribute to maintaining and sustaining of open disclosure practices. This dynamic adaptation reflects the concept of self-organisation, where open disclosure evolves through internal feedback loops rather than being dictated solely by rigid policies or historical norms. Furthermore, these findings challenge the perception that healthcare systems are constrained by the culture of blame and repercussions. Instead, they highlight the system's ability to evolve through stakeholder interactions within a broader, adaptive framework. CAS theory explains how open disclosure evolves through dynamic interactions between team communication, patient expectations, and regulations. Healthcare systems, as complex adaptive systems, respond to feedback loops using patient input and team debriefs to adapt and improve disclosure practices continuously.

8.4.1 Patient Autonomy

The study findings highlight the need for HCPs to be flexible, attentive to patient's needs and respectful of their autonomy. For example, HCPs accounts revealed that while some patients valued meeting with the disclosure team and being informed, they also wanted to move past incidents without further proceedings. In contrast, other patients sought more comprehensive explanations and concrete actions for address PSIs. Patients and their families were sometimes hesitant to ask questions or seek clarifications/information about incidents. Patients' hesitation to ask questions during disclosure meetings can create a gap between the information provided and what is understood (Iedema, Sorensen, Manias, et al., 2008). This reluctance might arise from various factors, such as intimidation, fear of confrontation or lack of medical knowledge (Iedema, Sorensen, Manias, et al., 2008; O'Connor et al., 2010). The CAS theory suggests that patient interactions may positively or negatively influence the process and/or outcome of open disclosure. Therefore, careful attention to preparatory elements (such as appointing advocates, pre-meeting preparation or protocols) will enable adaption to patients' needs, enhance effective engagement and/or reduce the risk of uncertainty and negative outcomes.

HCPs in this study recognised the importance of apologising for PSIs; however, scheduling timely disclosure made delivering formal apologies difficult. Empirical evidence suggests that patients want a frank and

timely disclosure with an apology and assurance about their future care (O'Connor et al., 2010). The study findings highlight a misalignment between patients' and HCPs' expectations, reflecting emergent behaviour within complex healthcare systems. (Turner & Baker, 2019). As disclosure practices evolve through dynamic interactions between patients, clinicians and organisational policies, differing expectations create unpredictability in communication and decision-making. Based on this study and the existing literature, it is suggested that adequate preparation, relevant PSI information and disclosure awareness help HCPs manage patient expectations and conduct effective conversations (M. Y. Kim & Y. Kim, 2024).

8.4.2 Patient Preferences and trust

While disclosure is often perceived as leading to litigation, some HCPs in the current study believed that patients and families would not react negatively. This aligns with Ock et al. (2017), whose systematic review found a decreased public intent to pursue legal action against medical professionals, while HCP credibility and patient trust were enhanced, encouraging repeat visits and recommendations.

Legal provisions, such as the "Civil Liability (Amendment) Act " (2017a); "Patient Safety (Notifiable Incidents and Open Disclosure) Act" (2023), protect disclosed information from litigation, fostering a more collaborative and trusting healthcare environment. This shift in perception encourages open communication and quality-focused care without the persistent fear of legal repercussions. Notably, 70.7% ($n = 283$) of HCPs in this study observed that disclosure positively impacted patient trust, reinforcing the doctor-patient relationship (Kalra & Kopargaonkar, 2018). Furthermore, 58.6% ($n = 234$) of participants believed that openly discussing PSIs helped alleviate their feelings of guilt, as evidenced in the wider literature (I. Dhamanti et al., 2023; Lee & Kim, 2020). Viewing open disclosure as a two-way process benefits patients and HCPs, improves psychological well-being, job satisfaction and reduce stress, burnout, and staff turnover, ultimately fostering a positive work environment.

HCPs emphasised the importance of aligning patient expectations with open disclosure practices. They stressed the importance of ensuring that disclosure practices are culturally, geographically and disciplinary appropriate (Mullally & Corby, 2021; Piper et al., 2014) and sensitive to patients' need for information and preventative measures (Sattar et al., 2020). Rural patients preferred face-to-face over telephone disclosure because they valued personal interactions. While some HCPs were uncertain about their linguistic skills and ability to navigate multicultural settings, they recognised that effective communication significantly impacts disclosure outcomes. Carefully choosing words, maintaining a factual and logical approach, and fostering shared dialogue were seen as essential in shaping patient perceptions (Gallagher, Garbutt, et al., 2006; Iedema, Allen, Britton, et al., 2011).

Active listening was also identified as crucial for understanding patient concerns, fears and expectations within a complex adaptive system (Turner & Baker, 2019), where interactions between service users and HCPs are dynamic and non-linear. Small changes such as verbal and non-verbal cues, timing and tone can shift the dynamics of disclosure and influence outcomes. Since non-linearity is a key feature of CAS theory (Turner & Baker, 2019), even subtle communication adjustments, like a heartfelt apology or empathetic approach, can significantly enhance patient trust and satisfaction. Effective disclosure extends beyond

conveying facts; HCPs must judge what to communicate, how much to share and how to deliver information. The perceived empathy and sincerity of an apology can further shape the effectiveness of patient-HCP interactions, reinforcing trust and engagement in the disclosure process.

8.4.3 Attribution

According to the attribution theory (Heider, 1958; Kelley, 1973; Weiner, 1985b), HCPs, patients and their relevant person(s) attribute the causes of PSIs based on whether they are internal or external, stable or unstable, controllable or uncontrollable. These perceptions shape their emotional reactions and behavioural responses to open disclosure.

HCPs demonstrating honesty, transparency, and openness when disclosing PSIs are viewed more favourably when their actions are seen as intentional but well-intended. Further, if their behaviour is perceived as unintentional or influenced by external factors (e.g., system failures, workload pressures, equipment malfunctions), they are judged more leniently. Similarly, negative behaviours are less harshly judged when attributed to situational factors rather than deliberate intent. However, when patients perceive PSIs to result from internal, controllable, and stable factors (e.g., negligence), they are more likely to experience anger and mistrust.

HCPs observed that patients' emotional responses, such as anger, sadness, trust or understanding are closely linked to how they attribute the cause of a PSIs. Effective open disclosure requires acknowledging these perceptions and explaining whether the cause was internal (e.g., human error) or external (e.g., system failure) (Kelley, 1973). Causal attribution also influences HCP behaviour. When HCPs attribute PSIs to personal responsibility, they may be more inclined to disclose and apologise, whereas attributing incidents to external factors can affect their willingness to take responsibility (Weiner, 1985b). Understanding the causes of PSIs, the behaviours involved and the consequences of attribution is essential for shaping future actions (Kelley & Michela, 1980b; Schmitt, 2015). Identifying controllable errors and outlining steps to prevent recurrence is crucial. When HCPs accept responsibility for controllable causes and commit to corrective actions, patients are more likely to perceive disclosures as sincere and trustworthy. Conversely, emphasising uncontrollable or unstable causes can reduce patient distress while maintaining transparency. Thus, HCPs' attributions about PSIs influence their willingness to disclose, apologise and take responsibility.

8.5 Systems and Structures

8.5.1 Infrastructure

The study identified several systemic factors crucial to the practice of open disclosure (Table 39). While literature highlights the importance of 'quiet space' in high-risk environments for patient safety, its role in disclosures remains unexplored (Cummins et al., 2021). The importance of a conducive workspace environment, dedicated time for preparation and debriefing have been emphasised in the current study and previous literature as crucial for effective disclosure (Birks et al., 2014; Dossett et al., 2018; Duffy, 2012; Kaldjian et al., 2007; Manser & Staender, 2005; Ock et al., 2017; Walshe & Shortell, 2004).

Transitioning between 'order and chaos' (Turner & Baker, 2019), institutional structures, individual agents (such as HCPs, patients and families) and broader healthcare systems interact dynamically across multiple levels. This interaction reflects a desire for a more structured approach, with preventative and restorative interventions that promote psychological safety and facilitate a transition toward a restorative culture (Mira et al., 2025). At various systemic levels, these interactions create an open disclosure feedback loop (Turner & Baker, 2019) that can positively or negatively influence open disclosure practice. For instance, participants noticed that while quality improvement teams and managers promised support, this did not always translate into actual service delivery. This disconnect significantly impacted HCPs' trust in the system, which was compounded by fear of repercussions, a focus on individual blame and reluctance to admit mistakes.

8.5.2 Relationships and Interactions

Open disclosure is sensitive to context with each part of the system (stakeholders, environment, and resources) adapting to external forces. The non-linear relationships between individual and systemic factors that shape open disclosure practices in Ireland have been emphasised in the current study. Unlike countries with established no-blame cultures, Ireland's open disclosure practice is still evolving. It is marked by a lack of resources or organisation support as well as individual reluctance to admit mistakes due to fear of blame, litigation, reputational damage, and regulatory consequences. This reluctance creates barriers to open communication and leads to inconsistencies in practice. Offering second-victim support interventions such as pastoral, professional and peer support, self-care, adequate resources and training can help to mitigate these emotional challenges, fostering self-regulation within the system (Mira et al., 2025). However, the absence of sufficient incentives for open disclosure at the organisational level results in missed opportunities to establish positive feedback loops that would reward transparent behaviour.

The debate surrounding team-based disclosures highlights the complexity of interactions within multidisciplinary healthcare teams (Espin et al., 2006; Sorokin et al., 2005; Sorokin et al., 2011). Participants in the current study supported team disclosures to foster shared accountability and incorporate diverse perspectives. However, complexities and optimise team dynamics for effective open disclosure.

8.5.3 Systemic Measures

The decision to document and disclose PSIs often rests with line managers and is primarily influenced by the perceived benefits to patients, regardless of harm severity. This underscores a lack of clarity and standardisation in open disclosure practices. In line with these findings, Woolf (2004) argued that reporting errors and near misses is essential for systems improvements. The introduction of the ("Patient Safety (Notifiable Incidents and Open Disclosure) Act", 2023) represents a significant step in policy adaptation, providing legislative guidance and protection. However, the Act does not comprehensively address all open disclosure scenarios, focusing only on 13 notifiable incidents and cancer screening reviews. The challenges of designing comprehensive policies that account for all situations have been acknowledged (Gallen et al., 2019), highlighting the need for more detailed guidance or a code of practice. The interconnected nature of the Patient Safety Act with wider systems is evident in the amendment to "Civil Liability (Amendment) Act" (2017a). These changes enable HCPs to seek similar protection for other PSIs, while HIQA can use

revised thresholds to conduct statutory investigations. The new law represents an attempt to introduce structure and guidance into the complex system of disclosure practice.

The study data reveals mixed views on the impact of open disclosure on litigation and regulatory investigations. While some participants expressed concern about regulatory scrutiny and increased legal risks, others, particularly newer HCPs, emphasised the importance of ethical transparency and 'doing things right.' This generational shift reflects the system's adaptive capacity for integrating evolving professional norms. However, HSE has been criticised for delays in early disclosures (Sally, 2022; Tumelty, 2020), suggesting a failure to anticipate and address systemic challenges, which could lead to preventable litigation. Tackling these issues requires a culture of proactive disclosure where legal, ethical, and professional priorities are aligned.

8.6 Training and Education

8.6.1 Formal Learning

The critical role of training and education in improving HCPs' awareness, confidence, skills, and ability to manage PSIs was highlighted in the current study (Table 40). This reinforces evidence from broader literature (An et al., 2017; Croskerry et al., 2000; Hooper, 2019; Khalili et al., 2012; Kim et al., 2017). By incorporating protective legislation, open disclosure policies and guidelines into training programmes, HCPs were empowered to disclose PSIs openly and confidently. This approach addresses gaps in previous literature that called for enhanced training on policies and onboarding practices (Duffy, 2012). Moreover, it is instrumental in overcoming a culture of secrecy. A lack of awareness of open disclosure policy is often linked to insufficient training (McLennan, 2018; Sattar et al., 2020; Walshe & Shortell, 2004; Wu et al., 2013). The current study affirms that training is key to increased policy awareness and implementation. Participants who had previously been unaware of open disclosure practice were introduced to it through mandatory training, demonstrating organisational commitment to transparency and patient safety by means of embedding training into strategic initiatives.

Applying an andragogical approach (Knowles et al., 2014), the analysis emphasises the need for training to align with adult learning principles, ensuring it is practical, relevant, accessible and encourages self-directed learning. It was found that open disclosure curricula and e-modules provide a basic introduction to open disclosure policy and practice but also reveal significant variability in the content, availability, and quality of training programmes. This concern has been discussed in the literature about the need for standardised and targeted training (Birks et al., 2014; Duffy, 2012; Gallagher, Garbutt, et al., 2006; Kim & Lee, 2020; Leape, 2021; White et al., 2011; Wolk et al., 2014; Wu et al., 2013), although the disparity of access due to role hierarchy was less evident. In the current study, senior staff and managers often had greater access to in-depth training opportunities, leaving junior staff less equipped to engage effectively in open disclosure practices. Meanwhile, the literature presents diverse perspectives and insights into the roles and challenges faced by different HCPs (Birks et al., 2014; Iledema, Allen, Sorensen, et al., 2011). In line with existing literature (Hobgood et al., 2005), a collaborative environment fostered a deeper understanding of the importance of open disclosure and promoted a more comprehensive approach to error disclosure.

8.6.2 Learning Modality

Participatory approaches to training (Knowles, 1984; Lane & Roberts, 2021), such as simulations and workshops are highly valued and positively influence HCPs' attitudes to practice. These approaches allow HCPs to engage in simulated open disclosure scenarios, bridging practical skills and theoretical knowledge. This finding aligns with and extends previous research (Gallen et al., 2019; Jeffs et al., 2011; Jones & Levy, 2012) by advocating for a comprehensive learning experience that integrates lessons from relevant topics such as GDPR, mediation, conflict management and incident reporting programmes. This approach enhances understanding and application of open disclosure practices, fosters a culture of continuous learning and ensures compliance with policies and guidelines (Lane & Roberts, 2021; Taylor & Hamdy, 2013). While previous researchers have identified lack of training, knowledge and awareness as significant barriers to open disclosure practice (Adams et al., 2023; Aljubran, 2010; Birks et al., 2014; Byrth & Aromataris, 2014), discrepancies between open disclosure policies and training content were also found to contribute to inconsistency in practice.

The COVID-19 pandemic further compounded challenges by disrupting traditional in-person training formats, underscoring the need for flexible, accessible, and resilient training methods. Online modules are often criticised for lacking depth and engagement compared to face-to-face sessions. This highlights the importance of providing engaging and contextualised training to ensure that HCPs can retain and effectively apply what they have learned in practice. Additionally, despite the critical role of communication tools in open disclosure, the findings revealed that these tools were not always adequately reinforced or contextualised for long-term use. As a result, HCPs struggled to apply these skills effectively. This gap in training further emphasises the need for a more comprehensive and consistent approach to open disclosure education.

8.6.3 Resources and Contexts

Consistent with the literature (Kim et al., 2017), this study found a significant association between education and improvement in values, ethics, awareness and confidence levels. Additionally, the qualitative findings demonstrate the importance of resources, managerial support, and ongoing awareness programmes for effective disclosures. Other barriers, such as patient demands, fast-paced work environments and fear of repercussions, were found to outweigh HCPs' motivation for disclosure regardless of the training received, as noted in the literature (Wolf & Hughes, 2008). To address these challenges, training should emphasise why HCPs '*need to know*' about open disclosure and how it influences patient care, supports decision-making and how it supports both patients and HCPs throughout the process while fostering self-directed learning. Although assessment of the impact of training on changes in practice was limited in the current study, it is suggested that emphasising benefits such as enhanced patient satisfaction, reduced medico-legal risks, and improved professional competence could mitigate concerns about potential repercussions and will help to align their values with professional standards and ethics.

The problem-centred learning approach fosters ongoing learning (Knowles, 1984), enhances emotional resilience and strengthens self-concept by encouraging learners to take responsibility for their decisions

(Taylor & Hamdy, 2013). Emotional intelligence enables self-reflection and self-awareness, helping HCPs to acknowledge and interpret their emotions effectively (Perez et al., 2014). Participants noted that the training provided a safe space and practical strategies for addressing fear, managing distress, navigating difficult conversations, supporting colleagues and promoting an empathic yet objective review of incidents. Although emotional resilience was not explicitly measured in the current study, the training offered was found to provide valuable insights into these challenges. Other authors have confirmed that emotional intelligence is essential for rational decision-making, enhancing clinical practice and ensuring patient safety (Lane & Roberts, 2021; Ndawo, 2021). Incorporating emotional intelligence into open disclosure training can empower HCPs to deliver compassionate care, reduce stress and improve clinical outcomes.

The social context of the learning environment is crucial for making open disclosure training both specific and effective. One of the key elements identified by participants was the emphasis on legal support and cultural competency. These aspects were seen as vital for navigating the complexities of open disclosure in diverse and multicultural healthcare environments (Iedema, Allen, Sorensen, et al., 2011; Leape et al., 2009; McLennan & Moore, 2019). Training that integrates these factors not only enhances compliance but also fosters ethical values, enabling HCPs to confidently address patient and family questions. Moreover, by emphasising the learning process and managerial support, open disclosure training helps shift organisational culture towards transparency and mutual respect.

8.6.4 Patient and Public Involvement

Another significant finding of the current study is the importance of engaging with patient user groups to enhance learning and practice (Table 40). Interacting with patients, particularly at the ward and ground levels, provided valuable insights into their experiences and helped HCPs develop greater empathy. The sharing of positive and negative feedback from patients underscored the importance of open disclosure for building trust and confidence in the healthcare system. While authors have discussed the value of patient involvement in the disclosure process and simulated case scenarios (Harrison et al., 2017; C. Kim et al., 2017; Mira et al., 2017; O'Connor et al., 2010) they have often overlooked patient involvement in various aspects of training. Direct engagement with patients across multiple areas of the training framework, along with opportunities for self-reflection and feedback, was viewed as a key strategy for enhancing HCPs' understanding of the broader impact of open disclosure and influencing their attitudes to disclosure.

Based on the analysis, training programmes should be multifaceted, addressing the complexity of open disclosure as a multi-layered process. These programmes must focus on practical solutions and intrinsic motivation, ensuring that training is flexible, approachable, and easily applicable. Self-directed learning and personal empowerment were also highlighted as essential for boosting confidence, efficacy, and long-term skill retention. By integrating personal and professional development, training can foster the intrinsic motivation required for HCPs to engage meaningfully with open disclosure practices and continuously improve their communication and patient safety skills.

8.7 Strengths & Limitations of the Study

8.7.1 Strengths

The mixed-methods design employed in this research allowed for integration and provided a more nuanced understanding of the HCPs attitudes to and perceptions of open disclosure of PSIs. The quantitative data provided statistical evidence, while the qualitative interviews enabled the researcher to identify facilitators, barriers and strategies to enhance open disclosure practice.

The unique strength of this research is the multidisciplinary sample, which includes Medical Professionals, Nursing and Midwifery Professionals, and Health and Social Care Professionals. These participants represent eight acute, maternity, and long-term care facilities across a selected hospital group in Ireland. Recruiting a census sample from each care facility, the survey ensured an equal opportunity for a representative population to participate in this study. By employing a maximum-variation sampling strategy and multidisciplinary HCPs from urban and rural care facilities in the interviews, this research sheds light on the best practices, challenges, and experiences of HCPs related to open disclosure of PSIs. This approach allowed for a broad MDT representation of 417 survey respondents and 42 interview participants during the COVID-19 pandemic, fostering a thorough analysis of the findings. This robust discussion and conclusion not only enhance the study's credibility but also emphasise its relevance and generalisability in the field.

The researcher's consultation with a range of multidisciplinary HCPs, academics, and open disclosure experts from the National Open Disclosure Office contributed to the study's design and the content validity of the survey questionnaire. This collaboration improved the survey tool by enhancing its clarity, relevance, importance, and representativeness concerning HCPs' attitudes and perceptions about open disclosure of PSIs.

This study commenced after the initial launch of open disclosure policies and guidelines and prior to their revision and re-launch in 2019. It also coincided with the implementation of the Part 4 open disclosure provisions of the Civil Liability (Amendment) Act 2017 and the Patient Safety (Notifiable Incidents and open disclosure) Act 2023. While Duffy's (2012) findings highlighted the lack of open disclosure policies and guidelines, the current study sheds light on HCP's awareness of and the importance of open disclosure legislation and existing practices in healthcare settings. Nevertheless, concerns raised by HCPs regarding the legislation and policy align with issues identified in global open disclosure literature, which need to be addressed.

One of the key strengths of the study was the mutual engagement and cooperation between the researcher and the multidisciplinary HCPs, particularly during the COVID-19 pandemic. Considering the sensitive nature of this research, conducting semi-structured interviews online allowed participants to share their open disclosure experiences with a high level of trust and confidentiality. Therefore, focus group discussions may not have been suitable, as they could have influenced the discussions, level of engagement and depth of responses.

The discussion of findings is underpinned by theoretical principles, which situate this research study within the broader fields of ethics and philosophy, social sciences, communication studies, law, psychology, and

organisational behaviour. This foundation in scholarly discourse enhances the credibility and rigor of the study.

The findings reflect the perspectives of HCPs who advocate for tailored, patient-centered disclosure strategies and realistic support for HCPs. This approach may improve future open disclosure processes within the organisation.

8.7.2 Limitations

The researcher experienced challenges related to recruitment for the quantitative phase (Phase 1) of this study, mainly due to the COVID-19 Pandemic (HSE, 2019a) and the Cyber-attack on the national health service IT systems (HSE, 2021a). Convenience sampling from a census population was employed, but delays in ethical approvals and reliance on gatekeepers for distribution introduced uncertainty. Study invitations were shared via email and in hard copy; however, it remains unclear how widely these were disseminated or received. Issues such as lack of email access among some HCPs and potential spam filtering further limited reach. Consequently, accurate response and non-response rates could not be established. However, power analysis confirmed that the final sample size was sufficient for statistical analysis.

A key limitation of this research study is the lack of involvement of public and patient safety representatives due to the study's primary focus on obtaining HCPs' perspectives and challenges associated with recruitment. Engaging patients and their relevant advocates, in collaboration with HCPs, would have enriched the understanding of open disclosure practices and informed future strategies in Ireland. However, the study has explored HCPs' insights into patient-focused disclosure strategies, emphasising the need for a more inclusive approach in future research.

This study focused on the investigation of HCPs' views and perceptions of Open Disclosure. Incorporating future work in this area would benefit from more explicit involvement of PPI in the research design. The inclusion of the voices of service users and their families who have experienced open disclosure processes within these hospitals was not feasible within the current research design approach. Therefore, if this study were to be redesigned or repeated, it would be beneficial to include advisory panels of service users at each of the key stages. This would help build trust, foster transparency, facilitate collaborative solutions, and promote engagement among stakeholders.

The study yielded a representative sample from the survey as calculated on the total number of HCPs working across this hospital group (Chapter 4, Section 4.5.2.3, Chapter 5, Section 5.2.2). However, the sampling approach was limited in that it did not create adequate representation from medical professionals (Chapter 5, Section 5.2.2). Subsequent studies will be needed to secure an adequate number of participants for within-group analysis in those professional groups, where numbers are naturally smaller. The interview adopted a maximum variation sampling approach to ensure that the interview participants reflected the views and experiences of various HCPs working across the range of hospitals.

The researcher acknowledges her role as a Registered Nurse, an academic and an open disclosure trainer. She took the following measures to mitigate personal bias during data collection, analysis, and interpretations of findings. Adherence to methodological process, regular discussions with the supervisory

team and maintaining a reflexive diary helped address bias. Given the subjective nature of qualitative research, any unintended influence on the study is purely coincidental. To ensure a rigorous and comprehensive research process, the researcher has been cautious not to allow practitioner-based assumptions to impact her conclusions or arguments. Nevertheless, the researcher recognises that her diverse roles and experiences have contributed to building a scholarship of practice, enriched by her familiarity with both the area of practice and the research process. The Researcher's expertise in multidisciplinary healthcare settings, patient-provider dynamics, regulatory frameworks, and open disclosure principles has fostered trust and collaboration between herself as the Researcher and HCPs as the study participants. While the researcher acknowledges the value of supervision and reflection in addressing assumptions and findings articulated throughout the study, she also appreciates the unique expertise, knowledge, and skills she brings to the research process as both an academic and a practitioner.

8.8 Conclusion

In this chapter, the integrated findings were analysed using a multidisciplinary set of theoretical frameworks to provide a deeper understanding of HCPs' attitudes to, perceptions of and experiences regarding open disclosure. The application of theories on self-efficacy, attribution, uncertainty reduction, communication adaptation and complex systems enabled a nuanced exploration of how individual, communicative, and systemic factors interact to shape open disclosure practices. These theories provided insight into HCPs' confidence, patient perceptions, disclosure behaviours and the broader institutional structures that influence disclosures.

The significance of ethical principles, communication strategies, patient-centred approaches, systemic structures, and training in open disclosure were all highlighted. Addressing uncertainty, improving communication, and aligning patient expectations were critical for fostering trust and transparency. Additionally, institutional policies, interprofessional collaboration and structured training were essential for sustaining open disclosure practices. Strengthening institutional support, refining policies and fostering a culture of learning and accountability is key to bridging existing gaps. A well-structured and adaptable open disclosure framework that balances individual skills, communication strategies and systemic support can enhance transparency, trust, and patient safety outcomes.

Recommendations based on these findings will be presented in the next chapter, along with strategies for disseminating open disclosure practices to support their effective implementation across healthcare settings.

Chapter 9 Conclusion

9.1 Introduction

The final chapter highlights the innovative aspects of the research study, emphasising its significant contributions to advancing current knowledge on open disclosure. Additionally, this chapter explores the broader implications for transforming open disclosure practices, enriching education, and inspiring future research directions within the field. The chapter concludes with a presentation of the plans for disseminating the study findings and a personal reflection on this PhD journey.

9.2 Implications and Recommendations

This section summarises the key findings discussed in the previous chapters. The results of this study indicate several implications for policymakers, as well as for education, training, and future research. It is important for Higher Education Institutions (HEIs), the National Open Disclosure governing bodies of the Health Service Executive (HSE), and researchers in this field to consider these implications and take appropriate action.

