



**Coercion and Involuntary Care: A Study of Involuntary and
Voluntary Psychiatry Inpatients in Dublin**

Thesis submitted for the degree of Doctor of Philosophy

at The University of Dublin, Trinity College

March

2023

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This thesis work is dedicated to my partner Carlin and to my parents for their ongoing support and encouragement to continue in the pursuit of lifelong education.

I. 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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II. Summary

Involuntary care is a feature of mental health services around the world. In addition to involuntary admission and treatment, specific coercive or restrictive practices including seclusion and physical restraint occur in inpatient mental health settings. This study aimed to determine the relationships, if any, between these formal coercive practices and perceived coercion on admission among psychiatry inpatients in Ireland, as well as any relationships between perceived coercion on admission and variables such as age, gender, and diagnosis. This study also aimed to determine the relationships between objective necessity for involuntary treatment as measured by the Compulsory Treatment Checklist (CTC), legal admission status (voluntary or involuntary) and various clinical parameters (e.g., symptoms, insight) in an Irish inpatient psychiatry setting.

I included 107 psychiatry inpatients aged 18 years or over who were admitted to the acute psychiatry admission units in Tallaght University Hospital and Connolly Hospital, Dublin, Ireland over a 30-month period between September 2017 and February 2020. Over a quarter (27.1%) of participating patients had involuntary status; nine (8.4%) had experienced at least one episode of seclusion, and ten (9.3%) had experienced at least one episode of restraint.

When corrected for multiple testing, I found perceived coercion on admission to be significantly associated with involuntary status; perceived negative pressures on admission were significantly associated with involuntary status; and negative affective reactions to hospitalisation on admission were significantly associated with birth in Ireland. Total score across these four subscales was significantly associated with involuntary status. On multi-variable analyses, when corrected for multiple testing,

seclusion and physical restraint did not have any significant associations separately but experience of seclusion or restraint when analysed together was associated with involuntary status. Each multi-variable model explained just over one third of the variance in the distribution of seclusion and restraint practices.

Higher Compulsory Treatment Checklist scores were significantly and independently associated with involuntary status ($p < 0.001$), more positive symptoms of schizophrenia ($p < 0.001$), and younger age ($p = 0.031$). In this sample, the optimal cut-off score was 16.5, which detected compulsory treatment with a sensitivity of 82.8% and specificity of 69.2%. Although limited evidence is present to date on the use of this tool in other jurisdictions, I concluded that although useful, performance of this tool will likely vary across jurisdictions, resulting in different optimal cut-off scores in different countries.

Overall, I found perceived coercion on admission, assessed in retrospect by the patient, to be more closely associated with involuntary status and symptoms than it is with subsequent use of formal coercive practices, such as seclusion and restraint. This is an important finding in the context of proposed reforms to the Mental Health Act governing such practices. Use of seclusion and restraint is most strongly associated with involuntary admission status and, in the case of seclusion, younger age, rather than gender, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes towards medication or insight. While I have explored the network of interactions between involuntary status and use of seclusion and restraint, this merits much closer attention, especially as use of seclusion and physical restraint appears to be associated with involuntary legal status independent of level of symptoms, therapeutic alliance or insight.

III. Acknowledgements

I would like to express sincere gratitude to all participants in this study in both hospital sites in addition to the nursing staff in Tallaght University Hospital and Connolly Hospital for facilitating data collection in both sites.

I am immensely grateful to my PhD supervisor, Professor Brendan Kelly, for giving me the opportunity to engage in this research over the past four years and for his encouragement, support and guidance in navigating the area of postgraduate research and publication. I would also like to thank my thesis panel members Professor Veronica O'Keane and Dr Simon McCarthy-Jones for providing guidance throughout this PhD process.

I am enormously grateful to Dr Roisin Plunkett for her work on this study and for her support. Thank you also to Dr Shane Rooney and for the administrative staff in Tallaght University Hospital for their practical help in the early stages of setting up this study.

Thank you finally to my parents for their unwavering support and inspiration to continue pursuing further education, and to Carlin for his encouragement and support.

IV. Publications arising from this work

O'Callaghan AK, Plunkett R, Kelly BD. The association between perceived coercion on admission and formal coercive practices in an inpatient psychiatric setting. *International Journal of Law and Psychiatry*. 2021;75:101680.

<https://doi.org/10.1016/j.ijlp.2021.101680>210

O'Callaghan AK, Plunkett R, Kelly BD. The association between objective necessity for involuntary treatment as measured during admission, legal admission status and clinical factors in an inpatient psychiatry setting. *International Journal of Law and Psychiatry*.

2022 Mar-Apr;81:101777. <https://doi.org/10.1016/j.ijlp.2022.101777>217

O'Callaghan AK, Plunkett R, Kelly BD. Seclusion, restraint, therapeutic alliance and legal admission status: what really matters? *Journal of Psychiatric Practice*. 2022 Nov;

28(6):454-464. <https://doi.org/10.1097/prs.0000000000000665>224

O'Callaghan AK. 'The Medical Gaze': Foucault, anthropology and contemporary psychiatry in Ireland. *Irish Journal of Medical Science*. 2022;191(4):1795-1797.

<https://doi.org/10.1007/s11845-021-02725-w>235

O'Callaghan AK, Plunkett R, Kelly BD. What is the role of gender in perceived coercion during psychiatric admission? *Irish Journal of Psychological Medicine*, 1-5.

<https://doi.org/10.1017/ipm.2023.6>238

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List of abbreviations

AES	MacArthur Admission Experience Survey
CTC	Compulsory Treatment Checklist
DAI	Hogan Drug Attitude Inventory
GAF	Global Assessment of Functioning
MHA 2001	Mental Health Act 2001
MMSE	Mini Mental State Examination
PPI	Patient and Public Involvement
ROC	Receiver operating characteristic
SAPS	Scale for Assessment of Positive Symptoms
SANS	Scale for Assessment of Negative Symptoms
WAI-SR	Working Alliance Inventory – Short Revised
WHO	World Health Organisation

Chapter 1

Introduction

1.1 Ireland's Mental Health Act 2001

In Ireland, involuntary admission to a hospital or an in-patient facility for psychiatric treatment is governed by the Mental Health Act, 2001 (MHA, 2001), which sets out precise clinical and legal requirements for involuntary admission (Kelly, 2011). The MHC 2001 was implemented in November 2006 and replaced the previous Mental Treatment Act 1945 (Ireland, 1946). One of the key objectives of the MHA 2001 was to bring Ireland's practice of involuntary admission in line with the European Convention for the Protection of Human Rights and Fundamental Freedoms (1950) (Council of Europe, 1951). Ireland's MHA 2001 has resulted in enhanced practices in this setting in Ireland, although the current Act has had variable adherence to further published standards including those by the World Health Organisation (Freeman, 2005) and UN Convention on the Rights of Persons with Disabilities (Kelly, 2011; United Nations, 2006).

The current legislation defines 'mental disorder' as 'mental illness, severe dementia or significant intellectual disability where (a) because of the illness, disability or dementia, there is a serious likelihood of the person concerned causing immediate and serious harm to himself or herself or to other persons, or (b) (i) because of the severity of the illness, disability or dementia, the judgment of the person concerned is so impaired that failure to admit the person to an approved centre would be likely to lead to a serious deterioration in his or her condition or would prevent the administration of appropriate treatment that could be given only by such admission, and (ii) the reception, detention and treatment of the person concerned in an approved centre would be likely to benefit or alleviate the condition of that person to a material extent' (Section 3(1)).

The legislation also defines these three areas of ‘mental disorder’ (Section 3(2)), defining ‘mental illness’ as a state of mind of a person which affects the person’s thinking, perceiving, emotion or judgment and which seriously impairs the mental function of the person to the extent that he or she requires care or medical treatment in his or her own interest or in the interest of other persons. ‘Severe dementia’ is defined as a deterioration of the brain of a person which significantly impairs the intellectual function of the person thereby affecting thought, comprehension, and memory and which includes severe psychiatric or behavioural symptoms such as physical aggression. ‘Significant intellectual disability’ means a state of arrested or incomplete development of mind of a person which includes significant impairment of intelligence and social functioning and abnormally aggressive or seriously irresponsible conduct on the part of the person. The legislation states that ‘a person may be involuntarily admitted to an approved centre [inpatient psychiatry unit] and detained there on the grounds that he or she is suffering from a mental disorder’ (Section 8(1)), but cannot be so admitted ‘by reason only of the fact that the person (a) is suffering from a personality disorder, (b) is socially deviant, or (c) is addicted to drugs or intoxicants’ (Section 8(2)). The three-step involuntary admission procedure under the 2001 Act results in a 21-day ‘admission order’, which can be followed by a ‘renewal order’ of up to three and then six months’ duration (Section 15) if the preceding order is affirmed by a mental health tribunal (Section 18).

1.2 Involuntary admission rates

Involuntary psychiatric admission is a common feature of mental health services around the world (Kelly et al., 2015). The demographic and clinical correlates of involuntary status have been widely studied but are still not fully understood (Fiorillo et al., 2011; Kalisova et al., 2014). Ireland's rate of involuntary admission is relatively steady at 47 involuntary admissions per 100,000 population per year in 2018 (Daly, 2019), although it is worth noting that this has risen to 56.7 per 100,000 population per year in the most recent figures from 2021 (Daly & Craig, 2022). There is considerable international variability in rates of involuntary admission, with one recent large comparative study showing rates ranging from 14.5 involuntary admissions per 100,000 population per year in Italy to 282 in Austria (Sheridan Rains et al., 2019). It is unclear what role the Covid-19 Pandemic may have played in Ireland's recent increased figures, although it has been noted that people with established mental illness were more vulnerable to experience relapse in the context of the Covid-19 Pandemic (O'Connor et al., 2021). In 2018, when this study began, there were 17,000 admissions to Irish psychiatric units and hospitals, of which 13% were involuntary (Daly, 2019). The most recent available figures are those for 2021, when there were 15,723 admissions, 17% of which were involuntary (Daly & Craig, 2022). The Health Research Board have noted an overall reduction in admission rates over the past 56 years from 1965-2021 following a peak in the mid-1980s, and admissions have declined by almost 14% in the ten-year period from 2012-2021 (Daly & Craig, 2022).

Despite overall reduced admission rates with a shift towards community care, it has been noted in several European studies that the number of patients detained involuntarily for

mental health treatment has risen considerably in the past three decades in some countries while they stay constant or decline elsewhere (Sheridan Rains et al., 2019). While the reasons for such increases are unclear, authors of one paper in the UK have attributed this to increased case finding; more assertive follow-up; benefits of in-patient treatment; management of risk; legislative changes and the development of teams whose focus is assessment under the Mental Health Act (Keown et al., 2018).

In general terms, involuntary admission is commonly associated with a diagnosis of schizophrenia, a psychotic disorder or bipolar disorder (Daly, 2019; Mulder et al., 2008; Walker et al., 2019; Zhou et al., 2015), severity of symptoms (Hustoft et al., 2013; Kalisova et al., 2014; Salize & Dressing, 2004), male gender (Walker et al., 2019), perceived dangerousness (Gou et al., 2014; Walker et al., 2019; Zhou et al., 2015) and unemployment (Chang et al., 2013). There are increased rates of involuntary admission among ethnic minorities in many countries including Switzerland (Lay et al., 2011) and New Zealand (Wheeler et al., 2005), but not, interestingly, Ireland (Curley et al., 2016). Reduced insight into illness is another possible correlate of involuntary status, but even models which take many of these factors into account still account for under 50% of the variance in admission status (Gou et al., 2014; Kelly et al., 2004; Walker et al., 2019).

1.3 Restrictive practices

During involuntary admission, patients in Ireland, as elsewhere, may experience restrictive practices including seclusion, physical restraint, and mechanical restraint. In Ireland, the Mental Health Commission, established in 2002 as part of the implementation of the Mental Health Act 2001, has oversight of these practices and they have responsibility for ensuring that all approved centres (psychiatric inpatient units) comply with minimum standards related to use of such practices. In 2021, there were 67 approved centres operating in Ireland (Mental Health Commission, 2022e) including general adult mental health services such as the two sites included in this study, in addition to mental health services for children and adolescents, older people, intellectual disabilities, and forensic mental health services.

1.3.1 Seclusion

The Mental Health Commission (Mental Health Commission, 2009b) defines ‘seclusion’ as ‘the placing or leaving of a person in any room alone, at any time, day or night, with the exit door locked or fastened or held in such a way as to prevent the person from leaving’ (p.17).

Seclusion is used in Approved Centres when a patient is considered a serious threat to themselves or others and is used to prevent them from causing harm to themselves or others. This usually occurs due to disruptive and violent behaviours secondary to acute mental illness which do not respond to other methods such as verbal de-escalation or medication. The Mental Health Commission states that:

‘The use of seclusion may increase the risk of trauma and may trigger symptoms of previous experiences of trauma. Therefore, it must only be used in rare and exceptional circumstances as an emergency measure... As seclusion compromises a person’s liberty, its use must be the safest and least restrictive option of last resort necessary to manage the immediate situation, be proportionate to the assessed risk, and employed for the shortest possible duration. Its use must only occur following reasonable attempts to use alternative means of de-escalation to enable the person to regain self-control.’ (Mental Health Commission, 2022d).

In 2018, 760 patients were placed in seclusion a total of 1,799 times (Mental Health Commission, 2019). Two thirds of patients secluded were male and two thirds were under 40 years of age. In 2021, the Mental Health Commission (MHC) reported on the use of restrictive practices in approved centres during 2020 (Mental Health Commission, 2021). In 2020, 699 patients were placed in seclusion a total of 1,840 times; majorities were male in 2020 (62%) and 2019 (67%) (MHC, 2021). In its 2022 report, the Mental Health Commission noted that the number of episodes of seclusion decreased between 2020 and 2021 from 1,840 to 1,176 episodes, but the average duration of seclusion episodes increased, with episodes of seclusion lasting over 24 hours accounting for 21% of all episodes (Mental Health Commission, 2022e).

1.3.2 Physical restraint

The Mental Health Commission (Mental Health Commission, 2009a) defines ‘physical restraint’ as ‘the use of physical force (by one or more persons) for the purpose of preventing the free movement of a resident’s [patient’s] body when he or she poses an

immediate threat of serious harm to self or others’ (p.14). At a national level in Ireland, physical restraint is used more frequently and widely than seclusion (Mental Health Commission, 2022e). In 2018, 1,207 patients experienced physical restraint a total of 5,665 times (Mental Health Commission, 2019). Physical restraint was essentially equally common among men and women, and 54% were over 40 years of age. In 2020, 1,211 patients experienced physical restraint; slight majorities were male in 2020 (51.7%) and 2019 (53.9%) (MHC, 2021). In its report on 2021 activities, the Mental Health Commission noted that episodes of physical restraint and the number of residents undergoing physical restraint have decreased from 2019 onwards, in contrast to an overall steady increase in physical restraint observed between 2008 and 2018.

1.3.3 Mechanical restraint

The Mental Health Commission (Mental Health Commission, 2009b) defines ‘mechanical means of bodily restraint’ as ‘the use of devices or bodily garments for the purpose of preventing or limiting the free movement of a patient’s body’ (p.17) and Version 2 specifies that ‘The use of cot sides or bed rails to prevent a patient from falling or slipping from his or her bed does not constitute mechanical means of bodily restraint under these Rules’. In 2018, there were fewer than five episodes of mechanical restraint in psychiatric units in Ireland, all within the National Forensic Mental Health Service, which is not part of this study (Mental Health Commission, 2019). As a result, mechanical restraint was not considered any further in this research. Of note, there was an atypical increase in episodes of mechanical restraint in 2020, with 150 episodes attributed to a single Child and Adolescent Mental Health approved centre, none of which occurred in the sites included

in this study and this figure reduced back to 25 reported incidents of mechanical restraint in 2021.

1.3.4 Seclusion and Restraint Reduction Strategy

In 2014, the Mental Health Commission produced a Seclusion and Restraint Reduction Strategy, with the goal of significantly reducing the use of seclusion and physical restraint (Mental Health Commission, 2014). This strategy highlights the lack of evidence of a therapeutic benefit associated with the use of restrictive practices and limited evidence of these practices reducing behaviours of violence and aggression, with this strategy instead advocating for the use of de-escalation and behavioural support measures alone. This strategy sets out a standardised training curriculum on seclusion and restraint for staff working in psychiatry settings, with the goal of addressing the attitudes and misconceptions relating to these measures; trauma-informed care; recovery-oriented services; physical and psychological risks; evidence based early recognition tools, structured risk assessment, de-escalation and crisis management protocols; risk minimization; debriefing; approved policies, and a philosophy of care and treatment within approved centres (Mental Health Commission, 2014). While this strategy does not explore the impact of the use of such measures on an individual's care, it acknowledges the environmental changes and training required for adequate de-escalation to avoid such measures, including access to psychiatric intensive care units which is not available on all sites. In light of this strategy, from 2017 it became a mandatory requirement for all healthcare professionals working in approved centres to be trained in the prevention, de-escalation and management of violence and aggression (Health Service Executive, 2017).

1.3.5 Effects of restrictive practices

The effects of seclusion and restraint on therapeutic alliances require careful consideration, not least because a positive physician-patient working alliance is associated with improved patient satisfaction and greater adherence to treatment (Fuertes et al., 2007). The relationship of these practices with insight also merits particular attention owing to continued uncertainty about clinical correlates of involuntariness: even relatively comprehensive models, which take account of a range of most relevant clinical variables, still explain less than 50% of the variance in legal admission status (Gou et al., 2014; Kelly et al., 2004). There is a notable absence of quantitative data available in literature on patients' experience of use of these coercive or restrictive measures and the impact on such therapeutic alliances. There has been strong suggestion that use of seclusion and restraint have negative physical or psychological consequences, with incident estimates of post-traumatic stress disorder following these practices varying from 25% to 47% in the literature (Chieze et al., 2019).

Interestingly, there is evidence that the last two decades have seen attitudes to these practices change significantly, at least among nurses, with attitudes shifting from a therapeutic paradigm, in which seclusion and restraint were seen to have positive effects on patients, to a safety paradigm, with staff recognising seclusion and restraint as undesirable but necessary for the ward safety (Doedens et al., 2020). The effect of such a shift in attitude has yet to be determined but might well be significant as practices such as seclusion and restraint remain relatively common in inpatient psychiatric settings.

1.4 Perceived coercion

The terminology related to the concept of coercion in the setting of mental health services is complex. The dictionary defines the act of coercion “to constrain or restrain by the application of superior force, or to constrain to compliance or obedience by forcible means” (Oxford University Press, (n.d.)). The use of this terminology in inpatient psychiatric settings is a major challenge as it refers to not only to formal coercive measures such as involuntary admission, seclusion or restraint, but also to a patients’ perceived coercion, which may not necessarily align with such practices. Perceived coercion is often referred to as a subjective state within a patient that is reached after consideration of their environment and situation (Rhodes, 2000). While the use of formal measures is easy to measure and monitor, and is routinely collected by the Mental Health Commission, the latter is a complex and difficult to measure concept and does not exclusively relate to being involuntary (Philippe et al., 2019). The concept of coercion in mental health settings is a controversial area as it exposes clinical conflicts between the right to self-determination and access to necessary care.

The United Nations’ Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment has called for “an absolute ban on restraints and seclusion” (United Nations General Assembly, 2013). This has been supported by the World Health Organisation’s QualityRights initiative, which has identified that

“Coercive service environments, including services where involuntary admission and treatment are practiced, create tension and conflict. People may often react to their situation, to the way they are being treated, and to the environment of the service in a way that is perceived by the service staff, for example, as

“threatening”, “challenging” and “noncompliant”. The response of the service to this is often to impose more coercion on people, including the use of seclusion and/or restraint” (World Health Organisation, 2019).

While the overall concept of enhancing therapeutic environments and avoiding tension and conflict in these settings is welcome, there have been arguments against this “absolutist stance” on banning coercive measures as they may lead to criminalisation, stigmatisation and a widening of the treatment gap for individuals with mental illness (Duffy & Kelly, 2020). In the United States, the “Six Core Strategies” model was developed in 2002 to reduce the use of seclusion and restraint following a 1998 report outlining that 142 patients in the U.S. had died in the previous 10 years as a result of restraint (Weiss et al., 1998). This strategy has shown statistically significant reductions in seclusion and restraint in areas across the U.S and has begun to spread internationally (Perers et al., 2022).

As noted above, not all involuntarily admitted patients automatically experience perceived coercion because of what may be recognised as a formal coercive or restrictive measure. From the patients’ perspective, up to 78% of involuntary patients later feel that their involuntary admission was beneficial (O'Donoghue et al., 2010; O'Donoghue, Lyne, Hill, O'Rourke, et al., 2011; van der Post et al., 2014), and greater procedural justice has been found to be associated with better therapeutic relationships (Roche et al., 2014). On reviewing the literature in this area, it is evident that more research is, however, needed into both the clinical correlates of involuntary care and patients’ experience of coercion in mental health care settings.

There is a need to clarify precisely which aspects of involuntary care are most associated with perceived coercion both on admission and subsequently. There is some evidence that low levels of insight are associated with the use of coercive measures such as involuntary admission, seclusion and restraint (O'Donoghue et al., 2011b), but their use is generally under-researched. In addition, patients' views on the use of these measures are shaped by both perceived fairness and effectiveness (Meilau et al., 2016), so patients' perceptions of their experiences during involuntary care are critical, rather than focusing only on the occurrence of formal coercive measures.

1.5 International comparisons

Cross-national comparisons of formal coercive measures are complex due to a lack of centralised data collection in a number of countries. One study comparing rates of seclusion and restraint in Wales, Ireland, Germany and the Netherlands showed that episodes of physical restraint per 100 admissions per month, patients affected by restraint per 100 occupied bed days per month, and patients affected by restraint per 100 admissions per month are virtually the same in all four countries (Lepping et al., 2016). The Netherlands was found to have the highest use of seclusion, with Wales the lowest followed by Ireland and Germany.

It appears that Ireland's use of formal coercive or restrictive measures is relatively low by international standards. This study's rate of involuntary admissions, for example, is less than half of that in neighbouring England and, unlike England, Ireland does not have compulsory community treatment orders as a potentially less restrictive option, allowing patients to undergo involuntary treatment while remaining in their home environment (Gilhooley & Kelly, 2018). Ireland's rate of coercive measures also compares favourably looking further afield. In Finland, for example, the most commonly used restrictive measure is seclusion, followed by involuntary medication, mechanical restraint and physical restraint, and there is considerable variation between wards in the use of these measures (Laukkanen et al., 2020). In one male ward in Israel, 31.3% of patients experienced restraint or seclusion, of whom 98% had been aggressive in the past (Miodownik et al., 2019).

The Mental Health Commission have found an association between formal coercive practices and male gender, but associations between perceived coercion and gender have not been explored in detail to date. It is important to clarify this relationship between gender and perceived coercion owing to reported differences in associations between perceived coercion and increased suicide attempts post-discharge (Jordan & McNiel, 2020), in addition to reduced therapeutic alliance (Katsakou et al., 2010; Sheehan & Burns, 2011) and patient perceptions of treatment as dehumanising (Newton-Howes & Mullen, 2011).

1.6 Objective necessity for involuntary admission

Although involuntary psychiatric admission is a common feature of mental health services around the world (Kelly et al., 2015), there are very few tools to support clinical assessment of objective necessity for involuntary care. This is an important issue, owing to the deprivation of liberty involved in compulsory treatment. In addition, the 2013 report of the United Nations (UN) Special Rapporteur for the Prevention of Torture noted that severity of mental illness alone is not sufficient to justify detention, and that any detention or non-consensual psychiatric treatment should be necessary to protect the safety of the person or of others (United Nations General Assembly, 2013).

The importance of this issue is underlined by the fact that rates of involuntary admission vary significantly between countries, with one large comparative study showing rates ranging from 14.5 involuntary admissions per 100,000 population per year in Italy to 282 in Austria (Sheridan Rains et al., 2019). This study found that these variations are, for the most part, unexplained, despite higher rates being associated with lower rates of absolute poverty, higher gross domestic product, and healthcare spending per capita, higher proportions of foreign-born individuals in a population, and larger numbers of inpatient beds. There is also evidence that rates of involuntary hospitalisation vary between countries which allow such admissions on the basis of need for treatment and countries which require justification on grounds of risk (de Stefano & Ducci, 2008).

Overall, however, most of the variation in rates of involuntary admission across jurisdictions remains unexplained, confirming the need to better understand the factors that shape perceived necessity for compulsory treatment (Salize & Dressing, 2005).

While previous studies have emphasised clinical and socio-demographic characteristics linked with involuntary care (Lorant et al., 2007), there has been insufficient examination of the variables that drive the decision process of compulsory admission and thus determine rates (Kallert et al., 2011).

Differences in mental health legislation across jurisdictions could potentially complicate this area of study, but Sheridan Rains et al. (Sheridan Rains et al., 2019) report that characteristics of legislative systems appear unrelated to involuntary hospitalisation rates. This suggests that this topic is amenable to study across jurisdictions, although there are still very few clinical tools that attempt to understand and objectively assess the necessity for compulsory care in any country, let alone internationally. Such tools could potentially help to identify key factors driving involuntary admission rates in different jurisdictions and help standardise practices across clinical settings.

One such tool, the Compulsory Treatment Checklist (CTC), was recently developed and described by Brissos et al. (Brissos et al., 2017) in inpatient Portuguese psychiatric settings. The CTC is a 25-item, observer-rated checklist that aims to assess the necessity for involuntary psychiatric treatment, based on relevant legal factors, danger items, historic factors, and cognitive factors. CTC total scores range from 0 to 50, with higher scores indicating greater need for involuntary care. Brissos et al. (2017) identified an optimal cut-off score of 23.5, which detected compulsory treatment with a sensitivity of 75% and specificity of 93.6%. This tool has not, however, been studied outside Portugal to date and I was unable to find evidence of its use outside of a Portuguese setting.