9.2.1 Implications and Recommendations for Policymakers

In 2023, the HSE launched the "Patient Safety (Notifiable Incidents and Open Disclosure) Act (PSA)" (2023), which amended the "Civil Liability (Amendment) Act" (2017). The Act establishes that open disclosure is the responsibility of a Health Practitioner (referred to as HCP in this study), "a person whose name is entered in the register as referred to it in Article 4(s) of the Order of 2000" (PSA 2023., Pg 11), which echoes with the voices of the study participants in this research. Furthermore, the Act clarifies that a Health care Practitioner must inform the Health Service Provider, "a person, other than a health practitioner, who provides one or more health services and for that purpose..." (PSA 2023., Pg 13) about any notifiable incident that occurs during the provision of care to the patient in the health service. In accordance with the Act, the Health Services Provider is then responsible for disclosing this information to the patient and their relevant person(s) during the notifiable incident open disclosure meeting.

While HCPs have an understanding that open disclosure is everybody's responsibility, there remains uncertainty about which specific healthcare practitioner—such as a registered medical practitioner, registered pharmacist, registered pharmaceutical assistant, registered nurse, or registered midwife—should make the disclosure, depending on the type, nature, and significance of PSIs. Additionally, delays between the identification of a PSI by a healthcare practitioner and the subsequent disclosure by the healthcare provider can raise further concerns. Hence, the significant findings from this research provide key recommendation to the policy context regarding the open disclosure of PSIs.

Key Policy Recommendations:

- It is recommended that healthcare systems, hospital groups, regulators, educators, and governing bodies explicitly align the open disclosure policies, guidelines, legislations and framework with their actual implementation and evaluation processes in clinical practice.

- The policy should guide the development of protocols, pathways, and/or algorithms to assist HCPs in adhering to the criteria and mechanisms to effectively engage in open disclosure with patients and their relevant person(s).
- The policy, governance and regulatory structures and operations must include measures to address, manage, and prevent the impact of open disclosure on multidisciplinary HCPs and those involved in the process.

9.2.2 Implications and Recommendations for Clinical Practice

Although the literature and study findings suggest open disclosure is a complex and challenging process, it also serves as a crucial pathway for communicating, managing, and preventing PSIs in clinical practice. Although the literature suggests open disclosure is a complex and challenging process, it also serves as a crucial pathway for communicating, managing, and preventing PSIs in clinical practice. Consequently, support services for second victims and effective referral pathways are vital for helping HCPs to cope with the physical, emotional, and professional consequences associated with open disclosure of PSIs. These support services should enhance HCPs self-efficacy beliefs and promote a sense of psychological safety, where HCPs feel safe to acknowledge, apologise and speak up for a culture of openness and transparency without the fear of punishment or stigma. This approach will help HCPs manage their situations and sustain their roles and responsibilities, regardless of the outcomes. It fosters a culture of trust, honesty and professionalism, ensuring that relationships with health service providers, patients, and the general public are not compromised or affected but instead healed and restored.

Key Practice Recommendations:

- HCPs should be empowered with the adequate knowledge, skills and a positive attitude towards open disclosure through training, feedback mechanisms and ethical reasoning.
- Multidisciplinary HCPs committed to principles and ethos of open disclosure to support HCPs in identifying, managing, reporting, disclosing, reviewing, and learning from the PSIs.
- Mentorship and Supportive leadership to promote psychological safety among HCPs
- Monitoring and measuring compliance with disclosure practices will help to evaluate the progress and improvements to be made to the disclosure process.

9.2.3 Implications and Recommendations for the Healthcare Organisations

As empirical studies address the impact on the organisation as a third victim (Mira et al., 2015; Yan et al., 2022), HCPs in this study recommend multi-layered and multifaceted strategies to strengthen trust and transparency, which are essential for shared accountability in open disclosure (Paradiso & Sweeney, 2019). The implementation of local policies, protocols and clinical audits is essential to address and mitigate contributory human factors to PSIs. In alignment with the HSE's Patient safety strategy for 2019-2024 (HSE, 2024a), this presents a valuable opportunity to learn, transform and reform disclosure practices. This can be achieved through a collaborative, compassionate and partnership approach with shared and balanced accountability between the organisation and HCPs (HSE, 2024a; Hughes, 2023).

The design of organisational systems and the behavioural choices of HCPs (Paradiso & Sweeney, 2019; Reason, 2000) significantly influence open disclosure processes and practices. According to Paradiso and Sweeney (2019), a 'just culture' supports the reporting of PSIs, emphasises learning and improvement, acknowledges accountability and responsibility, and distinguishes between acceptable and unacceptable behaviours (Ivaldi et al., 2023) and its impact on safe care. The organisation hold accountability for the systems they design and for investigating PSIs, but not the individual. Therefore, understanding the relationship between a trusting and just culture and the behavioural choices of HCPs is crucial for transitioning from a blame-free environment to a culture of balanced accountability. Nevertheless, the focus must extend beyond focusing on the quality learning environment and just culture to restore and rebuild relationships with everyone involved (Boskeljon-Horst et al., 2024). In this context, leaders' expectations, responses and perspectives play a vital role in achieving restorative success related to operational, technical and safety aspects of open disclosure (Boskeljon-Horst et al., 2024; Hughes, 2023)

Key Healthcare Organisational Recommendations:
➤ Encourage a multidisciplinary partnership approach with various stakeholders, involving patients and their relevant person(s), HCPs, policymakers, the public and the media in implementing open disclosure in the clinical practice.
➤ The establishment of an open disclosure department with designated discipline-specific Champions who will receive specialised training on disclosure policies and legislation, therapeutic communication, professional empathy, conflict management, problem solving, teamwork, negotiation skills and Human factors.
➤ To facilitate HCPs in moving away from a culture of blame, shame and stigma, the provision of adequate resources, coaching, debriefing and involvement of patients and their relevant person(s) in root cause analysis is crucial. Additionally, offering peer support services, education, follow-up services, and organisational support is essential to foster a restorative culture.

9.2.4 Implications and Recommendations for Education and Training

The study findings indicate that education and training related to open disclosure, specifically concerning policies, practices, and processes have significantly influenced HCPs' values and ethics regarding interprofessional practice, a multidisciplinary approach, and effective communication (McDonough et al., 2017). In other words, a collective efficacy has been developed and sustained in addressing and managing issues related to open disclosure. Education and training are essential for the implementation of disclosure policy and raising awareness about protective legislation, equipping HCPs to become competent and skilled practitioners in disclosure processes. The training focused on self-reflection and self-awareness through '*perspective-taking*' is required for HCPs to enhance their self-efficacy, emotional intelligence, and psychological safety (Bonnema et al., 2012; Poirier et al., 2017; Wojcieszak et al., 2008). As the findings suggest, the open disclosure education received during their professional degree had a profound impact on ethical reasoning and shaped their professional values concerning the disclosure of PSIs.

The majority of HCPs emphasised the importance of involving representatives from Patients for Patient Safety Ireland as advocates in open disclosure education and training (Jha et al., 2013; Langer et al., 2016). Additionally, sharing the experiences and outcomes from multidisciplinary HCPs engaged in the open disclosure process is equally important (Wong et al., 2017). Furthermore, ongoing sessions with regulatory and judicial representative are vital to reinforcing the protective legislation, policies, and provisions surrounding open disclosure for both Senior HCPs and frontline workers across various disciplines. The teaching-learning strategies used should promote a two-way process involving them through simulation, role play and interactive activities (Wong et al., 2017; Kim et al., 2017; Lepisto et al., 2017; Popkess et al., 2017). It is essential to tackle challenging situations and complex interactions, addressing HCPs' thought processes, emotions, attitudes, perceptions, safety and wellbeing with specific therapeutic approaches, interventions and responses aimed at restoration. This approach will build trust and confidence among HCPs, as the culture within their organisations begins to shift from a blame, no-blame and just culture to a restorative culture (Ivaldi et al., 2023). Both empirical studies and study participants strongly endorse the involvement and education of the public, policy makers, and media in raising awareness and understanding of the significance of open disclosure in addressing PSIs.

Key Education and Training Recommendations:
➤ Higher Education Institutes (HEIs) to provide open disclosure education that incorporates moral and ethical reasoning, emphasising its importance in patient safety.
➤ Open disclosure training to focus on developing effective communication skills, resilience, ethics, professional empathy and cultural competency.
➤ Involvement of Patients for Patient Safety Ireland as advocates, regulatory and legal representatives and HCPs with both positive and negative experiences to share their views of open disclosure during the training programmes.
➤ Teaching-learning strategies to encourage collaborative learning among multidisciplinary HCPs using problem-solving techniques, simulations and peer discussions.

9.2.5 Implications and Recommendations for Future Research

The current study's findings and discussion have revealed several areas for further research in open disclosure. This will enhance the assurance of procedures, protections, and provisions outlined in the legislation, enabling HCPs to embrace and engage in disclosure conversations with patients and their relevant person(s).

Key Future Research Recommendations:
➤ It is recommended that future open disclosure research focus on empowering and engaging the participation of patients and public services. It is vital to collaborate with Patients for Patient Safety Ireland and explore their experiences of open disclosure of PSIs within the Irish Healthcare system. This would provide a comprehensive view of open disclosure practices and

their standardisation across Ireland, benefitting those who review disclosure-related policies and strategies.
➤ Future research could adopt a phenomenological approach to focus on the lived experiences of HCPs involved in the open disclosure process. Alternatively, a case-study approach could utilise focus group interviews to examine and evaluate the experiences of multidisciplinary HCPs engaged in governance and leadership related to open disclosure. Additionally, action research, with its participatory, iterative approach and cyclical process of planning, action, observation and reflection, enables researchers to actively collaborate with stakeholders at every stage of the research. This collaboration can help identify the issues, develop strategies, implement actions, monitor progress, analyse outcomes and evaluate the effectiveness of open disclosure until the intended results are achieved.
➤ Research on open disclosure education, including both pre- and post-training experiences through simulation, will be able to examine HCPs' knowledge, skills and attitudes towards open disclosure and its practical application in clinical settings. A longitudinal study conducted over different time periods could effectively assess and evaluate HCPs' self-efficacy, moral sensitivity and competency in managing disclosure conversations.
➤ The system-focused interventions will be beneficial to measure culpability through system analysis. This can be achieved using either Leonard and Frankel's three-step process or James Reason's culpability model. These evidence-based measures will help assess HCP's actions and contribute towards the system's redesign for an effective open disclosure practice.
➤ Finally, effective measurement and monitoring through documentary analysis of clinical audits, patient records, and key performance indicators related to open disclosure practice and training will provide valuable insights into progress and areas needing improvement.

9.3 Dissemination

This research has been widely disseminated at national and international conferences, webinars and summer school presentations. Engaging in open disclosure multidisciplinary workshops, educating undergraduate nursing students, participating in peer support sessions and collaborating with subject matter experts have enriched not only knowledge about open disclosure but also facilitated a dynamic exchange of methodological and analytical insights. Despite the challenges posed by the COVID-19 pandemic, particularly regarding travel and in-person attendance, alternative arrangements were made to present through virtual platforms.

Future dissemination includes:

- The study findings will be further shared through journal publications, conference presentations and seminars.
- Proposed manuscripts for publication in peer reviewed journals include:
 - Title: Open Disclosure through Multidisciplinary Perspectives within the Irish Health Care Context. Planned submission to BMJ Quality and Safety, March 2026.

- Title: Strategies to Enhance Open Disclosure Practice and Training. Planned submission to The Joint Commission Journal on Quality and Patient Safety, November 2026.
- It will be embedded into the currently delivered open disclosure training and workshops to promote best practices and further research to enhance the approaches to open disclosure.
- The unique position of the researcher as an educator and a nurse enables her to effectively communicate the research findings and promote policy awareness through various levels of engagement with stakeholders through team briefings, individual meetings, and collaborations. Emphasis will be placed on the importance of collaborative learning, patient engagement, and policy awareness.
- Relevant resources to promote open disclosure will be shared through Online blogs, patient safety groups and the quality and safety departments of HSE hospitals.

9.4 Personal Reflection

This research process has been a process of learning, resilience, and opportunities. My desire to pursue a PhD drew my attention to 'Open Disclosure' for its principles focusing on patient safety and quality health care. The values of nursing, such as compassion, care, and commitment, alongside the motto of Alma Mater, 'Heal and Comfort,' consistently guided my approach to patient care and professional career. Recognising patients' rights, being an advocate and working collaboratively as a team informed my decisions during my clinical practice. However, this research study was not without its challenges, which I had to navigate as a researcher, trainer, and nurse along the way. While remaining mindful of patients' care needs, I strived to provide ample opportunities for multidisciplinary HCPs to voice their views and share their experiences of honesty, truthfulness, and transparency in the context of open disclosure in clinical practice.

As I delved deeper into the research topic, I discovered that a mixed-method approach would provide a comprehensive view of my study. However, I soon recognised my ignorance regarding the complexities of mixed-method research, the protracted ethics approval process that spanned an entire year, and the unforeseen challenges of the COVID-19 pandemic. Despite these obstacles, pursuing this study has been incredibly rewarding and helped me meet my research objectives. Both approaches have allowed me to delve deeper and broader into the open disclosure of PSIs from a multidisciplinary perspective. HCPs' willingness to participate in the interviews motivated me to pursue and sustain this research study. Participating in various research master classes, webinars, peer support sessions and a statistics course with software tools like SPSS, NVivo, and R programming has equipped me with the skills necessary to navigate the complexities of my research journey (Appendix 24).

Supervisory relationships, scholarly advice and ongoing meetings have greatly influenced my PhD journey. Encouraging phrases such as 'I want you to succeed', 'will get there', 'it is a testimony to your diplomacy and diligence,' and 'well done' helped me to strive and thrive during this PhD journey. Since 1995, my relationship with my managers and colleagues has been the foundation of my professional accomplishments in India and Ireland. The unwavering support, understanding, appreciation and

encouragement facilitated scholarly discussions, friendly compliments and meaningful interactions while fulfilling my role as a Nurse Tutor. This research journey has been both rewarding and challenging, with mixed emotions. From dealing with uncertainties related to the research process, diagnosis of loved ones, self-doubt, despair, exhaustion and loneliness to a feeling of joy at a new arrival in the family to the achievement of leaving certificate, striving for Gaisce–The President's Award and junior certificate of children. Besides, having an opportunity to intercede and minister through the 'Word of God' with the accompanying signs, wonders and miracles has further sustained me. It will be embedded into the currently delivered open disclosure training and workshops to promote best practices and further research to enhance the approaches to open disclosure.

As I reflect on my doctoral journey, I am indebted to my family, who has little knowledge of the research process yet encourage me, especially in my mum's words, to 'stay focused' and constant support from my sister through her wisdom-filled knowledge and skills that sustained me throughout this process. Without acknowledging a caring and considerate family, heart-warming friend and a family of faith, I would never have accomplished my PhD studies with integrity and dedication. I am grateful for the opportunity to research in this emerging field of open disclosure in Ireland. My passion for learning, accepting constructive feedback, and determination to pursue this research with a focused approach and iterative process have supported me in reaching this far in meeting the deadline of this research study.

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Appendices

Appendix 1 Literature Review Search Strategy

Concept 1: 'Open Disclosure' 'education': Disclosure – in proximity

Medline (EBSCO): No appropriate index term; CINAHL: No appropriate index term; Embase: No appropriate emtree term; Cochrane: "open disclosure" keywords only; WOS: Keyword search on title and topic

Keywords: (disclos* OR "truth disclos*" OR "disclosure inciden*" OR openness* OR truth* OR "duty of candour*" OR "duty of candor*" OR "duty to warn*" OR "duty to report*" OR "duty to advise" OR "duty to advise" OR "being open*" OR "Safety of candour" OR "honest disclos*" OR "full disclos*" OR "error disclos*" OR "patient safety" OR ethic* OR moral*) N2 (educat* OR train* OR workshop* OR seminar* OR class* OR program* OR instruct* OR inform* OR teach* OR coach* OR tutor* OR learn* OR study OR studied OR lectur* OR mentor* OR taught* OR framework* OR in-train* OR skill* OR simulat* OR talk* OR "in-service" OR online OR "e-learning" OR mandatory OR "continuing professional development" OR "continuous professional development")

EMBASE Keywords: ((disclos* OR 'truth disclos*' OR 'disclosure inciden*' OR openness* OR truth* OR 'duty of candour*' OR 'duty of candor*' OR 'duty to warn*' OR 'duty to report*' OR 'duty to advise' OR 'duty to advise' OR 'being open*' OR 'safety of candour' OR 'honest disclos*' OR 'full disclos*' OR 'error disclos*' OR 'patient safety' OR ethic* OR moral*) NEAR/2 (educat* OR train* OR workshop* OR seminar* OR class* OR program* OR instruct* OR inform* OR teach* OR coach* OR tutor* OR learn* OR study OR studied OR lectur* OR mentor* OR taught* OR framework* OR 'in train*' OR skill* OR simulat* OR talk* OR 'in-service' OR online OR 'e-learning' OR mandatory OR 'continuing professional development' OR 'continuous professional development')):ab,ti

WOS Keywords: ((disclos* OR "truth disclos*" OR "disclosure inciden*" OR openness* OR truth* OR "duty of candour*" OR "duty of candor*" OR "duty to warn*" OR "duty to report*" OR "duty to advise" OR "duty to advise" OR "being open*" OR "Safety of candour" OR "honest disclos*" OR "full disclos*" OR "error disclos*" OR "patient safety" OR ethic* OR moral*) NEAR/2 (educat* OR train* OR workshop* OR seminar* OR class* OR program* OR instruct* OR inform* OR teach* OR coach* OR tutor* OR learn* OR study OR studied OR lectur* OR mentor* OR taught* OR framework* OR in-train* OR skill* OR simulat* OR talk* OR "in-service" OR online OR "e-learning" OR mandatory OR "continuing professional development" OR "continuous professional development"))

Concept 2: 'Adverse events' : 'Healthcare Professional' -in proximity

Medline (EBSCO): (MH "Long Term Adverse Effects") OR (MH "Medication Errors") OR (MH "Near Miss, Healthcare") OR (MH "Diagnostic Errors+") OR (MH "Medical Errors+")

CINAHL: (MH "Long Term Adverse Effects") OR (MH "Medication Errors") OR (MH "Near Miss, Healthcare") OR (MH "Diagnostic Errors+") OR (MH "Medical Errors+")

Embase: 'adverse event'/exp

WOS: title and topic with keywords only

All keywords run on title an abstract to increase focus of search.

Keywords: (advers* OR safe* OR serious* OR unexpected* OR harm* OR unintended* OR unintention* OR unanticip* OR critical* OR sentinel OR inevitabl* OR negative) N2 (event* OR incident* OR accident* OR outcomes* OR error* OR injur* OR death* OR effect* OR affect*) OR (medical* OR surg* OR nurs* OR drug* OR diagnos* OR treat* OR medicat* OR healthcare* OR care* OR hospital* OR system* OR prescrib* OR prescript* OR consult* OR investing* OR clinical) N2 (mistake* OR error* OR omission* OR omit* OR risk* OR misconduct* OR side-effect* OR "side effect*" OR neglig* OR injur* OR accident* OR complicat* OR malpractice OR harm* OR misdiag* OR mis-treat* OR mistreat*)

EMBASE Keywords: (advers* OR safe* OR serious* OR unexpected* OR harm* OR unintended* OR unintention* OR unanticip* OR critical* OR sentinel OR inevitabl* OR negative) NEAR/2 (event* OR incident* OR accident* OR outcomes* OR error* OR injur* OR death* OR effect* OR affect*) OR (medical* OR surg* OR nurs* OR drug* OR diagnos* OR treat* OR medicat* OR healthcare* OR care* OR hospital* OR system* OR prescrib* OR prescript* OR consult* OR investing* OR clinical) NEAR/2 (mistake* OR error* OR omission* OR omit* OR risk* OR misconduct* OR side-effect* OR "side effect*" OR neglig* OR injur* OR accident* OR complicat* OR malpractice OR harm* OR misdiag* OR mis-treat* OR mistreat*)

Appendix 2 Study Characteristics of Included Studies (N=135)

Author & Year	Key Aims	Study Type	Participants	Key Findings
Abdollahi et al. (2024, Iran)	To assess patients' expectations and preferences regarding the disclosure of medical errors (MEs).	Cross-sectional study	270 patients	Found 96.6% of patients want to know about medical errors. Preferences include 29.3% wanting all errors disclosed and 32.6% only major harm. Over half prefer the responsible physician to inform them, and 64% of patients would complain about major harm. Younger, educated, and urban patients are more likely to seek disclosures. Additionally, 77.8% of those with prior complaints want to be informed, while 56.4% of illiterate patients would not complain.
Adams et al. (2022, UK)	To develop evidence that helps maternity providers improve disclosure of adverse incidents to affected women/families in NHS maternity care.	Multidisciplinary co-design: Three-phased realist evaluation study	National stakeholders in service improvement and patient/family engagement	The expected outcomes include actionable evidence about organisational strategies and co-designed outputs such as guidance materials and information resources for various stakeholders.
Adams et al. (2023, UK)	To understand how and why interventions to enhance open disclosure affect events and experiences in maternity care.	Realist literature synthesis	Families, Clinicians, Services	Key mechanisms include harm acknowledgment, family involvement, understanding events, clinician skills, and transparency. Contextual factors are incident configuration, open disclosure drivers, and organisational influence.
Al-Nomay et al. (2017, Saudi Arabia)	To gather data on the attitudes of dental professionals in Riyadh, Saudi Arabia, toward medical error disclosure.	Cross-sectional study	586 Dental professionals and Dental auxiliaries	94.4% of dental professionals supported disclosing medical errors, with significant differences based on institution type, gender, age, and nationality. Over 68.9% felt the dentist should disclose errors, particularly among government institution participants.
Aljubran (2010, Saudi Arabia)	Investigate the public attitude toward disclosure in Saudi Arabia.	Review	Medical oncologists	Most patients wanted to know their cancer diagnosis, while 75% of doctors preferred to inform the family. For incurable cases, 67% of doctors and 51% of hospital staff would inform the patient first.
Allan and Munro (2008, Australia)	Define the importance, success factors and barriers to open disclosure and the need for more empirical evidence.	Literature review	HCPs patients, health care providers, and management	Open disclosure enhances the doctor-patient relationship, reduces litigation risks, promotes system improvements, and upholds patient autonomy. HCPs should communicate honestly and ethically.

Amir et al. (2017, India)	Understand postgraduate doctors' attitudes, perception and knowledge towards medical error disclosure	Cross-sectional study	Doctors	Resident doctors fear punishment, hindering disclosure. A reporting system is recommended, as workload and patient non-compliance contribute to medical errors.
Asghari et al. (2010, Iran)	Evaluate doctors' attitudes toward handling medical errors made by their peers and factors influencing these attitudes.	Cross-sectional study	General practitioners	92.7% of doctors expected peers to disclose errors to them. 67% of doctors had encountered a medical error by a peer in the past 6 months. 90% received little to no training on peer error management.
Australian Commission on Safety and Quality in Health Care (ACSQHC), (2013, Australia)	Outlines Australian Open Disclosure Framework, core principles, processes and support for local policy implementation.	Australian Open Disclosure Framework Supporting materials and resources		Guidance on open disclosure in healthcare as a patient right and best practice. Key aspects include strong leadership, training, incident assessment, and follow-up. Managers are vital in fostering a supportive culture, and open disclosure does not imply legal liability.
Baalmann et al. (2023, USA)	The study explores the impact of a telehealth simulation on medical and pharmacy students' confidence and faculty-assessed skills regarding medication error disclosure.	A three-phase interprofessional student simulation	145 second-year pharmacy students and 137 third-year medical students.	Pharmacy students reported improved confidence in disclosing medication errors and using telemedicine. They scored a median of 7 out of 12, excelling in team discussions but struggling with error acknowledgment and patient disclosures.
Bardon (2018, Ireland)	Report on nine new legal actions related to a cervical cancer scandal in Ireland	Newspaper Article	Individuals or entities involved in the cervical cancer screening	Nine women have now sued the National Screening Service for cervical cancer misdiagnoses, totalling 28 cases. This follows Vicky Phelan's missed smear test case, which prompted the director's resignation and plans for mandatory error disclosure.
Bassett (2015, Ireland)	Implement a Quality Care Metrics system in an Older Person Service, and enhance the systematic measurement of quality of care delivered	Thesis	Steering Committee, Executive Sponsor, Project Director, Project Manager, Project Team, User Reference Group (Service Users)	Highlights the critical role of Nursing Quality Care Metrics in enhancing accountability and improving patient outcomes. The Context, Input, Process, Product model is user friendly as it covers the entire project from initiation to conclusion and facilitates a transparent evaluation for stakeholders through a checklist methodology.

Bell et al. (2010, USA)	To implement and assess an interactive educational programme that explores the human impact of medical error, assesses participants' experiences and attitudes, develops communication skills, and offers strategies for bedside disclosures.	Survey and workshops and	154 trainees (108 third-year medical students and 46 medical and surgical residents) 75 faculty physicians	Lack of apology after mistakes, Inadequate training, Lack of institutional support, Limited knowledge of disclosure policies and Positive impact of the curriculum. Need for a structured disclosure curriculum early in medical education, emphasising the importance of role models, support systems, and educational strategies to improve communication after harmful events.
Bell et al. (2017, USA)	Explore physician attitudes and practices regarding transparency and disclosure of medical errors.	Survey	3038 physicians from various practice types (academic, private), sexes, specialties, and experience levels.	Physician attitudes towards disclosing medical errors, discussing with peers, and reporting to institutions are related, influenced by factors such as gender, practice type, and beliefs about the effects of disclosure on litigation and patient trust.
Benbassat et al. (2001, Israel)	1. Propose a theoretical model of physicians' attitudes toward medical error. 2. Develop a measure of these attitudes. 3. Provide empirical support for relationships in the model.	Research Study	Practicing Physicians, Residents, Students	Association between stress from uncertainty and the tendency toward defensive practice ($r = .36, p = .000$) and between fear of litigation and support for self-regulation ($r = .21, p = .000$). Found that interventions to increase physicians' tolerance of uncertainty may reduce fear of litigation and defensive practice.
Bender (2007, USA)	Discuss the "I'm sorry" laws in Colorado and Texas and explore how different jurisdictions handle admissions of error or expressions of regret in healthcare settings.	Editorial	Various stakeholders in healthcare (patients, physicians, hospital administrators, lawyers, insurers, Law makers)	Open communication and apologies, can significantly reduce medical malpractice claims and associated costs, driven by patients' desire for explanations and acknowledgment of errors These laws encourage physicians to disclose medical errors by making expressions of sympathy inadmissible in civil court as evidence of liability.
Birks et al. (2014, UK)	Critically evaluate open disclosure policy, strategies, conceptualisations, and stakeholder perspectives in the UK	Scoping review and qualitative interviews	Policymakers, professional organisations, NHS managers, health professionals, patients, and patient organisations.	Current practices are largely based on expert consensus rather than solid evidence. Literature reviews and accounts found benefits of a generally open culture. Significant lack of evidence regarding the effectiveness of disclosure interventions on organisational or individual outcomes.

Boothman et al. (2012, USA)	Deliberate on the impacts and importance of the University of Michigan Health System (UMHS) model, offer suggestions on application in other settings, and present thoughts of its future	Observational Study	Healthcare professionals, legal professionals, patients	University of Michigan Health System adopted proactive OD model that emphasises honesty, resulting in reduction in malpractice claim and related costs. Approach has fostered culture of patient safety and led to improvements in claims processing times and settlement amounts.
Bourke and Lochtenberg (2023, Ireland)	Discusses open disclosure of PSIs and debate surrounding its legal enforcement	Opinion		Mandatory open disclosure with criminal penalties would create fear, not honesty. HCPs and patients deserve honest, compassionate and caring disclosure.
Brown et al. (2014, USA)	Evaluate the influence of a communication skills workshop on radiology trainees. Assess changes in comfort and attitudes towards direct communication with patients and families.	Observational Study	109 Radiology Trainees	Respondents desired additional training on error disclosure (83%), general communication (56%), and radiation risks (80%) After completing the workshop, more trainees reported comfort in communicating about bad news, errors, and radiation risks. fewer reported unwillingness to disclose the error despite medicolegal concerns (pre vs post, 39 vs 15%; $P < .001$).
Byrth and Aromataris (2014, Australia)	Synthesise research evidence exploring health professionals' perceptions and experiences of the barriers and facilitators of open disclosure of medical errors to patients.	Systematic Review	Health care professionals	Factors influencing open disclosure of errors by HCPs are complex and multifaceted, encompassing personal, professional, cultural, and systemic elements. Structured approaches like effective education, role modelling and promoting cultures of honesty and transparency can help mitigate barriers and enhance facilitators.
Byrth and Aromataris (2014, Australia)	To synthesise the best available qualitative evidence exploring health professionals' perceptions and experiences of open disclosure of medical errors to patients	Systematic Review Protocol	Healthcare Professionals	
Carmichael (2017, South Africa)	Investigate barriers to doctors reporting, acknowledging, and remedying medical errors. Explore ethical management of such situations.	Bioethical Evaluation	211 clinicians from the School of Clinical Medicine	Necessity for full disclosure of errors to enhance patient safety and trust, while also highlighting barriers faced by HCPs in achieving transparency, such as fears of victimisation and inadequate support systems. Advocates for a shift towards a 'no-blame' culture and improved training.

Carrillo et al. (2021, Spain)	To analyse the relationships between factors that contribute to HCPs' informing and apologising to a patient after an avoidable adverse event (AAE).	A secondary study based on the analysis of data collected in a cross-sectional study conducted between May and July 2014	1087 front-line HCPs. Of these, 610 (56.1%) worked in primary care and 477 (43.9%) worked in hospitals	Institutional support increases the likelihood of disclosing AAEs. HCPs are more likely to apologise if they feel supported and unaware of potential lawsuits, while fear of legal action stems from a lack of support. Nurses are more receptive to disclosure training than physicians, and a strong safety culture enhances frequency of disclosures.
Choi et al. (2021, South Korea)	Explore nurses' perceptions regarding disclosure of patient safety incidents (DPSI)	Survey	689 nurses	Most nurses (96.7%) felt that major errors should be disclosed to patients or their caregivers. However, only 67.5% supported DPSI becoming mandatory by law. Nurses generally had a positive attitude toward disclosure of PSIs, but it was less positive than that of the general public across various aspects.
Christensen et al. (1992, USA)	Understand how doctors perceive and react to their professional mistakes, including their beliefs, coping mechanisms, emotional responses, and changes to their practice following a mistake	Qualitative	11 physicians from various fields practicing at the community hospital	Notable lack of self-disclosure among physicians regarding mistakes, leading to isolation and need for more open discussions. physicians experience emotional distress related to perceived mistakes due to prior beliefs and perfectionism. The degree to which physicians shared distress with colleagues is based on degree of competitiveness engendered by medical training.
Claringbold et al. (2023, Australia)	To understand women's attitudes toward the Breast Screen Western Australia (WA) screening programme during an open disclosure process	Questionnaire	Women experiencing an interval cancer diagnosis between 2011 and 2020 were sent a questionnaire by mail.	The majority of women expressed favourable attitudes towards the service and appreciated providing feedback in the open disclosure process.

Cockburn (2021, Australia)	Provide overview of Australian open disclosure framework, barriers to disclosure, disclosure gap and apology laws	Discussion Paper		The document focuses on the ethical, legal, and policy aspects of disclosing PSIs to patients. Barriers: legal fears, lack of support, uncertainty, emotional discomfort, reputation concerns, poor communication skills, and a blame culture contributing to an 'incident disclosure gap.' Enablers: education, education, strong leadership, a supportive culture, and legal protections. Strategies: staff training, promoting leadership, accurate risk assessments, and blame-free reporting.
Cole et al. (2013, USA)	Explore the relationship between disclosure options and ethical reasoning.	Observational Study	Medicine house staff members at Johns Hopkins Hospital	Higher ethical reasoning scores associated with a greater willingness to disclose errors. Those acknowledging an error having higher DIT-2 scores (51.1 vs 31.6, $p<0.01$). Incorporating ethical training into medical education could improve error disclosure practices and enhance patient safety.
Croskerry et al. (2000, Canada)	To establish a comprehensive educational agenda and curriculum focused on error prevention in emergency medicine (EM).	Discussion Paper	Graduate and Postgraduate Medical students	The paper argues that malpractice litigation hinders cultural change in healthcare and highlights the need for public education on the system's fallibility. It calls for a multifaceted approach to improve safety in emergency medicine through systemic issues, interdisciplinary collaboration, and increased public awareness to enhance outcomes.
Dalton and Williams (2014, UK)	Promote culture of Candor within organisations, discuss challenges, and highlight importance of honesty and transparency.	Policy review	Healthcare staff, patients and families	Need for well-designed incentives to be candid Government explores various reimbursement mechanisms and other measures to support duty of candour.

De Silva (2025, UK)	Highlights pressures against transparency after harm and advocates for proactive dialogue, including risk discussions and feedback during care	Editorial		The article highlights challenges with the duty of candour in the NHS, including resistance from clinicians due to fears of litigation and reputational damage. Shift work complicates accountability, and medical training often neglects error communication. It advocates for integrating candour principles into medical education to enhance transparency.
Delbanco and Bell (2007, USA)	Discuss the impact of PSIs and disclosures	Opinion	Individuals affected by medical errors (patients, healthcare providers)	Highlights the emotional impact of medical errors on patients, families, and healthcare providers. Identify and explore emotional themes of guilt, fear, and isolation. Advocate for honest communication, forgiveness, and systemic changes in healthcare.
Dhamanti et al. (2023, Indonesia)	To examine how health staff in Indonesian hospitals perceived open disclosure of PSIs.	Mixed method explanatory sequential approach	262 health workers from hospitals, while the qualitative phase interviewed 12 doctors, nurses, midwives, pharmacists and medical laboratory technicians.	The study revealed strong open disclosure practices but confusion between reporting and disclosure. It stressed the importance of disclosing major errors and identified key factors like communication and patient characteristics. However, support and training for open disclosure in hospitals were lacking, highlighting the need for an effective system.
DoH. (2008, Ireland)	Develop proposals for a system of governance based on corporate accountability for the safety and quality of health services.	Report of the Commission on Patient Safety and Quality Assurance		The Commission reported that there are significant problems with existing internal and external regulatory mechanisms for ensuring patient safety in Ireland. The Commission considered ways in which the gaps in the current system might best be remedied so that responsibility, accountability and safety are clearly embedded as key priorities for all participants in the healthcare system.
Dossett et al. (2018, USA)	Understand physicians' disclosure of pre-referral errors and reasons.	Qualitative	Cancer specialists	Specialist physicians struggle whether & how to disclose pre-referral medical errors, facing barriers such as legal implications and damage to professional relationships. Lack of consensus regarding the benefits of disclosure.

Duffy (2012, Ireland)	Evaluate open disclosure in Ireland after clinical adverse events, including barriers, guidelines, support, and litigation concerns.	Survey-based	Patients and healthcare team	38.9% of respondents felt little follow-up support after adverse events 11.1% reported feeling guilt Over 50% acknowledged having support available but were hesitant 56.5% indicated their organisation did not have an open disclosure policy or guideline 54.4% recognised barriers, with 24% citing fear of litigation
Duffy et al. (2022, Ireland)	Explore Anaesthesiologists' awareness of error the potential for harm and their attitude to reporting and disclosure	Survey-based	Eighty-nine anaesthesiologists from 14 hospitals across Ireland	Rates of incident reporting and disclosure were lower than the standards that might apply in an environment focused on Candor and safety Extensive education programme required to raise awareness of error and embed appropriate reporting and disclosure behaviours. Vignettes may be valuable.
Eaves-Leanos and Dunn (2012, USA)	Outlines the shift to openness in healthcare disclosure, emphasising providers' obligations to inform patients about adverse events while highlighting barriers and recommending standardised policies and training to improve transparency.	Discussion Paper	Various Stakeholders including physicians, nurses, and allied health personnel, Patients and their families or personal representatives, VHA attorneys Health profession students	The article stresses the importance of open disclosure of adverse events in healthcare, highlighting that it improves patient safety, as shown by the Lexington Veterans Affairs Medical Center (VAMC) experience. Standardising practices and training can help overcome barriers and build trust.
Elwy et al. (2016, USA)	Examine how surgeons disclose adverse events and its impact on their well-being.	Prospective observational study	Surgeons from various specialties	Most surgeons reported using disclosure practices, such as explaining event and expressing concern for patient's welfare, but fewer apologised or discussed preventability, which correlated with negative personal effects from the events. Additionally, surgeons with negative attitudes toward disclosure experienced increased anxiety about patient outcomes following adverse events.

Espin et al. (2006, Canada)	Explore operative care teams' perceptions of errors, reporting and disclosure	Research Study	OR team members (surgeons, nurses, anaesthesiologists), patients	HCPs and patients have shared understanding of errors, primarily defining them as deviations from standards and negative outcomes. Significant difference in reporting practices, nurses more likely to report only errors within their scope, patients favoured full disclosure of all error details. Culture of individualism among nurses regarding error reporting, indicating a need for collective responsibility.
Esswood and Olley (2019, Singapore)	To understand the effect of Asian culture relating to apologies because of the implementation of open disclosure in Singapore's healthcare system	Systematic Review	Healthcare professionals and healthcare consumers	Asian culture significantly influences the practice of apologies in open disclosure, highlighting the need for culturally sensitive approaches in healthcare. Critical research gap regarding healthcare professionals' perceptions of open disclosure.
Finlay et al. (2013, Australia)	Clarify doctors' legal and ethical obligations regarding open disclosure and propose specific reforms to enhance its adoption	opinion		Many practitioners hesitant to adopt due to fears of legal repercussions and lack of training. Open disclosure may reduce litigation, overall impact on legal outcomes remains inconclusive. Importance of support from state bodies and complaints organisations in implementation.
Fitzpatrick et al. (2023, Ireland)	To examine international consensus on interval breast cancer audit processes and disclosure in population-based breast screening programmes.	Survey	Participants were representatives from 17 out of 24 invited countries / regions with population-based breast screening programmes, giving a response rate of 71%.	The study concluded that while there is consistency in providing aggregate programmatic audits, there is no consistent approach to individual interval cancer reviews or results disclosure across international breast screening programmes.
Gallagher and Levinson (2005, USA)	Discuss importance and impacts of error disclosure, advocate for error disclosure, and emphasise need for evidence-based guidelines.	opinion		Fear of legal repercussions often deters physicians from disclosing errors. Authors advocate for integrating disclosure practices with quality improvement initiatives and providing training for clinicians on effective disclosure and to develop supportive policies.

Gallagher et al. (2003, USA)	Determine attitudes of patients and physicians about medical error disclosure	Qualitative	Patients (N =52) and Physicians (N=46)	Physicians need to improve communication regarding medical errors to meet patients' desires for transparency, emotional support, and apologies. Health care institutions should also focus on supporting the emotional well-being of practitioners.
Gallagher, Garbutt, et al. (2006, USA)	Describe how physicians disclose errors to patients and explore physicians' responses to various scenarios depicting medical errors.	Survey-based observational study	Medical and Surgical physicians (N=2637)	56% of respondents mentioned the adverse event without acknowledging it as an error, while only 42% explicitly stated that an error occurred. 19% would not volunteer any information about the error's cause, and 63% would not provide specific information about preventing future errors.
Garbutt, et al. (2007, USA)	Understand paediatricians' attitudes and experiences regarding communication of medical errors.	Cross-Sectional Survey	Paediatricians (Residents and Attendings)	Patients highly value transparency regarding medical errors, wanting to understand why an error occurred and how it will be prevented in the future. Physicians are often reluctant to disclose errors due to fears of legal repercussions, including the potential for lawsuits and increased malpractice premiums. Need for structured training and evidence-based guidelines to enhance physicians' disclosure skills
Ghalandarpourattar et al. (2012, Iran)	Evaluate attitudes of attending surgeons and residents towards error disclosure.	Cross-sectional study	Attending surgeons and surgical residents	Notable gap between surgeons' intentions to disclose medical errors and their actual practices, with only 16.7% having disclosed their last error to patients. Participants were less inclined to disclose minor errors (39.6%) compared to major errors (49.1%). Reason for not disclosing errors included fear of malpractice lawsuits (71.7%) and concerns about losing patient trust (62.3%).
Giraldo et al. (2020, USA)	To provide preliminary estimates of the impact of incident disclosure behaviour on medical malpractice claims.	Descriptive analysis	Study analysed 434 medical malpractice claims. The participants were patients involved in these claims.	In 434 malpractice claims, only 4.6% disclosed errors at the time, and 5.9% included apologies. The study highlighted the infrequency of error disclosures and apologies. 4.6% (n = 20) medical errors had been disclosed to the patient at the time of the error, and 5.9% (n = 26) had been followed by disclosure and apology.

Goldberg et al. (2002, USA)	Examine affective aspects of physician errors and presents a coping strategy	Review	The article reviews existing literature and presents a discussion on coping with medical mistakes and errors in judgment	The article highlights the prevalence of medical errors, especially in emergency departments, with diagnostic error rates of 40% to 60%. It recommends that physicians cope by accepting responsibility, discussing with colleagues, disclosing to patients, and conducting error analysis. The emotional impact on physicians underscores the need for a supportive learning environment.
Hannawa and Frankel (2021, USA)	To validate the Medical Error Disclosure Competence (MEDC) model's ability to predict the effects of physicians' communication skills on error disclosure outcomes in a simulated context.	Experimental design	721 respondents were assigned to 16 experimental disclosure conditions that tested the MEDC model's constructs across 2 severity conditions (i.e., minor error and sentinel event)	Nonverbal attentiveness affects how disclosures are perceived. Adequate disclosures strengthen relationships, while inadequate ones can cause distancing and legal issues. Verbal apologies are mostly ineffective. Medical Error Disclosure Competence guidelines may be helpful in reducing financial and reputational risks.
Harrison et al. (2017, UK)	Explore perceived enablers facilitating open disclosure enactment among UK doctors and nurses.	Qualitative Study	13 doctors and 22 nurses	Greater transparency in addressing adverse events relies on healthcare professionals viewing Candor as moral and professional duty, most effective in a non-punitive, learning-focused environment. Ongoing, open communication with patients, including incident disclosure, is crucial throughout their care.
Harrison et al. (2019, Australia)	Explore the service and policy structures that impact open disclosure (OD) practices in New South Wales (NSW), Australia.	Explorative study using semi-structured interviews.	12 health service managers and policy makers involved in open disclosure policy or practice levels in NSW, Australia.	The study emphasises alignment in open disclosure practice through collaboration with root cause analysis, holistic training, and policies for disclosing low-level harm incidents. It also notes that formal open disclosure processes are infrequently applied after adverse events in NSW, despite established guidelines.

Hingorani et al. (1999, UK)	Patients' and doctors' attitudes to the provision of information to patients after a hypothetical adverse event in cataract surgery	Cross-Sectional Survey	Patients attending a consultant ophthalmologist	Patients want more information after negative medical event than doctors think necessary. Doctors hesitate to share details to avoid causing anxiety or losing trust. Not providing clear information can harm patient-doctor relationship and increase risk of legal issues. Patients expect honesty, explanations, and apologies after incident. There is a need for change in how both patients and doctors view medical errors, promoting openness and understanding that mistakes can happen. New rules now make it important for doctors to acknowledge these events.
Hobgood et al. (2002, USA)	Understand ED preferences for error disclosure. Identify serious errors for reporting. Assess views on educators' roles in reporting.	Quantitative survey study	Sample of ED patients and families	Majority of respondents (88%) wanted complete disclosure of any medical errors with 76% indicating they wish to be informed right away. 99% favour reporting to hospital committees, 97% to state medical boards, and 92% to government agencies. Teaching error management should prioritise error disclosure techniques, honesty, and compassion.
Hobgood et al. (2004, USA)	To gather preliminary data on how the three major types of emergency medicine residents differ in error identification, disclosure, and reporting	Quantitative survey study	One hundred sixteen subjects participated: 41 EMTs (35%), 33 RNs (28%), and 42 physicians (36%).	Considerable number of providers, including emergency medical technicians (EMTs), registered nurses (RNs), and physicians, reported difficulties in identifying, disclosing and reporting clinical errors. Provider-specific educational initiatives and enhanced teamwork training are necessary.
Hobgood et al. (2005, USA)	To determine emergency medicine residents' emotional and behavioural responses to their medical errors and examine associations between residents' responses to medical error and perceptions of their training.	Survey Research	55 residents from two U.S. residency programmes	Emergency medicine residents frequently experience negative emotions after errors, affecting improvements. Of 33 residents, 83% discussed their mistakes, mainly with attending physicians. Common emotions included remorse (68%) and frustration (55%). While 81% increased attention to detail, only 5% used more evidence-based practices. Negative feelings were associated with inexperience and perceptions of overload and lack of support.

Hooper (2019, UK)	Explore the development of 'candour' in the health sector and its effects on nursing professionals.	Opinion	Healthcare professionals, nurses	New strategy to create a more open learning environment for nurses, focusing on honesty and ensuring they have the right training and information to do their jobs well. Nurses must be familiar with technical aspects of both the professional and statutory duties, and they must make sure their employers provide them with the training and Information.
Iledema, Sorensen, & Piper (2008a, Australia)	Explore patients' and family members' perceptions of Open Disclosure of adverse events that occurred during their health care.	Qualitative study	23 people involved in adverse events and incident disclosure	Staff should better align their disclosure communication with the victim's perceptions and experiences of adverse events, providing a suitable apology and offering both short- and long-term support. Additionally, they should consider using consumer insights on adverse events to improve services.
Iledema, Sorensen, Manias, et al., (2008b, Australia)	To assess the impact of open disclosure on patients and clinicians; evaluate communication barriers and implementation strategies; interrogate ethical-legal tensions; and synthesise cross-jurisdictional evidence.	Review	Patients, families, healthcare professionals	Victims prefer timely, collaborative discussions after adverse events. Most patients want immediate, full disclosure of medical errors. Emphasis is placed on understanding patients' lived experiences post-incident.
Iledema, Suellen, et al. (2011a, Australia)	To explore the barriers clinicians face in carrying out open disclosure and to examine both clinicians' and patients' views on disclosure following adverse events.	Qualitative	147 Healthcare Professionals, 142 Patients & Family Members	Clinician uncertainty about what constitutes an event requiring disclosure. Assumptions that patients/families are primarily focused on blame and lack the ability to understand complex clinical issues. Discomfort and fear in managing interactions with distressed or angry patients and relatives. Lack of clarity on how to support colleagues through the disclosure process. Concerns about litigation risks, legal privilege constraints, and insurer-driven risk-averse policies, which inhibit open communication.
Iledema, Suellen et al. (2011b, Australia)	To explore patients' and families' experiences of incident disclosure and to develop principles for effective disclosure	Retrospective Qualitative Study	39 patients and 80 family members affected by severe PSI	Disclosure often failed to meet patient and family's expectations. They called for better preparation, open dialogue about the event, timely follow-up, involvement in closure decisions, and clearer communication on system improvements. These insights informed a proposed framework of effective disclosure principles.

Jefferies et al. (2010, Canada)	Examine HCPs perceptions of a simulation-based educational intervention on team-based error disclosure.	Qualitative Study	24 participants (6 physicians, 6 surgeons, 12 nurses) from three hospitals.	Participants expressed mixed views: some saw team-based disclosure as unrealistic or forced, while others found it beneficial. These perceptions were influenced by error type, patient preferences, and professional/cultural norms. The simulation provided a novel, practice-altering experience for many participants.
Jefferies et al. (2011, Canada)	Explore standards of safe disclosure practices, error definition, research on error disclosure, and nurses' role in disclosure.	Simulation-based qualitative study	Registered Nurses, Physicians	Nurses face tension in disclosing errors while navigating professional boundaries. Key themes identified include shared responsibility and secondary roles in the disclosure process. Enhancing nurses' roles in error disclosure requires multilevel strategies at organisational, team, and individual levels.
Jones & Levy, (2012, USA)	Discusses the role of education in patient safety and disclosure of medical error in Podiatric Medicine	Discussion Paper	Physicians, nurses, other health-care providers	Emphasises importance of full disclosure of medical errors. Advocates for effective communication in healthcare settings. Suggests training for recognising medical error consequences. Reviews historical context of patient safety initiatives. Addresses the role of leadership in patient safety and the need for continuous assessment of safety programmes.
Kaldjian et al. (2007, USA)	To examine physicians' and trainees' practices and attitudes regarding error disclosure to patients	Cross-Sectional Survey	538 Participants - faculty physicians, resident physicians, and medical students.	Most would disclose hypothetical errors (97% minor, 93% major), but fewer reported actual disclosures (41% minor, 5% major). Some admitted withholding disclosure (19% minor, 4% major). Faculty were more likely to disclose and less concerned about consequences. Attitude valuing ethical beliefs strongly influenced willingness to disclose.
Kiegaldie et al. (2016, Australia)	To explore junior clinicians' experiences, attitudes, and preparedness for managing medical errors and open disclosure. To identify perceived barriers to error disclosure.	Cross-Sectional Survey	48 medical interns and 52 graduate nurses	59% had experienced near misses, 34% minor errors, and 7% serious errors; few had disclosed. Most supported disclosing serious (100%) and minor (84%) errors, but views on near misses were mixed. Interns expressed more legal concerns; nurses more likely to escalate and report. Observation of senior staff disclosing was rare; 89% wanted more open disclosure education. Limited recognition of shared responsibility; need for interprofessional education highlighted.

Kim and Kim (2024, South Korea)	To evaluate the impact of a PSI disclosure education programme on nursing students' knowledge, perceptions, attitudes, and self-efficacy related to incident disclosure	Quasi-experimental, non-equivalent pretest–posttest design.	50 fourth-year undergraduate nursing students	Significantly improved nursing students' knowledge ($p < .001$), perception ($p = .031$), and self-efficacy ($p < .001$) regarding PSI, though attitudes remained unchanged due to high baseline scores. The findings support integrating structured disclosure training into nursing curricula to strengthen communication skills in clinical practice.
Kim and Lee (2020, South Korea)	To explore nurses' lived experiences with the disclosure of PSI	Qualitative Study	14 nurses (9 clinical nurses and 5 head nurses)	Nurses faced emotional distress, fear of blame, and lack of support during patient safety incident (PSI) disclosures. Mixed patient reactions ranged from anger to understanding, impacting disclosure confidence. Organisational and legal barriers hindered timely and transparent disclosure. Nurses called for structured protocols, legal protections, interprofessional collaboration, and better staffing. Greater patient involvement and a supportive safety culture were viewed as essential for improving disclosure practices.
Kim, C. et al. (2017, South Korea)	To assess the effectiveness of an education programme on medical error disclosure for medical interns and students.	Education programme development and evaluation	6 medical interns and 79 fourth-year medical students	Participants showed confidence in factual explanations but struggled to discuss error prevention. Lack of prior training and formal curriculum limited performance and confidence. Disclosure was more likely for severe errors; minor errors were often withheld due to ethical uncertainty and fear of litigation. Institutional culture and legal concerns were major barriers. The education programme improved confidence but highlighted the need for broader, structured training across scenarios and roles.
Kim, C. W. et al. (2017, USA)	To assess pharmacists' attitudes and behaviours regarding medication errors and their disclosure and compare perspectives between community and hospital pharmacists.	Cross-Sectional Survey (A pilot study)	422 pharmacists	Most pharmacists agreed that errors are inevitable and should be disclosed. Community pharmacists emphasised emotional support and personal responsibility in disclosure. Hospital pharmacists prioritised full transparency and rejected positive presentation of errors.
Kim et al. (2022, South Korea)	To examine Korean physicians' perceptions of disclosing patient safety incidents (DPSI) using hypothetical clinical scenarios	Cross-sectional Survey	910 physicians using 8 clinical vignettes	Physicians viewed DPSI positively (6.2 vs 5.4), linking it to higher trust and reduced litigation risk, particularly in minor or ambiguous cases. While trust improved, compensation perceptions remained unchanged. Despite supportive evidence, scepticism about legal protection persists, and DPSI remains underused in Korea due to cultural and systemic barriers.