1.7 An imbalance of power in acute psychiatric settings

It is important to view patient's perception of coercion in the wider context of the relationship between doctor and patient. Power imbalance between patients and professionals has long been debated and discussed both in general medical settings and acute psychiatry settings. Michel Foucault developed the concept of 'the medical gaze', describing the process in which doctors fit a patient's story into a "biomedical paradigm, filtering out what is deemed as irrelevant material" (Misselbrook, 2013). Doctors are perceived within this model to focus on selecting the biomedical elements of patients' problems, but in the subspecialty of psychiatry this is not the case, and such a filter is not so easily applied.

The American Psychiatric Association defines Psychiatry as "the branch of medicine focused on the diagnosis, treatment and prevention of mental, emotional and behavioural disorders" (American Psychiatric Association, 2021), and the psychiatrist as "a medical doctor who specializes in mental health, qualified to assess both the mental and physical aspects of psychological problems". There is an increased awareness of the gap between diagnostic definitions and the lived personal experience of wellness or illness. The World Health Organisation defines health as "A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organisation, 1948).

Michel Foucault (1926-1984) was a French historian and philosopher who had a strong influence in both philosophy and a wide range of humanistic and social science disciplines. His work *Madness and Civilisation: A history of insanity in the age of reason*,

explored his view of “the moral hypocrisy of modern psychiatry” (Gutting & Oksala, 2021). He argued that what was presented as “an objective, incontrovertible scientific discovery (that madness is mental illness) was in fact the product of eminently questionable social and ethical commitments” (Gutting & Oksala, 2021). This may have had some truth in an Irish 1950’s asylum system, which was often used not as a centre for treatment but as a forum for social control, when at one point in the late 1950s there were approximately 21,000 people resident in psychiatric institutions, which represented 0.7% of the entire population (Department of Health, 1972). Following the introduction of antipsychotic medications and formalised treatment pathways for previously untreatable diagnoses, Ireland has moved to a system that is no longer reliant on a long-term asylum system.

Foucault was particularly interested in the exercise of power within social systems, and he explored perceived relationships between knowledge and power within medicine in his work *The Birth of the Clinic*. Foucault argued that those in power set the agenda. This is a concept which remains palpable in today’s medical systems in the context of involuntary admission under the Mental Health Act and use of formal coercive measures. This power exists only formally in the context of formal measures such as involuntary admission, seclusion and restraint, with a goal within the current system of focusing on empowering people once they retain capacity through adequate treatment, a situation only made possible by that initial therapeutic power dynamic. However, it is important to explore whether this power exists in a more informal capacity outside of the use of such measures.

1.7.1 Socially Constructed Nature of Perceptions of Coercion

Taking into account Foucault's perspective on power as it occurs within social systems, it is also worthwhile to look at the socially constructed nature of perceptions of coercion. As with violence, which is closely tied to coercion in sociological literature in this area, the definitions of coercion are socially constructed and have changed over time. Social constructionism is an approach within psychology that elucidates "the process by which people come to describe, explain, or otherwise account for the world in which they live" (Gergen, 1985). This is also touched on in Kuhn's language game paradigm outlining that "words are conceptual tools, used within local language games, devised in order to make certain social phenomena visible" (Haugaard, 2022). The term "coercion" can be used broadly to describe anything from social pressures and the structuring of society to encompassing any infringement on interpersonal rights (Anderson, 2023). Any perceptions of coercion must be understood within this social context.

It has also been argued that coercion is an automatically necessary feature of law and that law itself coerces as a means to motivate compliance (Woodbury-Smith, 2020) and that is not possible for society to function with some authorized uses of coercion (Anderson, 2023). This is important to consider in the context of the role of the Mental Health Act 2001 in this study cohort.

1.8 Aims and structure of thesis

This research aims to determine the relationships, if any, between perceived coercion on admission and subsequent formal coercive practices among psychiatry inpatients in Ireland, and any relationships between perceived coercion on admission and other variables such as age, gender, and diagnosis. Considering the differences between these initial published findings and the Mental Health Commission's findings related to associations between gender and such practices, I also sought to further explore the original dataset with particular focus on the gender differences in this area, with a view to informing interventions.

In addition to exploring associations between perceived coercion and formal coercive practices, I also aimed to explore the use of these factors further, and determine the relationships, if any, between use of seclusion and physical restraint and factors such as demographic parameters, diagnosis, legal admission status (voluntary or involuntary), symptoms, cognitive function, global functioning, therapeutic alliance, attitudes towards medication and insight, among psychiatry inpatients in Ireland.

This study also aims to assess the usefulness of the Compulsory Treatment Checklist previously validated in a Portuguese setting in a different jurisdiction (Ireland), and to determine the relationships, if any, between objective necessity for involuntary treatment (measured using the CTC) and legal admission status, as well as various clinical parameters (such as symptoms and insight), among adult psychiatry inpatients in Ireland in order to establish whether this tool has validity and value in an Irish setting to assist with clinical decision-making.

Chapter 2

Methods

2.1 Study design

This is a quantitative study using semi-structured interviews to determine the relationships between perceived coercion on admission; formal coercive practices; relationships between Compulsory Treatment Checklist scores, and other relevant variables. I sought to include both voluntary and involuntary patients in this sample to examine any relationship between admission status and perceived coercion on admission. As involuntary admissions account for a minority (13%) of psychiatric admissions in Ireland (Daly, 2019), I preferentially selected involuntary patients for inclusion in this sample so as to provide greater focus on the variables of greatest interest which are associated with involuntary status (i.e., coercive practices such as seclusion and restraint). More specifically, it was my intention that this sample would include double the proportion of involuntary patients that I would expect from national data in the year of study, i.e., I aimed that approximately 26% of the sample would be involuntary patients, compared to 13% nationally. The goal of this was to provide enhanced focus on involuntary patients while still permitting comparison with voluntary patients and keeping the overall sample as large as feasible.

2.2 Ethical considerations

Before commencement, this study was approved by Research Ethics Committees covering Tallaght University Hospital and Connolly Hospital, Blanchardstown, Dublin. Written informed consent was obtained from each participant prior to participating in the study. This study was performed in accordance with appropriate data protection legislation and the Declaration of Helsinki (World Medical Association, 2008).

2.3 Participants

2.3.1 *Recruitment summary*

This study included voluntary and involuntary psychiatry inpatients aged 18 years or over who were admitted to the acute psychiatry admission units in Tallaght University Hospital and Connolly Hospital in mixed urban and suburban areas of Dublin, Ireland over a 30-month period between September 2017 and February 2020. Both inpatient units are located in general medical hospitals and provide acute mental healthcare to adults with major mental illness, including both voluntary and involuntary patients under Ireland's Mental Health Act, 2001. Ireland's public mental health service is arranged on a strict catchment-area basis, so that all public (non-fee-paying) psychiatry admissions of people resident within the geographical catchment area of these hospitals must occur in these admission units.

2.3.2 *Recruitment criteria*

For inclusion in the study, each patient must have been admitted as an inpatient during the study period; be aged 18 years or over; be proficient in the English language; and possess decision-making capacity to provide valid, written, informed consent. It was not possible to assess all patients at the same time during their hospital stays, owing to differing lengths of stay, variable courses of illness (affecting ability and willingness to participate), differences in the times at which coercive measures were used, and unpredictable discharge dates. To control for different lengths of hospital stay at time of

assessment, therefore, all multi-variable models included length of hospital stay at time of assessment as an independent variable.

2.3.3 Method of selection

Convenience sampling was utilised for selection of patients. Nursing staff in both research sites were approached to identify patients who fulfilled criteria for inclusion in the study. As noted in the Study Design, I aimed for approximately 26% of this sample to be involuntary (double the proportion of involuntary patients that I would expect from national data in the year of study) to allow for enhanced focus on involuntary patients and analysis of correlates of interest. In order to ensure this was met, involuntary patients were preferentially approached for one in every four interviews at selection stage and the percentages of voluntary vs involuntary were kept under review throughout the data collection period. To ensure no conflict of interest, neither data collector was involved in any of the individuals' care. A decision was made that the researcher would visit the alternative site to collect data for any individual if this issue occurred however this was not necessary during the study period.

The nature of the timing of acute psychiatric admissions was considered when establishing the research protocol for timing of interviews. As many admissions occur at weekends and out of hours, it was aimed to approach each patient at the earliest possible opportunity during their admission from day one of admission onwards rather than on the first day of each admission. However, as there was only one part-time researcher in each site engaging in data collection it was not always possible to approach each patient at the same point in their admission. A pragmatic approach was taken to this to ensure adequate

data collection and Length of Stay at time of admission was included in all models to account for any differences related to this and this is included as a limitation of this study.

After obtaining written, informed consent, I interviewed all participating patients using a semi-structured interview. Each interview took place over approximately 40 minutes and all patients were informed that they could withdraw consent for participation at any point. Comfort breaks were offered throughout the interview process.

2.4 Clinical measures

2.4.1 Demographic and clinical details

I recorded each patient's gender, marital status, employment status, place of birth, date of birth, date of admission and date of assessment. I also recorded each patient's admission status under the Mental Health Act, 2001 and whether they had experienced seclusion or physical restraint at any point during the admission up to the time of interview. This information was easily available in each patient's chart due to Mental Health Commission recording requirements.

Clinical diagnoses were recorded using the World Health Organisation's *International Classification of Mental and Behavioural Disorders (ICD-10)* (World Health Organisation, 1992). The diagnostic groups recorded were: Substance Use Disorders, Schizophrenia Group, Affective Disorders, Anxiety Disorders, and Personality and Behavioural Disorders. It is worth noting that two of these groups: Substance Use Disorders and Personality and Behavioural Disorders fall outside of the category of patients who can be admitted involuntarily. Section 8(2) of the Mental Health Act 2001 (MHA, 2001) states that:

“it is not lawful to admit a person involuntarily in an Approved Centre solely because that person is (a) suffering from a personality disorder (b) is socially deviant, or (c) is addicted to drugs or intoxicants”.

It goes on to state that:

“Even if admission to an Approved Centre is likely to be of benefit, in the absence of mental disorder as defined in the 2001 Act, a person cannot be involuntarily admitted. Similarly, in the absence of mental disorder as

defined in the 2001 Act, a person cannot be involuntarily admitted if a failure to admit would be likely to lead to a serious deterioration in his or her condition”.

Consideration was given to excluding this group of patients who could not be admitted voluntarily, however, I decided to include this group considering that they could potentially be a group experiencing considerable perceived coercion without the option of the legal process and protection allowed by the use of the Mental Health Act 2001.

2.4.2 Rating Scales

There were two raters engaging in data collection for this study, one in each hospital site. I collected data in Tallaght University Hospital and (RP) collected data in Connolly Hospital. Both raters were psychiatry trainees with similar clinical experience and familiarity with the rating scales used. To control for inter-rater reliability, both raters met regularly and separately rated and cross-checked ratings for a sample of patients. Inter-rater reliability may have been more formally assessed to ensure consistency and validity. Percent agreement is one such method, although this does not account for chance agreements. Alternative formal statistical methods for measurement of this include Cohen's Kappa statistics and Kendall's coefficient of concordance. The informal measurement of this is a limitation of this study.

Hospital site was also included in data collection, although no significant variation was noted between the two sites. I completed all interviews in Tallaght University Hospital (31 interviews) and (RP) completed all interviews in Connolly Hospital (76 interviews); in addition, I planned the study, managed the data, performed all analyses in this thesis, interpreted the analyses, wrote and revised published papers (included with this thesis),

and wrote this thesis. For data collection, all suitable patients were approached about the study, and ‘hospital site’ was included in the analysis to ensure no significant differences were present between patients from the two hospital sites.

Of note, I independently engaged in study planning, data collection in Tallaght University Hospital, data management and analysis, interpretation and discussion, supervised by my research supervisor.

2.4.2.1 Scale for Assessment of Positive Symptoms and Scale for Assessment of Negative Symptoms

As involuntary admission is commonly associated with a diagnosis of schizophrenia, a psychotic disorder or bipolar disorder, I chose to collect clinical data specifically on severity of symptoms of schizophrenia. Symptoms of schizophrenia were assessed using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984) and Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983). These are standardised scales which have been shown to have consistent interrater reliability across multiple cross-cultural settings (Andreasen et al., 1991). This measure was chosen in favour of alternative scales rating psychotic symptoms such as the Positive and Negative Symptom Scale (PANSS) or the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1988) due in part to the complexity and limited reliability of interpreting such scales in the context of multiple other variables (Kumari et al., 2017). Of other potential tools available, the PANSS has shown consistently better outcomes than the BPRS (Kumari et al., 2017). There is also limited evidence of the reliability and validity of the BPRS outside of psychosis spectrum diagnoses (Zanello et al., 2013), although since the

commencement of this study further data has emerged on the potential for this (Hofmann et al., 2022).

The SAPS comprises 30 items under the four domains of hallucinations (6 items), delusions (12 items), bizarre behaviour (4 items) and positive formal thought disorder (8 items), each rated on a 6-point scale ranging from 0 to 5, yielding a total SAPS score that can range between 0 and 150. The SANS comprises 20 items under the domains of affective blunting (7 items), alogia (4 items), avolition/apathy (3 items) anhedonia/asociality (4 items) and attention (2 items), each rated on a 6-point scale ranging from 0 to 5, yielding a total SANS score than can range between 0 and 100. On both scales, the more symptoms the patient has, the higher their score.

2.4.2.2 Mini Mental State Examination

The Mini Mental State Examination (MMSE) (Folstein et al., 1975) was performed to assess each patient's cognition. The MMSE was developed as a screening test to quantify cognitive impairment and comprises 11 questions that test five areas of cognitive function (orientation, immediate memory, attention/concentration, delayed recall and language), yielding a total MMSE score that can range between 0 and 30. Examination of the MMSE's psychometric properties shows moderate-to-high levels of reliability, with a score of 23 or lower indicative of cognitive impairment (Tombaugh & McIntyre, 1992). This scale was chosen due to these psychometric properties and because alternative scales such as the Montreal Cognitive Assessment (MoCA) were deemed to be overinclusive for the scope of this study, despite some studies showing benefits to the use of the MoCA in this population (Fisekovic et al., 2012).

The MMSE is not specifically designed for use in this cohort of patients including those with psychosis but is commonly used in the literature (Arapidis et al., 2006; Ong et al., 2016; Tatari et al., 2011). For this reason I felt it would be unwise to rely on subscales of the MMSE as this is not specifically validated. It would be useful to examine use of other potential cognitive measurement tools in further research.

2.4.2.3 Global Assessment of Functioning

Patients' level of functioning was assessed using the Global Assessment of Functioning (GAF), which is a numeric scale ranging from 1 to 100, with higher scores indicating better functioning (American Psychiatric Association, 1994). This scale is widely used as a rating scale to establish the severity of illness in psychiatry, and encompasses three dimensions of functioning: psychological, social and occupational (Aas et al., 2018). I chose this scale as it is intended to be a generic rather than a diagnosis-specific scoring system.

2.4.2.4 MacArthur Admission Experience Survey

The MacArthur Admission Experience Survey (AES) (Short Form) was used to determine levels of perceived coercion on admission, negative pressures on admission, procedural injustice on admission and affective reactions to hospitalisation on admission among patients (Gardner et al., 1993). This is a widely used, validated, observer-rated scale which evaluates the level of perceived coercion experienced at the point of psychiatric hospital admission. This scale has good psychometric properties, is not time-

consuming, is well understood by patients and has been validated in different settings. The test-retest reliability of the perceived coercion subscale of the MacArthur Admission experience Survey was not explored in this study as patients were interviewed at one timepoint only in this study. Previous studies have shown this tool to have good internal consistency and test-retest reliability (Golay et al., 2017; Zlodre et al., 2016)

The AES comprises 16 statements, divided into four subscales, to reflect these four elements of the person's hospital admission experience, each of which is rated as 'true', 'false' or 'don't know'.

The perceived coercion subscale uses statements which focus on freedom, choice, initiative, control and influence over coming into hospital. The negative pressures subscale focusses on being forced, threatened or physical forced to come into hospital by others. The procedural justice (or voice) subscale focuses on whether the patient has a chance to voice an opinion about coming into hospital and perceptions of process satisfaction, fairness and validation. The affective reactions subscale uses a series of adjectives to evaluate the patient's affective or emotional reaction to hospitalisation (Gardner et al., 1999; Golay et al., 2017).

The perceived coercion subscale comprises five items with an overall score ranging from 0 to 5, scored in this study such that a higher score indicates greater perceived coercion. The negative pressures subscale comprises six items with an overall score ranging from 0 to 6, scored in this study such that a higher score indicates greater negative pressures. The procedural justice subscale (also known as the voice subscale) consists of three items with an overall score ranging from 0 to 3, scored in this study such that a higher score indicates lower perceived procedural justice.

The affective reactions to hospitalisation subscale comprises six emotions (angry, sad, pleased, relieved, confused, and frightened) with an overall score ranging from 0 to 6. In this study, each positive emotion rated as ‘true’ scored 0 and as ‘false’ scored 1; each negative emotion rated as ‘true’ scored 1 and as ‘false’ scored 0; as a result, a higher score indicates a higher level of negative emotions. Total score for the AES was calculated by adding scores of each of the four subscales; therefore, the AES total score range was from 0 to 20.

2.4.2.5 Working Alliance Inventory

The patient’s therapeutic alliance with their treating consultant psychiatrist was assessed using the Working Alliance Inventory - Short Revised (WAI-SR), a 12-item self-report questionnaire that assesses three key aspects of the therapeutic alliance: agreement on tasks of therapy (‘task’; four items on the scale); agreement on the goals of therapy (‘goal’; four items) and development of an affective bond (‘bond’; four items). Developed by Horvath and Greenberg (Horvath & Greenberg, 1989), the WAI-SR is validated in both inpatient and outpatient settings (Busseri & Tyler, 2003; Hatcher & Gillaspay, 2006). The WAI-SR is a commonly used tool in studies rating therapeutic alliance in inpatient psychiatry settings, and so use of this tool allows for direct comparison with other literature in this area. I chose to focus on the therapeutic relationship with the treating consultant specifically as this tool is not validated in assessing the overall relationship with the team and, as per Mental Health Commission guidelines, the consultant psychiatrist was making the final decisions regarding admission status and signing off on use of coercive measures. Each item is rated on a seven-point Likert scale ranging from 1 to 7 (1: ‘never’, 2: ‘rarely’; 3: ‘occasionally’; 4: ‘sometimes’; 5: ‘often’; 6: ‘very often’;

7: 'always') with two items in the goals of therapy subscale (4 and 10) reverse scored. As a result, each of the three subscale scores ranges from 4 to 28, and total score ranges from 12 to 84, reflecting the strength of therapeutic alliance (Munder et al., 2010).

2.4.2.6 Hogan Drug Attitude Inventory

Patients' attitudes towards prescribed medication is one of the strongest contributors in non-adherence to treatment, and a positive attitude towards psychopharmacological medication is associated with a lower risk of re-hospitalisation (Schennach et al., 2012). I assessed attitudes towards medication and medication compliance using the Drug Attitude Inventory (DAI), a self-report, true/false questionnaire comprising 30 statements about perceived effects of medication (Hogan et al., 1983). This tool was created to measure attitudes toward medications in adults and predicts adherence in schizophrenia and depression studies (Brook et al., 2003; Rossi et al., 2000) and has been found to be the best predictor of medication adherence in hospitalised adults with schizophrenia (Donohoe et al., 2001).

The DAI consists of 15 statements that a patient who adheres to medications is likely to answer as 'True' and 15 statements that the same patient is likely to answer as 'False'. Each statement that is positively answered is given a score of +1 and each statement that is negatively answered is given a score of -1. The total score is calculated as the sum of positive scores minus the negative scores. This generates a total score ranging from -30 to +30. A positive total score indicates adherence, and a negative total score indicates non-adherence.

2.4.2.7 Birchwood Insight Scale

Insight was measured with the 8-item self-report Birchwood Insight Scale (Birchwood et al., 1994). This scale has construct validity in both schizophrenia spectrum and bipolar disorders (Büchmann et al., 2019) and modified versions of this scale have also been used to assess mood disorders alone on an outpatient basis (Sturman & Sproule, 2003). I used the original scale due to the strong associations between schizophrenia and bipolar disorder and involuntary admission status. The Birchwood insight scale assesses three dimensions of insight: ability to re-label symptoms, awareness of mental illness, and recognition of a need for treatment. It comprises eight items, each rated on a 3-point scale ranging from 0 to 2. Added together, these yield a total score that ranges from 0 to 16, with a higher score indicating better insight. A score of 0 to 8 indicates no insight; 9 to 11 indicates good insight, and 12 to 16 indicates full insight.

Scoring can be broken down into three subscales, with items 1 and 8 added to generate a score for 'awareness of symptoms' (0-4); items 2 and 7 added to generate a score for 'awareness of illness' (0-4), and items 3 to 6 added and divided by 2 to generate a score for 'need for treatment' (0-4). For each of these subscales, a score of 1 or 2 indicates poor insight and a score of 3 or 4 indicates good insight.

2.4.2.8 Compulsory Treatment Checklist

The Compulsory Treatment Checklist (CTC) was used to evaluate the necessity for involuntary psychiatric treatment (Brissos et al., 2017). This checklist comprises 25 items identified as relevant to involuntary treatment, with four item clusters: legal, danger, historic and cognitive. All of the information required was readily available in the inpatient chart within standard admission documentation, rather than obtained as part of the semi-structured patient interviews. It is a psychometrically oriented evaluation of the need for compulsory psychiatric treatment that has been shown to be appropriate for use in the emergency setting, inpatient ward, or outpatient consultations.

As previously outlined, this novel tool was chosen as there were no other rating scales at the time of commencement of this study that were validated to assess objective need for involuntary admission, and this was its first use outside of a Portuguese setting. This introduces an additional element to the use of this tool as an English translation of this was used in our study. The CTC tool used in this study was directly produced by the authors of the original study which was published in the *International Journal of Law and Psychiatry*, an English-language journal. Although not explicitly stated, it is assumed that the original use of the tool in a Portuguese setting used a Portuguese version of this and translation was engaged in prior to submission. Language is important to take into account as language and cultural contexts can differ considerably despite the assumption that the target language measures the same construct. Although rarely used, methodology exists for robust translation of tools (Cheung et al., 2020; Hawkins et al., 2020). Methodological analysis of the translation of this tool was limited by the lack of

published information on the original Portuguese version of the tool and was outside of the scope of this research study.

The CTC legal cluster evaluates factors that commonly must be present by law to validate detention: serious mental disorder; imminent or short-term danger; absence of treatment, which can result in significant deterioration; refusal to submit to necessary medical treatment, but lack of discernment required to evaluate the meaning and implications of non-consent; and creation of danger to legally protected rights of relevant value.

The CTC danger cluster evaluates factors commonly referred to in the literature as being associated with dangerous situations, thus leading to risk of violence. History of violence, anti-social behaviours, impulsiveness, anti-social personality traits, and anti-social cognitions are all included due to their predictive value for violence.

The CTC historic cluster address past evidence of non-adherence with treatment and supervision failure, as well as substance misuse (due to its association with violent behaviour).

The CTC cognitive cluster addresses cognitive factors that can interfere with a patient's ability to decide about treatment, including insight, understanding of information, psychotic symptoms, and the behavioural and affective impact of symptomatology, owing to the importance of all these factors in shaping decisions about involuntary care.

Each item in the CTC is recorded as 'absent' (0), 'possible' (1), or 'present' (2). As a result, total CTC scores range from 0 to 50, with a higher score indicating a higher

probability that the patient needs and would benefit from involuntary psychiatric treatment. In the original Portuguese study, the optimal CTC total cut-off score of 23.5 (out of 50) had a sensitivity of 75% and a specificity of 93.6% in detecting compulsory treatment. I identified that there may be differences in the sensitivity and specificity within an Irish population and set out to establish appropriate cut-off scores following analysis of this data set.

The required information to complete the CTC was reflected in compulsory admission documentation and risk assessment in both hospital sites. For the patient's interviewed, missing data was not identified as an issue for data collection for this tool. During study design, I decided that any missing data would be managed as missing at random and at statistical analysis stage would be imputed with either multiple imputation or regression imputation.

2.5 Statistical analysis

Following collection, data were transferred to a password-protected research computer, in a locked research office onsite in each hospital site. Data were anonymised and encrypted. Data were stored, described, and analysed using IBM SPSS Statistics Version 27. Data were normally distributed except where indicated otherwise in the results section.

To investigate correlates of each of the four MacArthur AES subscale scores and total AES score, I generated five linear regression models with AES subscale scores and total AES score as the dependent variables. Independent variables were demographic and clinical characteristics shown in Table 3. The statistical modelling technique included corrections for multiple testing in each model. In order to correct for multiple testing, I looked at the number of variables in each analysis and divided the p value of 0.05 by the number of variables. For example, in the multi-variable binary logistic regression analyses of correlates of seclusion and physical restraint (Table 3) I looked at six variables, so calculated a significant p value corrected for multiple testing of 0.0083. In the multi-variable analyses of correlates of MacArthur Admission Experience Survey (AES) on admission (Table 5) I corrected for multiple testing by dividing the p value of 0.05 by the fifteen variables, resulting in a significant p value corrected for multiple testing of 0.0033. In the multi-variable analyses of correlates of MacArthur Admission Experience Survey (AES) on admission in females (Table 6) I corrected for multiple testing by dividing the p value of 0.05 by the fourteen variables, resulting in a significant p value corrected for multiple testing of 0.0036. In the multi-variable analyses of correlates of MacArthur Admission Experience Survey (AES) on admission in females

(Table 6) I corrected for multiple testing by dividing the p value of 0.05 by the fourteen variables, resulting in a significant p value corrected for multiple testing of 0.0036.

For bi-variable analysis, I used the Student t test, Chi Square test, and Mann Whitney U test, as appropriate. For multi-variable analyses of correlates of seclusion and physical restraint, I generated three binary logistic regression models with seclusion (yes/no) and physical restraint (yes/no) as the dependent variables, in addition to a third model with either seclusion or physical restraint (yes/no) as the dependent variable. Demographic and clinical characteristics associated with the dependent variables on bi-variable testing were entered as independent variables in the regression models (Table 3).