Kolaitis et al. (2015, USA)	To assess paediatricians' attitudes toward disclosing medical errors to both parents and paediatric patients.	Cross-sectional observational study	1200 members of the American Academy of Paediatrics.	98% supported disclosing errors to parents, but only 57% to paediatric patients ($p < .0001$). Disclosure was generally supported for children aged 12+ (mean: 12.15 years), not under 10 (mean: 10.25 years). 72% favoured joint disclosure decisions by physicians and parents; 88% preferred doing so with parents present. Attitudes were significantly influenced by patient age (OR: 18.65) and harm irreversibility (OR: 2.90), not physician demographics.
Koller et al. (2016, Canada)	To synthesise current research and policy on the disclosure of medical errors in paediatric settings	Systematic Review	Children, parents, paediatricians	Parents want to be informed, often before involving their child. Physicians fear litigation and lack support or training to disclose errors. Disclosure and reporting are often treated separately, despite being linked. Canadian and US policies lack paediatric-specific guidelines. UK uses age 16 for disclosure; Australia favours collaborative, case-by-case decisions. Australian policy best reflects current evidence. North American guidelines need reform to support child- and family-centred disclosure.
Krumwiede et al. (2019, USA)	Assess effectiveness of interprofessional team-based disclosure of medical error educational activity.	Educational activity, simulation	458 students across three institutions	Significant knowledge improvement on disclosure approach and apology timing ($p < .001$). Strong correlation between student and SFM ratings of team disclosure performance ($\rho = 0.54$, $p < .001$). Over 80% of students felt the activity was valuable and improved their confidence in disclosing errors.
Lane and Roberts (2020, Australia)	To explore how final-year medical students experience learning about open disclosure (OD) using high-fidelity simulation in the context of medication error.	Qualitative, using hermeneutic phenomenology with an interpretivist theoretical perspective	Participants were eight final-year medical students. Data was collected through focus groups	The study found that students learn through negotiation, challenges, and goal achievement, emphasising the importance of psychological safety, emotional arousal, and diverse approaches in open disclosure.

Lane and Roberts (2020, Australia)	To explore the ways in which medical interns perceive the relationship between medication error and their experience of open disclosure.	Hermeneutic phenomenology	Semi-structured face-to-face interviews were conducted with 12 medical interns.	The study reveals that interns rationalise their medical errors, accept them as part of healthcare culture, and vary their apologies based on who made the mistake. A framework for open disclosure after medication errors is recommended.
Langer et al. (2016, Germany)	To assess the feasibility and impact of involving patients and families as co-educators in clinician training on medical error disclosure and prevention.	Mixed-methods research study	Clinicians, patients/families	Patients and families were concerned about medical jargon and potential defensive behaviour from clinicians. Clinicians valued receiving real-time feedback, developing improved communication strategies, and gaining patient perspectives. Appreciated clinician accountability and gained emotional insight into how errors affect HCPs.
Leape et al. (2009, USA)	Discusses core concepts critical for advancing healthcare safety	Discussion Paper		Progress in patient safety remains slow. Cultural and institutional resistance, particularly hierarchical structures and poor teamwork obstruct transparency and accountability. To drive meaningful reform, five core principles proposed: transparency, care integration, patient and consumer engagement, restoration of joy and meaning in work, and medical education reform.
Lee and Kim (2020, South Korea)	To investigate the relationship between nursing students' moral sensitivity, attitudes about patient safety, and their perceptions of disclosure of patient safety incidents in Korea.	Cross-sectional observational study	407 nursing students across four nursing universities	Nursing students' perceptions of open disclosure improved with enhanced attitudes about patient safety, which were more impactful than moral sensitivity. Only 25% were familiar with open disclosure, but most had a positive view, with greater satisfaction in their major linked to more favourable perceptions.
Madigosky et al. (2006, USA)	Examine the effects of a patient safety and medical fallibility curriculum on medical students' knowledge, skills, and attitudes.	Longitudinal	92 Second-year medical students	Immediate improvements in knowledge and attitudes were observed post-curriculum; however, only 7 out of 13 gains were sustained after one year. Some attitude shifts regressed or changed in an undesired direction. At one year, 76% had observed an error; 71% disclosed to peers, 56% to residents, and 46% to faculty, but only 7% used the formal error reporting system. Over half reported applying lessons from the curriculum, but behaviour did not consistently reflect long-term knowledge or attitudinal change.

Mahmudah et al. (2022, South Korea)	The study examined the responses to PSIs during cancer screening, including open disclosure practices.	Cross-sectional survey	620 residents	Prevalence: 1.8% ($n = 11$) of participants and 1.8% ($n = 11$) of family members experienced patient safety incidents (PSIs) during cancer screening. Most frequent incident type: Procedure-related errors. No significant predictors of PSI identified via multivariable logistic regression. Significant link between perceived medical error and level of harm ($p < .05$). PSI disclosure significantly associated with reported experiences ($p < .001$).
Manser & Staender (2005, USA)	Examine patient expectations after adverse events. Review current open disclosure practices and barriers. Identify organisational strategies to support healthcare providers post-incident	Review	Healthcare professionals, patients, and family members	Patient expectations post-adverse events include clear explanations, sincere apologies, remedial actions, and assurances of prevention. Disclosure remains uncommon, despite broad recognition of its ethical necessity. Key barriers include fear of litigation, lack of training, emotional discomfort, a culture of infallibility, and weak learning systems. Organisational commitment is crucial to ensure structured disclosure frameworks, provider support, and quality assurance. Support for healthcare providers must address emotional impact and include systems for debriefing, analysis, and learning from incidents.
Mansour et al. (2020, Jordan)	To assess physicians' knowledge, attitudes, and practices (KAP) regarding medical error disclosure and evaluate the impact of formal training.	Research study	88 physicians (55 trained, 33 untrained)	87% would disclose major harm, fewer for minor/no harm. Trained physicians had better knowledge of relevant legal provisions (67% vs 46%) and were more influenced by them in disclosure decisions (62% vs 36%). Training positively impacted KAP and supported transparency in healthcare.
Mazan et al. (2020, USA)	To examine the attitudes and behaviours of American pharmacists regarding medication errors and their disclosure to patients.	Survey Questionnaire	252 respondents (12.6% response rate)	Pharmacists face challenges in disclosing medication errors, with only 58% informing patients despite 95.5% encountering errors and 77.6% having reporting policies. Improvements are needed in disclosure practices.
Mazor et al. (2004, USA)	To examine how error type, harm severity, and level of disclosure influence patient responses to medical errors	Survey	1,500 adult health plan members in New England	Full disclosure increased patient satisfaction, trust, and positive emotional reactions. It reduced the likelihood of changing physicians and seeking legal advice in only one scenario. Most patients (98.8%) wanted to be told about errors; 83% supported financial compensation if harmed. Legal advice was still sought in many cases, even with full disclosure. Responses varied based on error type and harm severity.

Mazor et al. (2006, USA)	To examine how disclosure, prior physician-patient relationship, cost waivers, and clinical outcome severity influence responses to medical errors	Randomised experiment using video vignettes	407 health plan members	Nondisclosure led to higher likelihood of switching doctors, reduced trust and satisfaction. Increased intent to seek legal advice and worsened emotional responses (notably in missed allergy cases). Cost waivers and prior positive relationships had no significant effect on patient responses.
McFadden et al. (2006, USA)	To examine the importance of seven critical strategies for reducing hospital errors. and barriers to the implementation of these strategies	Survey methodology	Healthcare Quality Directors	Results indicate that a considerable gap exists between current hospital practices and the perceived importance of various approaches to improving patient safety. Results of our regression analysis reveal that internal organisational barriers are associated with a larger gap between perceived importance and actual implementation. Moreover, the regression analysis also reveals that smaller gaps are associated with better error outcomes such as reduction in the frequency and severity of errors. The findings provide specific directions for enhancing patient safety programmes at hospitals in the future.
McLennan (2018, Switzerland)	Examine the role of law as a barrier to medical error communication and propose alternatives.	Review	HCPs though it primarily focuses on physicians and anaesthesiologists	The paper argues that the legal environment has a limited impact on physicians' practices related to error communication, with hospital culture, policies, and training being more significant determinants. It highlights the need for improved education on error disclosure, noting the considerable emotional impact of medical errors on clinicians.
McLennan and Moore (2019, New Zealand)	To review and compare the scope and content of open disclosure policies across New Zealand District Health Boards (DHBs) and establish a baseline for future research.	Content Analysis	19 policies from 20 New Zealand District Health Boards in June 2016	New Zealand DHB open disclosure policies are inconsistent in terminology and guidance, with minimal training for staff and inadequate focus on patient-centred practices. Cultural sensitivity is lacking, particularly in addressing Māori and Pacific community needs. Policies emphasize individual incidents over large-scale events, leading to ineffective frameworks and support.

McLennan and Truog (2013, Australia)	Review of Apology law in the Australian healthcare context.	Discussion Paper	Australian Open Disclosure Policy	Disclosure gap persists despite ethical norms and national frameworks. Fear of litigation is overestimated and not well-supported by legal precedent. Apology laws protect regret, not fault, offering limited reassurance. Core barriers include shame, blame culture, and poor communication training. Legal reform alone is insufficient; cultural and educational change is critical. Sincere apologies help to empathise, not legal shielding, drives better outcomes. Clinicians need support: reporting encouragement, disclosure training, and emotional backup.
McLennan et al. (2012, Germany)	This article examines Germany's current approach to open disclosure and regulation	Discussion Paper	German Open Disclosure Policy	Open disclosure remains underdeveloped in Germany and is not a central component of national health policy. There are few explicit measures supporting or mandating disclosure practices. While some regulatory structures are conducive, a systematic framework for open disclosure is still lacking. Germany contrasts sharply with English-speaking countries like the US, UK, Canada, and Australia, where open disclosure is more formally implemented. Policy, legal, and educational reforms are needed to embed open disclosure practices within German healthcare.
McLennan et al. (2013, Switzerland)	To evaluate implementing internal standards for disclosing harmful medical errors to patients and families.	Cross-Sectional Survey	205 hospitals in Switzerland	62% of hospitals had either implemented or planned to implement a disclosure standard within 12 months. University and acute care hospitals (75%) were more likely to have such policies than psychiatric, rehabilitation, and specialty clinics (47%). There is promising institutional support in many hospitals, a key factor in fostering open disclosure culture.
McLennan et al. (2015, Switzerland)	To explore anaesthesiologists' attitudes, experiences and willingness to disclose and report medical errors.	Cross-Sectional Survey	281 anaesthesiologists across five university hospital	While all supported disclosing serious errors, fewer endorsed disclosing minor errors (77%) or near misses (19%). Only 12% had received formal training, though 93% wanted it. Willingness to report errors was higher when physicians believed their hospital would act on the reports (OR: 2.10). Significant variations across hospitals highlighted the influence of local culture. Strengthening training and feedback systems may improve communication and patient safety.

Mendonca and Schmidt (2020, Brazil)	To explore Brazilian physicians' personal experiences with medical errors and their consequences on professional practice.	Qualitative Study	10 physicians	Excessive workload and poor communication increase the likelihood of medical errors. Medical errors have a negative emotional impact, including stress and guilt. Physicians rarely seek support after making an error. There is resistance to change or adopting new practices post-error. Error disclosure is uncommon due to lack of institutional guidance. There is a need for structured training and organisational culture change to promote open disclosure and improve practice.
Mira et al. (2017, Spain)	To synthesise insights on adverse events and propose targeted recommendations to support patients, clinicians, and organisations where open disclosure and apology laws are lacking.	Systematic Review, Qualitative	Literature Review: 14 studies (2000–2015) and 16 institutional websites on open disclosure and second/third victim phenomena. Focus Groups: 4 sessions involving 27 healthcare professionals.	Adverse events (AEs) harm not only patients but also healthcare professionals ("second victims") and institutions. Most systems lack structured responses or legal frameworks like apology laws. Recommendations span 8 areas: safety policy, patient care, error prevention, staff support, resource activation, patient/family communication, incident analysis, and reputation protection. Proactive, system-wide strategies are essential to mitigate AE consequences and foster a culture of learning and transparency.
Mullally and Corby (2022, Ireland)	Discuss the process to openly disclose to adults with significant intellectual disabilities and communication difficulties.	Practice Innovation	Service for people with intellectual disabilities	An apology pathway was developed by a multidisciplinary team. A tailored; rights-based process enabled meaningful apologies using personalised communication aids. Disclosure was delivered to service users first, then families. Emotional and practical supports were provided post-disclosure for both users and staff. A resource toolkit was created to guide future disclosures. Highlights urgent need for inclusive open disclosure practices across disability services.
NCPDNM. (2010, Ireland)	To provide an update on nursing and midwifery interventions, overview the National Council's work since 2006, and prompt reflection on the complex healthcare environment from a nursing and midwifery perspective, while focusing on ensuring safe, high-quality patient care.	Discussion Paper	Nurses and Midwives	The discussion paper emphasises the importance of evidence-based practice for patient safety and quality care, highlighting the need for nurses and midwives to develop competencies in research utilisation and evidence-based practice, particularly for clinical outcomes. It stresses that successful implementation requires policy integration at all organisational levels with adequate resources and incentives and calls for nurse and midwife leaders to work strategically across organisations, sectors and disciplinary boundaries.

O'Connor et al. (2010, USA/Ireland)	Review literature on disclosure of adverse events in healthcare and related perspectives.	Review	Healthcare professionals, patients, families, Various stakeholders involved in the handling of adverse events	Disclosure practices can be enhanced by reinforcing policies and providing support to healthcare professionals in disclosing adverse events. Greater transparency and honesty after such events can strengthen the relationship between providers and patients.
Ock et al. (2016, South Korea)	Explore and compare perceptions about open disclosure among different participants, including members of the general public and physicians, using in-depth interviews and focus group discussions.	Qualitative interviews	16 physicians, 18 general public	Both physicians and the general public in Korea recognise importance of open disclosure, particularly for significant medical errors causing major harm emphasises the need for clear guidelines and training to support physicians in effectively conducting open disclosures
Ock et al. (2020, South Korea)	To examine the attitudes of the general public toward disclosure of PSIs	Survey questions, Face-to-face interviews using paper-based questionnaires	700 participants	Most participants highlighted the importance of disclosing major errors (99.9%) and near misses (93.3%). The general public in Korea holds overwhelmingly positive attitudes toward the disclosure of patient safety incidents. Introduction of an apology law alongside disclosure policy, which could facilitate the disclosure process by allowing physicians to apologise without fear of legal repercussions.
Passini et al. (2023, France)	1. Describe professionals' attitudes towards disclosing errors. 2. Identify motivations and risk factors for non-disclosure. 3. Explore perceptions of parents' reactions to error disclosure.	Multicentre, prospective, observational study	Patients, healthcare professionals	In the specific setting of the Study on Preventing Adverse Events in Neonates (SEPREEN) randomised controlled trial involving NICUs, staff largely refrained from disclosing errors to parents, particularly when the infant did not experience moderate consequences.
Perez et al. (2014, USA)	Discusses physician barriers to transparency. The effect of empathy in provider-patient relationships, particularly in communication around adverse events. Examine the implications of poor communication and the role of apologies in mitigating lawsuits.	Review	Health care professionals	The intrapersonal, interpersonal, institutional and societal barriers were identified. Creating supportive learning environments and private discussion forums for physicians can foster emotional resilience and professional growth following medical errors. Incremental changes should be prioritised. Simplifying transparency policies and replacing complex reporting mechanisms with clear, user-friendly guidelines can encourage participation and trust.

Pfrimmer et al. (2010, USA)	Explore the role of nurses in disclosure and apology.	opinion		Emphasises the crucial role of nurses in promoting effective communication within healthcare teams. Highlights nurse involvement in the disclosure process is essential for preserving public trust in the nursing profession's honesty and integrity.
Pillinger (2016, Ireland)	The primary aim of the study was to evaluate the implementation of an open disclosure pilot programme in health and social care settings. This programme sought to foster a culture of openness regarding adverse events, thereby enhancing patient safety and accountability within healthcare organisations.	Evaluation	Staff members involved in the National Open Disclosure Pilot, Clinical Nurse Manager, Family representatives	Both pilot sites successfully implemented open disclosure, benefiting staff and patients. Key insights included the necessity of timely responses and integrating open disclosure into governance. Challenges such as staffing shortages, time constraints, and adverse media impact staff morale. Clear accountability and support during patient safety incidents (PSIs) are essential, along with a focus on ethical responsibilities.
Piper and Iedema (2011, Australia)	Examine the development of incident disclosure research, policy, and legal reforms.	Review		Incident disclosure policies have become more patient-centred, but a gap persists between required disclosures and 30% actually disclosed. Open and honest communication and innovative legal reforms are essential for enhancing safety culture.
Popkess et al. (2017, USA)	Examine the effectiveness of interprofessional teams in a simulated scenario and observe reactions of standardised family members.	Simulation Study	202 students from dental (49), nursing (74) and pharmacy students (79)	The simulation improved knowledge and attitudes toward error disclosure across health disciplines. Nursing students particularly valued the real-life practice and understanding of professional roles.
Pyo et al. (2020, South Korea)	Explore Korean physicians' perceptions regarding the disclosure of patient safety incidents (DPSI) and investigate when DPSI is needed, its effects, barriers, methods for facilitating DPSI, and comparisons with the general public's views.	Cross-sectional Study	910 Physicians	Most physicians (94.9%) support disclosing serious errors, but only 39.8% agree on near-miss errors. There's strong support for DPSI guidelines (91.2%), but a notable perception gap exists between physicians and the public.

Renkema et al. (2014, Netherlands)	Provide insight into physicians' emotions and thoughts towards malpractice litigation and its relation to disclosure behaviour.	Interview and questionnaire-based study	Dutch physicians (31 in total)	Variation in physicians' attitudes towards malpractice litigation with two distinct clusters: a positive attitude towards disclosure and another a negative attitude that often leads to reluctance in disclosing incidents. Decision to disclose shaped by complex interplay of emotions and thoughts regarding litigation, rather than just fear of litigation. Authors recommend coaching system to facilitate discussions about differing attitudes and to support open disclosure practices.
Renkema (2017, Netherlands)	To explore how the context of public and professional accountability influences job-crafting behaviours among physicians.	Qualitative research design	31 physicians working in eight hospitals in the Netherlands.	The study found that the accountability context significantly influences job-crafting behaviours. Physicians reported that awareness of their accountability led them to proactively modify their tasks and interactions to optimise their work environment. The research highlighted that different work stages (assessment, remedial action, and after-service) could trigger distinct job-crafting behaviours, suggesting that these stages should be considered in future research on job crafting. Participants provided valuable insights into the relationship between accountability and job-crafting behaviours. This comprehensive approach sheds light on the complex dynamics of job crafting within the framework of professional accountability, offering implications for both practice and policy.
Robertson and Long (2018, USA)	Evaluate and discuss the adverse emotional effects of unintentional medical errors on medical personnel and explore reasons behind these effects, along with potential solutions for mitigating them.	Discussion Paper	Assumed healthcare providers who have been involved in unintentional medical errors	Medical errors significantly impact the mental health of healthcare providers, leading to feelings of guilt, anxiety, and depression, worsened by a culture of perfectionism and lack of support. Solutions such as counselling, a non-punitive learning environment, and a focus on systemic issues rather than individual blame are essential for promoting provider wellness.
Romano et al. (2022, Brazil)	The main goal of this research was to understand, describe, and discuss the perception of disclosure of adverse events in a population of health professionals from a middle-income country in Latin America, specifically Brazil	Descriptive study	995 Brazilian healthcare professionals.	Most respondents viewed disclosure as ethical (77.9% support), and while 67.1% believed it affects perception, only 8.3% thought it would reduce trust. Legal risk concerns increased with severe outcomes. Despite 80.1% backing disclosure policies, tensions existed between ethical beliefs and legal worries.

Ruroede (2001, USA)	Assess the attitudes of risk management professionals towards disclosure of medical mistakes.	Survey	Health care risk management professionals.	Risk management professionals generally favoured full disclosure of medical mistakes and believed this should occur regardless of injury or liability risk. The primary barriers to disclosure identified were fear of litigation, lack of communication skills, and concerns from physicians.
Saleh (2023, Ireland & Bahrain)	To establish if non-disclosure of PSIs is a concerning issue in Ireland and Bahrain, whether the regulatory and legislative approaches introduced to address non-disclosure of PSIs are appropriate, and if these measures have been achieved or have the potential to achieve their expected goals.	Qualitative and Comparative literature review.	Literature from 2000 and 2022 searched, analysed and compared to the findings from Ireland and Bahrain	The study compares open disclosure PSIs in Ireland and Bahrain. Ireland has implemented measures and legislation following high-profile PSIs, while Bahrain has guidelines but lacks specific open disclosure laws and extensive research. Both countries recognise the need for open disclosure, but Ireland faces greater public pressure for transparency. Significant research gaps, especially in Bahrain, hinder effective assessment of open disclosure practices, which are also influenced by cultural factors. Overall, both countries have made progress, but further research is needed to enhance open disclosure.
Sattar et al. (2020, UK)	To synthesise the literature on the views and experiences of patients/family members and HCPs on the disclosure of adverse events.	Systematic review of qualitative studies	15 studies with a total of 1205 HCPs included doctors, nurses, surgeons, paediatric residents, anaesthesiologists.	Patients and HCPs have differing views on disclosure practices, with barriers like blame culture and inadequate training. Patients want accountability and sincere apologies. Effective disclosure should ensure clarity on legal aspects, provide HCP training, and model best practices.
Scallly (2018, Ireland)	Examine individual cases of cervical cancer in detail through the Cervical Check Audit. Aim to facilitate learning for continuous improvement of the cervical cancer screening programme.	Letter to Editor	Healthcare Professionals	The policy and practice of open disclosure were found to be "deeply contradictory and unsatisfactory." Clinicians had discretion not to disclose information, and this non-disclosure caused intense anger and distress among affected women and families, particularly regarding the manner in which they were eventually informed. Governance Gaps: Serious deficiencies were apparent in the governance structures of screening services, specifically within CervicalCheck. There was a demonstrable deficit of clear governance and reporting lines between CervicalCheck, the National Screening Service, and the Health Service Executive (HSE), leading to confusion and multiplied risks. The report also noted substantial weaknesses or absences of proper professional advisory structures.

Shekar and Brennan (2023, UK)	To explore the law in relevance with Duty of Candour (DoC) in the United Kingdom, along with its limitations and controversies.	Professional Development		The Duty of Candour (DoC) presents legal challenges for clinicians, with mixed responses regarding its implications. Most medical errors arise from human and systemic factors, underscoring the need for cultural change in healthcare. Regulatory bodies like the GMC are enhancing focus on human factors in assessments and training.
Sorensen et al. (2008, Australia)	To understand the views of doctors, nurses, allied HCPs and health managers regarding the open disclosure of medical errors.	Qualitative study	131 HCPs who had participated in open disclosure meetings.	HCPs have a positive attitude towards open disclosure are applying its principles to patient-clinician communication. Issues like hiding errors, wavering commitment and systemic issues hinder full implementation. A gap exists between policy objectives and actual implementation, limiting benefits for HCPs. Health services need to develop 'organising capabilities' to effectively implement open disclosure, including identifying and addressing barriers, fostering competencies, and adapting policies to local conditions.
Sorokin et al. (2005, USA)	To assess the attitudes of physicians-in-training (medical students and residents) about patient safety and adverse events	Survey Questionnaire	321 participants (93 fourth-year medical students and 228 residents)	Over 80% of trainees strongly believe they have a responsibility to disclose adverse events to patients. Upper-year trainees are more comfortable discussing these events with patients than medical students and lower-level residents. Additionally, 88% of trainees agree that improved teamwork with nurses could help reduce the occurrence of adverse events.
Studdert et al. (2010, Australia)	To assess the attitudes of HCPs engaged in open disclosure towards the legal risks and protections surrounding this activity.	Cross-Sectional Survey	51 experienced open disclosure practitioners	Most participants identified fears of medicolegal risks (45/51) and inadequate training (43/51) as key barriers. Many (30/51) felt qualified privilege laws had little effect on HCPs' willingness to engage in open disclosure, and views on apology laws varied. Many were unaware of relevant apology laws.
Wagner et al. (2013, Canada)	The study explores nurses' perceptions of nursing error communication in long-term care, focusing on barriers and facilitators.	Cross-Sectional, Descriptive	289 Nurses (Long-Term Care)	Nurses find it hard to define errors and often prioritise communication by severity. Barriers include fear of retaliation, unclear policies, and heavy workloads. Facilitators for communication include accountability, supportive management, and teamwork.

Waller et al. (2020, Australia)	To assess cancer nurses' perceptions of patient-reported health care error rates, adherence to best-practice disclosure standards, and barriers to error disclosure in oncology settings	Cross-sectional survey	97 nurses from two cohorts, specifically focusing on those working in medical oncology and haematology	Nurses perceived a significant discrepancy in perceptions of error reporting accuracy. Additionally, barriers to error disclosure were reporting burden, fear of career damage, and lack of institutional support.
Walshe & Shortell (2004, UK, USA, Australia, New Zealand, Canada, Netherlands)	Explore how health care systems in six countries handle major failures in health care services and understand how these failures are identified, investigated, managed, and learned.	Document analysis and interviews	Key informants from six countries who had leading roles in patient safety, policy making or research.	Major failures are the product of the distinctive culture of health care organisations, professions, and systems characterised by secrecy, deference to authority, defensiveness, and protectionism. Many key stakeholders often know about these problems but do nothing. Organisations that experience these failures lack quality review, incident reporting and performance management.
Warehall (2023, Ireland)	The duty of candour: open disclosure of medical errors.	Discussion Paper		Medical errors are the third leading cause of death in the US and impact 12.2% of patients in Ireland, with only 1.9% of adverse events reported. A punitive culture discourages disclosure, highlighting the need for systemic change and mandatory training on open disclosure.
Watson et al. (2015, Australia)	To investigate how HCPs and patients communicate in open disclosure conversations using communication accommodation theory (CAT).	Exploratory Study	80 First-year psychology students	Effective open disclosure involves emotional expression, interpretability, and interpersonal control. It also showed that successful conversations have physicians using patients' language, with topic repetition distinguishing effective interactions.
White et al. (2017, USA)	Implement error disclosure coaching model and evaluate its effectiveness.	Case study	251 trainees (physicians, medical directors, nurse managers, patient safety officers pharmacist managers and the risk management staff)	The intervention found that while two-thirds of clinical areas disclosed errors, lacked confidence in their coaching skills after several months. Respondents felt that few physicians (10.6%) or nurses (17.6%) were adequately trained in disclosure skills. A single training is unlikely to lead to mastery and that follow-up interventions should focus primarily on skills, rather than knowledge and attitudes.

White et al. (2008, USA)	Investigate trainees' attitudes and experiences with medical errors and disclosure to patients.	Cross-Sectional Survey	889 participants including medical students, interns, and residents	Most medical trainees (74%) see medical errors as serious. Although nearly all (99%) believe they should be disclosed to patients, 87% cite barriers like patient understanding and potential lawsuits. Only 33% have training in error disclosure, with involvement in errors rising with training level.
White et al. (2011, USA)	To determine how medical trainees would disclose medical errors to patients and its educational implications.	Cross-Sectional Survey	999 US trainees, including 629 medical students, 159 interns and 211 residents in internal medicine.	Only 43% definitely intending to disclose errors and 50% explicitly stating an error occurred. More experienced trainees were less likely to apologise, preferring to disclose obvious errors over subtle ones.
WHO (2011, Switzerland)	To bring new knowledge into daily practice through measurements, improve students' study habits, and enhance success rates on examinations.	Educational improvement research or evaluation studies	Health professional students	A non-punitive safety culture is essential to deal with errors, with reporting mechanisms that help prevent and correct system failures and human errors instead of seeking individual or organisational culpability
WHO (2012, Switzerland)	Provides guidelines for discussing sensitive health issues with patients, understanding their perspectives, and proper information sharing.	Guidance paper	Patients, healthcare providers including Garcia-Caban et al.	Presents how HCPs can prevent and learn from PSIs through Open disclosure and SEGUE framework (Set the stage, Elicit information, Give information, Understand the patient's perspective, End the encounter)
Wolk et al. (2014, USA)	To investigate the rationale for and obstacles to disclosing unintended patient harm. To identify factors that can facilitate better disclosure practices in healthcare settings. To assess stakeholder perspectives and quantify the disparity between expected and observed disclosures in healthcare settings.	Root Cause Analyses (RCAs) versus institutional disclosures and Survey Questionnaires	41 individuals with leadership roles in the institutional disclosure process at the 7 acute care facilities including facility directors; chiefs of staff;	A significant gap between adverse events (45 RCAs) and actual institutional disclosures (13) in 7 VHA hospitals over 2 years, despite positive perceptions of the disclosure policy. Apology, when offered, must be appropriate to the values, culture, and expectation for the patient for physician– patient communication. The study recommended disclosure training for HCPs, managers, and a systems-based approach to integrate disclosure activities across quality, risk management, and patient safety domains.

Wong et al. (2016, Malaysia)	To ascertain the views of medical school faculty on various aspects related to medical errors, patient communication, and reporting of adverse events.	Survey Research	Nurse executives; quality, risk, patient safety managers and regional counsels	Faculty members' perception of medical errors based on the clarity of circumstance rather than complications. The severity of the cases also influenced their views on responsibility and disclosure. They attributed more responsibility to senior clinicians and favoured stronger actions like compensation and disciplinary measures.
Wong et al. (2017, Canada).	To measure the disclosure skills of internal medicine (IM), paediatrics, and orthopaedic surgery residents. To explore resident perceptions of formal versus informal training in preparing them for disclosure in real-world practice	Mixed-methods design	86 eligible postgraduate year (PGY) 2 IM residents, along with PGY-2 and PGY-3 Paediatrics residents, and PGY-3 Orthopaedic surgery residents.	Residents in IM, Paediatrics, and orthopaedic surgery showed similar error disclosure skills, rated between 4.1 and 4.4 out of 5. Formal training alone was not enough; role modelling and a strong safety culture were key. The clinical learning environment is vital for enhancing patient safety education. A balanced approach combining structured and experiential learning is recommended.
Wu et al. (2013, USA)	To review the state of adverse event disclosure policies and practices in the United States and Canada, examine barriers to full disclosure, and propose solutions for improvement.	Review approach	Discusses the perspectives of thought leaders, policymakers, and HCPs in both the US and Canada	There is a gap between healthcare providers' support for disclosing adverse events and the actual practice. Barriers include fear of consequences, emotional distress, negative attitudes, and lack of support. The prevalence of second victims is estimated at 10-50%. A comprehensive approach is needed to enhance disclosure practices at all system levels.
Wu (2000, USA)	To address the cultural challenges within healthcare regarding the acknowledgment and management of mistakes and second victim support	Editorial	Healthcare Professionals	Acknowledging the emotional impact of mistakes is essential in healthcare. Open discussions about errors foster recovery, education, and accountability. Transparency with patients is an ethical obligation that builds trust. The paper calls for a cultural shift to enhance patient safety and professional accountability through dialogue.



Services & Support
Building a Better Health Service
National Quality Improvement Team



NATIONAL
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PROGRAMME



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The University of Dublin

Open Disclosure of Patient Safety Incidents from a Multidisciplinary Perspective





HCP's
Needed

To participate, scan
the QR Code below:



Research Study: TWO Phases

PHASE 1: Survey

If you are a Registered Health Care Professional (HCP), working in [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] and agree to volunteer, please complete an anonymous online **OR** paper-based survey questionnaire.

PHASE 2: Interview

If you wish to speak in detail about your views on Open Disclosure practices in an interview and have completed the survey, please contact the researcher

Ms. Veena Lasrado at lasradov@tcd.ie or [REDACTED]



Donations to charity on your behalf:

Select the charity of your choice; the researcher will donate €1.00 on your behalf.

Please read Participant Information Leaflet (PIL) accompanying the survey sent to your email address by your communication manager. Your participation is entirely voluntary. If you choose not to participate, it will not affect your career, role, or position. If you wish to complete paper-based questionnaire, please contact Quality & Safety Department.

For more information, please contact:

Prof Anne-Marie Brady at - abrady4@tcd.ie
Ms. Veena Lasrado at lasradov@tcd.ie or [REDACTED]

Appendix 4 Invitation Letter to Prospective Participant



**School of Nursing and Midwifery
Trinity College Dublin
24 D'Olier Street Dublin**

May 2021

Dear Clinician,

I am Veena Janith Lasrado, PhD student in the School of Nursing Midwifery, Trinity College Dublin. This study is undertaken as a part of my PhD study (part-time) under the guidance and supervision of Prof Anne-Marie Brady. This study will explore open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice. I have been in contact with (CEO/ Hospital Manager) who has approved the research study at (Name of the hospital) hospital. The Ethics Committee at the School of Nursing and Midwifery, Trinity College Dublin and hospital have approved this research study (insert Ethics reference number).

As Health Care Professionals (HCPs), we are becoming more aware of the importance of 'Open Disclosure' in our healthcare system in recent years. In Ireland, little is known about HCPs knowledge, attitude and perception towards disclosure of patient safety incidents and its impact on healthcare practice. As a researcher and a colleague, I would like to identify barriers and facilitators in engaging in open disclosure practice and training. I am also hoping to determine strategies to overcome these barriers and improve open disclosure practice. Moreover, as a researcher, I would like to voice your views and represent your opinions and suggestions honestly and accurately regarding the open disclosure of patient safety incidents.

Please find attached the Participant Information Leaflet (PIL). After reading the information leaflet, please complete the electronic survey questionnaire using this link (Survey link) or return the hard copy of the survey questionnaire if you choose to participate in the study. The completion of the questionnaire in its entirety is of utmost importance as it influences the outcome of the study.

As a component of this study, I would like to invite you to participate in an individual interview. If you wish to participate, please contact the researcher by email or telephone or text message. Your participation is voluntary. If you do choose to take part, you would be free to leave the study at any time without giving a reason.

If you have any questions or queries, please do not hesitate to contact me by telephone or email. Thank you for your time and attention in considering this invitation letter.

Best wishes,

Veena Janith Lasrado
Email: lasradov@tcd.ie
Mobile No: [REDACTED]

Participant Information Leaflet

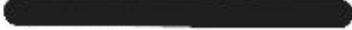


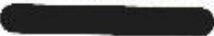
This information leaflet compiled to provide you with study information about this research before you consent to participate.

Name of the study: Exploring open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice: a mixed-method study

Site RCSI Hospitals includes Beaumont hospital, Connolly hospital, Our Lady of Lourdes Hospital Drogheda, Louth County hospital Dundalk, Cavan General Hospital, Monaghan hospital and Rotunda hospital Dublin

Principal Investigator (s)
(insert names, titles and contact details)
Prof Anne-Marie Brady
Chair of Nursing & Chronic Illness
School of Nursing & Midwifery
Trinity College Dublin, the University of Dublin
24 D'Olier Street, Dublin 2, Ireland.


abrady4@tcd.ie
<https://nursing-midwifery.tcd.ie/staff/abrady4/>
www.nursing-midwifery.tcd.ie/

Ms Veena Janith Lasrado
PhD Student & Nurse Tutor at RCNME, Tullamore, Co. Offaly
Email: lasradov@tcd.ie


Study Organiser/ Sponsor
(if applicable) HSE, NMPDU Dublin North and Mid-Leinster (partially funded)

Data Controllers Trinity College Dublin

Data Protection Officer 
Trinity College Dublin, Dublin 2

Data Protection Officer (Hospital)

Introduction:

My name is Veena Janith Lasrado. I am a registered PhD candidate at Trinity College Dublin under the supervision of Prof Anne-Marie Brady. I also work as a Nurse Tutor at the Regional Centre for Nursing and Midwifery Education (RCNME), HSE, Ireland.

You have been invited to participate in a research study at (Hospital site) because you are employed in the RCSI hospital group. Before you decide whether or not you wish to take part, please read this information leaflet carefully. Please contact Veena Janith Lasrado at lasradov@tcd.ie or [REDACTED] if you any questions.

This information leaflet has five main sections:

Part 1- The Study

Part 2- Data Protection

Part 3- Costs, Funding and Approval

Part 4-Future Research

Part 5- Further Information

Part -1 The study

Why is this study being done?

In recent years, 'Open Disclosure' of patient safety incidents has received greater attention in Irish healthcare services. Healthcare Professionals (HCPs) across the multidisciplinary team strive to provide a safe and high standard of quality of care to patients and their families. However, we are aware that 'when things go wrong' in healthcare; it impacts everyone involved. This study has been developed to explore HCPs knowledge, attitude, and perception towards the open disclosure of patient safety incidents and its impact on healthcare practice. Furthermore, it is anticipated that this study will identify the barriers and facilitators to open disclosure practice and training and will develop and identify strategies to overcome those barriers. Moreover, as a researcher, I want to give a voice to your views, representing your opinions and suggestions accurately regarding the open disclosure of patient safety incidents.

Why have I been invited to take part?

You have been invited to participate in the study because you are Healthcare Professional (HCP) registered with a professional regulatory body and currently employed in the RCSI hospitals.

Do I have to take part? What happens if I change my mind?

Participation is entirely voluntary for the interview process. You can withdraw at any stage of the research process without providing any reason, and there will not be any consequences. If you decide not to take part in the study, change your mind and opt-out, it will not affect your career, role, or position.

If you wish to opt-out, please contact Veena Janith Lasrado, PhD student, TCD at lasradov@tcd.ie or [REDACTED] who will be able to organise this for you. If you wish, you can ask for your interview data stored to be destroyed. If you request this, we will destroy all interview data that is still in our possession. We will no longer use or share your data for research from this point onwards. However, it will not be possible to destroy data already used in this research study.

If you choose to participate in the interview, I will arrange a convenient time and a place as per your request for face-to-face/telephone/Microsoft Teams/other platforms in line with ethics approval from TCD and your hospital. For face-to-face interviews, we will strictly adhere to the Department of Health COVID-19 regulations. These interviews will be recorded so that they can later be transcribed for analysis.

How will the study be carried out?

This study will take place in your hospital around summer 2021 following approval from TCD and hospital ethics. The study poster will be advertised in your hospital through the Hospital Communications Manager. You will receive an information leaflet and consent form through your hospital broadcast, newsletter, notice board or other platforms. All HCPs employed in the RCSI are invited for the survey questionnaire (Phase 1). All survey respondents will be invited to complete an expression of interest to participate in follow up interviews (Phase 2). If you have any questions or queries regarding the study, please contact Veena Janith Lasrado at lasradov@tcd.ie or [REDACTED].

What will happen to me if I decide to take part?

Phase 1:

You will complete a short survey either electronically or a paper-based questionnaire about your knowledge, attitude and perception towards disclosure of patient safety incidents. The survey remains anonymous so that it cannot trace back to any study participants. The return of the completed survey questionnaire will be considered consent to participate in the study.

Phase 2:

In addition, I would like to explore your views, experiences and suggestions regarding barriers and facilitators to open disclosure practice and training. This will be your opportunity to determine strategies to overcome these barriers. If you choose to participate in a one-to-one semi-structured interview, please contact the researcher by email or telephone or text message. The researcher will seek explicit consent (Appendix 4) from those HCP's willing and contacts the researcher for the interview process and audio-recording. The data obtained will be coded at the source. The researcher will obtain the name, contact details, telephone, and email address from interview participants to return the signed consent form and review of your transcription.

What will happen to my data?

The data you provide in the questionnaire is completely anonymous and cannot be removed because it is impossible to identify your data. The interview data is coded at the source to protect safety and your confidentiality. Any personal identifiable information which could identify you will be removed, including written doctoral thesis, academic journals, and conferences. The data you provide will be stored securely and analysed by the research team. Your information and documents will be destroyed when the study is completed.

Where will my information be stored and protected?

I will keep all your information from the survey and interview stored on TCD's main server, password-protected and encrypted study-specific folder with restricted access. Paper-based surveys will be stored in a locked filing cabinet, in a locked office in the School of Nursing and Midwifery, Trinity College Dublin. After the interview, if you wish to review the transcribed data to validate the content, it will be made available to you by the researcher. Any potentially identifying information will be removed from the transcribed data. Each study participant will be identified with a unique code number, and only the researcher will have access to this code. The audio-recording and code key will be deleted when transcription accuracy and analysis is complete, and data will be anonymised.

Who will have access to my information?

The researcher (Veena Janith Lasrado) and Supervisor (Professor Anne-Marie Brady) will have access to your anonymised information from the survey questionnaire and coded data from the audio-recording. We will strictly maintain the confidentiality of all your shared information.

Are there any benefits to taking part in this research?

This study may not provide direct benefits to you. However, research performed with your coded information may help us to better understand the open disclosure of patient safety incidents from a multidisciplinary perspective. This will help managers, policymakers and academics to enhance the multidisciplinary approach and support to all HCPs both in practice and through training programmes following open disclosure of patient safety incidents.

Are there any risks to me or others if I take part?

There is no potential risk or harm identified from your participation in this study. However, if you become distressed, experience discomfort, or upset or change your mind at any point, you can stop participating in the study. If it happens during the interview process for the participants who have volunteered and consented to be interviewed (Phase2), I will stop the interview unless you wish to continue. I will consider measures to ensure that you are comfortable during the interview process (Phase 2). In addition, the duration of time spent to complete the survey questionnaire and interview might be considered by HCPs as a drawback. Great care will be taken to ensure the confidentiality of all data and the risk to participants of a breach of confidentiality is maintained.

Will I be told the outcome of the study?

The results of the research will be disseminated in journals and at academic conferences. No information which reveals your identity will be disclosed. The summary of the findings will be reported to the participant upon request.

Who has reviewed this study?

This study has been approved by the Research Ethics Committee of your hospital and the Trinity College Dublin, Dublin, Ireland.

Part 2- Data Protection**What information about me (personal data) will be used as part of this study?**

The transcribed data obtained from the interview process will be coded and pseudonymised (Phase 2), and only the researcher will have access to this code.

What will happen to my personal data?

Any identifiable data will be replaced with a code number and solely used for this research study. The interview data will be stored on TCD's main server, password-protected and encrypted study-specific folder with restricted access. After the interview, if you wish to review the transcribed data to validate the content, it will be made available to you by the researcher. The audio-recording and code key will be deleted when transcription accuracy and analysis is complete, and data remains fully anonymised. The data will be used only as is necessary to achieve the research study's objective and will not be used in a way that could damage or cause distress to the participant.

Who will have access and use my personal data as part of this study?

The researcher and the supervisor (Professor Anne-Marie Brady) will have access to your information for this research study. Confidentiality of the data will be maintained.

Will my personal data be kept confidential? How will my data be kept safe?

The data obtained from the interview is coded, stored on TCD's main server, password-protected and encrypted study-specific folder with restricted access.

The presentations or publications resulting from this study will not identify any participants from the study. We have taken a number of measures to safeguard your confidentiality and keep your data safe. However, if something did go wrong, we will inform you if the data breach is sufficiently serious.

What is the lawful basis to use my personal data?

This is health research, which is in the public interest, so we rely on Article 6 (e) and (9) (2 (j)) of the GDPR. We also ask for your explicit consent as an extra safeguard according to Irish Health Research Regulations (2018). So, take your time to read this leaflet and complete the consent form for the study.

What are my rights?

Under GDPR You are entitled to:

The right to access your interview data and receive a copy of it

The right to restrict or object to the processing of your data

The right to object to any further processing of the information we hold about you

The right to have inaccurate information about you corrected or deleted

The right to receive your data in a portable format and to have it transferred to another data controller

The right to request deletion of your data unless it would seriously impair the objectives of the research itself

Part 3-Costs, Funding and Approval

Has this study been approved by a research ethics committee?

This study has been approved by the [REDACTED] Research Ethics Committee [REDACTED] and the Faculty Research Ethics Committee, Trinity College Dublin, Ireland (Ref:210310)

Who is organising and funding this study? Will the results be used for commercial purposes?

This study was fully funded for the past two years by HSE, NMPDU, Dublin North. However, this year only partial funding was received from HSE NMPDU Tullamore, and the researcher paid the remaining amount and other expenses for the study. The study participants or the researcher are not paid to recruit participants for the study, and the results are not used for commercial purposes.

Is there any payment for taking part? Will it cost me anything if I agree to take part?

No payment is provided for taking part in this research study. However, the study respondent has an opportunity to choose the charity of your choice from the list, and the researcher will donate €1.00 on behalf of each study participant.

Part 4- Future Research

Will my personal data be used in future studies?

Your personal data will be used for this research study only.

Part 5- Further Information

Whom should I contact for information or complaints?

I hope this information leaflet has been beneficial in answering your questions or queries. If you would like to obtain more clarifications regarding any aspects of this study, please do not hesitate to contact me Veena Janith Lasrado at lasradov@tcd.ie, [REDACTED]

If you wish to consult with my Research supervisor, please feel free to contact Professor Anne-Marie Brady at abrady4@tcd.ie.

Details to contact Data Protection Officer, Trinity College Dublin: Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie

Appendix 6 Permission Letter from RCSI Hospital Group



By Email Only: veena.lasrado@hse.ie

Ms. Veena Janith Lasrado
Nurse Tutor
Regional Centre of Nursing & Midwifery Education
Midland Regional Hospital
Tullamore

19th November 2020

Re: Requesting permission to conduct Research study on Open Disclosure within RCSI Hospital Group

Dear Ms. Lasrado,

Thank you for your enquiry regarding your research study titled '*Exploring disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice in a selected hospital group in Ireland: a mixed-method study*'.

The matter has been discussed with [REDACTED], CEO, RCSI HG and I am responding. We are favourable to your study proceeding in the RCSI HG subject to the following conditions being met,

- Can you provide me with the Research Ethics Committee approval for this study
- Can you also provide me with a full outline of your research study

Kind Regards,

[REDACTED]
[REDACTED]

Group Quality & Patient Safety Manager
RCSI Hospital Group

RCSI Hospitals
Advancing Patient Care

BEAUMONT
HOSPITAL

CAVAN &
MONAGHAN
HOSPITAL

CONNOLLY
HOSPITAL

LOUTH
COUNTY
HOSPITAL

OUR LADY OF
LOURDES HOSPITAL
DROGHEDA

ROTUNDA
HOSPITAL

RCSI
(ACADEMIC
PARTNER)

Appendix 7 Ethical Approvals from Research Ethics Committees

Beaumont Hospital Ethics (Medical Research) Committee

Chairperson:
Convenor:

Administrator:

25th May 2021

REC reference: 21/32 - Expedited

Prof Anne-Marie Brady
School of Nursing and Midwifery, Trinity College Dublin
24 D'Olier Street, Dublin 2

E-mail: abrady4@tcd.ie; lasradov@tcd.ie; [REDACTED]

Dear Dr. Brady

21/32 – Prof. Anne-Marie Brady (TCD) - Exploring open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice

Co-investigator: [REDACTED] – Education Co-ordinator, Beaumont Hospital

I confirm research ethics committee approval is now in place for this research study which seeks to proceed in Beaumont Hospital. (I enclose approval documentation for your files.)

'This submission has been reviewed from an ethical perspective only. It is the responsibility of the PI/sponsor/data controller to ensure and monitor compliance with any relevant legislation in the country where the study is due to take place or any local policy in the site where the study is due to take place.'

Receipt of research ethics committee approval is not, and should not be regarded as evidence of compliance with GDPR or the Irish Health Research Regulations 2018 (as amended 2021)

The PI/sponsor/data controller is advised to conduct data protection / DPIA reviews of ongoing projects at regular intervals: https://www.beaumontethics.ie/home/dpia_review.htm

It is imperative to report any data protection breaches to dpo@beaumont.ie as soon as you become aware of same; and retain the most up to date copy of the DPIA and make available to the Beaumont Hospital Data Protection Officer on request.

Post-Approval Process: -

The Beaumont Hospital site sign off process for studies requiring approval is outlined here: - https://www.beaumontethics.ie/home/sign_off.htm

The research study cannot commence until all relevant permissions are in place, and all contracts have been fully executed.

Kind regards

Yours sincerely



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

**Regional Manager Consumer Affairs
HSE Dublin North East**

Bective Street, Kells
Co. Meath, A82 NX32

Hampton Court, Cootehill Road
Cavan Town, H12 YY84

Tel: +353 (0) 46 9251264
Fax: +353 (0) 46 9251774

Tel: +353 (0) 49 4377343
Fax: +353 (0) 49 4377379
Email: consumeraffairs.hsedne@hse.ie

Ms Veena Janith Lasrado
RCNME
Regional Midland Hospital
Tullamore Campus
Tullamore
Co Offaly

5/7/2021

Re/ Research Study Proposal: Revised Submission

"Exploring open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice"

REC Ref: REC/21/020

Dear Ms Lasrado

I refer to your email correspondence of the 8/6/2021 in response to issues raised by the HSE North East Research Ethics Committee (REC) in connection with the above study. I wish to advise that I have had an opportunity to review same.

I can confirm that you have met all the conditions of the Committee.

Approval is now given to commence the above Study.

You should note that ethical approval will lapse if you do not adhere to the following conditions:

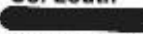
1. Submission of an Annual Progress Report (due annually from the date of this approval letter)
2. Report unexpected events or any event that may affect ethical acceptability of the study.
3. Submit any changes to study documentation (minor or major) to the North East REC for review and approval.
4. Notify North East REC of discontinuation of the study.
5. Submit a final Study Report/Study Synopsis when the study has been completed.

Due to Amendment to the Health Research Regulations which took effect from the 29th January 2021, a copy of the consent form completed by study participant must be provided to all Data Subject prior to commencement of the Health Research. This is a legal requirement now under Irish Data Protection Law.

This approval will be formally noted at the next REC meeting.

Yours sincerely,


Chair, HSE North East Area
Research Ethics Committee

Copied to , General Manager, Our Lady of Lourdes Hospital, Drogheda,
Co. Louth
, Director of Nursing, Our Lady of Lourdes Hospital,
Drogheda, Co. Louth
, General Manager, Cavan General Hospital, Cavan
, Clinical Director, Cavan General Hospital, Cavan

HSE North East Area Research Ethics Committee
HSE Dublin North East, Bective Street, Kells, Co. Meath

List of site/s with favourable opinion/approval

Research Identification

Title of Research:

"Exploring open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice"

Approval to commence the study was given on 5/7/2021.

The study approval is extended to each of the site/s listed below.

Applicant	Site
Veena Janith Lasrado	Our Lady of Lourdes Hospital, Drogheda & Monaghan Hospital & Cavan General Hospital & Louth County Hospital

Signed:


Chair of Committee

Date:

5/7/2021

26th October, 2021.

Ospidéal an Rotunda
Cearnóg Parnell, Baile Átha Cliath 1, Éire
The Rotunda Hospital
Parnell Square, Dublin 1, Ireland.
T: +353 1 827 1700 / F: +353 1 872 6523
www.rotunda.ie

Ms. Veena Lasrado
Regional Centre for Nursing & Midwifery Education (RCNME),
Regional Midland Hospital Tullamore Campus,
Tullamore,
Co. Offaly.

Our ref: REC-2021-012 *(please quote this reference on all correspondence)*
Re: Exploring open disclosure of patient safety incidents from a
multidisciplinary perspective and the impact within healthcare
practice.

Dear Veena,

Many thanks for the amended documentation received in relation to the above research. I am pleased to advise that the requirements set out by the Committee in respect of your study have now been met. This being the case, ethical approval for the research is granted and it may now commence.

You are requested to submit a progress report to the Committee in twelve months, and annually thereafter as applicable.

Please advise us by email to research@rotunda.ie when you have completed your research. We would also like to know when and where you publish or present your results. Please be aware of your responsibilities with respect to the Rotunda Hospital's good research practice policies and guidelines, copies of which are available on the Q-Pulse system.

Kind regards.

Yours sincerely,



Chairman,
Research Ethics Committee.



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Connolly Hospital
Blanchardstown
Dublin 15
D15 X40D
Tel: (01) 8213844

Ms. Veena Lasrado

16th December 2021

Re: Study CHB 005/21 - Exploring Open Disclosure of patient safety incidents from a multidisciplinary perspective, and the impact within healthcare practice.

Dear Ms. Lasrado,

Thank you for your submission to Connolly Hospital Research Ethics Committee and providing your subsequent revisions as we requested to this study. These revisions have been reviewed and I would like to confirm that your study has been approved.