I also tested each model for multicollinearity, which is when two or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, I calculated a 'tolerance value' for each independent variable: tolerance values below 0.10 would indicate significant problems with multicollinearity (Katz, 1999). I calculated the r-squared value for each model to determine the predictive power of each model.

Receiver operating characteristic (ROC) curve analysis was used to calculate a new optimum CTC cut-off point. The ROC curve is a widely used method when figuring out a diagnostic test's accuracy and to establish an appropriate cut-off point for the test. This analysis draws a plot of sensitivity (true positive rate) by 1-specificity (false positive rate) at every test value in order to determine the test value where the sensitivity and specificity are highest as the cut-off point (Zweig & Campbell, 1993).

To investigate correlates of total CTC score, I generated a linear regression model with total CTC score as the dependent variable. Independent variables were demographic and clinical characteristics shown in Table 4. I also tested this model for multicollinearity as above, by calculating a ‘tolerance value’ for each independent variable; tolerance values below 0.10 would indicate significant problems with multicollinearity (Katz, 1999). In the analysis of the Correlates of Compulsory Treatment Checklist (CTC) total scores using different cut-off points (Table 9) I corrected for multiple testing by dividing the p value of 0.05 by the four variables, resulting in a significant p value corrected for multiple testing of 0.0125. In the multi-variable analysis of correlates of Compulsory Treatment Checklist (CTC) total score (Table 10) I corrected for multiple testing by dividing the p value of 0.05 by the eleven variables, resulting in a significant p value corrected for multiple testing of 0.0045.

The five main assumptions underlying multiple linear regression models are linearity; no multicollinearity, independence; homoscedasticity, and multivariate normality. Presence of these is necessary to ensure the reliability of a multiple linear regression. To determine if a linear relationship between each predictor and response variable was present, a plot of the predictor variables as listed in Table 5 was plotted against perceived coercion (Figure 1). Normality is assumed due to the lack of deviation. This data was also checked for homoscedasticity using a scatterplot of the residuals (Figure 2). The lack of obvious pattern and equal distribution above and below zero on both the x and y axis show homoscedasticity. Finally, I checked for the absence of multicollinearity using VIF values for this model. The VIF values ranged from 1.157 – 6.470. As all values are below 10 this indicates that this assumption is met.

Figure 1

Analysis of linear relationship between predictor variables and perceived coercion.

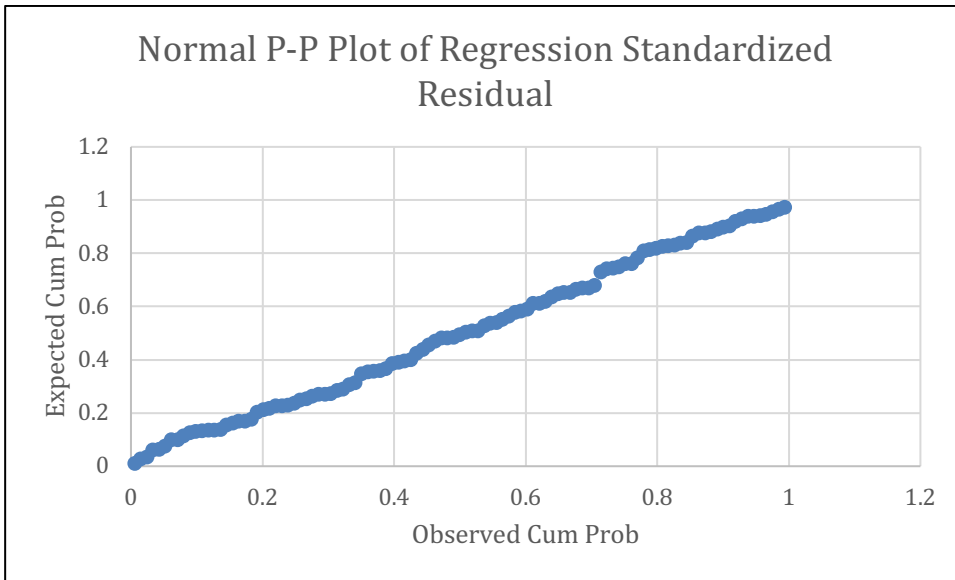
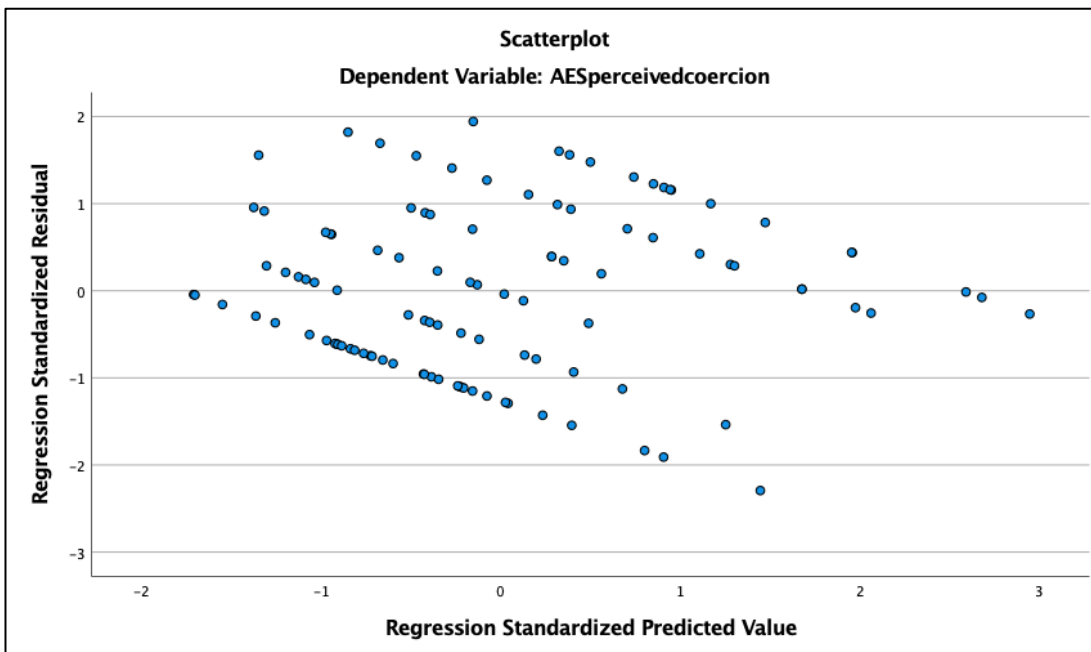


Figure 2

Analysis of linear relationship between predictor variables and perceived coercion.



Some researchers state that for regression analysis there should be at least 10 observations per variable. Again looking at the multiple regression model (Table 5), there are 15 variables so an ideal minimum sample size would be $n=150$. The minimum sample size can also be calculated using tools such as GPower and this showed A sample size of 141 results in a statistical test power of 0.8028, the probability to reject an incorrect H_0 . As our sample size was $n=107$, this is listed as a limitation and any results must be interpreted with this potential source of error in mind.

2.6 Candidate's Role in the study

My role in the study included independently engaging in study planning and applying for ethical approval, data collection of all patients in Tallaght University Hospital and regular liaison with (RP) rater in Connolly Hospital, data management and analysis, interpretation, discussion and write up of results. All of the above were supervised by my research supervisor.

Chapter 3

Results

3.1 Demographic details

Demographic characteristics of those studied are included in Table 1. This study sample included 107 patients of whom 29 (27.1%) had involuntary status for part or all their admission. As previously noted, I aimed for approximately 26% of this sample to be involuntary to allow for analysis of correlates of interest. Forty-eight patients (44.9%) within this sample were female and 59 (55.1%) were male. There were no patients in this data set who identified as non-binary. Almost two-thirds of patients were never married (n=69; 64.5%); 15 (14%) were married; 17 (15.9%) were separated or divorced, and 6 (5.6%) were widowed. Majorities were born in Ireland (n=89; 83.2%) and unemployed (n=79; 73.8%). These proportions did not differ between patients recruited in Tallaght University Hospital (n=31; 29.0%) and Connolly Hospital (n=76; 71.0%) ($p>0.05$ in all cases). Mean age was 43.3 years (standard deviation [SD]: 15.8).

Length of hospital stay at time of assessment was non-normally distributed (skewed to the right) with a median of 11 days (inter-quartile range: 5-23). Affective disorders were the most common diagnoses (n=50; 46.7%) followed by schizophrenia and related disorders (n=29; 27.1%), personality and behavioural disorders (n=12; 11.2%), substance use disorders (n=9; 8.4%) and anxiety disorders (n=7; 6.5%).

At time of assessment, nine patients (8.4%) had experienced one or more episodes of seclusion during their admission. Five patients (4.7%) had experienced one episode of seclusion; one patient (0.9%) had experienced two episodes; two patients (1.9%) had experienced three episodes, and one patient (0.9%) had experienced seven episodes. Ten patients (9.3%) had experienced one or more episodes of physical restraint. Six patients

(5.6%) had experienced one episode of physical restraint; one patient (0.9%) had experienced two episodes; one patient (0.9%) had experienced three episodes; one patient (0.9%) had experienced four episodes, and one patient (0.9%) had experienced ten episodes. One patient (0.9%) experienced seclusion but not restraint; two patients (1.9%) experienced restraint but not seclusion; eight patients (7.5%) experienced both seclusion and restraint, and 96 patients (89.7%) experienced neither seclusion nor restraint. Owing to the substantial overlap between those who experienced seclusion and those who experienced restraint, these two groups were further analysed as a single group, i.e., I studied two groups: those who experienced seclusion, restraint, or both (n=11) and those who experienced neither (n=96).

Ten patients within this sample (9.3%) were nursed in 'high dependency units' or psychiatric intensive care and the remainder (n=97; 90.7%) were nursed in general acute psychiatric wards.

Table 1
Demographic characteristics of voluntary and involuntary groups

Variable		Voluntary <i>n</i> (%)	Involuntary <i>n</i> (%)	Total Cohort <i>n</i> (%)
Gender	Female	34 (43.6%)	14 (48.3%)	48 (44.9%)
	Male	44 (56.4%)	15 (51.7%)	59 (55.1%)
Marital status	Never married	53 (67.9%)	16 (55.2%)	69 (64.5%)
	Ever married	25 (32.1)	13 (44.8%)	38 (35.5)
Place of birth	Ireland	69 (88.5%)	20 (69%)	89 (83.2%)
	Non-Ireland	9 (11.5%)	9 (31%)	18 (16.8%)
Employment status	Employed	24 (30.8%)	4 (13.8%)	28 (26.2%)
	Unemployed	54 (69.2%)	25 (86.2%)	79 (73.8%)
Psychiatric Diagnosis	Substance Use Disorders	8 (10.3%)	1 (3.4%)	9 (8.4%)
	Schizophrenia Group	16 (20.5%)	13 (44.8%)	29 (27.1%)
	Affective Disorders	37 (47.4%)	13 (44.8%)	50 (46.7%)
	Anxiety Disorders	7 (9%)	0 (0%)	7 (6.5%)
	Personality and Behavioural Disorders	10 (12.8%)	2 (6.9%)	12 (11.2%)
Seclusion	No Seclusion	76 (97.4%)	22 (75.9%)	98 (91.6%)
	Seclusion	2 (2.6%)	7 (24.1%)	9 (8.4%)
Restraint	No Restraint	76 (97.4%)	21 (72.4%)	97 (90.7%)
	Restraint	2 (2.6%)	8 (27.6%)	10 (9.3%)
Nursed in High Dependency Unit	No	76 (97.4%)	21 (72.4%)	97 (90.7%)
	Yes	2 (2.6%)	8 (27.6%)	10 (9.3%)

3.2. Clinical variables

Nineteen patients (17.8%) scored 0 on the SAPS (indicating a lack of positive symptoms of schizophrenia) and 88 patients (82.2%) scored at least 1. SAPS total score was non-normally distributed (skewed to the right) with a median of 8.0 (inter-quartile range: 1.0-17.0). Twenty-three patients (21.5%) scored 0 on the SANS (indicating a lack of negative symptoms of schizophrenia) and 84 patients (78.5%) scored at least 1. Twenty-three patients (21.5%) scored 0 on the SANS, indicating a lack of negative symptoms of schizophrenia. Eighty-four patients (78.5%) scored at least 1 on the scale. SANS total score was non-normally distributed (skewed to the right), with a median of 7.0 (IQR: 1.0-15.0).

MMSE score measuring cognition was non-normally distributed (skewed to the left) with a median of 28 (inter-quartile range: 27-30). Eight patients (7.5%) scored 23 or lower, indicating the presence of cognitive impairment. Mean GAF score measuring global assessment of functioning was 46.68 (SD: 14.47). The lowest score was 20 and the highest was 80.

3.3 Therapeutic alliance

WAI-SR total scores measuring therapeutic alliance with the treating consultant were non-normally distributed (skewed to the left), with a median of 66.00 (IQR: 51.00-74.00). The task subscale of the WAI-SR was non-normally distributed (skewed to the left), with a median of 22.00 (IQR: 16.00-27.00); the bond subscale was non-normally distributed

(skewed to the left), with a median of 24.00 (IQR: 19.00-28.00), and the goal subscale was normally distributed, with a mean of 19.06 (SD: 5.57).

3.4 Attitudes towards medication and medication compliance

Most patients showed positive attitudes towards psychiatric medication on the DAI: 80 patients (74.6%) had positive total scores, indicating adherence with medications, while 27 (25.4%) had negative scores, indicating non-adherence or negative attitudes. Total scores were non-normally distributed (skewed to the left), with a median of 12.00 (IQR: -2.00 to +20.00).

3.5 Insight

Total scores on the Birchwood Insight Scale were non-normally distributed (skewed to the left), with a median of 14.00 (IQR: 8.00-16.00). Twenty-eight patients (26.2%) had no insight (scores between 0 and 8), nine (8.4%) had good insight (scores between 9 and 11) and seventy (65.5%) had full insight (scores between 12 and 16). Scores on the awareness of symptoms subscale were non-normally distributed (skewed to the left), with a median of 3.00 (IQR: 2.00-4.00); scores on the need for treatment subscale were non-normally distributed (skewed to the left), with a median of 3.00 (IQR: 2.00-4.00), and scores on the awareness of illness subscale were non-normally distributed (skewed to the left), with a median of 4.00 (IQR: 2.50-4.00) (Table 2). The mean Insight Scale total score of patients who were secluded or restrained did not differ from the mean total score of those not secluded (1.91, SD: 0.94 versus 2.45, SD:0.86; $t=1.81$, $p=0.095$).

3.6 Formal coercive measures

3.6.1 Correlates of seclusion

3.6.1.1 Demographic correlates

The mean age of patients who were secluded was lower than the mean age of those not secluded (30.22 years, SD: 10.58 versus 44.55, SD: 15.66; $t=3.71$, $p=0.003$). Patients who were secluded did not differ from those who were not secluded in terms of gender (55.6% male versus 55.1% male, respectively; Chi-Square=0.001, $p=1.000$), proportion who were never married (77.8% versus 63.3%; Chi-Square=0.758, $p=0.487$) or proportion who were employed (11.1% versus 27.6%; Chi-Square=1.153, $p=0.440$).

The proportion of patients who were born in Ireland and were secluded was lower than the proportion who were not born in Ireland and were secluded (5.6% vs 22.2%; Chi-Square=5.358, $p=0.042$). The proportion of patients who were voluntary and were secluded was lower than the proportion who were involuntary and were secluded (2.6% vs 24.1%; Chi-Square=12.772, $p=0.001$). Of note, while seclusion is not allowed for voluntary patients, emergency circumstances may arise in which a voluntary patient is secluded. When this occurs, a process is commenced to change their status to involuntary.

Table 2

Background characteristics of seclusion group and restrained group vs control group

Variable		Seclusion or Restraint <i>n</i> (%)	No seclusion or restraint <i>n</i> (%)	Chi Square	p
Gender	Female	6 (54.5%)	42 (43.8%)	0.495	0.537
	Male	5 (45.5%)	54 (56.3%)		
Marital status	Never married	9 (81.8%)	60 (62.5%)	0.205	0.321
	Ever married	36 (37.5%)	2 (18.2%)		
Place of birth	Ireland	6 (54.5%)	83 (86.5%)	0.007	0.019
	Non-Ireland	5 (45.5%)	13 (13.5%)		
Employment status	Employed	1 (9.1%)	27 (28.1%)	0.174	0.282
	Unemployed	10 (90.9%)	69 (71.9%)		

3.6.1.2 Clinical correlates

Patients who were secluded did not differ from those who were not secluded in terms of diagnosis (substance use disorders: 11.1% versus 8.2%; schizophrenia group: 33.3% versus 26.5%; affective disorders: 33.3% versus 48.0%; anxiety disorders 0% versus 7.1%; and personality and behavioural disorders: 22.2% versus 10.2%; Chi-Square=2.308; $p=0.679$), SANS scores (mean rank: 42.00 vs 55.10; Mann-Whitney $U=333.00$, $p=0.223$), MMSE scores (mean rank: 57.22 versus 53.70; Mann-Whitney $U=470.00$, $p=0.740$), WAI-SR total scores (mean rank: 48.50 versus 54.51; Mann-Whitney $U=391.50$, $p=0.578$) or length of stay at time of assessment (mean rank: 61.72 versus 53.29; Mann-Whitney $U=510.50$, $p=0.435$).

SAPS total score was significantly higher among patients who were secluded than those who were not secluded (mean rank: 73.72 vs 52.19; Mann-Whitney $U=618.50$, $p=0.046$).

A higher proportion of secluded patients had negative DAI scores compared to patients

who were not secluded (55.6% versus 22.4%; Chi-Square=4.789, $p=0.043$). Birchwood Insight Scale total scores were significantly lower among patients who were secluded compared to those who were not (mean rank: 30.22 vs 56.18; Mann-Whitney $U=227.00$, $p=0.015$).

3.6.1.3 Multi-variable analysis

On multi-variable analysis, seclusion was associated with younger age ($p=0.035$) and involuntary status ($p=0.031$) (Table 3). This regression model accounted for 41.9% of the variance in seclusion and did not attain statistical significance ($p=0.052$). All tolerance values were greater than 0.50, indicating no problems with multicollinearity. I looked at six variables, so I also calculated a p value corrected for multiple testing of 0.0083. With this corrected p value there were no variables that maintained their significance within this model for seclusion.

Table 3:

Multi-variable binary logistic regression analyses of correlates of seclusion and physical restraint

Variable	Seclusion				Physical restraint				Seclusion or physical restraint			
	β	<i>p</i>	OR	95% C.I.	β	<i>p</i>	OR	95% C.I.	β	<i>p</i>	OR	95% C.I.
Age (years)	-0.082	0.035	0.921	0.853- 0.994	-0.041	0.185	0.960	0.903- 1.020	-0.59	0.062	0.942	0.855- 1.003
Place of birth (Ireland or non-Ireland)	0.769	0.366	2.157	0.408- 11.410	1.230	0.126	3.420	0.709- 16.509	0.968	0.227	2.634	0.547- 12.684
Admission status (voluntary or involuntary) ¹	2.408	0.031	11.10 9	1.247- 98.975	2.511	0.014	12.31 6	1.651- 91.871	2.979	0.005	19.67 4	2.486- 155.680
Positive symptoms (measured by SAPS) ²	0.011	0.766	1.011	0.941- 1.086	0.033	0.312	1.033	0.970- 1.101	0.027	0.417	1.027	0.963- 1.095
Attitude to medication (measured by DAI) ³	0.021	0.600	1.021	0.945- 1.103	0.011	0.769	1.011	0.940- 1.088	0.017	0.639	1.018	0.946- 1.095
Insight (measured by Birchwood Insight Scale) ⁴	-0.126	0.294	0.881	0.696- 1.116	-0.051	0.669	0.950	0.753- 1.200	-0.040	0.733	0.960	0.761- 1.212
Constant	-2.949	0.276	0.052		-6.043	0.025	0.002		-5.672	0.034	0.003	

r^2	41.9%			39.4%			43.3%		
Model p	0.052			0.002			0.003		

Notes

¹ Admission status refers to whether the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

² Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984). A higher score indicates an increased number of symptoms.

³ Measured using the Drug Attitude Inventory (DAI) (Hogan et al., 1983). A positive total score indicates adherence, and a negative total score indicates non-adherence.

⁴ Measured using the Birchwood Insight Scale (Birchwood et al., 1994). A higher score indicates better insight

3.6.2 *Correlates of physical restraint*

3.6.2.1 *Demographic correlates*

Patients who were physically restrained did not differ from those who were not physically restrained in terms of mean age (34.40 years, SD: 14.93 versus 44.27, SD: 15.64; $t=1.98$, $p=0.073$), gender (40.0% male versus 56.7% male, respectively; Chi-Square=1.022, $p=0.339$), proportion who were never married (80.0% versus 62.9%; Chi-Square=1.159, $p=0.489$) or proportion employed (10.0% versus 27.8%; Chi-Square=1.493, $p=0.449$).

The proportion of patients who were born in Ireland and were physically restrained was lower than the proportion who were not born in Ireland and were physically restrained (5.6% versus 27.8%; Chi-Square=8.678, $p=0.012$). The proportion of patients who were voluntary and were physically restrained was lower than the proportion who were involuntary and were physically restrained (2.6% vs 27.6%; Chi-Square=15.623, $p<0.001$). (When a voluntary patient is restrained in emergency circumstances, a process is commenced to change their status to involuntary.)

3.6.2.2 *Clinical correlates*

Patients who were physically restrained did not differ from those who were not physically restrained in terms of length of stay at time of assessment (mean rank 61.55 versus 53.22; Mann-Whitney $U=560.50$, $p=0.419$), diagnosis (substance use disorders: 10.0% versus 8.2%; schizophrenia group: 40.0% versus 25.8%; affective disorders: 30.0% versus 48.5%; anxiety disorders: 0.0% versus 7.2%; personality and behavioural disorders:

20.0% versus 10.3%; Chi-Square=2.851, $p=0.583$), SANS scores (mean rank: 43.65 versus 55.07; Mann-Whitney $U=381.50$, $p=0.265$), MMSE scores (mean rank: 54.15 versus 53.98; Mann-Whitney $U=486.50$, $p=0.987$) or WAI-SR scores (mean rank: 44.25 versus 55.01; Mann-Whitney $U=387.50$, $p=0.296$).

SAPS total score was significantly higher among patients who were physically restrained than those who were not physically restrained (mean rank: 76.00 versus 51.73; Mann-Whitney $U=705.00$, $p=0.018$). A higher proportion of patients who were physically restrained had negative DAI scores compared to patients who were not physically restrained (60.0% versus 21.6%; Chi-Square=7.067, $p=0.016$). Birchwood Insight Scale total scores were significantly lower among patients who were physically restrained than those who were not physically restrained (mean rank: 33.80 versus 56.08; Mann-Whitney $U=283.00$, $p=0.028$).

3.6.2.3 Multi-variable analysis

On multi-variable analysis, physical restraint was associated with involuntary status when looking at a p value of 0.05 for significance ($p=0.021$) (Table 3). This regression model accounted for 39.4% of the variance in physical restraint and attained statistical significance ($p=0.002$). All tolerance values were greater than 0.50, indicating no problems with multicollinearity. When using a p value corrected for multiple testing of 0.0083 there were no variables that maintained their significance within this model for physical restraint separately.

3.6.3 *Correlates of seclusion or physical restraint or both*

Patients who were either secluded or physically restrained or both (n=11) were younger than those who were not secluded or physically restrained or both (33.18 years, SD: 14.73 versus 44.51, SD:15.54; $t=2.402$, $p=0.032$), and were less likely to have been born in Ireland (Table 2). On multi-variable analysis, being secluded or physically restrained or both was associated with involuntary status ($p=0.005$) (Table 3). When using a significance value corrected for multiple testing of $p=0.0083$ this retained its significance and was the only variable to maintain this ($p=0.005$). This regression model accounted for 43.3% of the variance in seclusion or physical restraint or both and attained statistical significance ($p=0.003$) at significance values of both 0.05 and 0.0083. All tolerance values were greater than 0.50, indicating no problems with multicollinearity.

3.7 Perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to hospitalisation on admission

The MacArthur Admission Experience Survey (AES) total score on admission was non-normally distributed (skewed to the right) with a median of 6.0 (inter-quartile range: 3.0-13.0). On the perceived coercion subscale of the AES, mean score was 2.04 (SD: 1.89; Table 4). On the negative pressures subscale, mean score was 1.56 (SD: 1.98). On the procedural injustice subscale, mean score was 1.10 (SD: 1.19). On the affective reactions to hospitalisation subscale, mean score was 2.98 (SD:1.80).

3.7.1 Multi-variable analysis of MacArthur Admission Experience Survey

On multi-variable analysis, AES total score on admission was significantly associated with involuntary status ($p < 0.001$) and positive symptoms of schizophrenia ($p = 0.017$) and had borderline significant associations with birth being employed ($p = 0.045$) and female gender ($p = 0.042$; Table 5). When corrected for multiple testing using a significant p value of 0.0033, involuntary status maintained its statistical significance.

On multi-variable analysis of the AES subscales, perceived coercion on admission was significantly associated with involuntary status ($p < 0.001$), female gender ($p = 0.032$) and positive symptoms of schizophrenia ($p = 0.035$). When corrected for multiple testing using a significant p value of 0.0033, involuntary status was the only variable that retained significance. Perceived negative pressures on admission were significantly associated with involuntary status ($p < 0.001$) and positive symptoms of schizophrenia ($p = 0.004$).

When corrected for multiple testing using a significant p value of 0.0033, involuntary status was the only variable that retained significance. Perceived procedural injustice on admission was significantly associated with fewer negative symptoms of schizophrenia ($p=0.006$), involuntary status ($p=0.006$), cognitive impairment ($p=0.011$) and female gender ($p=0.014$). When corrected for multiple testing using a significant p value of 0.0033, none of the variables maintained their significance. Negative affective reactions to hospitalisation on admission were significantly associated with birth in Ireland ($p<0.001$) and being employed ($p=0.025$). When corrected for multiple testing using a significant p value of 0.0033, birth in Ireland maintained its significance.