If you require any further information, please do not hesitate to contact me or paula.hatt@hse.ie

Yours sincerely,



Clinical Director
Chairperson, Research Ethics Committee



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin

Ollscoil Átha Cliath | The University of Dublin

Ms Veena Janith Lasrado
School of Nursing and Midwifery
Trinity College Dublin, the University of Dublin
24 D'Olier Street,
Dublin, D02 T283

22nd December 2021

Ref: 210310
Title of Study: Exploring open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice.

Dear Veena,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in December 2021. We are pleased to inform you that the above project has ethical approval to proceed.

This study has been ethically approved. We would advise you to seek review and comments on your DPIA from the DPO if required prior to study commencement'

As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

Yours sincerely,

A large black rectangular redaction box covering the signature of the Chairperson.

A black rectangular redaction box covering the name of the Chairperson.

Chairperson
Faculty Research Ethics Committee

Appendix 8 Letter requesting access to HCPs for the Research Study



(CEO/Hospital Manager/ Director)

Name and Address of participating RCSI Hospitals

Date:

Dear Sir/ Madam

Re: Request for access to Healthcare Professionals (HCPs) for the Research study

My name is Veena Lasrado. I am a Nurse Tutor at RCNME Tullamore and worked at RCSI Hospitals for the past five years until August 2020. Currently, I am pursuing PhD study (part-time) at Trinity College Dublin (TCD), Ireland under the supervision of Prof Anne-Marie Brady.

The research study is on 'exploring open disclosure of patient safety incidents from a multidisciplinary perspective and the impact within healthcare practice: a mixed-method study'. I am writing to obtain permission to gain access to a sample of Healthcare Professionals (HCPs) across the multidisciplinary team. The research proposal, letter of support from the research supervisor and the proposed survey instrument are enclosed with this letter for your perusal.

The researcher proposes administering the survey questionnaire to a target population of 400 HCPs and interviewing a sub-sample of 20-22 HCPs from across the disciplines following approval from the Hospital and TCD Research Ethics Committee. The researcher will send the invitation letter outlining the study details, Participation Information Leaflet (PIL), Consent Form and an electronic link to the survey questionnaire and hard-copy to HCPs across the multidisciplinary team through the communication manager or relevant professional. As a component of this research study, the survey participants are invited to contact the researcher if they wish to participate in a follow-up interview. The researcher will maintain the study participants' confidentiality and anonymity and the data integrity as per GDPR and Health Research Regulation.

The research team will report the outcome of the study findings and assistance for the study. Thank you very much for your time in considering this approval request to access a sample for this research study. If you have any queries or questions, please do not hesitate to contact me.

Yours sincerely,

Veena Janith Lasrado

lasradov@tcd.ie,

Tel: [REDACTED]

Appendix 9 Participant Consent Form for Interview (Phase 2)



Consent Form to Prospective Interview Participant (Phase 2) Researcher: Veena Janith Lasrado Tel: [REDACTED]

Research Title: Exploring Open Disclosure of Patient Safety Incidents in Healthcare: A Multidisciplinary Perspective through a Mixed-Methods Study

Declaration by participant: Please mark (✓ or x) in the tick box section	Tick Box
I confirm I have read and understood the Participant Information Leaflet (PIL) for the study. The information has been fully explained to me, and I have been able to contact the researcher (Veena Janith Lasrado) to ask questions, if necessary, all of which have been answered to my satisfaction.	
I understand that this study is entirely voluntary, and if I decide to withdraw, I can stop taking part in this study at any time without giving a reason. I understand that deciding not to take part will have no adverse effects for me.	
I agree to participate in this research study, having been fully informed of the risks, benefits, and alternatives set out in full in the information leaflet which I have been provided.	
I consent to participate in the interview and for the interview to be audio-recorded.	
I understand that upon request, I will be given an opportunity to review the interview transcript to confirm its accuracy.	
I understand that the interview transcript will be identified with a code number. The audio-recording will be deleted when the accuracy of the transcript has been confirmed and analysed.	
I understand that there are no direct benefits, or I will not be paid for participation in this study.	
I understand that study findings, thesis or publication will not identify me as a participant of the study	
I allow the researcher to share coded information about me (information in which my name has been replaced with a code) only with her supervisor (Prof Anne-Marie Brady) at Trinity College of Dublin for this research study.	

I agree with the above and consent to partake in the interview process

☐

Participant's Name (Block letters): _____
Contact Details (Phone): _____ Email: _____
Participant's signature: _____ Date: _____

Consent form continued.

Declaration:

I, Veena Janith Lasrado, have explained to each interview participant the nature, purpose, risks and benefits of this research study. I have provided them with the Participant information Leaflet, Consent Form, and the research team's contact details. I have requested the study participants to approach me if they have any questions or queries.

Researcher name: Veena Janith Lasrado

Title: PhD Student

Signature: _____

Date: _____

One copy of this form must be retained by the participant and one copy must be retained by the researcher

Withdrawal from the study Post-Interview:

This is to declare that I _____, want to withdraw from this study. I request you to erase all my information from the interview.

Participant's Name (Block letters): _____

Participant's signature _____ **Date:** _____

Office use only



The Open Disclosure of Patient Safety Incidents from a Multidisciplinary Perspective Survey

This survey intends to examine the attitude and perception of Healthcare Professionals (HCPs) towards disclosure of patient safety incidents. It aims to identify the facilitators and barriers to Open Disclosure practice within the healthcare practice.

The study is being carried out by researchers at Trinity College Dublin in partnership with the Health Service Executive (HSE) within RCSI Hospitals. The Questionnaire will remain anonymous, and the confidentiality of the participants will be maintained with strict confidence at all times. The information leaflet is enclosed with this pack. The completion of the questionnaire in its entirety is of utmost importance as it influences the outcome of the study. The consent to participate in the study is implied by the return of the survey. The survey will take about 10-15 minutes.

This is your opportunity to voice your opinions, comments and suggestions through the questionnaire and semi-structured interview. If you wish to participate in the interview, Please sign the enclosed consent form or contact the researcher by email lasradov@tcd.ie or text [REDACTED].

We would like to thank you for taking the time to complete this questionnaire.

If you have any questions, please contact:

Veena Lasrado

Trinity Centre for Practice & Healthcare Innovation

School of Nursing and Midwifery,

Trinity College Dublin

General Instruction:

- The chosen answer can be identified by ticking the box
 - Example Yes ☒
 - No ☐
- Please complete **either** an anonymous online **OR** paper-based survey questionnaire.
- At the end of this survey, the participants can choose a charity from the list, and the researcher will donate €1.00 on behalf of each study participant.
- If you have completed the paper-based questionnaire, please return it within 14 days to **Quality and Safety Department, Our Lady of Lourdes Hospital, Drogheda.**
- **Declaration:**
I consent to participate in the study by completing the survey questionnaire
Yes ☐
- **For this survey questionnaire, the following definitions apply,**

- **HSE (2019) defines Open Disclosure as:** “an open, consistent, compassionate and timely approach to communicating with patients and, where appropriate, their relevant person following patient safety incidents. It includes expressing regret for what has happened, keeping the patient informed and providing reassurance in relation to on-going care and treatment, learning and the steps being taken by the health services provider to try to prevent a recurrence of the incident”.
- **Adverse event:**
An incident which resulted in harm that may or may not be the result of error (HSE Incident Management Framework 2018)
- **Patient safety incident**

Part 4 of the Civil Liability Act defines a patient safety incident as: “an incident which occurs during the course of the provision of a health service” which:

- (a) has caused an unintended or unanticipated injury, or harm, to the patient
- (b) did not result in actual injury or harm to the patient but was one which the health services provider has reasonable grounds to believe placed the patient at risk of unintended or unanticipated injury or harm or
- (c) unanticipated or unintended injury or harm to the patient was prevented, either by “timely intervention or by chance”, but the incident was one which the health services provider has reasonable grounds for believing could have resulted in injury or harm, if not prevented.

Therefore, a patient safety incident includes harm events, no harm events and near miss events (HSE, 2019).

*It should be noted that the terms ‘adverse event’ ‘medical error’ and ‘patient safety incident’ are used interchangeably in this survey questionnaire as these terms emerge in the relevant literature and policy documents on the area.

SECTION A

Your attitude on Disclosure of Patient Safety incidents

In this section, please tick ONE response on EACH line that corresponds to your level of agreement with the following statement:

A1

	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. If I saw a medical error, I would keep it to myself.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. If there is no harm to a patient, there is no need to disclose an error.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Disclosing medical errors as a health care team improves patient trust.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. Disclosing errors as a health care team demonstrates a patient safety culture.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

A2

	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. Only the medical team can determine if a patient safety incident has occurred during the care of a patient.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. Disclosing patient safety incidents to the patient and their relevant person should only be done by the person who was directly involved in the incident.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Disclosing patient safety incidents is everyone's responsibility.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

A3	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. I am comfortable supporting and advising a peer on how to respond to an error.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. I am fearful that other Health Care Professionals might doubt my professional ability if they are aware of my involvement in a patient safety incident.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. I am aware of policies and guidelines to assist me in communicating effectively when there are any patient safety concerns in my clinical area.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A4	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. Disclosing patient safety incidents as a health care team is important to promote a patient safety culture.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. Disclosing patient safety incidents as a health care team demonstrates a patient centred approach to health care.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. The HCPs in the multidisciplinary team in my clinical area work together as a well-coordinated team when managing and responding to patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. Disagreements among HCPs when responding to patient safety incidents are resolved appropriately (i.e., not who is right but what is best for the patient).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

SECTION B Your perception on Disclosure of Patient Safety incidents

In this section, please tick ONE response on EACH line that corresponds to your level of agreement with the following statement:

		Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
B1						
a.	In the event of a medical error causing serious harm, HCPs should notify the patient and/or their relevant person(s).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	In the event of a medical error causing minor harm, HCPs should notify the patient and/or their relevant person(s).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	In the event of a medical error causing no harm, HCPs should notify the patient and/or their relevant person(s).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

B2	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. Patient safety incidents should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not fully understand the explanation.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. Patient safety incidents should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not want to know about the incident.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Patient safety incidents should be disclosed even when the HCPs determine that the patient and/or their relevant person(s) would not find out about the incident.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. Patient safety incidents should be disclosed even when the HCPs determine that it would not be beneficial for the patient and/or their relevant person(s) to find out about the incident.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e. Open disclosure of patient safety incidents should be determined based on the severity of the medical error.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
f. Patient safety incidents should be disclosed based on whether informing the patient or families about the medical error would benefit them.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

B3	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. I think apologising for a patient safety incident is important in my values.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. It is necessary to disclose patient safety incidents because the patient would want to know about patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Open Disclosure of a patient safety incident is needed even if it causes loss and disadvantage for the hospital and HCPs.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. HCPs have the responsibility to inform the patients and/or their relevant person(s) about their or their team's errors.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
B4	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. Patients and families will react negatively to disclosure of patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. Open disclosure of patient safety incidents will increase medical litigation.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Open disclosure of patient safety incidents will damage the reputation of HCPs.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. HCPs will be subject to disciplinary actions by healthcare institutions if they disclose patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e. HCPs will be subject to criticism by their colleagues if they disclose patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

B5		Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a.	Patients and families will have more trust in HCPs who disclose patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	They are more likely to recommend to others around them HCPs who disclose patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	They are more likely to return for treatment to HCPs who disclose patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d.	HCPs who disclose patient safety incidents are more likely to provide better services.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e.	Open disclosure of patient safety incidents will lead HCPs themselves to be more interested in patient safety issues.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
f.	Open disclosure of patient safety incidents will reduce the HCPs sense of guilt.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

B6	Absolutely Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Absolutely Agree (5)
a. Open disclosure of patient safety incidents requires higher ethical awareness by the HCPs.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. Education and training programmes are needed for open disclosure of patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Healthcare institutions need personnel to support open disclosure of patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. Healthcare institutions need a positive culture of patient safety that supports open disclosure of patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e. It is necessary to provide guidelines for open disclosure of patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
f. It is necessary to establish apology laws to protect healthcare providers.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Please go to the next page to begin the final section

FINAL SECTION About you and the organisation in which you work

C1 Your age (Please tick ONE response)

a.	21-30 years	☐	1
b.	31-40 years	☐	2
c.	41-50 years	☐	3
d.	51-60 years	☐	4
e.	>61 years	☐	5
f.	Prefer not to say	☐	6

C2 Your gender (Please tick ONE response)

a.	Male	☐	1
b.	Female	☐	2
c.	Other	☐	3
d.	Prefer not to say	☐	4

C3 What is your current position? (Please tick ONE response)

a.	Medical Professional (Consultant, Registrar, SHO, Interns)	☐	1
b.	Nursing and Midwifery (Staff Nurses, CNM, CNS, ANP ADON, DON)	☐	2
c.	Health & Social care professionals (Therapy Professions, Health Science/Diagnostics, Psychologists, Pharmacy, Social workers....etc)	☐	3
d.	Others, please specify _____	☐	4

C4 **How long have you been working in the healthcare sector? _____**

C5 **Your involvement in Open Disclosure training (please tick all relevant answers)**

a.	As a part of professional degree programme	☐ ₁
b.	Seminar, webinar, conference or presentations on open disclosure	☐ ₂
c.	Interactive workshops on open Disclosure	☐ ₃
d.	Online/E-learning resources for open disclosure training	☐ ₄
e.	Open Disclosure facilitator training	☐ ₅
f.	Other, please specify _____	☐ ₆

C6 **Benefits of Open Disclosure Training (Please tick all relevant answers)**

a.	Open disclosure training is critical for the implementation of open disclosure policy.	☐ ₁
b.	A multidisciplinary approach to open disclosure training contributes to a valuable learning experience for HCPs.	☐ ₂
c.	Multidisciplinary training environment provides an insight to the challenges experienced by other HCPs during open disclosure.	☐ ₃
d.	Training made me aware of protective legislation for HCPs involved in the open disclosure process.	☐ ₄
e.	Following training, I am comfortable to disclose patient safety incident to a patient and/or their relevant persons'.	☐ ₅

C7 Have you been involved in a patient safety incident? (Please tick ONE response)

- a. Yes ☐ ₁
- b. No ☐ ₂

C8 If yes, what was the nature of involvement? (Please tick all relevant answers)

- a. Initial discussion with the patient and/or their family or significant others ☐ ₁
- b. Pre-meeting discussions ☐ ₂
- c. Open Disclosure discussions ☐ ₃
- d. I did not participate in patient meetings ☐ ₄
- e. Not applicable ☐ ₅

Is there anything further you would like to tell us about the Open Disclosure of Patient Safety Incidents? Please do so here:

Please turn the page to select a Charity of your choice

Please select the charity of your choice for the Researcher to donate on your behalf:

1.	LauraLynn Ireland's Children Hospice	
2	Peter McVerry Trust	
3	Pieta House	
4	Midland Youth Drug & Alcohol Support	
5	Féileacáin – Stillbirth and Neonatal Death Association of Ireland	
6	Irish Traveller Movement	
7	Acquired Brain Injury Ireland	
8	Mary's Meals	
9	Midlands Hospice Building Fund	
10	Irish cancer Society	

Thank you very much for your participation in this study.
Your time and support for this research are greatly appreciated!

Appendix 11 QR Code Instruction



Open Disclosure of Patient Safety Incidents from a Multidisciplinary Perspective

How to Scan a QR Code



To begin, open the QR Code reader on your phone.

Step 1. Hold your device over the QR Code of the Research study poster, ensuring it is clearly visible within your smartphone's screen.

Step 2. When you correctly hold your smartphone over a QR Code, two things can happen. The phone automatically scans the code, or you need to press a button to snap a picture (like the button on your smartphone camera). If necessary, press the button.

Step 3. Your smartphone reads the code and navigates to the online survey. This may not be instant; it can take a few seconds on most devices.

Step 4. The study information page will appear on your screen



Any Questions? Email: lasradov@tcd.ie

Appendix 12 Attitude Questionnaire (Popkess et al., 2017)

Table 2. Attitude Assessment items grouped by IPEC core competency subscales

IPE Core Competency	Attitude Survey Question	Profession	Pre-Assessment	SD	Post-Assessment	SD
Values / Ethics for Interprofessional Practice (VE)	If I saw a medical error, I would keep it to myself.	Dental	4.2340***	.56000	4.5957***	.49605
		Nursing	4.7059***	.45903	4.9265***	.26294
		Pharmacy	4.5921***	.56986	4.7368***	.59707
		Overall	4.5445***	.55900	4.7696***	.49131
	If there is no harm to a patient, there is no need to address an error.	Dental	3.8298***	.70152	4.1064***	.78668
		Nursing	4.5147***	.70165	4.8116***	.42962
		Pharmacy	4.4079***	.69623	4.3684***	.74551
		Overall	4.3037***	.74829	4.4635***	.71537
	Disclosing medical errors as a health care team improves patient trust.	Dental	4.000*	.93250	4.3404**	.75977
		Nursing	4.4203*	.99122	4.7391**	.47441
		Pharmacy	4.0658*	.97071	4.5526**	.70038
		Overall	4.1771*	.98145	4.5677**	.65968
	Disclosing errors as a health care team spreads the blame.	Dental	3.5106	.80413	2.8261	1.19823
		Nursing	3.6912	.93453	3.3478	1.49338
		Pharmacy	3.7333	1.01786	3.1974	1.39542
		Overall	3.6632	.93843	3.1623	1.39542
Roles / Responsibilities (RR)	Only the prescriber can determine the causes of a medication error.	Dental	3.9362***	.63944	4.5106**	.50529
		Nursing	4.4118***	.71728	4.5217**	.67755
		Pharmacy	4.7632***	.56258	4.8421**	.54290
		Overall	4.4346***	.71426	4.3458**	.60503
	Disclosing medical errors should only be done by the person who	Dental	3.5319***	.83017	4.0638**	.86989
		Nursing	3.7612***	.93888	4.5507**	.67598
		Pharmacy	4.2800***	.74544	4.4737**	.91613
		Overall				

	directly made the error.	Overall	3.9101***	.89166	4.4010**	.84420
Interprofessional Communication (CC)	I am comfortable supporting and advising a peer who must decide how to respond to an error.	Dental	3.5106	.83072	3.8696	1.02434
		Nursing	3.5217	1.15820	4.1304	.68413
		Pharmacy	3.2763	1.13840	4.0526	.87780
		Overall	3.4219	1.08011	4.0366	.85453
Teams and Teamwork (TT)	Disclosing medical errors as a health care team is important.	Dental	4.2553*	.53030	4.3404***	.75977
		Nursing	4.6377*	.76641	4.8261***	.41856
		Pharmacy	4.5132*	.77448	4.6053***	.67486
		Overall	4.4948*	.73076	4.6198***	.64412
	Disclosing medical errors as a health care team is an important aspect of patient centered care.	Dental	4.2340*	.63289	4.3191***	.75488
		Nursing	4.5942*	.79185	4.8116***	.42962
		Pharmacy	4.3947*	.83393	4.5789***	.67849
		Overall	4.4271*	.78260	4.5990***	.64767
Other	Learning how to disclose medical errors is an appropriate use of time in my training.	Dental	4.0000*	.72232	4.1064***	.98321
		Nursing	4.3478*	.78264	4.7246***	.44997
		Pharmacy	4.2895*	.60698	4.4737***	.75672
		Overall	4.2396*	.71256	4.4740***	.76531
	I am comfortable disclosing an error to a patient.	Dental	3.2766	.97138	3.7447	1.13191
		Nursing	3.0580	1.12307	3.7971	.75886
		Pharmacy	2.8553	1.09184	3.9342	.92589
		Overall	3.0313	1.08249	3.8385	.92661

*significant differences at the ps .05 level

** significant differences at the ps .01 level

***significant differences at the ps.001 level

Appendix 13 Approval for use of Phase One Instruments

From: Popkess, Ann [apopkes@siue.edu]
Sent: 24 June 2020 20:41
To: Veena Janith Lasrado
Subject: Re: Request for a Survey instrument in Research study
Attachments: IPEC Attitude scores_IPE.docx; Final manuscript.pdf

Attached are the scale scores and the final manuscript incase you needed a copy.

Best,
Ann M Popkess, RN PhD, CNE
Associate Professor
Assistant Dean, Undergraduate Programs
SIUE School of Nursing
Box 1066 Alumni Hall
Alumni Hall 2120
Edwardsville, IL 62026
618-650-3934
fax: 618-650-3854
apopkes@siue.edu

From: Veena Janith Lasrado <veena.lasrado@hse.ie>
Sent: Wednesday, June 24, 2020 2:13 PM
To: Popkess, Ann <apopkes@siue.edu>
Subject: RE: Request for a Survey instrument in Research study

Dear Ms Popkess,
Many thanks for your prompt reply and permission to modify the tool. I will surely acknowledge your work and will inform you of any changes made to the survey instrument. I would appreciate if you could email the validated survey tool (Questionnaire-items-composite measures) and user guide or instructions (if available) and any information which would be helpful for this study. Have a Blessed evening.

With kind regards,
Veena

From: Popkess, Ann [<mailto:apopkes@siue.edu>]
Sent: 24 June 2020 19:36
To: Veena Janith Lasrado
Subject: Re: Request for a Survey instrument in Research study

Veena:
Thank you for your message. You may adapt the tool---
I would appreciate appropriate reference citations and sharing of any changes that you may make.

Good luck on your study! Be well.

Ann M Popkess, RN PhD, CNE
Associate Professor
Assistant Dean, Undergraduate Programs, SIUE School of Nursing
Box 1066 Alumni Hall, Alumni Hall 2120, Edwardsville, IL 62026
618-650-3934, fax: 618-650-3854, apopkes@siue.edu



to me, Wendy, Theresa

Hi Veena - attached is the HPPSACS instrument, journal article, and link to my doctoral dissertation. You have my permission to use the instrument with acknowledgement. Thank you - Teri

<https://digitalcommons.unf.edu/etd/236/>

Teri Chenot, Ed.D., MS, M.Ed., MSN, RN, CCE(ACBE), FNAP, FAAN

Associate Professor, Keigwin School of Nursing
Department Chair, Healthcare Quality and Safety Programs
Director, QSEN Institute Regional Center at Jacksonville University
Chapter Leader/Faculty Advisor for the IHI Open School Chapter at Jacksonville University
Brooks Rehabilitation College of Healthcare Sciences
Jacksonville University
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Fax: (904) 256-7287
E-mail: tchenot@ju.edu
JU Healthcare Quality and Safety
Programs: <https://www.ju.edu/healthcaresafety/index.php>
JU QSEN Website: <https://www.ju.edu/qsen>



Madigosky, Wendy S WENDY.MADIGOSKY@cuanschutz.edu 29 Aug 2020, 20:00
to Theresa, Wendy, me

Dear Veena,

I'm delighted to read of your interest and have attached the original instruments with scoring information. The green highlighted items were reverse scored and the yellow highlights indicate the correct responses. You certainly may use the questionnaires from our study with attribution. This was used with medical and nursing students at the time, although only medical student results were published. I did not pursue determining the reliability and validity of the questionnaire, however Dr. Teri Chenot did this on her adapted version (called the Health Care Professionals Patient Safety Assessment Curriculum Survey or 'HPPSACS') that she already shared with you. Others have likewise further adapted and validated this tool—and this can be found through literature searches. Please do let us know of any final products such as a published version of your research so that we may be aware of your work as well.

Sincerely,

Wendy Madigosky MD MSPH | Director, Interprofessional Education and Development Course
Assistant Director--School of Medicine | Center for Interprofessional Practice and Education
(303) 724-8291 | Wendy.Madigosky@cuanschutz.edu | Fulginiti Pavilion, Room 004C



Veena Lasrado <lasradov@tcd.ie>

Re:Request for the Survey Tool for a Research study

Veena Janith Lasrado <veena.lasrado@hse.ie>
To: "janithlasrado@gmail.com" <janithlasrado@gmail.com>
Cc: "lasradov@tcd.ie" <lasradov@tcd.ie>

26 June 2020 at 10:30

From: 김유정 [mailto:cybericu@naver.com]
Sent: 25 June 2020 12:44
To: Veena Janith Lasrado
Subject: RE: Re:Request for the Survey Tool for a Research study

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear Lasrado

Of course!!

I permit the use of tool.

I hope you will have a good results.