Patient experience of seclusion or restraint during their admission was not associated with perceived coercion on admission, negative pressures on admission, perceived procedural injustice on admission, affective reactions to hospitalisation on admission or total AES score on admission (Table 5).

Each of the five regression models accounted for between approximately one quarter and one third of the variance in the relevant dependent variable (r^2 between 26.9% and 38.3%). All models attained statistical significance ($p<0.05$ in all cases; Table 5). When corrected for multiple testing using a significant p value of 0.0033, all models retained their significance except for the negative affective reactions subscale model ($p=0.010$). All tolerance values in all models were greater than 0.10, indicating no significant problems with multicollinearity.

I also looked at AES total scores divided by gender. See Table 6 and Table 7 for full results of multi-variable analyses of correlates of the AES and all subscales. Beta

coefficients are included, and these compare the strength of each individual independent variable to the dependent variable, with the higher absolute value indicating the stronger effect. I also included 95% confidence intervals. In both of these analyses I also corrected for multiple testing by dividing the p value of 0.05 by the fourteen variables, resulting in a significant p value corrected for multiple testing of 0.0036.

3.7.2 MacArthur Admission Experience Survey gender differences

Female patients

Among female patients, higher AES total score was associated with younger age ($p=0.039$) and involuntary status ($p=0.009$) (Table 6). When corrected for multiple testing using a p value of 0.0036, involuntary status maintained its statistical significance. Statistically significant associations were also found within the AES subscales. Perceived coercion was associated with involuntary status ($p=0.009$), although this did not maintain its significance when corrected for multiple testing using a p value of 0.0036. Perceived negative pressures were associated with positive symptoms of schizophrenia ($p<0.001$), younger age ($p=0.026$) and involuntary status ($p=0.006$). When corrected for multiple testing using a p value of 0.0036, positive symptoms of schizophrenia was the only variable to maintain its statistical significance. Procedural injustice was associated with involuntary status ($p=0.011$), fewer negative symptoms ($p=0.039$), and cognitive impairment ($p=0.041$). When corrected for multiple testing using a p value of 0.0036, none of these variables maintained their significance. There were no statistically significant associations within the negative affective reactions to hospitalisation subscale.

Male patients

In the male patient group, AES total score was associated with not being born in Ireland ($p=0.009$) and involuntary status ($p=0.001$; Table 7). When corrected for multiple testing using a p value of 0.0036, involuntary status maintained its significance. Statistically significant associations were also found within the AES subscales. Perceived coercion was associated with involuntary status ($p<0.001$) and not being born in Ireland ($p=0.018$). When corrected for multiple testing using a p value of 0.0036, involuntary status maintained its statistical significance. Perceived negative pressures were associated with involuntary status ($p<0.001$), not being born in Ireland ($p=0.027$), longer stay ($p=0.023$), and reduced functioning ($p=0.013$). When corrected for multiple testing using a p value of 0.0036, none of these variables maintained their significance. Procedural injustice was associated with fewer negative symptoms ($p=0.041$) and reduced level of functioning ($p=0.044$) but neither of these variables maintained their significance when corrected for multiple testing using a p value of 0.0036. Negative affective reactions to hospitalisation were associated with not being born in Ireland ($p=0.003$) and being unemployed ($p=0.036$). When corrected for multiple testing using a p value of 0.0036, not being born in Ireland maintained its statistical significance

All tolerance values were greater than 0.10, indicating no problems with multicollinearity. The r -squared values indicate that these models generally account for between one third and a half of the variance between individuals in these scales and subscales (Tables 6 and 7).

Table 4

Frequencies of scores on the four subscales of the MacArthur Admission Experience Survey (AES) on admission

Score	Perceived coercion on admission ¹	Negative pressures on admission ²	Procedural injustice on admission ³	Affective reactions on admission ⁴
0	35 (32.7%)	52 (48.6%)	50 (46.7%)	9 (8.4%)
1	17 (15.9%)	13 (21.1%)	16 (15.0%)	16 (15.0%)
2	13 (12.1%)	16 (15.0%)	21 (19.6%)	22 (20.6%)
3	9 (8.4%)	5 (4.7%)	20 (18.7%)	18 (16.8%)
4	17 (15.9%)	4 (3.7%)		17 (15.9%)
5	16 (15.0%)	11 (10.3%)		13 (12.1%)
6		6 (5.6%)		12 (11.2%)
Mean	2.04 (SD: 1.89)	1.56 (SD: 1.98)	1.10 (SD: 1.19)	2.98 (SD 1.80)

¹A score of 5 is the highest level of perceived coercion on admission.

²A score of 6 is the highest level of perceived negative pressures on admission.

³A score of 3 is the highest level of procedural injustice on admission.

⁴A score of 6 is the highest level of negative affective reactions on admission

Table 5
Multi-variable analyses of correlates of MacArthur Admission Experience Survey (AES) on admission*

Variable	Perceived coercion on admission			Negative pressures on admission			Procedural injustice on admission			Negative affective reactions to hospitalisation on admission			Total AES score on admission ¹		
	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI
Gender	-0.198	0.032	-1.43 – -0.065	-0.145	0.111	-1.285 – -0.135	-0.231	0.014	-0.986 – -0.112	-0.064	0.513	-0.934 – 0.470	-0.189	0.042	-4.135 – -0.074
Age	-0.109	0.354	-0.041 – -0.015	-0.085	0.464	-0.040 – -0.018	-0.137	0.252	-0.028 – 0.007	-0.190	0.135	-0.050 – 0.007	-0.159	0.183	-0.139 – 0.027
Marital status	-0.140	0.211	-1.416 – -0.318	-0.103	0.353	-1.322 – -0.476	-0.157	0.167	-0.942 – 0.165	-0.098	0.413	-1.258 – 0.522	-0.150	0.185	-4.302 – 0.844
Place of birth	-0.128	0.182	-1.594 – -0.307	-0.038	0.685	-1.188 – -0.783	-0.020	0.836	-0.671 – 0.543	-0.375	<0.001	-2.774 – -0/823	-0.183	0.060	-5.528 – 0.112
Employment status	-0.161	0.076	-1.448 – -0.074	-0.119	0.181	-1.325 – -0.254	-0.073	0.423	-0.683 – 0.289	-0.219	0.025	-1.676 – -0.113	-0.184	0.045	-4.573 – -0.056
Admission status ²	0.472	<0.001	1.093 – 2.897	0.408	<0.001	0.873 – 2.744	0.307	0.006	0.242 – 1.394	0.172	0.139	-0.230 – 1.621	0.428	<0.001	2.641 – 7.994
Length of hospital stay at time of assessment	0.115	0.224	-0.002 – 0.010	0.103	0.270	-0.003 – -0.010	0.102	0.286	-0.002 – 0.006	-0.157	0.123	-0.012 – 0.001	0.047	0.624	-0.014 – 0.023
Diagnosis	0.054	0.566	-0.237 – -0.431	-0.019	0.837	-0.382 – -0.310	-0.089	0.352	-0.314 – 0.113	0.054	0.595	-0.250 – 0.435	0.010	0.916	-0.938 – 1.043

Experienced seclusion (yes/no)	0.111	0.509	-1.493 – – 2.991	-0.098	0.553	-3.022 – – 1.629	0.268	0.116	-0.289 – – 2.576	-0.003	0.988	-2.319 – – 2.284	0.059	0.726	-5.477 – – 7.833
Experienced restraint (yes/no)	-0.253	0.136	-3.793 – – 0.523	-0.015	0.927	-2.342 – – 2.135	-0.323	0.061	-2.693 – – 0.064	0.34	0.852	-2.006 – – 2.424	-0.150	0.380	-9.249 – – 3.560
Nursed in a HDU	0.126	0.295	-0.720 – – 2.344	0.032	0.787	-1.372 – – 1.806	-0.081	0.505	-1.308 – – 0.649	0.089	0.492	-1.027 – – 2.118	0.066	0.588	-3.301 – – 5.791
Positive symptom score ³	0.221	0.035	0.003 – – 0.066	0.283	0.004	0.015 – – 0.082	0.198	0.050	0.000 – – 0.041	0.078	0.465	-0.021 – – 0.045	0.240	0.017	0.021 – – 0.210
Negative symptom score ⁴	-0.008	0.934	-0.039 – – 0.036	-0.0067	0.505	-0.052 – – 0.026	-0.290	0.006	-0.058 – – 0.010	0.147	0.183	-0.012 – – 0.064	-0.041	0.688	-0.133 – – 0.088
Cognition ⁵	-0.168	0.099	-0.262 – – 0.023	-0.111	0.267	-0.231 – – 0.065	-0.265	0.011	-0.210 – – 0.028	-0.002	0.984	-0.148 – – 0.145	-0.154	0.133	-0.745 – – 0.100
Level of functioning ⁶	-0.100	0.366	-0.042 – – 0.016	-0.170	0.123	-0.053 – – 0.006	-0.200	0.077	-0.035 – – 0.002	0.018	0.881	-0.027 – – 0.032	-0.132	0.240	-0.136 – – 0.034
Constant	-	0.015	1.423- 12.757	-	0.072	-0.501 – – 11.257	-	<0.001	3.117 – – 10.358	-	0.020	1.094 – – 12.728	-	0.003	9.297 – – 42.938
r ²	36.8%			38.3%			35.0%			26.9%			35.7%		
Model <i>p</i>	<0.001			<0.001			<0.001			0.010			<0.001		

Notes

* As this is a linear regression model, odds ratios are not calculated. The standardised coefficient (Beta) is a unit-free measure of effect size that can be used to compare the magnitude of effects of independent variables. Significance values and confidence intervals for Beta are provided.

¹ The total score on the MacArthur Admission Experience Survey (AES) on admission was calculated by adding scores of each of the four subscales (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to psychiatric hospitalisation on admission).

² Admission status refers to whether the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

³ Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

⁴ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁵ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

⁶ Measured using the Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994)

Table 6Multi-variable analyses of correlates of MacArthur Admission Experience Survey (AES) on admission in **females***

Variable	Perceived coercion on admission			Negative pressures on admission			Procedural injustice on admission			Negative affective reactions to hospitalisation on admission			Total score on the MacArthur Admission Experience Survey (AES) on admission ¹		
	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI
Age	-0.389	0.096	-0.105 – 0.009	-0.421	0.026	-0.107 – 0.007	-0.442	0.059	-0.072 – 0.001	-0.342	0.155	-0.094 – 0.016	-0.481	0.039	-0.350 – -0.009
Marital status	-0.209	0.324	-2.560 – 0.870	0.002	0.990	-1.505 – 1.524	-0.010	0.961	-1.139 – 1.085	-0.082	0.709	-1.963 – 1.351	-0.095	0.647	-6.314 – 3.977
Place of birth	-0.243	0.218	-4.155 – 0.985	-0.250	0.141	-3.953 – 0.586	-0.321	0.106	-3.027 – 0.305	-0.259	0.2008	-4.051 – 0.914	-0.314	0.111	-13.908 – 1.512
Employment status	-0.104	0.476	-1.773 – 0.845	-0.116	0.353	-1.691 – 0.621	-0.056	0.698	-1.012 – 0.685	-0.077	0.608	-1.587 – 0.942	-0.109	0.448	-5.411 – 2.443
Admission status ²	0.585	0.009	0.697 – 4.421	0.524	0.006	0.725 – 4.014	0.562	0.011	0.393 – 2.807	0.269	0.224	-0.702 – 2.895	0.574	0.009	2.040 – 13.211
Length of stay at time of assessment	0.037	0.831	-0.012 – 0.015	-0.023	0.875	-0.013 – 0.011	0.037	0.831	-0.008 – 0.010	-0.278	0.127	-0.024 – 0.003	-0.073	0.668	-0.050 – 0.032
Diagnosis	-0.030	0.852	-0.655 – 0.544	-0.102	0.453	-0.727 – 0.332	-0.124	0.433	-0.541 – 0.237	-0.036	0.828	-0.642 – 0.517	-0.082	0.601	-2.267 – 1.333
Experienced seclusion (yes/no)	-0.010	0.974	-4.812 – 4.661	-0.495	0.083	-7.860 – 0.507	-0.010	0.976	-3.116 – 3.025	0.228	0.502	-3.048 – 6.103	-0.104	0.747	-16.480 – 11.939

Experienced restraint (yes/no)	-0.494	0.078	-6.304 – 0.357	-0.003	0.990	-2.959 – 2.924	-0.333	0.229	-3.461 – 0.857	-0.183	0.521	-4.244 – 2.191	-0.291	0.287	-15.312 – 4.672
Nursed in a 'high dependency unit'	0.062	0.794	-3.008 – 3.904	0.076	0.708	-2.486 – 3.619	-0.109	0.646	-2.751 – 1.730	0.011	0.964	-3.263 – 3.414	0.027	0.910	-9.789 – 10.947
Positive symptom score ³	0.281	0.128	-0.014 – 0.105	0.568	<0.001	0.043 – 0.147	0.277	0.132	-0.009 – 0.068	-0.051	0.786	-0.065 – 0.049	0.329	0.072	-0.016 – 0.339
Negative symptom score ⁴	-0.112	0.491	-0.087 – 0.043	-0.132	0.345	-0.084 – 0.030	-0.346	0.039	-0.087 – 0.002	0.163	0.336	-0.033 – 0.093	-0.106	0.511	-0.259 – 0.131
Cognition ⁵	-0.201	0.231	-0.420 – 0.105	-0.110	0.442	-0.320 – 0.143	-0.350	0.041	-0.348 – 0.008	0.011	0.950	-0.246 – 0.261	-0.175	0.290	-1.204 – 0.371
Level of functioning ⁶	-0.162	0.481	-0.083 – 0.040	-0.017	0.930	-0.056 – 0.052	-0.171	0.454	-0.054 – 0.025	-0.099	0.679	-0.071 – 0.047	-0.126	0.578	-0.234 – 0.133
Constant	-	0.050	0.007 – 21.166	-	0.148	-2.535 – 16.152	-	0.011	2.119 – 15.915	-	0.178	-3.299 – 17.142	-	0.040	1.634 – 65.113
r ²	42.9%			58.2%			43.2%			38.4%			44.2%		
Model <i>p</i>	0.088			0.002			0.083			0.177			0.069		

Notes

* As this is a linear regression model, odds ratios are not calculated. The standardised coefficient (Beta) is a unit-free measure of effect size that can be used to compare the magnitude of effects of independent variables. Significance values and confidence intervals for Beta are provided.

¹ The total score on the MacArthur Admission Experience Survey (AES) on admission was calculated by adding scores of each of the four subscales (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to psychiatric hospitalisation on admission).

² Admission status refers to whether the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

³ Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

⁴ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁵ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

⁶ Measured using the Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994)

Table 7Multi-variable analyses of correlates of MacArthur Admission Experience Survey (AES) on admission in **males***

Variable	Perceived coercion on admission			Negative pressures on admission			Procedural injustice on admission			Negative affective reactions to hospitalisation on admission			Total score on the MacArthur Admission Experience Survey (AES) on admission ¹		
	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI	β	<i>p</i>	95% CI
Age	0.137	0.356	-0.018 – 0.049	0.232	0.111	-0.007 – 0.064	0.002	0.991	-0.0204 – 0.024	-0.068	0.695	-0.047 – 0.032	0.114	0.476	-0.066 – 0.139
Marital status	-0.063	0.665	-1.314 – 0.846	-0.233	0.105	-2.084 – 0.205	-0.229	0.177	-1.294 – 0.246	-0.252	0.145	-2.221 – 0.338	-0.250	0.115	-53944 – 0.666
Place of birth	-0.332	0.018	-2.501 – 0.242	-0.302	0.027	-2.554 – 0.159	0.038	0.809	-0.708 – 0.902	-0.503	0.003	-3.423 – 0.746	-0.403	0.009	-80172 – 1.259
Employment status	-0.149	0.246	-1.591 – 0.419	-0.138	0.273	-1.653 – 0.478	-0.128	0.387	-10.27 – 0.406	-0.325	0.036	-2.473 – 0.091	-0.248	0.077	-5.842 – 0.310
Admission status ²	0.578	<0.001	1.228 – 3.312	0.495	<0.001	1.011 – 3.221	0.215	0.164	-0.222 – 1.046	0.158	0.316	-0.613 – 1.857	0.496	0.001	2.340 – 8.720
Length of stay at time of assessment	0.246	0.061	0.000 – 0.015	0.293	0.023	0.001 – 0.017	0.160	0.284	-0.002 – 0.008	0.028	0.851	-0.008 – 0.010	0.244	0.083	-0.003 – 0.043
Diagnosis	0.028	0.823	-0.389 – 0.487	-0.012	0.923	-0.486 – 0.441	-0.100	0.486	-0.421 – 0.203	0.259	0.083	-0.062 – 0.975	0.075	0.576	-0.965 – 1.714
Experienced seclusion (yes/no)	0.065	0.799	-2.756 – 3.558	0.099	0.692	-2.683 – 4.009	0.551	0.068	-0.162 – 4.338	-0.233	0.444	-5.175 – 2.306	0.099	0.722	-7.943 – 11.378

Experienced restraint (yes/no)	0.210	0.443	-2.292 - 5.147	0.204	0.445	-2.437 - 5.449	-0.487	0.127	-4.696 - 0.606	0.287	0.375	-2.448 - 6.367	0.147	0.617	-8.537 – 14.232
Nursed in a 'high dependency unit'	0.087	0.579	-1.276 - 2.255	0.055	0.717	-1.532 - 2.211	-0.041	0.820	-1.401 - 1.115	0.050	0.784	-1.805 - 2.379	0.061	0.719	-4.431 – 6.375
Positive symptom score ³	0.174	0.171	-0.012 - 0.067	0.088	0.473	-0.027 - 0.057	0.170	0.245	-0.012 - 0.045	0.271	0.072	-0.004 - 0.090	0.228	0.098	-0.020 – 0.225
Negative symptom score ⁴	0.082	0.584	-0.036 - 0.064	-0.076	0.605	-0.067 - 0.039	-0.632	0.041	-0.073 - -0.002	-0.052	0.769	-0.068 - 0.051	-0.097	0.549	-0.199 – 0.107
Cognition ⁵	- 0.054	0.700	-0.209 - 0.142	-0.021	0.876	-0.201 - 0.172	-0.246	0.130	-0.221 - 0.029	-0.126	0.442	-0.288 - 0.128	-0.125	0.405	-0.764 – 0.313
Level of functioning ⁶	- 0.094	0.514	-0.047 - 0.024	-0.360	0.013	-0.086 - -0.011	-0.341	0.044	-0.051 - -0.001	0.139	0.415	-0.025 - 0.059	-0.196	0.209	-0.177 – 0.040
Constant	-	0.617	-5.207 - 8.671	-	0.335	-3.795 - 10.915	-	0.027	0.650 – 10.540	-	0.053	-0.099 - 16.344	-	0.078	-2.226 – 40.246
r ²	52.0%			54.4%			36.0%			33.2%			44.2%		
Model <i>p</i>	<0.001			<0.001			0.076			0.129			0.011		

Notes

* As this is a linear regression model, odds ratios are not calculated. The standardised coefficient (Beta) is a unit-free measure of effect size that can be used to compare the magnitude of effects of independent variables. Significance values and confidence intervals for Beta are provided.

¹ The total score on the MacArthur Admission Experience Survey (AES) on admission was calculated by adding scores of each of the four subscales (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to psychiatric hospitalisation on admission).

² Admission status refers to whether the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

³ Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

⁴ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁵ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

⁶ Measured using the Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994)

3.7.3 MacArthur AES – Voluntary subgroup

It is worth discussing the subgroup of voluntary patients who experienced high levels of perceived coercion as this group, despite being voluntary, do not have the legal protections afforded to them by the Mental Health Act. I engaged in further analysis of this subgroup of voluntary patients and did not find any statistically significant associations between the MacArthur AES total score or any of the subscales.

3.7.4 MacArthur AES – Psychosis disorders subgroup

As noted, I applied the SAPS and SANS tool to patients with diagnoses other than schizophrenia: while these tools are commonly used in such patients, they are primarily validated for patients with schizophrenia. For this reason a further analysis of the MacArthur AES and its subscales was undertaken in the sub-group of patients with a psychotic disorder to ensure that any potential relationship between severity of psychotic symptoms and the outcome being examined could be diluted. For this subgroup, there was no statistically significant association between the MacArthur AES total score and the variables. Looking at the subscales, there was a statistically significant association with involuntary status ($p=0.020$), but this did not retain significance with a p value of 0.0038 corrected for multiple testing. There were no other statistically significant results on analysis of the other subscales. It is worth noting that the schizophrenia subgroup was 27.1% of the study group ($n=29$), which is an insufficient sample size to draw any clear conclusions from these results.

3.8 Compulsory Treatment Checklist

3.8.1 Total scores

CTC total score was non-normally distributed (skewed to the right). Involuntary patients had higher median CTC total scores than voluntary patients (median CTC total score for involuntary patients: 26.0; IQR: 18.0-34.0; median CTC total score for voluntary patients: 11.0; IQR: 7.0-20.0; mean ranks: 79.5 vs 44.5, respectively; Mann-Whitney $U=391.5$, $p<0.001$). Involuntary patients had higher scores on the legal, history and cognitive clusters of the CTC ($p<0.001$), but not the danger cluster (Table 8).

3.8.2 Optimal cut-off points

In the original Portuguese study of the CTC, the optimal cut-off point of 23.5 had a sensitivity of 75% and specificity of 93.6% in detecting compulsory care (Brissos et al., 2017). In this sample, patients scoring above 23.5 had less insight, poorer therapeutic alliances and more positive symptoms of schizophrenia compared to those below the cut-off (Table 9), but this cut-off had a sensitivity of 51.7% and specificity of 85.9% in this sample. Analysing alternative cut-off points using a ROC curve, I identified an ideal cut-off point in this sample of 16.5, which had a sensitivity of 82.8% and specificity of 69.2%.

3.8.3 Multi-variable analysis

On multi-variable analysis, higher CTC total scores were significantly and independently associated with involuntary status ($p < 0.001$), more positive symptoms of schizophrenia ($p < 0.001$) and younger age ($p = 0.031$; Table 10). When corrected for multiple testing using a p value of 0.0045, involuntary status and positive symptoms of schizophrenia maintained their statistical significance. This regression model accounted for approximately one half of the variance in CTC total score ($r^2 = 50.5\%$). The model attained statistical significance both with a p value of 0.05 and a p value corrected for multiple testing of 0.0045 ($p < 0.001$). All tolerance values were greater than 0.10, indicating no significant problems with multicollinearity.

Table 8

Median scores on the Compulsory Treatment Checklist (CTC)

	Involuntary	Voluntary	Mann Whitney U	P-value
CTC total ¹	26.0 (IQR:18.0-34.0)	11.0 (IQR:7.0-20.0)	391.5	<0.001
CTC legal cluster ²	8.0 (IQR:5.0-10.0)	4.0 (IQR:3.0-5.0)	305.0	<0.001
CTC danger cluster ³	2.0 (IQR:1.0-5.0)	2.0 (IQR:0.0-4.0)	956.0	0.212
CTC history cluster ⁴	4.0 (IQR:2.0-6.0)	2.0 (IQR:0.0-4.0)	577.0	<0.001
CTC cognitive cluster ⁵	12.0 (IQR:4.0-14.0)	2.0 (IQR:2.0-7.0)	421.0	<0.001

Notes

CTC: Compulsory Treatment Checklist (Brissos et al., 2017).

IQR: Inter-quartile range.

¹ Total scores range from 0 to 50, with a higher score indicating a higher probability that the patient needs and would benefit from involuntary psychiatric treatment.

² Total scores range from 0 to 12, with a higher score indicating a higher probability that factors that commonly must be present by law to validate compulsory detention are present.

³ Total scores range from 0 to 14, with a higher score indicating a higher probability that factors commonly referred to in the literature as being associated with dangerous situations, thus leading to a risk of violence, are present.

⁴ Total scores range from 0 to 8, with a higher score indicating a higher probability that evidence of non-adherence with treatment and supervision failure, as well as substance misuse (due to its association with violent behaviour), are present.

⁵ Total scores range from 0 to 16, with a higher score indicating a higher probability that cognitive factors that can interfere with the patient's ability to decide about treatment are present.

Table 9

Correlates of Compulsory Treatment Checklist (CTC) total scores using different cut-off points.

Scale	CTC cut-off of 23.5 (out of 50) ¹				CTC cut-off of 16.5 (out of 50) ²			
	Mean rank of patients above cut-off (<i>n</i> =26)	Mean rank of patients below cut-off (<i>n</i> =81)	Mann-Whitney U	p value	Mean rank of patients above cut-off (<i>n</i> =48)	Mean rank of patients below cut-off (<i>n</i> =59)	Mann-Whitney U	p value
Insight ³	29.1	62.0	405.5	<0.001	36.08	68.58	556.0	<0.001
Therapeutic alliance ⁴	41.02	58.17	715.5	0.014	46.84	59.82	1072.5	0.031
Positive symptoms of schizophrenia ⁵	68.7	49.3	672.0	0.005	67.57	42.96	764.5	<0.001
Negative symptoms of schizophrenia ⁶	62.27	54.56	1008.0	0.742	55.36	52.89	1350.5	0.680
Cognition ⁷	50.71	55.06	967.5	0.527	55.97	52.40	1321.5	0.547

Notes

CTC: Compulsory Treatment Checklist (Brissos et al., 2017).

¹ The original study of the CTC identified an optimal CTC total cut-off score of 23.5 (out of 50) in Portugal (Brissos et al., 2017).

² This study identified an optimal CTC total cut-off score of 16.5 (out of 50) in Ireland.

³ Measured using the Birchwood Insight Scale (Birchwood et al., 1994).

⁴ Measured using the Working Alliance Inventory - Short Revised (WAI-SR) (Horvath & Greenberg, 1989).

⁵ Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

⁶ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁷ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

Table 10

Multi-variable analysis of correlates of Compulsory Treatment Checklist (CTC) total score.

Variable	Standardised β	t	p
Admission status ¹	0.554	6.553	<0.001
Gender	0.029	0.378	0.706
Age	-0.213	-2.185	0.031
Marital status	-0.036	-0.386	0.700
Employment status	-0.018	-0.236	0.814
Place of birth	0.030	0.384	0.701
Length of hospital stay at time of assessment	0.000	0.000	1.000
Diagnosis	-0.074	-0.933	0.353
Positive symptom of schizophrenia ²	0.284	3.591	<0.001
Negative symptoms of schizophrenia ³	0.094	1.160	0.249
Cognition ⁴	-0.156	-1.899	0.061
Constant	-	1.846	0.068

Notes

Model $r^2 = 50.5\%$ ($p < 0.001$).

¹ Admission status refers to whether the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

² Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

³ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁴ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

3.9 Power Calculation

I engaged in a retrospective power calculation based on my own data and found that the odds for an involuntary patient experiencing seclusion or restraint were 19.6 times a voluntary patient. A sample size of $n=28$ per group would be needed to identify such an odds ratio at $p=0.05$. Our overall sample was 107, with 29 involuntarily patients and 78 voluntary patients. In order to detect an odds ratio of 5 with significance less than 0.05 I would need to have 47 patients per group. In order to detect an odds ratio of 30 I would have needed 26 patients per group.

I calculated a number of adjusted cut-off values for significance due to multiple testing for perceived coercion as discussed in my analysis section. For the cut-off of 0.0083 I calculated that I would have needed 44 patients per group for this to be adequately powered for an odds ratio of 19.674. For the cut-off of 0.0033 I calculated that I would have needed 53 patients per group for this to be adequately powered for an odds ratio of 19.674. For the cut-off of 0.0036 I calculated that I would have needed 52 patients per group for this to be adequately powered for an odds ratio of 19.674. For the cut-off of 0.0125 I calculated that I would have needed 40 patients per group for this to be adequately powered for an odds ratio of 19.674. For the cut-off of 0.0045 I calculated that I would have needed 50 patients per group for this to be adequately powered for an odds ratio of 19.674.

Based on all of the above calculations to ensure this study was adequately powered, I calculated a patient number required per group ranging from 26 – 53. 107 patients in total were included in this study, with 29 involuntarily patients and 78 voluntary patients.

Chapter 4

Discussion

4.1 Overview

4.1.1 Clinical details

This sample included 107 patients (27.1% involuntary) with a median length of hospital stay at time of assessment of 11 days. The most common diagnoses were affective disorders, schizophrenia (and related disorders) and personality and behavioural disorders. Over a quarter (27.1%) of participating patients had involuntary legal status; nine patients (8.4%) experienced one or more episodes of seclusion during their admission; 10 patients (9.3%) experienced one or more episodes of restraint, and 10 (9.3%) were nursed in ‘high dependency units’.

4.1.2 Perceived coercion

When corrected for multiple testing, I found perceived coercion on admission to be significantly associated with involuntary status; perceived negative pressures on admission were significantly associated with involuntary status; and negative affective reactions to hospitalisation on admission were significantly associated with birth in Ireland. Total score across these four subscales was significantly associated with involuntary status.

On multi-variable analyses, when corrected for multiple testing, seclusion and physical restraint did not have any significant associations separately but experience of seclusion or restraint when analysed together was associated with involuntary status. Each multi-

variable model explained just over one third of the variance in the distribution of seclusion and restraint practices.

4.1.3 Formal coercive practices

Of particular note, patient experience of seclusion or restraint during their admission was not associated with perceived coercion on admission, negative pressures on admission, perceived procedural injustice on admission, affective reactions to hospitalisation on admission or total AES score on admission in this sample (Table 3). Overall, variables in the five regression models accounted for between approximately one quarter and one third of the variance in perceived coercion on admission, negative pressures on admission, perceived procedural justice on admission, negative affective reactions to hospitalisation on admission and AES total score on admission.

On multi-variable analyses, seclusion and physical restraint were associated with involuntary status. Neither practice was independently associated with gender, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes towards medication or insight. Each multi-variable model explained just over one third of the variance in the distribution of seclusion and restraint in this sample.

4.1.4 Gender

I also explored the factors that link female gender with perceived coercion and procedural injustice during psychiatric admission, despite reduced rates of formal coercive practices such as seclusion and restraint in this group. While involuntary status was relevant to both

groups, I found differences in factors between both groups, with younger age being more relevant to the female group and not being born in Ireland more relevant to the male group. Overall, I found that factors other than formal coercive practices such as seclusion and restraint are primarily linked with perceived coercion in both groups.

4.1.5 Compulsory Treatment Checklist scores

This study found that higher Compulsory Treatment Checklist (CTC) total scores are significantly and independently associated with involuntary status, more positive symptoms of schizophrenia, and younger age in this Irish sample. This association with schizophrenia is unsurprising as previous studies of involuntary admissions in an Irish population have shown that schizophrenia group disorders are the most common diagnoses among involuntary patients (Cunningham, 2012; Feeney et al., 2019; Ng & Kelly, 2012), and this is also consistent with previous international studies (Corrigan & Bhugra, 2013; Hansson et al., 1999). However, previous studies in an Irish population have shown no difference between voluntary and involuntary patients in terms of age (Feeney et al., 2019; Ng & Kelly, 2012). In this context, further study of whether the factors measured within the CTC are disproportionately associated with younger age is worth considering.

The original Portuguese study of the CTC identified an optimal cut-off score of 23.5, which detected compulsory treatment with a sensitivity of 75% and specificity of 93.6% in that setting (Brissos et al., 2017). In this sample, the optimal cut-off score was 16.5, which detected compulsory treatment with a sensitivity of 82.8% and a specificity of 69.2%. In this sample, patients above these cut-off points (23.5 and 16.5) had less insight,

poorer therapeutic alliances, and more positive symptoms of schizophrenia, but while the cut-off point of 23.5 was optimal in Portugal, the cut-off point of 16.5 performed best in Ireland.

4.2 Strengths and limitations

4.2.1 Strengths

Methodological strengths of this study include the examination of a broad range of outcome variables and co-variables). Reliable, validated tools were used, and both bi-variable and multi-variable statistical analyses were performed.

Strengths of this study also include the examination of a novel tool to assess the necessity for compulsory care (the Compulsory Treatment Checklist) and the inclusion of a broad range of independent variables in this analysis, the use of multi-variable modelling to control for relevant co-variates, and this use of the Compulsory Treatment Checklist in a jurisdiction other than the one in which it was developed, in order to explore the potential cross-jurisdictional usefulness of this innovative tool.

4.2.2 Limitations

Limitations of this study included the fact that patients were interviewed at different time points during their hospital admissions owing to acute illness affecting their willingness and ability to participate, the variable timing of the use of coercive measures, and unpredictable discharge dates. Ideally, all patients would be interviewed either at the same stage during their admissions or at a defined time-point following use of coercive measures. I controlled for any resultant bias by including length of stay at time of assessment in this multi-variable model.

There are a cohort of patients who may be brought to hospital under the auspices of the Mental Health Act 2001, but whose involuntary orders are not completed either because they agree to stay voluntarily or because the order is not completed when they are reviewed by a consultant psychiatrist within 24 hours of arriving to the Approved centre. This is a unique group of patients who would be interesting to collect data on. This data was not available in this analysis and as such is a limitation of this study.

There is some research to indicate that an individual's index admission can have a lasting impact upon them, including their perceptions towards any future admissions (Lay et al., 2015). For this reason, number of admissions and looking at the group for which this was an index admission would have been a useful piece of information to have. Unfortunately this data was not collected on this group as this was not reliably available in the paper inpatient charts, particularly if patients had moved between hospital areas as there is no centralise electronic patient record system in place and is a limitation in this study.

A further limitation was the necessary exclusion of patients who lacked capacity to consent to research and those who did not agree to participate in interviews. Ideally a flow diagram would have been included to include information on those who declined to participate in this study, however, the ethical guidelines under which this research was undertaken are interpreted as not permitting processing of such data.

Ethical approval was obtained from the research and ethics boards of Royal College of Surgeons of Ireland (RCSI) and Trinity College Dublin (TCD) to ensure ethical approval was in place for both hospital sites and the ethical guidelines for both were used in the design for this study. As outlined in the both the RCSI and TCD Health Research

Guidelines, GDPR guidelines must be followed for all Health Research (Trinity College Dublin). The TCD guidelines state:

“A Researcher planning to use an individual’s information for health research must obtain the explicit consent of the individual”.

These guidelines also state that:

“It is recognised – as it is in other countries – that sometimes, in limited situations, obtaining consent will not be possible and that the public interest of doing the research significantly outweighs the need for explicit consent. It is in cases like this that HRCDC [Health Research Consent Declaration Committee] has a decision-making role. The HRB has developed a decision tree to help researchers assess whether they might be eligible to submit an application to the Health Research Consent Declaration Committee (HRCDC) to obtain a consent declaration”.

The above mentioned HRCDC is a statutory body that was established as part of the 2018 GDPR amendments and may only make a declaration where it is satisfied that the public interest in carrying out the research significantly outweighs the public interest in requiring the explicit consent of the data subject. The HRB has developed guidance to help researchers assess whether they might be eligible to submit an application to the HRCDC to obtain a consent declaration. On review of these guidelines for this research this was interpreted as not appropriate to collect data on those who did not consent to participate in this research.

In addition to the specific TCD and RCSI guidelines, in Ireland Health Research is governed by GDPR, the Data Protection Act 2018 ("Data Protection Act 2018 (Section 36(2)) (Health Research) Regulations 2018, S.I. No. 314 of 2018," 2018). These updated

2018 guidelines state that a researcher planning to use an individual's information for health research must obtain the explicit consent of the individual. These regulations state that for data to be collected on an individual:

“explicit consent has been obtained from the data subject, prior to the commencement of the health research, for the processing of his or her personal data for the purpose of specified health research, either in relation to a particular area or more generally in that area or a related area of health research, or part thereof”.

The Guidance on Explicit Consent produced by the Department of Health (Department of Health, 2018) regarding these guidelines states:

“It is essential that the individual is advised that in the event that he or she decides not to give consent that no attempt will be made to access his or her data and that no application will be made for a consent exemption to the Health Research Consent Declaration Committee. That is the situation in relation to (a) new research and (b) research that was ongoing on 8 August and where no consent has been obtained but must be obtained before 30 April 2019”.

This Data Protection Act ("Data Protection Act 2018 (Section 36(2)) (Health Research) Regulations 2018, S.I. No. 314 of 2018," 2018)also specifically states that:

“The Committee may, only where it is satisfied that the public interest in carrying out the research significantly outweighs the public interest in requiring the explicit consent of the data subject, and that all the requirements in paragraphs (3) and (4) have been met, make a declaration”.

The above outlines that for people who do not consent we cannot use any of their data.

This change to legislation does present significant difficulties with health research going

forward and researchers in RCSI have proposed that there must be an urgent review of the HRRs GDPR “explicit consent” requirement (Mee et al., 2021).

Purposive sampling was used in this study, and, while widely used in order to identify participants who are willing to participate and able to communicate their experiences, this approach also has limitations, such as increasing potential for bias and reducing generalisability (Palinkas et al., 2015). In particular, the self-report nature of elements of this study present the possibility of recall bias, as this study took place during acute hospital admission and patients tend to over-report symptoms that correspond to current illness (Schmier & Halpern, 2004). In addition, patients in this study retrospectively reported their perceptions of coercion during admission; their views might have been different at the time of admission, especially if seclusion and restraint were used following admission and before participation in the study. It would be informative to include information about the timing of the research interviews in relation to the last episode of restraint or seclusion, but this information was not available for this study. It is also a limitation that this study was based in mixed urban and suburban areas of Dublin city and therefore might not be generalisable to other settings such as rural areas.

Inter-rater reliability may have been more formally assessed to ensure consistency and validity. Percent agreement is one such method, although this does not account for chance agreements. Alternative formal statistical methods for measurement of this include Cohen’s Kappa statistics and Kendall’s coefficient of concordance. The informal measurement of this is a limitation of this study.

Other limitations include the fact that I applied the SANS and SAPS to patients with diagnoses other than schizophrenia: while these tools are commonly used in such patients, they are primarily validated for patients with schizophrenia. In addition, while the WAI-SR has been validated in inpatient samples, its validity is less clear in samples with a rather brief inpatient length of stay (i.e., median of 11 days). Further validation of this tool would be helpful.

Finally, the diagnostic differences between voluntary and involuntary patients is a limitation and may impact on overall results.

4.3 Comparison with previous studies

4.3.1 *Perceived coercion and admission status*

involuntary status are consistent with much of the literature on this topic (Jonathan Bindman et al., 2005; Cascardi & Poythress, 1997; Fiorillo et al., 2011). However, it is worth noting that many voluntary patients also experience varying levels of perceived coercion. Previous studies have shown that voluntary patients who are treated on secure or locked wards, as well as individuals who are brought to hospital under an involuntary admission order and subsequently agree to remain voluntarily (in some studies termed ‘coerced voluntaries’) are more likely to report high levels of perceived coercion (O'Donoghue et al., 2014). Other studies in both public and private (i.e. fee-paying) facilities have yielded results similar to this study (O'Donoghue, Lyne, Hill, Larkin, et al., 2011), although further work is still needed, ideally including studies specifically designed and adequately powered to identify differences between patient experiences in public and private psychiatric facilities (if any such differences exist). The associations that I identified between perceived coercion on admission and

Clinicians already make efforts to admit patients voluntarily whenever possible. The knowledge that involuntary status is a risk factor for seclusion and restraint adds to the importance of these efforts, as these links reflect key aspects of the experience of involuntary admission and care. It is especially notable in these findings that seclusion and restraint were linked with involuntary status regardless of positive symptoms of schizophrenia, attitudes to medication or insight. This has potential implications in

relation to the psychological impact of such measures and long-term implications of patient disapproval of treatment.

4.3.2 Perceived coercion and formal coercive practices

Different data gathering techniques in different countries make cross-national comparisons challenging in the field of formal coercive practices. One study in India, however, found that physical restraint was particularly associated with higher perceived coercion (Gowda et al., 2018). More work is needed in this area, as legal frameworks, psychiatric practices, and the definition of terms such as ‘physical restraint’ differ significantly between jurisdictions.

It is interesting that I found no association in this study between perceived coercion on admission, negative pressures on admission, perceived procedural injustice on admission, affective reactions to hospitalisation on admission, or total AES score on admission, on the one hand, and patient experience of seclusion or restraint during the admission, on the other hand. It is, of course, likely that perceived coercion would increase *after* episodes of seclusion and restraint, but it is nonetheless interesting that I found that perceived coercion on admission (even when assessed in retrospect by the patient) is *not* correlated with the use of such coercive measures.

One might imagine that patients who had experienced seclusion or restraint would, in retrospect, report higher levels of perceived coercion on admission. I did not find this to be the case, but future studies would ideally measure perceived coercion on admission

and later in the hospital stay, after seclusion and restraint have occurred, to track changes in patterns of perceived coercion over time and in response to specific coercive measures.

This study found seclusion to be associated with younger age and involuntary status. No association was noted in this study between seclusion and gender, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes towards medication or insight. This is comparable to studies internationally, with most studies showing an association between seclusion and younger age. An audit of the use of seclusion in Canadian hospitals found younger age, schizophrenia or other psychosis, bipolar and personality disorder, and longer stay in hospital to be predictors of an episode of seclusion with or without restraint (Dumais et al., 2011).

One retrospective study of all inpatient admissions to an Australian adult acute psychiatric unit over a 12-month period found that those who were secluded were more likely to be young, admitted involuntarily and have a diagnosis of schizophrenia (Tunde-Ayinmode & Little, 2004). They also noted that seclusion was more likely to occur in the evenings, when staff/patient ratios were lower, a factor which was not explored in this study. One study of adult patients admitted to general adult and psychiatric intensive care units in South London found that secluded patients were more likely to be younger and legally detained. Unlike in this study, they also noted that female sex increased the odds of seclusion. This may reflect differences in mental health legislation between countries, as UK legislation allows for involuntary treatment for Axis 2 disorders such as emotionally unstable personality disorder, which has a higher incidence in females. Likelihood of seclusion also decreased with time since admission (Cullen et al., 2018), which was not noted in this study. A retrospective study of psychiatric inpatients in

Malawi showed that male patients had increased odds of being secluded (Barnett et al., 2018). In that study, there was no association between seclusion and age; diagnosis of alcohol use disorder, marijuana use disorder or schizophrenia; involuntary admission; presence of hallucinations; suicidality or commission of violent acts prior to admission.

In this study, physical restraint was found to be associated with involuntary status. No association was found in this study between physical restraint and gender, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes towards medication or insight. Different data gathering techniques in different countries again make cross-national comparisons challenging. An international systematic review of seclusion and restraint from 1990 to 2010 found the variables most frequently associated with the use of seclusion and restraint were male gender, young adult age classes, foreign ethnicity, schizophrenia, involuntary admission, aggression or trying to abscond, and the presence of male staff (Beghi et al., 2013).

One Japanese study looking at both seclusion and restraint found that a history of epilepsy, dementia in Alzheimer's disease and antipsychotic usage were all significantly associated with the use of seclusion and restraint (Narita et al., 2019). Of note, prescribed medications were not considered as a factor in this study. Another study examined use of seclusion and restraint in the geriatric psychiatry division of Geneva University Hospital (Chieze et al., 2021). In this setting, risk factors for seclusion and restraint were younger age, male gender, being divorced or married, cognitive disorders, previous psychiatric hospitalisations, and involuntary referrals from the emergency department.

One retrospective Norwegian study examined restraint from 2004 to 2011 and found that the majority of restraint was associated with diagnosis (substance-abuse, psychotic or affective disorders), age, gender and legal status of hospitalization, with the majority of restraint cases concerning male patients under 50 years (Reitan et al., 2018). A Danish longitudinal study analysing mechanical restraint in an inpatient dual diagnosis population from 2006 to 2011 found that a diagnosis of schizophrenia, the use of stimulant substances and male sex were associated with an increased risk of being exposed to mechanical restraint (Lykke et al., 2020). One Spanish retrospective analysis of mechanical restraint between 2007 and 2014 found that the best predictor of restraint was involuntary admission followed by a diagnosis of personality disorder (Pérez-Revuelta et al., 2021). I did not study mechanical restraint in this study (as it was not used), but I found that physical restraint was associated with involuntary status, consistent with most other studies in the literature.

4.3.3 Perceived coercion and gender

The relationship I identify between perceived coercion on admission and female gender merits close examination. There is limited data available on the associations perceived coercion and gender, although a relationship has previously been identified (Fiorillo et al., 2011; Fiorillo et al., 2012). In fact, the use of coercive measures including restraint and seclusion has been variably associated with both male (Carpenter et al., 1988; Lay et al., 2011) and female genders (Mason, 1998; Salib et al., 1998) in some previous studies, with yet other studies failing to identify any gender pattern (Kalisova et al., 2014; Wynn, 2006). I were unable to identify any literature on non-binary genders in the research in this area.

This research explored the factors that link female gender with perceived coercion and procedural injustice during psychiatric admission, despite reduced rates of formal coercive practices such as seclusion and restraint in this group. Overall, I found that factors other than these formal coercive practices are primarily linked with perceived coercion, especially younger age, involuntary status, and positive symptoms among female patients. Among males, not being born in Ireland appears more relevant than age.

Several studies have identified associations between female gender and increased perceived coercion (Fiorillo et al., 2012; Jordan & McNiel, 2020; Raveesh et al., 2016) and some differ from this study in identifying greater exposure to formal coercive practices outside of an Irish context (Beghi et al., 2013; Gowda et al., 2018; Odawara et al., 2005). Proposed reasons to date have included a possible increased willingness among females to report feelings of vulnerability and psychological discomfort (Rhodes et al., 2002) or a socially influenced, gender-based characteristic of greater emotional responsiveness among females (Georgieva et al., 2012). These findings indicated that formal coercive practices played a lesser role than suggested in other studies. I report an association with younger age in female patients which had not been identified as a statistically significant factor prior to stratification by gender. Other studies vary in their associations with age, with one study that did not stratify by gender identifying greater age as a risk factor for increased perceived coercion (J. Bindman et al., 2005). Another study of patients being treated for anorexia nervosa found those under the age of 18 reported more perceived coercion than adult patients and, of note, 98% of participants in that study were female (Guarda et al., 2007).

Some work has been done on addressing perceived coercion in psychiatric care, including post-coercion review sessions, which can have significant impact, especially among female patients (Wullschleger et al., 2021). Further work is required to identify, implement, and evaluate any further gender-aware interventions that might play a role in these settings, with particular reference to non-binary gender identities.

Also of note, I saw that, for males, not being born in Ireland appears more relevant than age to perceived coercion. This is an important finding, particularly with an increasing immigrant population in Ireland. The Central Statistics Office estimated non-Irish nationals to make up 12.7% of the Irish population in 2019 (Central Statistics Office, 2019), and provisional figures from the 2022 census show the current estimate for net migration between 2016 and 2022 is 190,333 (Central Statistics Office, 2022). Migrants are noted to experience a greater level of psychological distress than native populations (Wittig et al., 2008). While this is not the core focus of this research, it highlights an important area for further research.

4.3.4 Negative pressures and psychotic symptoms

The association I identify between perceived negative pressures i.e. being forced, threatened, or physically forced to come into hospital by others on admission and positive symptoms of schizophrenia is also consistent with much of the literature on this topic. Higher levels of positive psychotic symptoms have previously been associated with use of coercive measures (Fiorillo et al., 2012; Kalisova et al., 2014), although there are limited data available linking these with perceived negative pressures. Previous studies have shown that individuals who felt coerced during admission were found to have

experienced more negative pressures, and that hallucinations and bizarre behaviour are the symptoms most linked with perceived coercion (O'Donoghue et al., 2014). A significant association between negative pressures and perceived coercion has also been noted in a number of papers (Cascardi & Poythress, 1997; Ivar Iversen et al., 2002; Lidz et al., 1995). It is unclear what the driving force is for this association is, but this may reflect a sense of urgency from others close to the patient to seek urgent inpatient treatment despite the patient's wishes as a response to more florid distressing psychotic symptoms. This may be supported by the lack of association between this and increased negative symptoms which may lead to a patient presenting more as withdrawn and less obviously unwell to others.

4.3.5 Procedural injustice

I identified significant associations between perceived procedural injustice on admission and fewer negative symptoms of schizophrenia, involuntary status, cognitive impairment, and female gender. These associations likely reflect the diversity of factors that shape perceptions of justice among psychiatry inpatients, including difficulties with engagement owing to negative symptoms, involuntary admission status and impaired cognitive ability to understand the complex legal and medical processes involved in involuntary admission under Ireland's MHA 2001. Again, the role of gender merits particular consideration in this context, owing to the limited literature available on differences in perceived coercion between males and females.

4.3.6 Negative affective reactions

I also report that negative affective reactions to hospitalisation on admission are significantly associated with birth in Ireland and being employed. These findings might reflect different expectations of hospital admission, especially among people whose work-life is disturbed first by mental illness and then by admission for inpatient care. These relationships clearly merit further examination, ideally using a more nuanced approach to assessing place of birth than the method used in this study, which (owing to limitations in source data) simply recorded if a person was born in Ireland or born elsewhere. This is an issue that merits more fine-grained examination before firm conclusions can be drawn and it would be worthwhile to study a larger group of patients from multiple backgrounds to establish whether differences relate to specific locations and whether there are specific associations between cultural approaches to mental illness, inpatient admission and acceptance of treatment that need to be adapted as Ireland becomes a more multicultural society.

4.3.7 Objective necessity for compulsory psychiatric treatment

The Compulsory Treatment Checklist was designed to evaluate the necessity for compulsory psychiatric treatment and was initially evaluated in a Portuguese setting, with patients admitted under the Portuguese Mental Health Act (Law 36/98) (Brissos et al., 2017). While legislation and rates of involuntary treatment vary across jurisdictions (Kallert et al., 2011; Steinert et al., 2010), Sheridan Rains et al. (Sheridan Rains et al., 2019) suggest that characteristics of legislative systems appear unrelated to involuntary hospitalisation rates. Consistent with this, these findings suggest that the CTC can be

usefully applied in Ireland and therefore possibly in other jurisdictions too, although certain aspects of its performance might vary between countries.

This is important because the literature on the objective assessment of need for involuntary admission remains very limited. Various studies examine associations between involuntary status and demographic and clinical parameters, including (but not limited to) agitation, aggression, being married, poor insight and low levels of general functioning (Braitman et al., 2014). In this study, too, poor insight was associated with involuntary status, but very few studies attempt to quantify the *necessity* for compulsory care as the CTC does.

A recent meta-analysis in this area showed the risk factors most strongly associated with involuntary admission to be the diagnosis of psychotic disorder and previous involuntary hospitalisation, with those with either of these risk factors having double the odds of being involuntarily admitted than those without (Walker et al., 2019). The authors acknowledge the limitations in available knowledge of the pathways and mechanisms by which this increased risk occurs and acknowledge the potential traumatic impact of a previous involuntary hospitalisation leading to reduced engagement with mental health services leading to a delay in seeking treatment until a further involuntary hospitalisation is required.

This reluctance might reflect the enormous variety and complexity of factors associated with involuntary treatment. For example, one retrospective study of patients in Brussels who were being considered for involuntary committal concluded that involuntary committal chiefly occurred due to the inability of the mental healthcare system to provide

more demanding patients with alternative forms of care (Lorant et al., 2007). In that study, more than half of all requests for involuntary committal were turned down in favour of less restrictive alternatives, although alternative care was less available for psychotic individuals, foreigners, and patients not living in a private household.

These findings are consistent with a study from Norway which reported that immigrants from non-western countries may experience more compulsory treatments, although their referrals to psychiatric emergency departments were not more frequent than the indigenous Norwegian population (Berg & Johnsen, 2004). This study suggested that immigrants have greater difficulties presenting their psychiatric problems to general practitioners and might thus develop more severe symptoms before referral. In this study, higher CTC scores were not associated with place of birth but were associated with more positive symptoms of schizophrenia, consistent with their findings.