Sincerly

Yujeong Kim

[Quoted text hidden]

SECTION B Your attitude on Disclosure of Patient Safety incidents

B1 Values / Ethics for Interprofessional Practice (VE)
 (Please tick ONE response on EACH line)

	Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a. If I saw a medical error, I would keep it to myself.	☐	☐	☐	☐	☐
b. If there is no harm to a patient, there is no need to address an error.	☐	☐	☐	☐	☐
c. Disclosing medical errors as a health care team improves patient trust.	☐	☐	☐	☐	☐
d. Disclosing errors as a health care team spreads the blame.	☐	☐	☐	☐	☐

B2 Roles / Responsibilities (RR):
 (Please tick ONE response on EACH line)

	Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a. Only the physician can determine if patient safety incidents occurred during patient care.	☐	☐	☐	☐	☐
b. Disclosing patient safety incidents to the patient and their relevant person should only be done by the person who directly made the error.	☐	☐	☐	☐	☐
c. Disclosing patient safety incidents is everyone's responsibility.	☐	☐	☐	☐	☐
d. The lesson that I have learned from a patient safety incident is to avoid sharing responsibility with other Health Care Professionals (HCPs).	☐	☐	☐	☐	☐

B3 Interprofessional Communication (IC): (Please tick ONE response on EACH line)		Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a.	I am comfortable supporting and advising a peer on how to respond to an error.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	I am fearful that other Health Care Professionals might doubt my professional ability if they are aware of my patient safety incident.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	I am aware of policies and guidelines to communicate effectively if there are any patient safety concerns in my clinical area.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d.	I feel more comfortable to use Acknowledge- Sorry-Story-Inquire-Solutions-Travel (A.S.S.I.S.T) model of communication during the disclosure of patient safety incidents to patients and their relevant persons.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
B4 Teams and Teamwork (TT): (Please tick ONE response on EACH line)		Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a.	Disclosing patient safety incidents as a health care team is important.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	Disclosing patient safety incidents as a health care team is an important aspect of patient-centred care.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	Health Care Professionals s within a multidisciplinary team work together as a well-coordinated team during the patient safety incidents in my clinical area.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d.	Disagreements among HCPs during patient safety incidents are resolved appropriately (i.e., not who is right but what is best for the patient).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

B5	Open Disclosure Training (ODT): (Please tick ONE response on EACH line)	Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a.	Learning how to disclose patient safety incidents is an appropriate use of time in my open disclosure training.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	Multidisciplinary approach to the open disclosure training has contributed to a valuable experience.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	I am aware of challenges with collaborating and communicating with other HCPs through open disclosure.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d.	I am aware of protective laws for HCPs involved in the open disclosure.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e.	I am comfortable disclosing an error to a patient and their relevant persons'	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Appendix 15 The Final version of the Attitude Questionnaire

SECTION A Your attitude on Disclosure of Patient Safety incidents

A1 Values / Ethics for Interprofessional Practice
(Please tick ONE response on EACH line)

	Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a. If I saw a medical error, I would keep it to myself. *	☐	☐	☐	☐	☐
b. If there is no harm to a patient, there is no need to disclose an error. *	☐	☐	☐	☐	☐
c. Disclosing medical errors as a health care team improves patient trust.	☐	☐	☐	☐	☐
d. Disclosing errors as a health care team demonstrates a patient safety culture.	☐	☐	☐	☐	☐

A2 Roles / Responsibilities:
(Please tick ONE response on EACH line)

	Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a. Only the medical team can determine if a patient safety incident has occurred during the care of a patient.	☐	☐	☐	☐	☐
b. Disclosing patient safety incidents to the patient and their relevant person should only be done by the person who was directly involved in the incident.	☐	☐	☐	☐	☐
c. Disclosing patient safety incidents is everyone's responsibility. *	☐	☐	☐	☐	☐

A3 Interprofessional Communication: (Please tick ONE response on EACH line)		Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a.	I am comfortable supporting and advising a peer on how to respond to an error.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	I am fearful that other Health Care Professionals might doubt my professional ability if they are aware of my involvement in a patient safety incident.*	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	I am aware of policies and guidelines to assist me in communicating effectively when there are any patient safety concerns in my clinical area.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A4 Teams and Teamwork: (Please tick ONE response on EACH line)		Absolutely Disagree	Disagree	Neither Agree or Disagree	Agree	Absolutely Agree
a.	Disclosing patient safety incidents as a health care team is important to promote a patient safety culture.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b.	Disclosing patient safety incidents as a health care team demonstrates a patient centred approach to health care.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c.	The HCPs in the multidisciplinary team in my clinical area work together as a well-coordinated team when managing and responding to patient safety incidents.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d.	Disagreements among HCPs when responding to patient safety incidents are resolved appropriately (i.e., not who is right but what is best for the patient).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Appendix 16 Content Validity instructions for the Expert Reviewers



Introduction:

Validity is a fundamental and essential step in the selection or application of a research instrument. It is important to identify whether an instrument measures what it is designed to measure (Lynn, 1986). Content validity determines clarity, relevance and representativeness of the content through its developmental or judgmental process (Lynn, 1986). In a self-reported questionnaire, it measures the degree to which each item corresponds to its construct domain (Field, 2013) and eliminates the undesirable items. This research study aims to explore the knowledge, attitude and perception on disclosure of patient safety incidents from a multidisciplinary perspective and to examine its impact within the healthcare practice.

The survey instrument consists of three surveys on knowledge, attitude and perception of HCPs on disclosure of patient safety incidents. This survey also intends to identify facilitators, barriers and strategies to Open Disclosure practice and, training within the healthcare practice. The survey will be administered to 400 Healthcare Professionals (HCPs) registered with their professional regulatory body from a multidisciplinary team and are 'willing to participate' in the study from RCSI hospitals. This survey will be accompanied by an invitation letter, the Participant Information Leaflet (PIL) and the Consent Forms.

The instructions to expert reviewers for the rating of items in a measure are as follows:

1. To review each item corresponding to their construct domain and intended audience for:
 - a. clarity or understanding
 - b. relevance or importance or effectiveness or appropriateness
 - c. level of representativeness
2. To rate each item using a four-point Likert scale:
 - a. Please rate the level of **clarity** for each item on a scale of 1-4, with 4 being the most clearest.
 - 1 = item is not clear
 - 2 = item needs major revisions to be clear
 - 3 = item needs minor revisions to be clear
 - 4 = item is clear
 - b. Please rate the **relevance or importance** of the item in measuring the aligned overarching construct on a scale of 1-4, with 4 being the most essential.
 - 1 = item is not necessary to measure the construct
 - 2 = item provides some information but is not essential to measure the construct
 - 3 = item is not useful but essential to measure the construct
 - 4 = item is essential to measure the construct

- c. Please rate the level of **representativeness** of item in measuring the aligned overarching construct on a scale of 1-4, with 4 being the most representative.
- 1 = item is not representative
 - 2 = item needs major revisions to be representative
 - 3 = item needs minor revisions to be representative
 - 4 = item is representative

Construct	Items	Item (source)	Clarity	Relevance	Representativeness	Comments

3. To leave your comments for each item to recommend phrasing to make it clearer or better or to delete all or for any additional information.

What additional item/s would you recommend including to measure the construct?
What additional item/s would you recommend deleting?
Please provide any additional information you believe may be useful in assessing the identified construct with this instrument

I acknowledge the amount of time and endurance required for the content validity of this survey questionnaire. Thank you very much for your expertise, support and encouragement.

Yours sincerely,

Veena Lasrado

PhD student

Email: lasradov@tcd.ie

Mobile No: XXXXXXXXXX

Appendix 17 Permission to use Instructions for the Rating Items in the Questionnaire



Dr. Nurul Imtiaz Binti Abd Gani <nurulimtiaz@uum.edu.my> Thu, 12 Nov 2020, 01:54
to me

yes sure. you are allowed to use the information in the article. all the best!

NURUL IMTIAZ BINTI ABD GANI

English Language Instructor
School of Languages, Civilisation and Philosophy
College of Arts and Sciences
Universiti Utara Malaysia
06010 Sintok
Kedah Darul Aman
MALAYSIA



From: Veena Lasrado <lasradov@tcd.ie>

Sent: Wednesday, November 11, 2020 9:47 AM

To: Nurul Imtiaz Binti Abd Gani

Cc: Dr. Mohan a/I Rathakrishnan; Prof. Madya Dr. Hariharan a/I N. Krishnasamy

Subject: Re: Request for a permission to use instructions for the rating items

Dear Nurul,

My name is Veena Lasrado, currently developing a survey questionnaire for the PhD study at Trinity College Dublin (TCD). May I request your permission to use the instructions from your research study on 'development and content validity of an instrument: perspectives from expert reviewers' for the rating of items in a measure. I will cite and acknowledge your response in my thesis and future publication. I look forward to your favourable reply.

With kind regards,
Veena

Appendix 18 Content Validity Index of Item Clarity, Relevance, Representativeness and Modified Kappa agreement of the HCPs Attitudes to Open Disclosure Questionnaire

Items	Clarity				Relevance				Representativeness				Interpretation
	Agreement	I-CVI*	Pc**	k***	Agreement	I-CVI*	Pc**	k***	Agreement	I-CVI*	Pc**	k***	
Values / Ethics for Interprofessional Practice													
If I saw a medical error, I would keep it to myself	13	0.93	0.0008544922	0.93	11	0.79	0.02222	0.78	11	0.79	0.022217	0.78	Excellent
If there is no harm to a patient, there is no need to address an error	13	0.93	0.0008544922	0.93	12	0.86	0.00555	0.86	12	0.86	0.005554	0.86	Excellent
Disclosing medical errors as a health care team improves patient trust	14	1.00	0.0000610352	1.00	13	0.93	0.00085	0.93	12	0.86	0.005554	0.86	Excellent
Disclosing errors as a health care team spreads the blame	11	0.79	0.0222167969	0.78	9	0.64	0.12219	0.59	9	0.64	0.122192	0.59	Fair
Roles / Responsibilities													
Only the physician can determine if PSIs occurred during patient care	13	0.93	0.0008544922	0.93	12	0.86	0.00555	0.86	12	0.86	0.005554	0.86	Excellent
Disclosing PSIs to the patient and their relevant person should only be done by the person who directly made the error.	13	0.93	0.0008544922	0.93	12	0.86	0.00555	0.86	12	0.86	0.005554	0.86	Excellent
Disclosing PSIs is everyone's responsibility.	14	1.00	0.0000610352	1.00	14	1.00	0.00006	1.00	14	1.00	0.000061	1.00	Excellent
The lesson that I have learned from a patient safety incident is to avoid sharing responsibility with other HCPs.	9	0.64	0.1221923828	0.59	9	0.64	0.12219	0.59	9	0.64	0.122192	0.59	Fair

Interprofessional Communication													
I am comfortable supporting and advising a peer on how to respond to an error.	14	1.00	0.0000610352	1.00	14	1.00	0.00006	1.00	14	1.00	0.000061	1.00	Excellent
I am fearful that other Health Care Professionals might doubt my professional ability if they are aware of my patient safety incident.	13	0.93	0.0008544922	0.93	14	1.00	0.00006	1.00	14	1.00	0.000061	1.00	Excellent
I am aware of policies and guidelines to communicate effectively if there are any patient safety concerns in my clinical area.	13	0.93	0.0008544922	0.93	14	1.00	0.00006	1.00	14	1.00	0.000061	1.00	Excellent
I feel more comfortable to use Acknowledge- Sorry-Story-Inquire-Solutions-Travel (A.S.S.I.S.T) model of communication during the disclosure of PSIs to patients and their relevant persons.	12	0.86	0.0055541992	0.86	13	0.93	0.00085	0.93	13	0.93	0.000854	0.93	Excellent
Teams and Teamwork													
Disclosing PSIs as a health care team is important	13	0.93	0.0008544922	0.93	12	0.86	0.00555	0.86	12	0.86	0.005554	0.86	Excellent
Disclosing PSIs as a health care team is an important aspect of patient-centred care	14	1.00	0.0000610352	1.00	13	0.93	0.00085	0.93	12	0.86	0.005554	0.86	Excellent
HCPs within a multidisciplinary team work together as a well-coordinated team during the PSIs in my clinical area	13	0.93	0.0008544922	0.93	13	0.93	0.00085	0.93	13	0.93	0.000854	0.93	Excellent

Disagreements among HCPs during PSIs are resolved appropriately (i.e., not who is right but what is best for the patient).	12	0.86	0.0055541992	0.86	11	0.79	0.02222	0.78	11	0.79	0.022217	0.78	Excellent
Open Disclosure Training													
Learning how to disclose PSIs is an appropriate use of time in my open disclosure training.	12	0.86	0.0055541992	0.86	11	0.79	0.02222	0.78	12	0.86	0.005554	0.86	Excellent
Multidisciplinary approach to the open disclosure training has contributed to a valuable experience.	13	0.93	0.0008544922	0.93	12	0.86	0.00555	0.86	13	0.93	0.000854	0.93	Excellent
I am aware of challenges with collaborating and communicating with other HCPs through open disclosure.	13	0.93	0.0008544922	0.93	14	1.00	0.00006	1.00	14	1.00	0.000061	1.00	Excellent
I am aware of protective laws for HCPs involved in the open disclosure.	13	0.93	0.0008544922	0.93	14	1.00	0.00006	1.00	14	1.00	0.000061	1.00	Excellent
I am comfortable disclosing an error to a patient and their relevant persons'	13	0.93	0.0001220703	0.93	13	0.93	0.00012	0.93	13	0.93	0.000122	0.93	Excellent
S – CVI/Ave		0.91				0.88				0.88			

NOTE: *I-CVI: item-level content validity index, **pc (probability of a chance occurrence) was computed using the formula: $pc = [N! / A! (N - A)!] \cdot .5N$ where N = number of raters and A = number of raters who agree that the item is relevant or clear, ***K (Modified Kappa) was computed using the formula: $K = (I-CVI - PC) / (1 - PC)$. Interpretation criteria for Kappa, using guidelines described in Cicchetti and Sparrow (1981) and Fleiss (1981): Fair = K of 0.40 to 0.59; Good = K of 0.60 to 0.74; and Excellent = K > 0.74. I-CVI, item-level content validity index; scale-level content validity index, average (S-CVI/Ave)

Appendix 19 Content Validity Index of Item Clarity, Relevance, Representativeness and Modified Kappa agreement of the HCPs Perceptions of Open Disclosure Questionnaire

Items	Clarity				Relevance				Representativeness				Interpretation
	Agreement	I-CVI*	Pc**	k***	Agreement	I-CVI*	Pc**	k***	Agreement	I-CVI*	Pc**	k***	
Open Disclosure across harm levels													
In the event of a PSI causing serious harm, HCPs should notify the patient and/or their relevant person(s).	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
In the event of a PSI causing minor harm, HCPs should notify the patient and/or their relevant person(s).	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
In the event of a PSI causing no harm, HCPs should notify the patient and/or their relevant person(s).	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
Open Disclosure across situations													
PSIs should be disclosed even when the healthcare providers determine that the patient or families would not fully understand the explanation.	12	0.86	0.0055542	0.86	13	0.93	0.000854	0.93	12	0.86	0.0055541992	0.86	Excellent
PSIs should be disclosed even when the healthcare providers determine that the patients or families would not want to know about the incident.	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent

PSIs should be disclosed even when the healthcare providers determine that the patients or families would not find out about the incident.	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
PSIs should be disclosed even when the healthcare providers determine that it would not be beneficial for the patients or families to find out about the incident.	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
PSIs should be determined based on the severity of the PSI.*	12	0.86	0.0055542	0.86	12	0.86	0.005554	0.86	12	0.86	0.0055541992	0.86	Excellent
PSIs should be disclosed based on whether informing the patient or families about the PSI would benefit them.*	11	0.79	0.0222168	0.78	11	0.79	0.022217	0.78	11	0.79	0.0222167969	0.78	Excellent
Justification of Open Disclosure													
I think apologising for PSIs is important.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
It is necessary to disclose PSIs because the patient would want to know about PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Open Disclosure of a PSI is needed even if it causes loss and disadvantage for the hospital and healthcare providers.	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
Healthcare providers have the responsibility to inform the patients and families about their or their team's errors.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Negative consequences of Open Disclosure													

Patients and families will react negatively to disclosure of PSIs.*	12	0.86	0.0055542	0.86	12	0.86	0.005554	0.86	12	0.86	0.0055541992	0.86	Excellent
Open Disclosure of PSIs will increase medical litigation.*	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
Open Disclosure of PSIs will damage the reputation of healthcare providers.*	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
Healthcare providers will be subject to disciplinary actions by healthcare institutions if they disclose PSIs.*	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Healthcare providers will be subject to criticism by their colleagues if they disclose PSIs. *	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Positive consequence of Open Disclosure													
Patients and families will have more trust in healthcare providers who disclose PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
They are more likely to recommend healthcare providers who disclose PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
They are more likely to return for treatment to healthcare providers who disclose PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Healthcare providers who disclose PSIs are more likely to provide better services.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Open Disclosure of PSIs will lead healthcare providers themselves to be more interested in patient safety issues.	13	0.93	0.0008545	0.93	12	0.86	0.005554	0.86	12	0.86	0.0055541992	0.86	Excellent

Open Disclosure of PSIs will reduce the healthcare provider's sense of guilt.	13	0.93	0.0008545	0.93	12	0.86	0.005554	0.86	12	0.86	0.0055541992	0.86	Excellent
Facilitators of Open Disclosure:													
Open Disclosure of PSIs requires higher ethical awareness by the healthcare providers.	13	0.93	0.0008545	0.93	13	0.93	0.000854	0.93	13	0.93	0.0008544922	0.93	Excellent
Education and training programmes are needed for Open Disclosure of PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
Healthcare institutions need personnel to support Open Disclosure of PSIs.	12	0.86	0.0055542	0.86	12	0.86	0.005554	0.86	12	0.86	0.0055541992	0.86	Excellent
Healthcare institutions need a positive culture of patient safety that supports Open Disclosure of PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
It is necessary to provide guidelines for Open Disclosure of PSIs.	14	1.00	0.0000610	1.00	14	1.00	0.000061	1.00	14	1.00	0.0000610352	1.00	Excellent
It is necessary to establish apology laws to protect healthcare providers.	11	0.79	0.0222168	0.78	10	0.71	0.061096	0.70	10	0.71	0.0610961914	0.70	Good
S – CVI/Ave		0.94				0.94				0.94			

NOTE: *I-CVI: item-level content validity index, **pc (probability of a chance occurrence) was computed using the formula: $pc = [N! / A! (N - A)!] * .5^N$ where N = number of raters and A = number of raters who agree that the item is relevant or clear, ***k (Modified Kappa) was computed using the formula: $k = (I-CVI - PC) / (1 - PC)$. Interpretation criteria for Kappa, using guidelines described in Cicchetti and Sparrow (1981) and Fleiss (1981): Fair = k of 0.40 to 0.59; Good = k of 0.60 to 0.74; and Excellent = k > 0.74. I-CVI, item-level content validity index; scale-level content validity index, average (S-CVI/Ave).

Appendix 20 Phase 2 Interview Guide



Pre-Interview:

- **Consent and Demographics** will be obtained before scheduling the date and time with the interview participants.
 - Age
 - Gender
 - Current position
 - Length of service
 - Have you attended any training on open disclosure of patient safety incidents?

Introduction:

- Welcome the participant
- Check written consent form and verbal consent
- Participant Information Leaflet (PIL) to confirm the participants understanding of the research aim, benefits, and potential risks.
- Answer participant's questions and clarify any concerns
- Obtain permission to audio-record the interview

Patient safety incidents experience

1. How would you define a patient safety incident?
 - a. Have you personally been involved in a patient safety incident?

Open Disclosure practice

2. What do you think about disclosing patient safety incidents to patients and their families?
3. Have you personally had any experiences with disclosing patient safety incidents?
 - a. What did/would you find helpful or challenging in dealing with patients and families during the disclosure of the patient safety incidents?
 - b. How did/would the disclosure of patient safety incidents impact your physical and mental wellbeing?
 - c. Had you received any prior open disclosure training? What was your experience with the training?

Strategies to improve open disclosure in practice

4. In your opinion, how can HCPs be supported to improve open disclosure practices in the future?

Conclusion:

5. Before we finish, is there anything else you would like to add about your views and experiences of disclosing patient safety incidents?

Further questions/prompts can be used if required for clarification

Tell me more about that...?

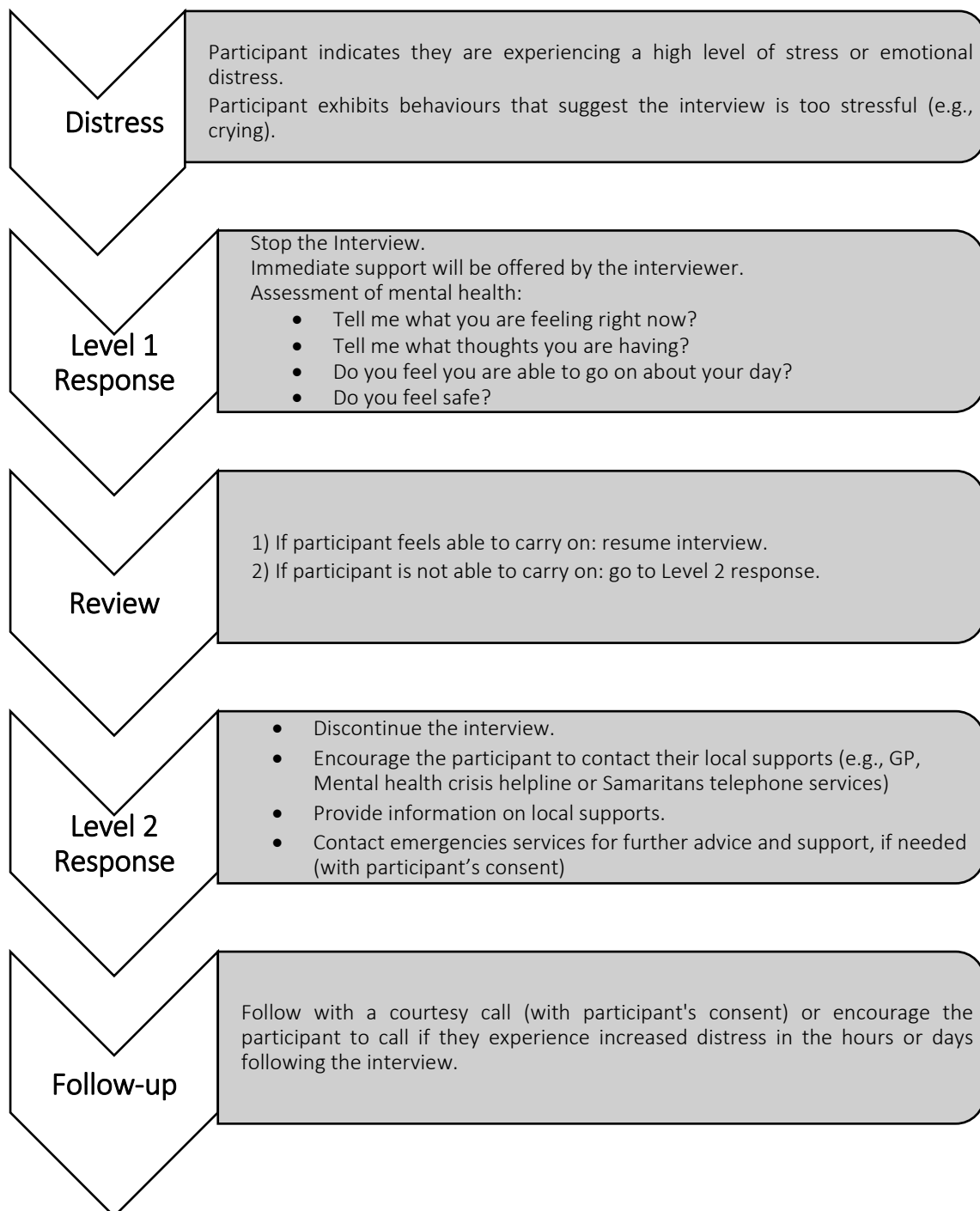
What do you mean by...?

How did that make you feel...?

Why is that important...?

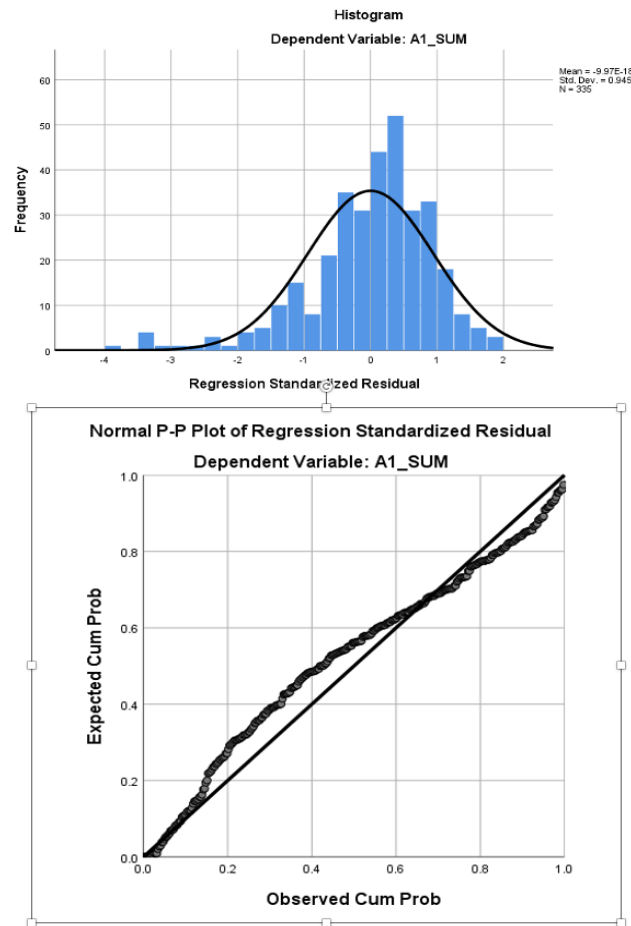
Could you give me an example of that...?