The CTC places considerable emphasis on apparent risk of violence, but it is notable that risk of violence is not consistently associated with involuntary admission across the published literature. One study of 1,543 admissions to three Finnish psychiatric university hospitals found that a public threat did not play a crucial role in involuntary admission (Tuohimäki et al., 2003). Under the Finnish Mental Health Act 1990/1116 the preconditions for compulsory psychiatric hospital admission are that the individual suffers from a mental illness, or, if under 18, a serious mental disorder which necessitates treatment because leaving the condition untreated would result in worsening of the psychiatric condition and/or a threat to the health or safety of the individual him or herself and/or a threat to the health or safety of others and all other mental health services are inapplicable or inadequate. In this study, the predominantly male patients who were

admitted under the criterion of ‘potentially harmful to others’ were not treated more frequently with coercive measures and their length of stay was similar to that of patients detained for other reasons.

These results tend to support this finding, as the CTC danger subscale was the only subscale that did not differ between voluntary and involuntary patients. Under the current Irish legislation, danger to self or others can form part of the criteria for involuntary admission, but as with the Finnish Mental Health Act, is not mandatory. In Ireland, an involuntary patient needs to have “mental illness, severe dementia or significant intellectual disability where (a) because of the illness, disability or dementia, there is a serious likelihood of the person concerned causing immediate and serious harm to himself or herself or to other persons, or (b) (i) because of the severity of the illness, disability or dementia, the judgment of the person concerned is so impaired that failure to admit the person to an approved centre would be likely to lead to a serious deterioration in his or her condition or would prevent the administration of appropriate treatment that could be given only by such admission, and (ii) the reception, detention and treatment of the person concerned in an approved centre would be likely to benefit or alleviate the condition of that person to a material extent” (Mental Health Act, 2001; Section 3(1)).

In Portugal, criteria for involuntary admission and treatment are that a person is suffering from a serious mental disorder and by virtue of this condition represents a danger to him- or herself, or others, and refuses to submit to the necessary medical treatment, or that a person is suffering from a serious mental disorder and lacks the necessary capacity to evaluate the meaning and implications of consent and the absence of treatment could

result in a significant deterioration of his or her condition (Law 36/98) (Almeida & Molodynski, 2016).

The differing criteria for compulsory admission across European Union member states is notable, with mandatory danger criterion in place for Austria, Belgium, France, Germany, Luxembourg and the Netherlands; danger criterion or need for treatment present in Denmark, Finland, Greece, Ireland, Portugal and the UK, and need for treatment only with no reference to danger criterion in Italy, Spain and Sweden (Salize & Dressing, 2004). The lack of compulsory danger criterion may impact the overall danger score and relevance of this section within the CTC, indicating potential modification required across different jurisdictions.

4.4 Patient and Public Involvement (PPI)

This study did not utilise Patient and Public involvement (PPI) and this is worth considering in future research in this area. The purpose of PPI is to use experiential knowledge to improve quality and relevance of research at all stages of research, including data analysis (Jennings et al., 2018), although this can face challenges in health research due to tight deadlines and scarce resources. The basis for PPI in research comes from the WHO's Alma Alta Declaration, which stated that people have a 'right and duty to participate individually and collectively in the planning and implementation of their healthcare' (World Health Organisation, 1978). Studies have demonstrated a role for PPI in research within mental health settings but qualitative research to date has outlined the need for this to be implemented while avoiding either tokenism or insufficient focus on mutual understanding or relationship building (Paul & Holt, 2017; Yamaguchi et al., 2022). Supporting emotional work for both advisors and researchers has been identified as key element of this work (PARTNERS2 writing collective, 2020). These limitations are reflected in the limited uptake of PPI in health research to date, with one study of 3000 papers published in BMJ open showing 20.6% of papers included a form of PPI (Lang et al., 2022).

This research may have included PPI at all stages of the project including feeding into the initial design by potentially engaging with service users on the acceptability and feasibility of the semi-structured interview prior to rollout. This may have benefitted the study by improving rates of engagement. Data analysis and interpretation of results may also have benefited from PPI involvement as the study progressed in order to provide a patient perspective on the potential meaning behind this. Challenges to including this in

this project include time and resources, access to appropriate patient groups, and the challenges of confidentiality of the patient group included. As noted in research to date, the potentially emotionally challenging setting of voluntary and involuntary acute psychiatry admissions may also have been a challenge in this study, and sufficient emotional and reflective processes would need to be put in place for this to be engaged with in a safe manner.

4.5 Future Qualitative Work

This study focussed on quantitative analysis of perceived coercion. There has been a clear shift in focus in research in this area in recent years, with several recent qualitative studies produced exploring perceptions of coercion during psychiatric admission (Klingemann et al., 2022; Newton-Howes & Mullen, 2011; Silva et al., 2023; Simms-Sawyers et al., 2020) and admissions in other hospital settings (Joebges et al., 2023). The surprising lack of association between formal coercive measures such as seclusion and restraint with perceptions of coercion is an area that warrants qualitative research to study the reasons behind this. Likewise, the reason for patients to have such different responses to involuntary status – is this related to the legal repercussions, stigma, or some other as of yet unknown factor?

Another key area for future qualitative research should be the patient groups who this study found to experience the most perceived coercion: females and males born outside of Ireland. The lived experience of these patient groups and why their experiences vary from other groups is essential to inform future interventions and policy.

Another area of Qualitative Research would be to assess the clinician experience of use of the Compulsory Treatment Checklist as a tool for aiding clinical decision-making. While acceptability of such a tool by users could be assessed quantitatively, a qualitative analysis of this would allow for richer information to adapt and expand such a tool further.

Chapter 5

Conclusion

5.1 Perceived coercion

These results show that perceived coercion on admission, assessed by the patient in retrospect, is more closely associated with involuntary status and symptoms than it is with subsequent formal coercive practices, such as seclusion and restraint, which were the primary variables of interest at the start of this study (O'Donoghue, Lyne, Hill, Larkin, et al., 2011). While the relevance of these practices should not be overlooked and all efforts should be made to minimise or eliminate them, this data suggests that other factors, such as admission status and symptoms, play decisive roles in shaping perceptions of coercion and procedural injustice in psychiatry inpatient settings, independent of the impact of seclusion and restraint. This is essential for informing policy decisions and any changes in governance of such practices.

It is important to view this in the context of Foucault's previously described model of power structures within medical systems. It is both increasingly important and difficult for psychiatry services to retain this open perspective to treatment of suffering and distress in a setting where there is increasing pressure secondary to underfunding and increased presentations. Clinicians should continue to focus on helping rather than controlling patients, particularly within a specialty with such direct exposure to the human suffering resulting from trauma, control and societal pressures.

It is worth remembering that the variables examined in this study account for approximately one third of the variance in perceived coercion on admission among psychiatry inpatients. Further work is needed to explain the remaining two-thirds of this

variance, which may relate to contextual factors, such as the physical environment of hospitals, rather than patient factors.

5.2 Role of gender

The role of gender also merits particular attention in future research, especially in relation to perceived coercion on admission and procedural injustice on admission. While the Mental Health Commission reports that male inpatients account for most episodes of seclusion and restraint, I found increased perceived coercion on admission and procedural injustice among females. This analysis has confirmed that factors other than formal coercive practices are primarily linked with perceived coercion among females and males. Among female inpatients, these include younger age, involuntary status, and positive symptoms of schizophrenia. Among males, not being born in Ireland appears more relevant than age. Further research is needed to better understand these correlations, not least because the r-squared values in this study indicate that these models generally account for between one third and a half of the variance between individuals in these scales and subscales; other factors are also likely to be relevant (e.g., decision-making capacity, substance misuse, etc.).

These results indicate that there is a need for gender-aware interventions to minimise perceived coercion and its consequent impacts on care among all patients. Research of interventions to date has focused on reduced formal coercive measures such as seclusion and restraint as their primary outcome measures, and include interventions in the domains of organisation, staff training, risk assessment, environment, psychotherapy, debriefings, and advance directives (Hirsch & Steinert, 2019). While these interventions may also be beneficial in reducing *perceived* coercion, it is essential that data on perceived coercion is gathered as part of future studies in this area.

5.3 Role of formal coercive measures

In Ireland, use of seclusion and restraint is most strongly associated with involuntary admission status and, in the case of seclusion, younger age, rather than gender, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes towards medication or insight. The network of interactions between involuntary status and use of seclusion and restraint merits much closer attention, especially as use of seclusion and physical restraint appears to be associated with involuntary legal status *independent of* level of symptoms, therapeutic alliance, or insight.

5.4 Objective necessity for involuntary psychiatric treatment

It is essential that clinicians aim to be objective in providing compulsory treatment for patients in order to limit the deprivation of liberty involved to those cases in which this is clearly justified, particularly in the context of the United Nations' call for an absolute ban on these measures (United Nations General Assembly, 2013). This objectivity can be difficult to achieve and tools which aim to support this decision-making process such as the CTC are a welcome addition to a trained clinician's assessment. This study has shown that this is a useful tool not only in Portugal but in Ireland too, although its performance will likely vary across jurisdictions, resulting in different optimal cut-off scores in different countries. It is likely that a study such as ours would need to be replicated across different jurisdictions to clarify these cut-off points. I found strong associations between involuntary status and the legal, historic, and cognitive item-clusters in the CTC, but not the danger cluster. Future work could usefully examine the performance of the CTC in other settings and its performance in jurisdictions where apparent dangerousness is a mandatory criterion for compulsory care and jurisdictions where it is not. The tool might also possibly help identify an admission unit that was an outlier in terms of unnecessarily lengthy involuntary admission orders that might not score highly on the CTC. It is also essential that future studies of the CTC analyse the effects of the use of the CTC on compulsory admission decision-making in individual cases, and not only at group-level.

5.5 Role in future policy development

It is essential to view this research and its results in the context of ongoing changes to the provision of Mental Healthcare in Ireland. To date, initial publications from this research have fed into a rigorous review of the published national and international academic evidence of restrictive practices by the Mental Health Commission (Mental Health Commission, 2022b), with particular reference to these findings related to perceived coercion and female gender. This review found the following in relation to restrictive practices (Larkin, 2022),

“Overall, the Irish guidance, codes and rules are reflective of good evidence in the area. However, the Rules and Code are limited in areas relating to underpinning Human Rights principles. Furthermore, there is an absence of independent review in the Irish context which is fairly extensively adopted in the International Jurisdictions. Monitoring measures need to be strengthened in the light of findings and there needs to be a constant focus on reduction or minimising the restrictive practices, expanding the focus from an organisational approach.”

This review has contributed to updates to the rules and codes of practices in this area (Mental Health Commission, 2022a, 2022c, 2022d), commencing on 1st January 2023. These updates include a ban on the use of mechanical restraint for children due to particular vulnerability to trauma and injury as a result of these practices. They also include a requirement for all public and private services to publish information about their efforts to reduce and, where possible, eliminate the use of restrictive practices with the goal of ensuring that these practices are only used in exceptional circumstances.

The code of practice related to physical restraint now includes the following principles (Mental Health Commission, 2022a),

- 1. Approved centres should recognise the inherent rights of a person to personal dignity and freedom in accordance with national and international human rights instruments and legislation.*
- 2. The use of physical restraint may increase the risk of trauma and may trigger symptoms of previous experiences of trauma. Therefore, it should only be used in rare and exceptional circumstances as an emergency measure.*
- 3. Persons who are restrained should be treated with dignity and respect at all times before, during, and after the restraint.*
- 4. Persons who are restrained should be fully informed and involved in all decisions regarding their care and treatment to include all matters relating to the use of physical restraint. The views of persons who are restrained should be listened to, taken into account and recorded.*
- 5. As physical restraint compromises a person's liberty, its use should be the safest and least restrictive option of last resort necessary to manage the immediate situation, be proportionate to the assessed risk, and employed for the shortest possible duration. Its use should only occur following reasonable attempts to use alternative means of de-escalation to enable the person to regain self-control.*
- 6. Communication with persons who are restrained should be clear, open and transparent, free of medical or legal jargon, and staff should communicate with empathy, compassion and care. Persons who have a sensory impairment may*

experience an increased level of trauma during physical restraint and staff should address the additional communication needs of these persons.

7. The views of family members, representatives and nominated support persons, should be taken into account, where appropriate.

8. Cultural awareness and gender sensitivity should be taken into account at all times and should inform the approved centre's policies and procedures for the use of physical restraint.

9. Physical restraint should be used in a professional manner and its use should be based within a legal and ethical framework.

The rules governing the use of seclusion now includes the following principles (Mental Health Commission, 2022d),

1. Approved centres must recognise the inherent rights of a person to personal dignity and freedom in accordance with national and international human rights instruments and legislation.

2. The use of seclusion may increase the risk of trauma and may trigger symptoms of previous experiences of trauma. Therefore, it must only be used in rare and exceptional circumstances as an emergency measure.

3. Persons who are secluded must be treated with dignity and respect at all times before, during, and after the seclusion.

4. Persons who are secluded must be fully informed and involved in all decisions regarding their care and treatment to include all matters relating to the use of seclusion. The views of persons who are secluded must be listened to, taken into account and recorded.

- 5. As seclusion compromises a person's liberty, its use must be the safest and least restrictive option of last resort necessary to manage the immediate situation, be proportionate to the assessed risk, and employed for the shortest possible duration. Its use must only occur following reasonable attempts to use alternative means of de-escalation to enable the person to regain self-control.*
- 6. Communication with persons who are secluded must be clear, open and transparent, free of medical or legal jargon, and staff must communicate with empathy, compassion and care. Persons who have a sensory impairment may experience an increased level of trauma during seclusion and staff must address the additional communication needs of these persons.*
- 7. The views of family members, representatives and nominated support persons, must be taken into account, where appropriate.*
- 8. Cultural awareness and gender sensitivity must be taken into account at all times and must inform the approved centre's policies and procedures for the use of seclusion.*
- 9. Seclusion must be used in a professional manner and its use must be based within a legal and ethical framework.*

5.6 Clinical Implications and Directions for future research

Ireland's Mental Health Act is continuing to adapt to meet to the standards set out in international human rights legislation (United Nations, 2006). A revised version of the Mental Health Act is currently in draft form, and it would be pertinent to re-examine the above factors in the context of any such changes once implemented. In particular, proposed changes include an alteration to the criteria for involuntary detention which it is proposed will fulfil all of the following criteria: (a) the person has a mental disorder of a nature and degree of severity which makes it necessary for him or her to be involuntarily detained in an approved inpatient facility to receive treatment which cannot be given other than in an approved inpatient facility, *and* (b) where such treatment is immediately necessary to protect the life of the person, or to protect the health of the person from the threat of serious harm, or for the protection of other persons, and (c) the reception, detention and treatment of the person concerned in an approved inpatient facility would be likely to ameliorate the condition of that person to a material extent (Page 32)(Department of Health, 2021). This focus on immediate risk may have a significant impact on resulting CTC scores and may require further adaptation in an Irish context. Objective tools to measure the efficacy and acceptability of any future policy developments are essential, and as these legislative changes take place it is important that every effort is made to ensure the results of such changes have a positive effect on patient care. This research has focussed on some of the factors that influence patient experience, and the impact of involuntary status rather than other restrictive measures such as seclusion and restraint reflect the need to adapt this legislation. It would be useful to reassess the patient experience both quantitatively and qualitatively and analyse any changes in perceived coercion with adaptations to the Mental Health Act.

Another significant proposed change is that all involuntary admission applications would be made by an authorised officer (Page 34)(Department of Health, 2021), and regulation and training for such positions may offer an opportunity for further research into measurement and standardisation of assessment for objective need for admission. Tools such as the CTC may have a role in such training, and quantitatively and qualitatively analysing both the acceptability and usefulness of such a tool in this setting would be important in the roll out of this change.

The Mental Health Commission is tasked with monitoring all approved centres in the country on an annual basis. While the Mental Health Commission collects data on incidences of involuntary admissions and formal coercive measures, neither quantitative nor qualitative measures of patient experience are routinely collected in all sites. This study has shown a role for measurement of perceived coercion as a separate measure which may not relate specifically to formal coercive measures, pointing instead more towards more subtle but specific issues in certain sites related to issues with staffing, therapeutic alliance or processes involved in the admission process. Collection of such data and expanding this further to include also qualitative measures on a wider basis would allow for a richer assessment of patient experience in Ireland's inpatient psychiatric settings.

As we move through the twenty-first century, there is an increasing role for tools such as artificial intelligence in supporting clinical research, with early research in this area indicating a potential role for this technology in redefining mental illness more objectively; earlier recognition of illness, and personalising treatment, with particular

strengths shown in rapid pattern analysis of large data sets (Graham et al., 2019; Shatte et al., 2019). In order for research in the domain of mental health to retain an equal status to physical health in any such developments, it is essential that objective measures of patient experience can be utilised to quantify and feed into machine-learning models. In the context of gender differences I have identified in this research, it is important that any such development accounts for any biases which have already been shown to exist in early research in this area (Straw & Callison-Burch, 2020). More work is also needed in establishing a method of accurately comparing international perceptions of coercion and formal coercive practices, and standardising the terminology in use for research purposes.

Further work is needed to establish whether these associations between perceived coercion and involuntary status are consistent across other types of psychiatric facilities such as comparing both public and private facilities, in addition to establishing any differences between urban and rural settings. Future studies would also ideally measure perceived coercion at several time points of admission, particularly before and after formal coercive practices have occurred in order to track patterns of perceived coercion in response to specific coercive measures. As noted above, it is essential to also gather qualitative data in order to adequately reflect patient experience and develop a richer understanding of the factors influencing negative experiences in inpatient settings.

While I have identified a relationship between increased perceived coercion and female gender, further work is required to identify, implement, and evaluate any further gender-aware interventions that might play a role in these settings. Non-binary gender identities also need to be explored in more detail as this group is at risk of being overlooked due to smaller numbers. I also identified greater perceived procedural injustice in female

patients, which requires further exploration. The experience of male migrants and increased perceived coercion is also important to explore further.

5.7 Reflections on completion of this research

Following completion of this research, there are a number of learnings I feel are important for future researchers in this area. Looking firstly towards the study planning stages, it would be worth exploring whether a sufficient body of work could be undertaken when examining this group of patients that would allow for gathering of data without explicit consent. The health research rules governing this changed in the early stages of this research project, and since the commencement of these rules, more clarity is now available on the process of ethically engaging in research within these more stringent guidelines. Another potential alternative approach would be to sufficiently resource a study to have sufficient data collectors to approach every single patient within the study timeframe so that overall annual admission data as currently collected by the Mental Health Commission could instead be meaningfully compared to the data set.

Furthermore, sufficient resourcing of such a study would allow patients to all be approached at a fixed timepoint in their admission or following use of coercive measures, removing length of stay and the purposive sampling used in this study as potential confounding variables. Although increased data collectors may introduce more inter-rater variability, this may provide an opportunity to engage in more formal inter-rater reliability measures, as these were not used in this study.

As with most research studies, reviewing all of the data during analysis stage unearthed a number of potential areas for additional data collection. One important group that I would have liked to have more information on was the group of patients who were brought to hospital under the auspices of the Mental Health Act 2001 but who then remained voluntarily. The analysis of this group along with a larger cohort of voluntary

patients would have allowed analysis of this very particular group who are not offered the legal protections of the Mental Health Act and are often lost to specific targeted interventions.

Further information I would have liked to have had access to is more information on number of admissions a patient has previously had, along with increased information on the subscales within each tool used. I based my use of tools on previous literature in this area, however, as new tools are constantly being validated, I would suggest to any other researchers in this area to spend time adequately searching the literature for the most psychometrically valid tools to the population rather than going with the most commonly used.

I feel this research experience has been beneficial for both me and hopefully for the vulnerable patient group that has been involved in this study. Although there are many challenges to research in this population, I believe it is essential to ensure all practices within psychiatric settings are ethical and conducive to enhancing patient care rather than remaining aligned with longstanding traditions or engaging in changes based on assumptions regarding patient's need and wishes.

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Appendix I

THIS NOTEPAPER MUST NOT BE USED FOR
PRESCRIPTIONS OR INVOICING PURPOSES



**THE ADELAIDE & MEATH
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Dr. Shane Rooney
Psychiatry Registrar
Tallaght Hospital
Tallaght
Dublin 24

16 August 2017

**Re: Dignity, Coercion and Involuntary Care: A Study of Involuntary and Voluntary
Psychiatry Inpatients in Dublin**

REC Reference: 2017 – 08 List 31 (2)
(Please quote reference on all correspondence)

Dear Dr. Rooney,

Thank you for your correspondence in which you sent in a response to the Committee's letter which detailed the Committee's queries and concerns in relation to the submission of the above referenced research study.

The Chairman has reviewed your responses on behalf of the Committee, is happy all issues are dealt with satisfactorily and on that basis, gives full ethical approval for the study to proceed.

Yours sincerely,

Claire Hartin
Secretary
SJH/AMNCH Research Ethics Committee

The SJH/AMNCH Joint Research and Ethics Committee operates in compliance with and is constituted in accordance with the European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004 & ICH GCP guidelines.

Appendix II



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PARTICIPANT INFORMATION LEAFLET

Dignity, Coercion and Involuntary Care: A Study of Involuntary and Voluntary Psychiatry Inpatients in Dublin

Site	Tallaght University Hospital
Principal Investigator(s) and Co-Investigator(s) (insert names, titles and contact details)	Professor Brendan Kelly (Tallaght University Hospital and Trinity College Dublin) Co-Investigators: Dr Aoife O'Callaghan, Dr Rosie Plunkett
Data Controllers	Trinity College Dublin (for research data) Tallaght University Hospital (for hospital medical records)
Data Protection Officer	Data Protection Officer Secretary's Office Trinity College Dublin Dublin 2 Data Protection Officer Tallaght University Hospital Dublin 24

Before you decide whether or not you wish to take part in this research study, you should read the information provided below carefully and, if you wish, discuss it with your family, friends or GP (doctor). Take time to ask questions – do not feel rushed or under pressure to make a quick decision.

You should clearly understand the risks and benefits of taking part in this study so that you can make a decision that is right for you. This process is known as 'Informed Consent'.

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You do not have to take part in this study and a decision not to take part will not have any effect on your future medical care.

You can change your mind about taking part in the study any time you like. Even if the study has started, you can still opt out. You do not have to give us a reason. If you do opt out, it will not affect the quality of treatment you get now or in the future.

WHAT IS THE PURPOSE OF THE STUDY?

Most patients are admitted to psychiatric units voluntarily, meaning they can leave if they wish and are free to take or not take any recommended treatments. However, some inpatients are involuntary patients under the Mental Health Act 2001. This is a law which means that the person is not free to leave hospital and may have to take treatment they do not wish to take if their doctor feels it is needed for them to get better.

Coercion means being forced to do something. Dignity is the sense that others honor and respect you and your choices.

We want to look at how being an involuntary or voluntary patient affects a person's dignity and coercion.

Being in hospital and having treatment which you potentially may not agree with probably affects both these things. We want to look at that idea in more detail so that we can find out what things are the most important for someone's sense of dignity in hospital.

It is sometimes the case that when a person unwell, they do not see it themselves, and when they are treated and back to themselves, their view of what happened is different to how it was at the time.

WHY HAVE I BEEN CHOSEN TO PARTAKE IN THIS STUDY?

You are being asked to take part because you are an inpatient in Tallaght University Hospital Acute Psychiatry Unit or Connolly Hospital Psychiatric Unit, you are aged 18 or over, and your doctor feels you are able to make an informed decision about whether or not you would like to take part.

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WHAT WILL HAPPEN IF I VOLUNTEER TO PARTICIAPTE?

The first part of the study will take place in the inpatient unit where you are admitted. The researcher will give you the information leaflet and consent form and answer any questions you have. They will give you a chance to think about whether you would like to take part. If you agree to take part, they will arrange to meet you on the inpatient unit in an interview room. This will last for no more than an hour and a half. You can stop or take a break any time you like. Some of the questionnaires are self-report questionnaires. You will be given the choice of whether you would like to go through these with the researcher or do them privately in your own time. If you do them in your own time, the researcher will arrange a time to collect them from you on the ward.

WHAT INFORMATION ABOUT ME (PERSONAL DATA) WILL BE USED AS PART OF THIS STUDY? WILL MY MEDICAL RECORDS BE ACCESSED?

Before they meet you, the researcher will look through your medical chart to get background details like your age, marital status, diagnosis, date of admission and voluntary/involuntary status. Then they will meet you in person to ask you questions.

The researcher will transfer the information they recorded, and your answers to the questionnaires into an encrypted file on a password-protected computer in a locked research office. This will be irrevocably anonymised once all your data are collected. Personal data will be processed only as is necessary to achieve the objective of the health research and will not be processed in a way that damage or distress will be caused to the participant. They will shred the paper record following input into a password protected computer.

WHO WILL HAVE ACCESS AND USE MY PERSONAL DATA AS PART OF THIS STUDY?

Prof Brendan Kelly, Dr Aoife O'Callaghan and Dr Rosie Plunkett will have access to your personal data until irrevocable anonymisation. This data will not leave the research site.

WILL MY DATA BE KEPT CONFIDENTIAL? HOW WILL MY DATA BE KEPT SAFE?

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Your privacy is important to us. We take many steps to make sure that we protect your confidentiality and keep your data safe. Here are some examples of how we do this: We will ensure any identifiable information is only kept until discharge date and this will be kept in an encrypted file on a password protected computer in a locked research office. Information used in publication or presentation will not be identifiable. All researchers involved in this research are bound by a professional code of secrecy which would result in disciplinary action for anyone involved who disclosed or facilitated unauthorised access to the personal data. Training in data protection law and practice has been provided to all involved in carrying out this research.

WHAT IS THE LAWFUL BASIS TO USE MY PERSONAL DATA?

By law, we can use your personal information for scientific research (in the public interest).¹ We will also ask for your explicit consent to use your data as a requirement of the Irish Health Research Regulations.

WHAT ARE MY RIGHTS?

You are entitled to:

- The right to access to your data and receive a copy of it
- The right to restrict or object to processing of your data
- The right to object to any further processing of the information we hold about you (except where it is de-identified)
- 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

By law you can exercise the following rights in relation to your personal data, unless the request would make it impossible or very difficult to conduct the research. You can exercise these rights by contacting your study Doctor (See footer) or the Trinity College Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy.

ARE THERE ANY RISKS INVOLVED IN PARTICIPATING?

¹ European General Data Protection Regulation (GDPR), articles 6(1)(e) and 9(2)(j).

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There are minimal risks to you by taking part in this study. If you become upset or unwell during the discussion, the discussion will be stopped, and care will be provided. If you wish to stop or take a break at any time, the discussion will be stopped, and you can decide if you would like to start again another time or not.

There is a risk that a connection to your identity could be made. Great care will be taken to ensure the confidentiality of all data and the risk to participants of a breach of confidentiality is considered very low.

ARE THERE ANY BENEFITS INVOLVED IN PARTICIPATING?

There is no direct benefit to you by taking part in this study. It will not change your treatment in any way. However, we hope that it will help us understand what things affect people's sense of dignity (being respected) and coercion (being forced) so that we can see what could improve the experience of admission to psychiatric units.

WHAT HAPPENS IF I DO NOT AGREE TO PARTICIPATE?

If you do not wish to participate, there are no consequences whatsoever for you. Your treatment will not be affected in any way.

WILL MY PARTICIPATION OR WITHDRAWAL HAVE ANY IMPACT ON MY ROUTINE CARE?

No.

WILL MY PARTICIPATION BE CONFIDENTIAL?

Yes. The researcher will write down information from your medical chart and record your answers to the questionnaires on paper. They will give your information a number to keep track of it. They will transfer the information to a dedicated research computer, which is password-protected and kept in a locked office. They will then shred the paper record. Data will be irrevocably anonymised. The results of the study will be reported in medical/scientific journals and disclosed at medical/scientific conferences. When they are writing up the paper, they will combine your information with the information of others in the study. No information which reveals your identity will be disclosed.

INDEMNITY

Your doctors are insured by the State Claims Insurance Service and the research is covered by Trinity College Dublin insurance.

WHO IS ORGANISING AND FUNDING THIS RESEARCH?

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Professor Brendan Kelly is a professor of psychiatry in Trinity College Dublin, and a consultant psychiatrist working in Tallaght University Hospital. He is the main organiser of this study. Dr Roisin Plunkett is a senior registrar working in Connolly Hospital, Blanchardstown, and she is helping to organise and run the study. Dr Aoife O'Callaghan is a registrar currently working in St James's Hospital, Dublin, and she is conducting the interviews in Tallaght University Hospital and helping to organise and run the study. The Department of Psychiatry in Trinity College Dublin will cover the cost of administration (printing and paper costs). Otherwise this study is being done for free, the researchers are volunteering their time. It is not being supported or funded by any drug companies or by the hospitals themselves.

HAS THIS STUDY REVIEWED BY AN ETHICS COMMITTEE?

Yes, the study has been reviewed and approved by the Tallaght University Hospital/ St James's Hospital Research Ethics Committee. Approval was granted on the 16th of August 2017.

CONTACT DETAILS

- If you have any concerns or questions, you can contact: Principal Investigator: Professor Brendan Kelly, Trinity Centre for Health Sciences, Tallaght University Hospital, Dublin 24. *Telephone: 01 896 3799 (Office Hours)*
- Data Protection Officer of Tallaght University Hospital: Data Protection Officer, Tallaght University Hospital, Dublin 24, Ireland. Email: dpo@tuh.ie. Phone: (01) 4142015.
- Data Protection Officer, Trinity College Dublin: Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy.

Under GDPR, if you are not satisfied with how your data is being processed, you have the right to lodge a complaint with the Office of the Data Protection Commission, 21 Fitzwilliam Square South, Dublin 2, Ireland. Website: www.dataprotection.ie.

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Patient Consent Form

Dignity, Coercion and Involuntary Care: A Study of Involuntary and Voluntary Psychiatry Inpatients in Dublin

- I have read and understood the Participant Information YES NO
- I have had the opportunity to ask questions and discuss the study YES NO
- I have received satisfactory answers to all my questions YES NO
- I have received enough information about this study YES NO
- I understand that I am free to withdraw from the study at any time without giving a reason and without this affecting my future medical care YES NO
- I agree to take part in the study YES NO
- I agree to allow for the processing of data collected YES NO

Participant's Signature: _____

Date: _____

Participant's Name in Print: _____

Investigator's Signature: _____

Date: _____

Investigator's Name in Print: _____

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Appendix III

The MacArthur Coercion Study

Admission Experience Survey: Short Form

"I am now going to read you some statements about your coming into the hospital this time. Please answer either "TRUE" or "FALSE" to each statement. Try to answer each question individually, no matter how similar it may sound to another."

	True	False	Don't Know
1. I felt free to do what I wanted about coming into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. People tried to force me to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I had enough of a chance to say whether I wanted to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I chose to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I got to say what I wanted about coming into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Someone threatened me to get me to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. It was my idea to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Someone physically tried to make me come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. No one seemed to want to know whether I wanted to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I was threatened with commitment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. They said they would make me come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. No one tried to force me to come into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. My opinion about coming into the hospital didn't matter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I had a lot of control over whether I went into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I had more influence than anyone else on whether I came into the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. How did being admitted to the hospital make you feel?			
Did it make you feel:			
a. Angry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Pleased.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Relieved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | |
|----------------|--------------------------|--------------------------|--------------------------|
| e. Confused. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Frightened. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
-

Subscales of the MacArthur Admission Experience Survey (AES) -- Short Form 1

Item 9 of the AES-Short Form was eventually dropped from these scales.

I. Perceived Coercion Scale

The scale is thus 0-5, with each "True" = 0, and each "False" = 1. See Gardner et al (1993), p.316.

1. I felt free to do what I wanted about coming into the hospital.
4. I chose to come into the hospital.
7. It was my idea to come into the hospital.
14. I had a lot of control over whether I went into the hospital.
15. I had more influence than anyone else on whether I came into the hospital.

II. Negative Pressures Scale

2. People tried to force me to come into the hospital.
6. Someone threatened me to get me to come into the hospital.
8. Someone physically tried to make me come into the hospital.
10. I was threatened with commitment.
11. They said they would make me come into the hospital.
12. No one tried to force me to come into the hospital.[reverse scored]

III. Voice Scale

The "voice" scale is an early version of what became the "procedural justice" scale (see Lidz et al, 1995).

3. I had enough of a chance to say whether I wanted to come into the hospital.
5. I got to say what I wanted about coming into the hospital.
13. My opinion about coming into the hospital didn't matter.[reverse scored]

IV. Affective Reactions to Hospitalization

16. How did being admitted to the hospital make you feel? Did it make you feel:
 - a. Angry
 - b. Sad

- c. Pleased
- d. Relieved
- e. Confused
- f. Frightened

This instrument is taken from

Gardner, W., Hoge, S., Bennett, N., Roth, L., Lidz, C., Monahan, J., and Mulvey, E. (1993). Two scales for measuring patients' performance perceptions of coercion during hospital admission. *Behavioral Sciences and the Law*, 20, 307-321.

Number:

Date:

MacArthur Admission Interview

Perceived Coercion

True Fal

- | | | |
|--|-----------------------|-----------------------|
| 1. I had more influence than anyone else on whether I came into hospital | <input type="radio"/> | <input type="radio"/> |
| 2. I had a lot of control over whether I went into the hospital | <input type="radio"/> | <input type="radio"/> |
| 3. I chose to come into the hospital | <input type="radio"/> | <input type="radio"/> |
| 4. I felt free to do what I wanted about coming into the hospital | <input type="radio"/> | <input type="radio"/> |
| 5. It was my idea to come into the hospital | <input type="radio"/> | <input type="radio"/> |

Perceived Pressures

Yes No

- | | | |
|---|-----------------------|-----------------------|
| 1. Did anyone try to talk you into going to hospital or being admitted? | <input type="radio"/> | <input type="radio"/> |
| 2. Did anyone offer or promise you anything? | <input type="radio"/> | <input type="radio"/> |
| 3. Did anyone threaten you? | <input type="radio"/> | <input type="radio"/> |
| 4. Did anyone force you? | <input type="radio"/> | <input type="radio"/> |

Procedural Justice

(these four questions are to be asked regarding each person involved with the decision)

1. To what extent did he/she do what he/she did out of concern? (very much, mostly, a little, not at all)
2. How much respect did he/ she treat you with? (very, some, a little, none)
3. How seriously did he/ she consider what you had to say (very, some, a little, none)
4. How fairly did he/ she treat you? (very fair, mostly fair, mostly unfair, very unfair)

Appendix IV

Patient Dignity Inventory					
For each item, please indicate how much of a problem or concern these have been for you within the last few days.	Not a problem	A slight problem	A problem	A major problem	An overwhelming problem
1. Not being able to carry out tasks associated with daily living (e.g. washing myself, getting dressed).	1	2	3	4	5
2. Not being able to attend to my bodily functions independently (eg. needing assistance with toileting-related activities).	1	2	3	4	5
3. Experiencing physically distressing symptoms (such as pain, shortness of breath, nausea).	1	2	3	4	5
4. Feeling that how I look to others has changed significantly.	1	2	3	4	5
5. Feeling depressed.	1	2	3	4	5
6. Feeling anxious.	1	2	3	4	5
7. Feeling uncertain about my health and health care.	1	2	3	4	5
8. Worrying about my future.	1	2	3	4	5
9. Not being able to think clearly.	1	2	3	4	5
10. Not being able to continue with my usual routines.	1	2	3	4	5
11. Feeling like I am no longer who I was.	1	2	3	4	5
12. Not feeling worthwhile or valued.	1	2	3	4	5
13. Not being able to carry out important roles (e.g. spouse, parent).	1	2	3	4	5
14. Feeling that life no longer has meaning or purpose.	1	2	3	4	5
15. Feeling that I have not made a meaningful and/or lasting contribution in my life.	1	2	3	4	5
16. Feeling that I have 'unfinished business' (e.g. things that I have yet to say or do, or that feel incomplete).	1	2	3	4	5
17. Concern that my spiritual life is not meaningful.	1	2	3	4	5
18. Feeling that I am a burden to others.	1	2	3	4	5
19. Feeling that I don't have control over my life.	1	2	3	4	5
20. Feeling that my health and care needs have reduced my privacy.	1	2	3	4	5
21. Not feeling supported by my community of friends and family.	1	2	3	4	5
22. Not feeling supported by my health care providers.	1	2	3	4	5
23. Feeling like I am no longer able to mentally cope with challenges to my health.	1	2	3	4	5
24. Not being able to accept the way things are.	1	2	3	4	5
25. Not being treated with respect or understanding by others.	1	2	3	4	5

Appendix V

IS – (present)

Please read the following statements carefully and then tick the box which best applies to you.

	Agree	Disagree	Unsure
1. Some of the symptoms were made by my mind			
2. I am mentally well			
3. I do not need medication			
4. My stay in hospital was necessary			
5. The doctor is right in prescribing medication for me			
6. I do not need to be seen by a doctor or psychiatrist			
7. If someone said I had a nervous or mental illness then they would be right			
8. None of the unusual things I experienced are due to an illness			

Insight Scale (IS) (Coding Schedule)

	Agree	Disagree	Unsure
1. Some of the symptoms were made by my mind	2	0	1
2. I am mentally well	0	2	1
3. I do not need medication	0	2	1
4. My stay in hospital was necessary	2	0	1
5. The doctor is right in prescribing medication for me	2	0	1
6. I do not need to be seen by a doctor or psychiatrist	0	2	1
7. If someone said I had a nervous or mental illness then they would be right	2	0	1
8. None of the unusual things I experienced are due to an illness	0	2	1

Maximum Score = 12 - Full insight
 Minimum Score = 0 - No insight
 (9 and above = good insight)

Subscales

Items		Possible Total
1, 8	Awareness of symptoms	4 (3 or 4 = good insight, 1 or 2 = poor insight)
2, 7	Awareness of illness	4 (3 or 4 = good insight, 1 or 2 = poor insight)
3, 4, 5, 6	Need for treatment (items need to be added and divided by 2)	4 (3 or 4 = good insight, 1 or 2 = poor insight)

Appendix VI

Hogan Drug Attitude Inventory

Assessment date

--	--	--	--	--	--

Assessment no.

--

The purpose of this questionnaire is to gain some understanding of how people view the use of psychiatric medications and the nature of their experiences of these drugs. Your replies are used for research purposes only, are strictly confidential, and will in no way affect your treatment.

Please read each of the following statements and decide whether it is **true as applied to you** or **false as applied to you**. If the statement is **false** or **usually false**, circle the **F** following the statement. If the statement is **true** or **usually true**, circle the **T** following the statement. If you want to change an answer, mark an **X** over the incorrect answer and circle the correct answer.

Please answer every question. If a statement is worded not quite the way you would express it yourself, decide whether it is **mostly true** or mostly false. Remember to give your own opinion – there are no right or wrong answers. Do not spend too much time on any one item.

The medications referred to in the statements are psychiatric medications only.

- | | |
|--|-----|
| 1. I don't need to take medication once I feel better. | T F |
| 2. For me, the good things about medication outweigh the bad. | T F |
| 3. I feel weird, like a 'zombie' on medication | T F |
| 4. Even when I am not in hospital I need medication regularly. | T F |
| 5. If I take medication it's only because of pressure from other people. | T F |
| 6. I am more aware of what I am doing, of what is going on around me, when I am on medication. | T F |
| 7. Taking medications will do me no harm. | T F |
| 8. I take medications of my own free choice. | T F |
| 9. Medications make me feel more relaxed. | T F |
| 10. I am no different on or off medication. | T F |
| 11. The unpleasant effects of medication are always present. | T F |
| 12. Medication makes me feel tired and sluggish. | T F |
| 13. I take medication only when I am sick. | T F |
| 14. Medication is a slow-acting poison. | T F |
| 15. I get on better with people when I am on medication. | T F |
| 16. I can't concentrate on anything when I am on medication. | T F |
| 17. I know better than the doctor when to go off medication. | T F |

- | | |
|---|-----|
| 18. I feel more normal on medication. | T F |
| 19. I would rather be sick than taking medication. | T F |
| 20. It is unnatural for my mind and body to be controlled by medication. | T F |
| 21. My thoughts are clearer on medication. | T F |
| 22. I should stay on medication even if I feel all right. | T F |
| 23. Taking medication will prevent me from having a breakdown. | T F |
| 24. It is up to the doctor when I go off medication. | T F |
| 25. Things that I could do easily are much more difficult when I am on medication. | T F |
| 26. I am happier, feel better, when taking medication. | T F |
| 27. I am given medication to control behaviour that other people (not myself) don't like. | T F |
| 28. I can't relax on medication. | T F |
| 29. I am in better control of myself when taking medications | T F |
| 30. By staying on medications, I can prevent getting sick. | T F |

If you have any further comments about medications or about this questionnaire, please write them below.

Please do not write below this line.

SCORING CRITERIA

The scale has 15 items that will be scored as **True** and 15 items that will be scored as **False** in the case of a fully compliant response. A correct answer to these items will be scored as plus 1. An incorrect answer will be scored as minus 1. The total score is the sum of pluses and minuses. A positive total score means a compliant response. A negative total score means a non-compliant response.

Below is the standard of a completely compliant response profile.

1.	F	11.	F	21.	T
2.	T	12.	F	22.	T
3.	F	13.	F	23.	T
4.	T	14.	F	24.	T
5.	F	15.	T	25.	F
6.	T	16.	F	26.	T
7.	T	17.	F	27.	F
8.	T	18.	T	28.	F
9.	T	19.	F	29.	T
10.	F	20.	F	30.	T

Appendix VII

Working Alliance Inventory
Short Form (C)

Instructions

On the following pages there are sentences that describe some of the different ways a person might think or feel about his or her therapist (counsellor). As you read the sentences mentally insert the name of your therapist (counsellor) in place of _____ in the text.

Below each statement inside there is a seven point scale:

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

If the statement describes the way you always feel (or think) circle the number 7; if it never applies to you circle the number 1. Use the numbers in between to describe the variations between these extremes.

This questionnaire is CONFIDENTIAL; neither your therapist nor the agency will see your answers.

Work fast, your first impressions are the ones we would like to see. (PLEASE DON'T FORGET TO RESPOND TO EVERY ITEM.)

Thank you for your cooperation.

© A. O. Horvath, 1981, 1982; Revision Tracey & Kokotowitc 1989.

WA!(S)

1. _____ and I agree about the things I will need to do in therapy to help improve my situation.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
2. What I am doing in therapy gives me new ways of looking at my problem.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
3. I believe _____ likes me.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
4. _____ does not understand what I am trying to accomplish in therapy.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
5. I am confident in _____'s ability to help me.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
6. _____ and I are working towards mutually agreed upon goals.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
7. I feel that _____ appreciates me.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
8. We agree on what is important for me to work on.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
9. _____ and I trust one another.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
10. _____ and I have different ideas on what my problems are.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
11. We have established a good understanding of the kind of changes that would be good for me.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
12. I believe the way we are working with my problem is correct.	1	2	3	4	5	6	7
	Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

WA!(S)

Appendix VIII

Appendix Annex 1. Compulsory Treatment Checklist (CTC). (In- and outpatient regimen). Law 36/98 July.

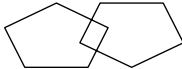
	Absent	Possible	Present	Not known
Legal assumptions' cluster				
1. Severe Psychiatric Anomaly (LEI: Serious Mental Disorder)	0	1	2	-
2. Imminent or short-term danger	0	1	2	-
3. The absence of treatment can markedly worsen clinical status	0	1	2	-
4. Lack of the necessary discernment to evaluate the meaning and implications of non-consent to treatment	0	1	2	-
5. Refusal to undergo the necessary medical treatment	0	1	2	-
6. Has created danger to legally protected rights	0	1	2	-
Danger indicators' cluster				
7. Previous violence and/or history of anti-social behaviour	0	1	2	-
8. Past or present violent ideation	0	1	2	-
9. Impulsivity	0	1	2	-
10. Cluster B personality disorder	0	1	2	-
11. Lack of social support	0	1	2	-
12. Pattern of anti-social personality	0	1	2	-
13. Anti-social cognitions	0	1	2	-
Clinical-historic items' cluster				
14. Previous admissions in compulsory treatment	0	1	2	-
15. Current or previous escape from inpatient admission	0	1	2	-
16. Non-adherence to the treatment plan	0	1	2	-
17. Substance use problems	0	1	2	-
Clinical-cognitive items' cluster				
18. Psychotic symptoms present	0	1	2	-
19. Does not recognize that has a serious mental disorder	0	1	2	-
20. Does not attribute the symptoms to the mental disorder	0	1	2	-
21. Does not recognize the need for treatment	0	1	2	-
22. Lack of insight towards inadequate and disruptive behaviour	0	1	2	-
23. Does not fully understand the information transmitted	0	1	2	-
24. Non-acceptance or non-convincing acceptance of the treatment plan	0	1	2	-
25. Behavioural and emotional impact of the symptomatology	0	1	2	-
Number of NK				
Total score				

Appendix IX

Mini-Mental State Examination (MMSE)

Patient's Name: _____ Date: _____

Instructions: Ask the questions in the order listed. Score one point for each correct response within each question or activity.

Maximum Score	Patient's Score	Questions
5		"What is the year? Season? Date? Day of the week? Month?"
5		"Where are we now: State? County? Town/city? Hospital? Floor?"
3		The examiner names three unrelated objects clearly and slowly, then asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible. Number of trials: _____
5		"I would like you to count backward from 100 by sevens." (93, 86, 79, 72, 65,) Stop after five answers. Alternative: "Spell WORLD backwards." (D-L-R-O-W)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.
1		"Repeat the phrase: 'No ifs, ands, or buts.'"
3		"Take the paper in your right hand, fold it in half, and put it on the floor." (The examiner gives the patient a piece of blank paper.)
1		"Please read this and do what it says." (Written instruction is "Close your eyes.")
1		"Make up and write a sentence about anything." (This sentence must contain a noun and a verb.)
1		"Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.) 
30		TOTAL

(Adapted from Rovner & Folstein, 1987)

Appendix X**SCALE FOR THE ASSESSMENT OF
POSITIVE SYMPTOMS****(SAPS)**

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(SAS Variable Name edition: 2000)

INTRODUCTION

This scale is designed to assess positive symptoms, principally those that occur in schizophrenia. It is intended to serve as a complementary instrument to the Scale for the Assessment of Negative Symptoms (SANS). These positive symptoms include hallucinations, delusions, bizarre behavior, and positive formal thought disorder.

As in the case of the SANS, the investigator using this instrument will need to decide on an appropriate "time set". The instrument was developed with the exception that, in general, the time set will cover the past month as in the case of SANS. This scale can also be used in psychopharmacologic research in order to make weekly ratings and chart the subject's response to treatment.

Investigators using this instrument, particularly in combination with the SANS, will need to use a standard clinical interview in order to evaluate the subject's symptoms. Since positive formal thought disorder is an important positive symptom, it is recommended that, in doing this interview, the investigator begin talking with the subject on a relatively neutral topic for five to ten minutes in order to observe the subject's manner of speaking and responding. Thereafter, he can begin to ask specific questions about the various positive symptoms. Suggested probes are provided in the interview guide.

In addition to using a clinical interview, the investigator should also draw on other sources of information, such as direct observation, reports from the subject's family, reports from nurses, and reports from the subject himself. In general, the subject can usually be considered a relatively reliable informant concerning delusions and hallucinations if he is able to communicate clearly and will comply with a clinical interview. On the other hand, the interviewer will usually have to rely on observation and reports from outside sources in order to evaluate bizarre behavior and positive formal thought disorder.

The last item describing each major type of positive symptom is an overall global rating. This should be a true global rating based on taking into account both the nature and the severity of the various types of symptoms observed. In some cases, a single symptom (e.g., extremely severe persecutory delusions) may lead to a very high global rating, even if other symptoms of this type are not present.

HALLUCINATIONS

Hallucinations represent an abnormality in perception. They are false perceptions occurring in the absence of some identifiable external stimulus. They may be experienced in any of the sensory modalities, including hearing, touch, taste, smell, and vision. True hallucinations should be distinguished from illusions (which involve a misperception of an external stimulus), hypnogogic and hypnopompic experiences (which occur when the subject is falling asleep or waking up), or normal thought processes that are exceptionally vivid. If the hallucinations have a religious quality, then they should be judged within the context of what is normal for the subject's social and cultural background. Hallucinations occurring under the immediate influence of alcohol, drugs, or serious physical illness should not be rated as present. The subject should always be requested to describe the hallucination in detail.

Auditory Hallucinations

The subject has reported voices, noises, or sounds. The commonest auditory hallucinations involve hearing voices speaking to the subject or calling him names. The voices may be male or female, familiar or unfamiliar, and critical or complimentary. Typically, subjects suffering from schizophrenia experience the voices as unpleasant and negative. Hallucinations involving sounds rather than voices, such as noises or music, should be considered less characteristic and less severe.

Have you ever heard voices or other sounds when no one is around?

What did they say?

None	0	SS36
Questionable	1	
Mild: Subject hears noises or single words; they occur only occasionally	2	
Moderate: Clear evidence of voices; they have occurred at least weekly	3	
Marked: Clear evidence of voices which occur almost every day	4	
Severe: Voices occur often every day	5	

Voices Commenting

Voices commenting are a particular type of auditory hallucination which phenomenologists as Kurt Schneider consider to be pathognomonic of schizophrenia, although some recent evidence contradicts this. These hallucinations involve hearing a voice that makes a running commentary on the subject's behavior or thought as it occurs. If this is the only type of auditory hallucination that the subject hears, it should be scored instead of auditory hallucinations (No. 1 above). Usually, however, voices commenting will occur in addition to other types of auditory hallucinations.

Have you ever heard voices commenting on what you are thinking or doing?

What do they say?

None	0	SS37
Questionable	1	
Mild: Subject hears noises or single words; they occur only occasionally	2	
Moderate: Clear evidence of voices; they have occurred at least weekly	3	
Marked: Clear evidence of voices which occur almost every day	4	
Severe: Voices occur often every day	5	

Voices Conversing

Like voices commenting, voices conversing are considered a Schneiderian first-rank symptom. They involve hearing two or more voices talking with one another, usually discussing something about the subject. As in the case of voices commenting, they should be scored independently of other auditory hallucinations.

Have you heard two or more voices talking with each other?

What did they say?

None	0	SS38
Questionable	1	
Mild: Subject hears noises or single words; they occur only occasionally	2	
Moderate: Clear evidence of voices; they have occurred at least weekly	3	
Marked: Clear evidence of voices which occur almost every day	4	
Severe: Voices occur often every day	5	

Somatic or Tactile Hallucinations

These hallucinations involve experiencing peculiar physical sensations in the body. They include burning sensations, tingling, and perceptions that the body has changed in shape or size.

Have you ever had burning sensations or other strange feelings in your body?

What were they?

Did your body ever appear to change in shape or size?

None	0	SS39
Questionable	1	
Mild: Subject experiences peculiar physical sensations; they occur only occasionally	2	
Moderate: Clear evidence of somatic or tactile hallucinations; they have occurred at least weekly	3	
Marked: Clear evidence of somatic or tactile hallucinations which occur almost every day	4	
Severe: Hallucinations occur often every day	5	

Olfactory Hallucinations

The subject experiences unusual smells which are typically quite unpleasant. Sometimes the subject may believe that he himself smells. This belief should be scored here if the subject can actually smell the odor himself, but should be scored among delusions if he only believes that others can smell the odor.

Have you ever experienced any unusual smells or smells that others do not notice?

What were they?

None	0	SS40
Questionable	1	
Mild: Subject experiences unusual smells; they occur only occasionally	2	
Moderate: Clear evidence of olfactory hallucinations; they have occurred at least weekly	3	
Marked: Clear evidence of olfactory hallucinations; they occur almost every day	4	
Severe: Olfactory hallucinations occur often every day	5	

Visual Hallucinations

The subject sees shapes or people that are not actually present. Sometimes these are shapes or colors, but most typically they are figures of people or human-like objects. They may also be characters of a religious nature, such as the Devil or Christ. As always, visual hallucinations involving religious themes should be judged within the context of the subject's cultural background. Hypnogogic and hypnopompic visual hallucinations (which are relatively common) should be excluded, as should visual hallucinations occurring when the subject has been taking hallucinogenic drugs.