Appendix 21 Research Interview and Distress Protocol, Adapted (Draucker et al., 2009)

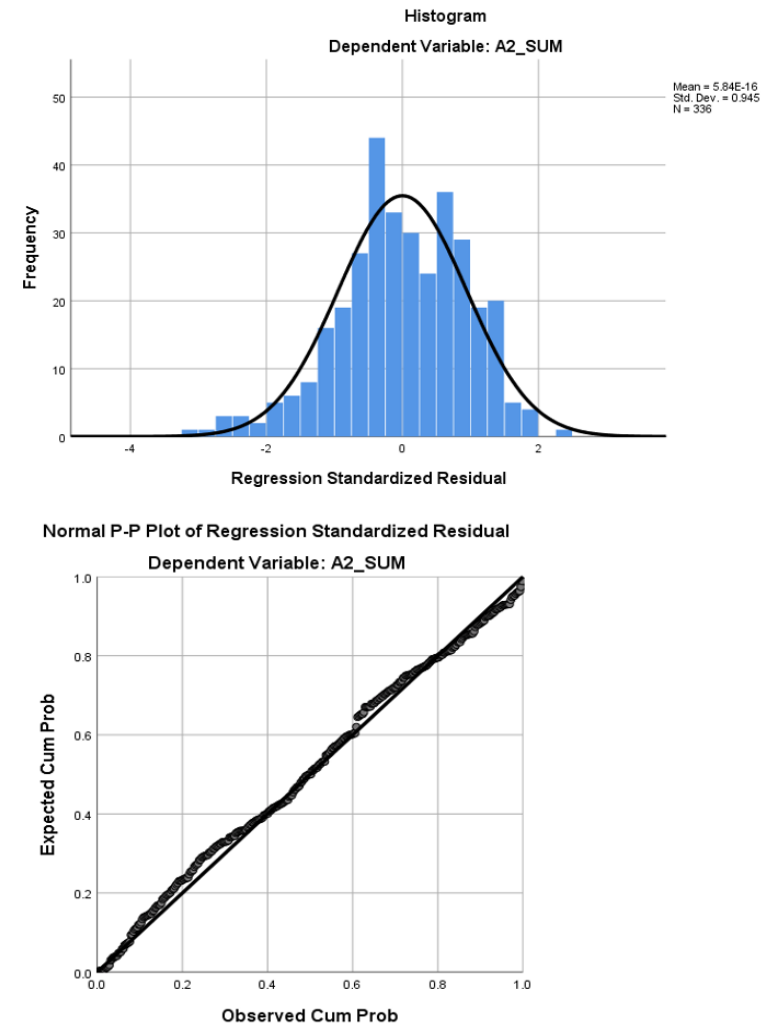


Appendix 22 Assumptions for CCA and Hierarchical Regression

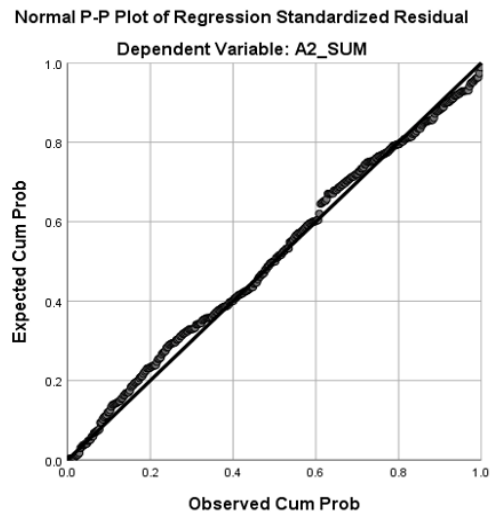
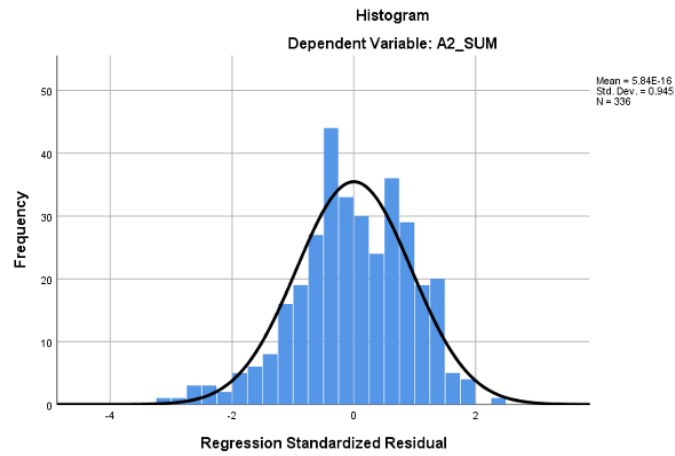
Hierarchical Regression for variables predicting Values or Ethics for Interprofessional Practice



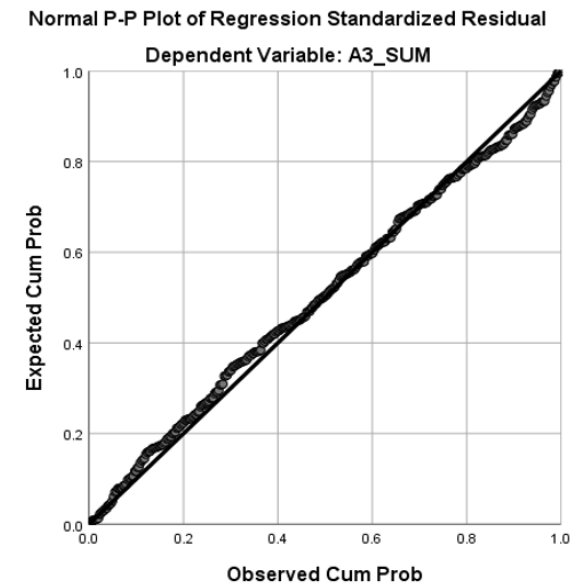
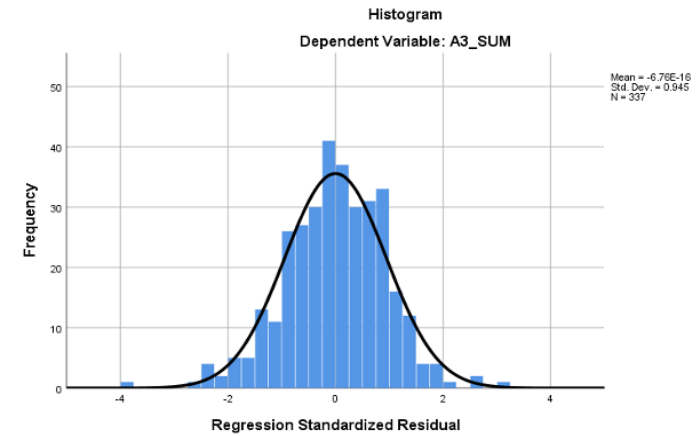
Hierarchical Regression for variables predicting Role and Responsibilities



Hierarchical Regression for variables predicting Role and Responsibilities



Hierarchical regression for variables predicting Interprofessional Communications



Appendix 23 Schematic Visualisation

Coding in NVIVO for the Qualitative Theme

Initial codes of 42 Transcripts

Name	Files	References
A Good Open Disclosure	1	1
Able to deal with PSI and prepares himself for OD	2	3
Acknowledges Nurses as Best Communicators	1	1
Acknowledging assistance and support from Nurse Manager	8	12
Acknowledging Healthcare as a Stressful and Chaotic Environment	5	6
Acknowledging identification of PSI as a Blessing	2	2
Acknowledging OD research study	8	10
Acknowledging of OD in practice	8	12
Acknowledging PSI as a result of a wider team than a single HCP	1	1
Acknowledging the difficulty of discomfort in engaging with OD	4	6
Acknowledging the role of Multidisciplinary team in the identification of PSI	1	1
Acknowledgment that Disclosing that PSI is important	9	10
Action Review	1	1
Actual real-life examples-OD training Suggestions	7	7
Additional work for HCP for being honest	1	1
Admission of PSI in the past without the name OD	2	2
Advocate for OD	1	1
Afraid of Clinicians	1	1
All Hospital must follow the same OD procedure	1	1
An Eye for an Eye and Tooth for a Tooth	1	1
Apologised to patient straight away	4	5
Apologising on behalf of hospital	1	1
Appreciative of the opportunity to share similar interest through this interview	1	1
Ascertain whether OD is beneficial or not to the patient and family	1	4
ASSIST ME	1	1
Assuming the consequences of OD	1	1
Attitude determines whether you are a good or bad clinician	1	1

Node Properties

General

Name: Barriers to Open Disclosure of Patient Safety Incidents in practice

Description: Identification of obstacles or challenges or hinderance to Open Disclosure of Patient Safety Incidents in practice.

Nickname:

Hierarchical name: Nodes\Phase3-Generating initial Themes from coded and collated Data\Barriers to O

☒ Aggregate coding from children

Color: Red

Created On: 11/05/2023 00:13 By: VL

Modified On: 22/05/2023 11:56 By: VL

OK Cancel

Phase3-Generating initial Themes from coded and collated Data

Name	Files	Reference
Attitude towards Disclosure of Patient Safety Incidents	41	246
Interprofessional Communication	1	1
Roles or Responsibilities	12	28
Teams and Teamwork	11	19
Values or Ethics for Interprofessional Practice	39	198
Acknowledgment that Disclosing that PSI is important-Acknowledgement of	9	10
Apologised to patient straight away	4	5
Attitude of surviving-thriving and moving on	1	1
Awareness around culture of patient and family	1	1
Barrier-culture that it not required if near miss or minor. But should be done	1	1
Being grateful from HCPs Perspective	12	15
Being Honest and Truthful which enhancing Trusting relationship with patie	10	18
Being Open and Honest to gain Patient and Family Trust	12	14
Being Polite and Listening to patient and family	2	2
Being Truthful and Honest	9	12
Being unapologetic for the time to do and reach the standard	1	1
Belief that OD Works	1	1
Confidence that it's a Right thing to Do	16	30
Conscious decision	1	1
Don't Keep Secrets	1	1
Don't Keep Secrets (2)	1	1
Empathy	9	11
Empathy and Compassion	7	7
Empathy for patient and family as a result PSI	9	10

Values or Ethics for Interprofessional Practice

intent,

Reference 3: I feel with th thing when s has been ex understand

Reference 4: I suppose th situation an

Reference 5: Say lectures out and mak opportunitie which we an just do it, yo really chang hospital can

Reference 6: It's trying to be hidden if

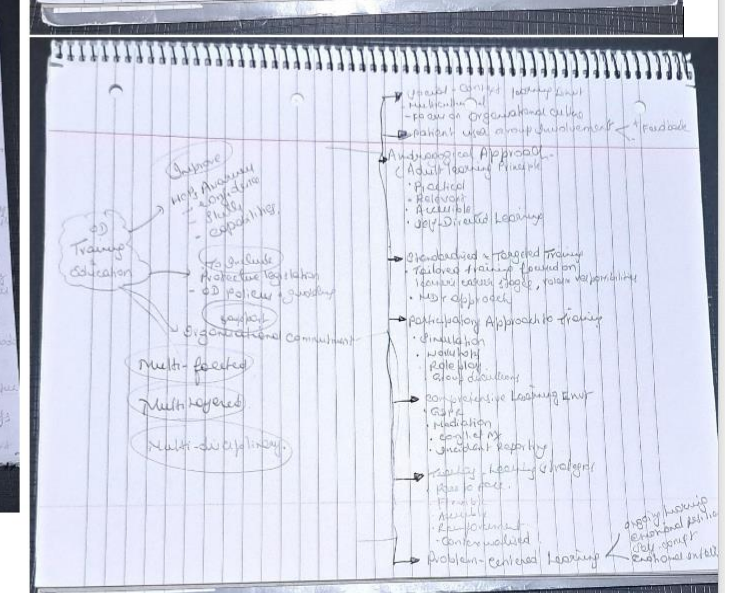
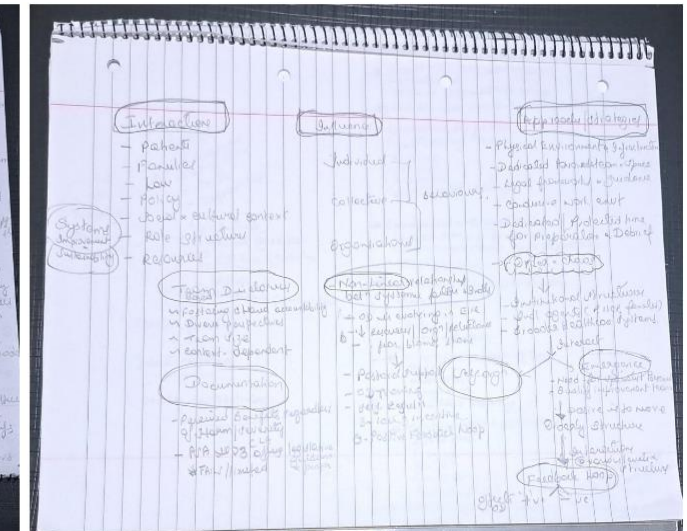
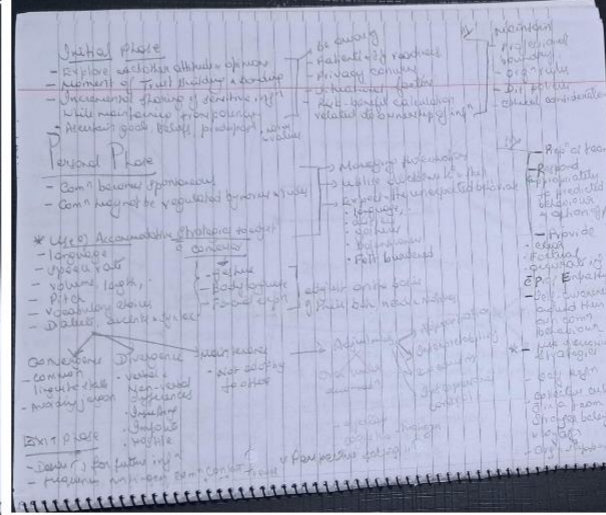
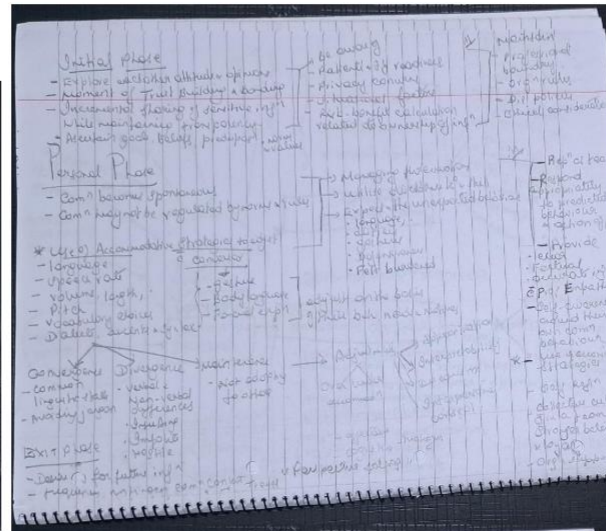
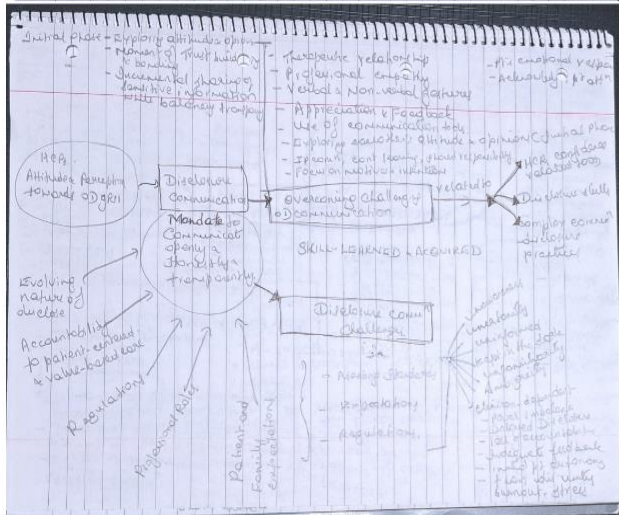
Reference 7: you explain being defen

Overarching Themes	Themes	Sub-themes
Identifying Enablers, Addressing Inhibitors, and Implementing Effective Approaches for Open Disclosure of Patient Safety Incidents	6.3.1 Unveiling Facilitators of Open Disclosure of PSI in healthcare practices	6.3.1.1 HCPs' Patient Safety Incident Experience, Response and Proactive strategies 6.3.1.2 Unveiling the HCPs' perception towards OD of PSI: Catalysts, Communication Dynamics, and the Enduring Significance for Current and Future Healthcare Practices 6.3.1.3 Transparency, Compassion, and Continuous Improvement: Navigating Open Disclosure for Enhanced Patient Trust and Safety.
	6.3.2 Unraveling Complexities in nurturing Open Disclosure of PSI in healthcare practices	6.3.2.1 Organisational Infrastructure and Cultural Challenges 6.3.2.2 Human Factors and Professional Dynamics 6.3.2.3 Quality, Safety and Regulatory Concerns 6.3.2.4 Hinderances to availability, adequacy, and alignment related to Open Disclosure training 6.3.2.5 Navigating Open Disclosure amidst the Challenges of COVID-19
	6.3.3 Uncovering Strategies to overcome Complexities related to Open Disclosure of Patient Safety Incidents	6.3.3.1 Collaborative approach with Stakeholders in the standardisation, implementation, and Integration of Open Disclosure Practices in Healthcare 6.3.3.1 Cultural Shift at all levels in the Organisation 6.3.3.2 Embracing SMART approach to Open Disclosure Practices 6.3.3.3 Supportive mechanisms to enhance System Redesign, System improvement and Sustainability 6.3.3.4 Humanistic Approach to Open Disclosure of Patient Safety Incidents (OD-PSI) 6.3.3.5 Enhancing Patient-Centered Care and Communication through Open Disclosure Training

- Vegetation is determined by climatic factors
 - Ecosystems determined by physical and biological factors
 - Natural resources are abundant
 - Population is growing rapidly
 - Environmental degradation is increasing

Environmental Degradation
 O.D.
 P.D.
 S.D.
 H.C. (N.D.)

Environmental Degradation
 - Deforestation
 - Soil erosion
 - Air pollution
 - Water pollution
 - Land degradation
 - Biodiversity loss
 - Climate change
 - Desertification
 - Salinization
 - Acidification
 - Eutrophication
 - Global warming
 - Ozone depletion
 - Radioactive contamination
 - Chemical contamination
 - Biological contamination
 - Noise pollution
 - Light pollution
 - Heat pollution
 - Vibration
 - Electromagnetic interference
 - Air pollution
 - Water pollution
 - Land pollution
 - Marine pollution
 - Atmospheric pollution
 - Soil pollution
 - Sedimentation
 - Acid rain
 - Greenhouse gas emissions
 - Air quality index
 - Water quality index
 - Land use index
 - Biodiversity index
 - Climate index
 - Desertification index
 - Salinization index
 - Acidification index
 - Eutrophication index
 - Global warming index
 - Ozone depletion index
 - Radioactive contamination index
 - Chemical contamination index
 - Biological contamination index
 - Noise pollution index
 - Light pollution index
 - Heat pollution index
 - Vibration index
 - Electromagnetic interference index



Appendix 24 Researcher's Engagement in Education and Training 2018-2024

2023-2024	European Academy of Nursing Science (EANS) 25 th Annual Summer Conference on 'Past, Present and Future of Nursing Science in Europe', University of Turin (Italy) 4 th July 2024
	European Academy of Nursing Science (EANS) Summer school (3rd year) at Turin, Italy from 1st-4th July 2024
	The Patient Safety (Open Disclosure and Notifiable Incidents) Act, 2023 – What it means for me webinar on 20th March 2024
	Patient Safety (Open Disclosure and Notifiable Incidents) Act, 2023 – An overview of the key provisions on 14th February 2024
	The Role of the Designated Person in Incident Management and Open Disclosure on 15th November 2023
	Open Disclosure session as a part of Patient Safety and Human Factors in Healthcare Module to Undergraduate Nursing students at Trinity College Dublin on 11th October 2023
	"Learn Together: Patient Involvement in the Incident Management Process" 11th October 2023
2022-2023	NVivo Training (2 Days) facilitated by Ben Meehan 25th and 26th of April 2023 at TCD
	Productivity and Publishing by Margaret-Mary Dowell on 7th March 2023
	Good practices in Reporting Thematic Analysis and Common problems to avoid and build good practices in reporting Thematic Analysis by Braun & Clarke
	NVivo How to Engage Students in Socially Constructed Qualitative Research Pedagogies by Prof. Janet C. Richards on 21st February 2023
	Gain Confidence when presenting your Quantitative Results by Ivan Mendez on 22nd February 2023
	Better Together: Online Qualitative Design, Data Collection and Analysis by Dr. Janet Salmons on 14th February 2023
	European Academy of Nursing Science (EANS) Annual Summer Conference on 'Continuity and Quality of Fundamental Nursing Care for Older People in Long Term Care' at Lovisenberg Diaconal University College, Oslo, Norway 6th July 2023
	Collaborative Qualitative Research on 24th January 2023
	European Academy of Nursing Science (EANS) Summer school (2nd year) at The Lovisenberg Diaconal University, Oslo, Norway from 2nd - 7th July 2023
	Workshops hosted by TCD Student Learning Development: Viva & Oral Defence on 12.04.2022 • 16th Annual PG Skills Development Summer School on 9th June 2022 (Online) • Critical thinking in your writing Workshop on 4th October 2022 (Online)
2021-2022	Seminar on 'Qualtrics-Using Qualtrics to collect data-guide for researchers' on 22.03.2022
	Workshops hosted by TCD Student Learning Development: PGT Essentials: Writing your Dissertation on 28.07.2022 • Academic Integrity and Plagiarism on 30.03.2022 2 • Building an argument in essays on 24.03.2022 • Thesis Writing Process on 15.03.2022 • Writing Introductions & Conclusions on 10.03.2022 • Writing sentences & Paragraphs on 09.03.2022

	• Reflective writing on 08.03.2022 • Developing Critical thinking in your writing on 23.02.2022 • Effective study for academic success on 24.02.2022 • Tips for Effective Writing: Grammar & Punctuation on 02.03.2022 • Writing with Confidence: Clarity and Focus on 4th 04.08.2022 • Writing with Confidence: Critique and Analysis on 09.08.2022 • Postgraduate Researcher's Skills for Success Nov 2021
	MMIRA Webinar: The historical influence on the development of Mixed-Method Designs on 17th November 2021
	Open Disclosure webinar on 'Role of the Designated person in supporting patients and their families' by Josephine Griffin on 20th October 2021
	European Academy of Nursing Science (EANS) Summer school (1 st year) (online due to COVID-19) at Cologne, Germany from 28th June to 9th July 2021
2020-2021	Trinity Masterclass: Amendments to the Health Research Regulations - Exploring Consent on 28th April 2021.
	Trinity Roundtable: Amendments to the Health Research Regulations - What researchers need to know on 21st April 2021
	Rapid Review Workshop at Trinity Health and Education International Research Conference on 9th March 2021
	'Introduction to open disclosure' to undergraduate nursing students at Trinity College Dublin via Blackboard Collaborate (online) on 20th October 2020
	Focus Group training by D.C.M. on 10th October 2020
	Thematic Analysis: Doing it well by Dr Russell Delderfield, University of Bradford, England on 26th August 2020
	Reflexivity: Writing it into a thesis by Dr Russell Delderfield, University of Bradford, England on 25th August 2020
	Qualitative Methodologists: The Basics of Qualitative Research by Dr Russell Delderfield, University of Bradford, England on 18th August 2020
	Keeping a research journal: Enhancing rigour in qualitative research by Dr Russell Delderfield, University of Bradford, England on 11th August 2020
	Literature reviewing for Doctoral Researchers Part 1 and Part 2 by Dr Russell Delderfield, University of Bradford, England on 16th July 2020
	Data Management for Doctoral Researchers by Dr Russell Delderfield, University of Bradford, England on 15th July 2020
	Ethical Doctoral Research by Dr Russell Delderfield, University of Bradford, England on 15th July 2020
	Interviewing skills and Focus Group skills for Doctoral Researchers by Dr Russell Delderfield, University of Bradford, England on 14th July 2020
	Writing a Research Proposal by Dr Russell Delderfield, University of Bradford, England on 8th July 2020
	The Research Integrity and Impact in an Open Scholarship Era (CA7000) module and the Data Protection, I.T. Security and Data Management (GDPR online Training) Jan- Dec 2019 and Certificate emailed Marie-Pierre on 2nd February 2020.
	Collaboration and consultation with Doug Wojcieszak, Founder and President, Sorry Works, U.S.A.

2019-2020	No Blame: Culture Change in Error Reporting and Open Disclosure –setting priority in education and research, a knowledge exchange workshop organized by Dr Dara Byrne, Personal Professor Simulation Education in Healthcare, School of Medicine, NUI Galway on 9th Oct 2019 at the Clarence hotel, Dublin.
	Master class in Mixed Method Research with Prof Victoria Vaughan Dickson (Professor at NYU Rory Meyers College of Nursing) on 1st Oct 2019 at School of Nursing & Midwifery, Trinity College Dublin
	Webinar on Health care workers and adverse events: the golden moment with Albert Wu on 26th Sept 2019 hosted by the International Society for Quality in Health Care (ISQua)
	Writing for publication workshop with Professor Brenda Happell (School of Nursing and Midwifery, University of Newcastle and Director of Happell Consulting) on 16th Sept 2019 at School of Nursing Psychotherapy and Community Health, Dublin City University.
	Launch of revised Open Disclosure policy and training days for Open Disclosure trainers and leads on 18th June 2019 at Education Centre, Scott Building, Regional Midland Hospital Tullamore.
	13th Postgraduate Skills Development Summer School on 13th June 2019 at Student Learning and Development
2018-2019	Agency for Healthcare Research and Quality (AHRQ) on Understanding Consumer Assessment of Healthcare Providers and Systems (CAHPS) Surveys.
	Mixed Method Research workshop on 7th Feb 2019
	Workshop for trainers and leads on Part 4 of the Civil Liability Amendment Act 2017 on 29th Jan 2019
	GDPR and Health Research Regulation Workshop on 18th Jan 2019
	Library HITS on Writing and Research skills such as Essay Writing, The Literature Review Process, Evaluating Journal Research papers, Citation and Plagiarism, Endnote Online, Endnote Desktop on 26th Nov 2018, Reading and Note Making on 15th Oct and 18th Oct 2018
	Research Integrity [from Epigeum] and Part 1 Copyright & Intellectual Property for the module on Research Integrity and Impact in an Open Scholarship Era (CA7000)
	Research Module lectures on Systematic Reviews (M.Sc. Lectures)

Appendix 25 The Good Reporting of a Mixed Methods Study Framework (O'Cathain et al., 2008)

Guideline	Location (Chapter, Section)
1. Describe the justification for using a mixed methods approach to the research question	• Chapter 3 (Philosophical and Methodological Approaches), Section 3.3 Research Study Design. • Chapter 4 (Methods), Section 4.3 Study Design
2. Describe the design in terms of the purpose, priority and sequence of methods	• Chapter 3 (Philosophical and Methodological Approaches), Section 3.3 Research Study Design – A Sequential Explanatory Mixed Method Design. • Section 3.3.1.1 - 3.3.1.3 Phase 1 (Quantitative), Phase 2 (Qualitative) and Phase 3 Integration (Mixing of Quantitative and Qualitative Data) • Chapter 4 (Methods), Section 4.2 Mapping of Study Objectives across Phase 1 and Phase 2 • Section 4.3 Study Design • Section 4.9 Integration
3. Describe each method in terms of sampling, data collection and analysis	• Described throughout Chapter 4 – Methods.
4. Describe where integration has occurred, how it has occurred and who has participated in it	• Chapter 3.3 Research Study Design • Section 3.3.1.3 Phase 3 Integration • Chapter 4 (Methods), Section 4.9 Integration • Chapter 7 (Integration)
5. Describe any limitation of one method associated with the presence of the other method	• Chapter 8 (Discussion), Section 8.7 Strengths and Limitations
6. Describe any insights gained from mixing or integrating methods	• Chapter 4 (Methods), Chapter 7 (Integration) - Chapter 8 (Discussion)