Have you had visions or seen things that other people cannot?

What did you see?

Did this occur when you were falling asleep or waking up?

Global Rating of Severity of Hallucinations

This global rating should be based on the duration and severity of hallucinations, the extent of the subject's preoccupation with the hallucinations, his degree of conviction, and their effect on his actions. Also consider the extent to which the hallucinations might be considered bizarre or unusual. Hallucinations not mentioned above, such as those involving taste, should be included in this rating.

None	0	SS41
Questionable	1	
Mild: Subject experiences visual hallucinations; they occur only occasionally	2	
Moderate: Clear evidence of visual hallucinations; they have occurred at least weekly	3	
Marked: Clear evidence of visual hallucinations which occur almost every day	4	
Severe: Hallucinations occur often every day	5	

None	0	SS42
Questionable	1	
Mild: Hallucinations definitely present, but occur infrequently; at times the subject may question their existence	2	
Moderate: Hallucinations are vivid and occur occasionally; they may bother him to some extent	3	
Marked: Hallucinations are quite vivid, occur frequently, and pervade his life	4	
Severe: Hallucinations occur almost daily and are sometimes unusual or bizarre; they are very vivid and extremely troubling	5	

DELUSIONS

Delusions represent an abnormality in content of thought. They are false beliefs that cannot be explained on the basis of the subject's cultural background. Although delusions are sometimes defined as "fixed false beliefs," in their mildest form delusions may persist only for weeks to months, and the subject may question his beliefs or doubt them. The subject's behavior may or may not be influenced by his delusions. The rating of severity of individual delusions and of the global severity of delusional thinking should take into account their persistence, their complexity, the extent to which the subject acts on them, the extent to which the subject doubts them, and the extent to which the beliefs deviate from those that normal people might have. For each positive rating, specific examples should be noted in the margin.

Persecutory Delusions

People suffering from persecutory delusions believe that they are being conspired against or persecuted in some way. Common manifestations include the belief that one is being followed, that one's mail is being opened, that one's room or office is bugged, that the telephone is tapped, or that police, government officials, neighbors, or fellow workers are harassing the subject. Persecutory delusions are sometimes relatively isolated or fragmented, but sometimes the subject has a complex set of delusions involving both a wide range of forms of persecution and a belief that there is a well-designed conspiracy behind them. For example, a subject may believe that his house is bugged and that he is being followed because the government wrongly considers him a secret agent for a foreign government; this delusion may be so complex that it explains almost everything that happens to him. The ratings of severity should be based on duration and complexity.

Have people been bothering you in any way?

Have you felt that people are against you?

Has anyone been trying to harm you in any way?

Has anyone been watching or monitoring you?

Delusions of Jealousy

The subject believes that his/her mate is having an affair with someone. Miscellaneous bits of information are construed as "evidence". The person usually goes to great effort to prove the existence of the affair, searching for hair in the bedclothes, the odor of shaving lotion or smoke on clothing, or receipts or checks indicating a gift has been bought for the lover. Elaborate plans are often made in order to trap the two together.

Have you ever worried that your husband (wife) might be unfaithful to you?

What evidence do you have?

None	0	SS43
Questionable	1	
Mild: Delusional beliefs are simple and may be of several different types; subject may question them occasionally	2	
Moderate: Clear, consistent delusion that is firmly held	3	
Marked: Consistent, firmly-held delusion that the subject acts on	4	
Severe: Complex well-formed delusion that the subject acts on and that preoccupies him a great deal of the time; some aspects of the delusion or his reaction may seem quite bizarre	5	

None	0	SS44
Questionable	1	
Mild: Delusion clearly present, but the subject may question it occasionally	2	
Moderate: Clear consistent delusion that is firmly held	3	
Marked: Consistent, firmly-held delusion that the subject acts on	4	
Severe: Complex, well-formed delusion that the subject acts on and that preoccupies him a great deal of the time; some aspects of the delusion or his reaction may seem quite bizarre	5	

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Delusions of Sin or Guilt

The subject believes that he has committed some terrible sin or done something unforgivable. Sometimes the subject is excessively or inappropriately preoccupied with things he did wrong as a child, such as masturbating. Sometimes the subject feels responsible for causing some disastrous event, such as a fire or accident, with which he in fact has no connection. Sometimes these delusions may have a religious flavor, involving the belief that the sin is unpardonable and that the subject will suffer eternal punishment from God. Sometimes the subject simply believes that he deserves punishment by society. The subject may spend a good deal of time confessing these sins to whomever will listen.

Have you ever felt that you have done some terrible thing that you deserve to be punished for?

None	0	SS45
Questionable	1	
Mild: Delusional beliefs may be simple and may be of several different types; subject may question them occasionally	2	
Moderate: Clear, consistent delusion that is firmly held	3	
Marked: Consistent, firmly-held delusion that the subject acts on	4	
Severe: Complex, well-formed delusion that the subject acts on and that preoccupies him a great deal of the time; some aspects of the delusion or his reaction may seem quite bizarre	5	

Grandiose Delusions

The subject believes that he has special powers or abilities. He may think he is actually some famous personage, such as a rock star, Napoleon, or Christ. He may believe he is writing some definitive book, composing a great piece of music, or developing some wonderful new invention. The subject is often suspicious that someone is trying to steal his ideas, and he may become quite irritable if his ideas are doubted.

Do you have any special or unusual abilities or talents?

Do you feel you are going to achieve great things?

None	0	SS46
Questionable	1	
Mild: Delusional beliefs may be simple and may be of several different types; subject may question them occasionally	2	
Moderate: Clear, consistent delusion that is firmly held	3	
Marked: Consistent, firmly-held delusion that the subject acts on	4	
Severe: Complex, well-formed delusion that the subject acts on and that preoccupies him a great deal of the time; some aspects of the delusion or his reaction may seem quite bizarre	5	

Religious Delusions

The subject is preoccupied with false beliefs of a religious nature. Sometimes these exist within the context of a conventional religious system, such as beliefs about the Second Coming, the Antichrist, or possession by the Devil. At other times, they may involve an entirely new religious system or a pastiche of beliefs from a variety of religions, particularly Eastern religions, such as ideas about reincarnation or Nirvana. Religious delusions may be combined with grandiose delusions (if the subject considers himself a religious leader), delusions of guilt, or delusions of being controlled. Religious delusions must be outside the range considered normal for the subject's cultural and religious background.

Are you a religious person?

Have you had any unusual religious experiences?

What was your religious training as a child?

Somatic Delusions

The subject believes that somehow his body is diseased, abnormal, or changed. For example, he may believe that his stomach or brain is rotting, that his hands or penis have become enlarged, or that his facial features are unusual (dysmorphophobia). Sometimes somatic delusions are accompanied by tactile or other hallucinations, and when this occurs, both should be rated. (For example, the subject believes that he has ballbearings rolling around in his head, placed there by a dentist who filled his teeth, and can actually hear them clanking against one another.)

Is there anything wrong with your body?

Have you noticed any change in your appearance?

None 0 SS47

Questionable 1

Mild: Delusional beliefs may be simple and may be of several different types; subject may question them occasionally 2

Moderate: Clear, consistent delusion that is firmly held 3

Marked: Consistent, firmly-held delusion that the subject acts on 4

Severe: Complex, well-formed delusion that the subject acts on and that preoccupies him a great deal of the time; some aspects of the delusion or his reaction may seem quite bizarre 5

None 0 SS48

Questionable 1

Mild: Delusional beliefs may be simple and may be of several different types; subject may question them occasionally 2

Moderate: Clear, consistent delusion that is firmly held 3

Marked: Consistent, firmly-held delusion that the subject acts on 4

Severe: Complex, well-formed delusion that the subject acts on and that preoccupies him a great deal of the time; some aspects of the delusion or his reaction may seem quite bizarre 5

Ideas and Delusions of Reference

The subject believes that insignificant remarks, statements, or events refer to him or have some special meaning for him. For example, the subject walks into a room, sees people laughing, and suspects that they were just talking about him and laughing at him. Sometimes items read in the paper, heard on the radio, or seen on television are considered to be special messages to the subject. In the case of ideas of reference, the subject is suspicious, but recognizes his idea is erroneous. When the subject actually believes that the statements or events refer to him, then this is considered a delusion of reference.

Have you ever walked into a room and thought people were talking about you or laughing at you?

Have you seen things in magazines or on TV that seem to refer to you or contain a special message for you?

Have people communicated with you in any unusual ways?

Delusions of Being Controlled

The subject has a subjective experience that his feelings or actions are controlled by some outside force. The central requirement for this type of delusion is an actual strong subjective experience of being controlled. It does not include simple beliefs or ideas, such as that the subject is acting as an agent of God or that friends or parents are trying to coerce him to do something. Rather, the subject must describe, for example, that his body has been occupied by some alien force that is making it move in peculiar ways, or that messages are being sent to his brain by radio waves and causing him to experience particular feelings that he recognizes are not his own.

Have you ever felt you were being controlled by some outside force?

None	0	SS49
Questionable	1	
Mild: Occasional ideas of reference	2	
Moderate: Have occurred at least weekly	3	
Marked: Occurs at least two to four times weekly	4	
Severe: Occurs frequently	5	

None	0	SS50
Questionable	1	
Mild: Subject has experienced being controlled, but doubts it occasionally	2	
Moderate: Clear experience of control, which has occurred on two or three occasions in a week	3	
Marked: Clear experience of control, which occurs frequently; behavior may be affected	4	
Severe: Clear experience of control which occurs frequently, pervades the subject's life, and often affects his behavior	5	

Delusions of Mind Reading

The subject believes that people can read his mind or know his thoughts. This is different than thought broadcasting (see below) in that it is a belief without a percept. That is, the subject subjectively experiences and recognizes that others know his thoughts, but he does not think that they can be heard out loud.

Have you ever had the feeling that people could read your mind?

None	0	SS51
Questionable	1	
Mild: Subject has experienced mind reading, but doubts it occasionally	2	
Moderate: Clear experience of mind reading which has occurred on two or three occasions in a week	3	
Marked: Clear experience of mind reading which occurs frequently; behavior may be affected	4	
Severe: Clear experience of mind reading which occurs frequently, pervades the subject's life, and often affects his behavior	5	

Thought Broadcasting

The subject believes that his thoughts are broadcast so that he or others can hear them. Sometimes the subject experiences his thoughts as a voice outside his head; this is an auditory hallucination as well as a delusion. Sometimes the subject feels his thoughts are being broadcast although he cannot hear them himself. Sometimes he believes that his thoughts are picked up by a microphone and broadcast on the radio or television.

Have you ever heard your own thoughts out loud, as if they were a voice outside your head?

Have you ever felt your thoughts were broadcast so other people could hear them?

None	0	SS2
Questionable	1	
Mild: Subject has experienced thought broadcasting, but doubts it occasionally	2	
Moderate: Clear experience of thought broadcasting which has occurred on two or three occasions in a week	3	
Marked: Clear experience of thought broadcasting which occurs frequently; behavior may be affected	4	
Severe: Clear experience of thought broadcasting which occurs frequently, pervades the subject's life, and often affects his behavior	5	

Thought Insertion

The subject believes that thoughts that are not his own have been inserted into his mind. For example, the subject may believe that a neighbor is practicing voodoo and planting alien sexual thoughts in his mind. This symptom should not be confused with experiencing unpleasant thoughts that the subject recognizes as his own, such as delusions of persecution or guilt.

Have you ever felt that thoughts were being put into your head by some outside force?

Have you ever experienced thoughts that didn't seem to be your own?

None	0	SS3
Questionable	1	
Mild: Subject has experienced thought insertion, but doubts it occasionally	2	
Moderate: Clear experience of thought insertion which has occurred on two or three occasions in a week	3	
Marked: Clear experience of thought insertion which occurs frequently; behavior may be affected	4	
Severe: Thought insertion which occurs frequently, pervades the subject's life and affects behavior	5	

Thought Withdrawal

The subject believes that thoughts have been taken away from his mind. He is able to describe a subjective experience of beginning a thought and then suddenly having it removed by some outside force. This symptom does not include the mere subjective recognition of alogia.

Have you ever felt your thoughts were taken away by some outside force?

None	0	SS54
Questionable	1	
Mild: Subject has experienced thought withdrawal, but doubts it occasionally	2	
Moderate: Clear experience of thought withdrawal which has occurred on two or three occasions in a week	3	
Marked: Clear experience of thought withdrawal which occurs frequently; behavior may be affected	4	
Severe: Clear experience of thought withdrawal which occurs frequently, pervades the subject's life and often affects his behavior	5	

Global Rating of Severity of Delusions

The global rating should be based on duration and persistence of delusions, the extent of the subject's preoccupation with the delusions, his degree of conviction, and their effect on his actions. Also consider the extent to which the delusions might be considered bizarre or unusual. Delusions not mentioned above should be included in this rating.

None	0	SS55
Questionable	1	
Mild: Delusion definitely present but, at times, the subject questions the belief	2	
Moderate: The subject is convinced of the belief, but it may occur infrequently and have little effect on his behavior	3	
Marked: The delusion is firmly held; it occurs frequently and affects the subject's behavior	4	
Severe: Delusions are complex, well-formed, and pervasive; they are firmly held and have a major effect on the subject's behavior; they may be somewhat bizarre or unusual	5	

BIZARRE BEHAVIOR

The subject's behavior is unusual, bizarre, or fantastic. For example, the subject may urinate in a sugar bowl, paint the two halves of his body different colors, or kill a litter of pigs by smashing their heads against a wall. The information for this item will sometimes come from the subject, sometimes from other sources, and sometimes from direct observation. Bizarre behavior due to the immediate effects of alcohol or drugs should be excluded. As always, social and cultural norms must be considered in making the ratings, and detailed examples should be elicited and noted.

Clothing and Appearance

The subject dresses in an unusual manner or does other strange things to alter his appearance. For example, he may shave off all his hair or paint parts of his body different colors. His clothing may be quite unusual; for example, he may choose to wear some outfit that appears generally inappropriate and unacceptable, such as a baseball cap backwards with rubber galoshes and long underwear covered by denim overalls. He may dress in a fantastic costume representing some historical personage or a man from outer space. He may wear clothing completely inappropriate to the climatic conditions, such as heavy wools in the midst of summer.

Has anyone made comments about your appearance?

None	0	SS56
Questionable	1	
Mild: Occasional oddities of dress or appearance	2	
Moderate: Appearance or apparel are clearly unusual and would attract attention	3	
Marked: Appearance or apparel are markedly odd	4	
Severe: Subject's appearance or apparel are very fantastic or bizarre	5	

Social and Sexual Behavior

The subject may do things that are considered inappropriate according to usual social norms. For example, he may masturbate in public, urinate or defecate in inappropriate receptacles, or exhibit his sex organs inappropriately. He may walk along the street muttering to himself, or he may begin talking to people whom he has never met about his personal life (as when riding on a subway or standing in some public place). He may drop to his knees praying and shouting in the midst of a crowd of people, or he may suddenly sit in a yoga position while in the midst of a crowd. He may make inappropriate sexual overtures or remarks to strangers.

Have you ever done anything that others might think unusual or that has called attention to yourself?

None	0	SS57
Questionable	1	
Mild: Occasional instances of somewhat peculiar behavior	2	
Moderate: Frequent instances of odd behavior	3	
Marked: Very odd behavior	4	
Severe: Extremely odd behavior which may have a fantastic quality	5	

Aggressive and Agitated Behavior

The subject may behave in an aggressive, agitated manner, often quite unpredictably. He may start arguments inappropriately with friends or members of his family, or he may accost strangers on the street and begin haranguing them angrily. He may write letters of a threatening or angry nature to government officials or others with whom he has some quarrel. Occasionally, subjects may perform violent acts such as injuring or tormenting animals, or attempting to injure or kill human beings.

Have you ever done anything to try to harm animals or people?

Have you felt angry with anyone?

How did you express your anger?

Repetitive or Stereotyped Behavior

The subject may develop a set of repetitive actions or rituals that he must perform over and over. Frequently, he will attribute some symbolic significance to these actions and believe that they are either influencing others or preventing himself from being influenced. For example, he may eat jelly beans every night for dessert, assuming that different consequences will occur depending on the color of the jelly beans. He may have to eat foods in a particular order, wear particular clothes, or put them on in a certain order. He may have to write messages to himself or to others over and over; sometimes this will be in an unusual or occult language.

Are there any things that you feel you have to do?

None	0	SS58
Questionable	1	
Mild: Occasional instances	2	
Moderate: For example, writing angry letters to strangers	3	
Marked: For example, threatening people, public harangues	4	
Severe: For example, mutilating animals, attacking people	5	

None	0	SS59
Questionable	1	
Mild: Occasional instances of ritualistic or stereotyped behavior	2	
Moderate: For example, eating or dressing rituals lacking symbolic significance	3	
Marked: For example, eating or dressing rituals with a symbolic significance	4	
Severe: For example, keeping a diary in an incomprehensible language	5	

Global Rating of Severity of Bizarre Behavior

In making this rating, the interviewer should consider the type of behavior, the extent to which it deviates from social norms, the subject's awareness of the degree to which the behavior is deviant, and the extent to which it is obviously bizarre.

None	0	SS60
Questionable	1	
Mild: Occasional instances of unusual or apparently idiosyncratic behavior; subject usually has some insight	2	
Moderate: Behavior which is clearly deviant from social norms and seems somewhat bizarre; subject may have some insight	3	
Marked: Behavior which is markedly deviant from social norms and clearly bizarre; subject may have some insight	4	
Severe: Behavior which is extremely bizarre or fantastic; may include a single extreme act, e.g., attempting murder; subject usually lacks insight.	5	

POSITIVE FORMAL THOUGHT DISORDER

Positive formal thought disorder is fluent speech that tends to communicate poorly for a variety of reasons. The subject tends to skip from topic to topic without warning, to be distracted by events in the nearby environment, to join words together because they are semantically or phonologically alike even though they make no sense, or to ignore the question asked and ask another. This type of speech may be rapid, and it frequently seems quite disjointed. It has sometimes been referred to as "loose associations." Unlike alogia (negative formal thought disorder), a wealth of detail is provided, and the flow of speech tends to have an energetic, rather than an apathetic, quality to it.

In order to evaluate thought disorder, the subject should be permitted to talk at length on some topic, particularly a topic unrelated to his psychopathology, for as long as five to ten minutes. The interviewer should observe closely the extent to which his sequencing of ideas is well connected. In addition, the interviewer should insist that he clarify or elaborate further if the ideas seem vague or incomprehensible. He should also pay close attention to how well the subject can reply to a variety of different types of questions, ranging from simple (Where were you born?) to more complicated (How do you think the present government is doing?)

The anchor points for these ratings assume that the subject has been interviewed for a total of approximately forty-five minutes. If the interview is shorter, the ratings should be adjusted accordingly.

Derailment (Loose Associations)

A pattern of spontaneous speech in which the ideas slip off one track onto another which is clearly but obliquely related, or onto one which is completely unrelated. Things may be said in juxtaposition which lack a meaningful relationship, or the subject may shift idiosyncratically from one frame of reference to another. At times there may be a vague connection between the ideas, and at others none will be apparent. This pattern of speech is often characterized as sounding "disjointed." Perhaps the commonest manifestation of this disorder is a slow, steady slippage, with no single derailment being particularly severe, so that the speaker gets farther and farther off the track with each derailment without showing any awareness that his reply no longer has any connection with the question which was asked. This abnormality is often characterized by lack of cohesion between clauses and sentences and by unclear pronoun references.

None	0	SS61
Questionable	1	
Mild: Occasional instances of derailment, with only slight topic shifts	2	
Moderate: Several instances of derailment; subject is sometimes difficult to follow	3	
Marked: Frequent instances of derailment; subject is often difficult to follow	4	
Severe: Derailment so frequent and/or extreme that the subject's speech is almost incomprehensible	5	

Example: Interviewer: "Did you enjoy college?"
 Subject: "Um-hum. Oh hey well, I oh, I really enjoyed some communities I tried it, and the, and the next day when I'd be going out, you know, um, I took control like uh, I put, um, bleach on my hair in, in California. My roommate was from Chicago, and she was going to the junior college. And we lived in the Y.M.C.A., so she wanted to put it, um, peroxide on my hair, and she did, and I got up and looked at the mirror and tears came to my eyes. Now do you understand it, I was fully aware of what was going on but why couldn't I, I . . . why, why the tears? I can't understand that, can you?"

Tangentiality

Replying to a question in an oblique, tangential or even irrelevant manner. The reply may be related to the question in some distant way. Or the reply may be unrelated and seem totally irrelevant. In the past tangentiality has sometimes been used as roughly equivalent to loose associations or derailment. The concept of tangentiality has been partially redefined so that it refers only to answers to questions and not to transitions in spontaneous speech.

Example: Interviewer: "What city are you from?"
 Subject: "That's a hard question to answer because my parents . . . I was born in Iowa, but I know that I'm white instead of black, so apparently I came from the North somewhere and I don't know where, you know, I really don't know whether I'm Irish or Scandinavian or I don't, I don't believe I'm Polish but I think I'm, I think I might be German or Welsh."

None	0	SS62
Questionable	1	
Mild: One or two oblique replies	2	
Moderate: Occasional oblique replies (three to four times)	3	
Marked: Frequent oblique replies (more than four times)	4	
Severe: Tangentiality so severe that interviewing the subject is extremely difficult	5	

Incoherence (Word Salad, Schizophrenia)

A pattern of speech which is essentially incomprehensible at times. Incoherence is often accompanied by derailment. It differs from derailment in that in incoherence the abnormality occurs within the level of the sentence or clause, which contains words or phrases that are joined incoherently. The abnormality in derailment involves unclear or confusing connections between larger units, such as sentences or clauses.

This type of language disorder is relatively rare. When it occurs, it tends to be severe or extreme, and mild forms are quite uncommon. It may sound quite similar to Wernicke's aphasia or jargon aphasia, and in these cases the disorder should only be called incoherence when history and laboratory data exclude the possibility of a past stroke, and formal testing for aphasia is negative.

Exclusions: Mildly ungrammatical constructions or idiomatic usages characteristic of particular regional or ethnic backgrounds, lack of education, or low intelligence.

Example: Interviewer: "What do you think about current political issues like the energy crisis?" Subject: "They're destroying too many cattle and oil just to make soap. If we need soap when you can jump into a pool of water, and then when you go to buy your gasoline, my folks always thought they should, get pop but the best thing to get, is motor oil, and, money. May, may as well go there and, trade in some, pop caps and, uh, tires, and tractors to group, car garages, so they can pull cars away from wrecks, is what I believed in."

None	0	SS63
Questionable	1	
Mild: Occasional instances of incoherence	2	
Moderate: Frequent bursts of incoherence	3	
Marked: At least half of the subject's speech is incomprehensible	4	
Severe: Almost all of the subject's speech is incomprehensible	5	

Illogicality

A pattern of speech in which conclusions are reached which do not follow logically. This may take the form of non-sequiturs (= it does not follow), in which the subject makes a logical inference between two clauses which is unwarranted or illogical. It may take the form of faulty inductive inferences. It may also take the form of reaching conclusions based on faulty premises without any actual delusional thinking.

Exclusions: Illogicality may either lead to or result from delusional beliefs. When illogical thinking occurs within the context of a delusional system, it should be subsumed under the concept of delusions and not considered a separate phenomenon representing a different type of thinking disorder. Illogical thinking which is clearly due to cultural or religious values or to intellectual deficit should also be excluded.

Example: "Parents are the people that raise you. Any thing that raises you can be a parent. Parents can be anything -- material, vegetable, or mineral -- that has taught you something. Parents would be the world of things that are alive, that are there. Rocks -- a person can look at a rock and learn something from it, so that would be a parent."

Circumstantiality

A pattern of speech which is very indirect and delayed in reaching its goal idea. In the process of explaining something, the speaker brings in many tedious details and sometimes makes parenthetical remarks. Circumstantial replies or statements may last for many minutes if the speaker is not interrupted and urged to get to the point. Interviewers will often recognize circumstantiality on the basis of needing to interrupt the speaker in order to complete the process of history-taking within an allotted time. When not called circumstantial, these people are often referred to as "long-winded."

Exclusions: Although it may coexist with instances of poverty of content of speech or loss of goal, it differs from poverty of content of speech in containing excessive amplifying or illustrative detail and from loss of goal in that the goal is eventually reached if the person is allowed to talk long enough. It differs from derailment in that the details presented are closely related to some particular goal or idea and that the particular goal or idea must be, by definition, eventually reached.

None	0	SS64
Questionable	1	
Mild: Occasional instances of illogicality	2	
Moderate: Frequent instances of illogicality (three or four times)	3	
Marked: Much of the subject's speech is illogical (more than four times)	4	
Severe: Most of the subject's speech is illogical	5	

None	0	SS65
Questionable	1	
Mild: Occasional instances of circumstantiality	2	
Moderate: Frequent instances of circumstantiality	3	
Marked: At least half of subject's speech is circumstantial	4	
Severe: Most of the subject's speech is circumstantial	5	

Pressure of Speech

An increase in the amount of spontaneous speech as compared to what is considered ordinary or socially customary. The subject talks rapidly and is difficult to interrupt. Some sentences may be left uncompleted because of eagerness to get on to a new idea. Simple questions which could be answered in only a few words or sentences are answered at great length so that the answer takes minutes rather than seconds and indeed may not stop at all if the speaker is not interrupted. Even when interrupted, the speaker often continues to talk. Speech tends to be loud and emphatic. Sometimes speakers with severe pressure will talk without any social stimulation and talk even though no one is listening. When subjects are receiving phenothiazines or lithium, their speech is often slowed down by medication, and then it can be judged only on the basis of amount, volume, and social appropriateness. If a quantitative measure is applied to the rate of speech, then a rate greater than 150 words per minute is usually considered rapid or pressured. This disorder may be accompanied by derailment, tangentiality, or incoherence, but it is distinct from them.

None	0	SS66
Questionable	1	
Mild: Slight pressure of speech; some slight increase in amount, speed, or loudness of speech	2	
Moderate: Usually takes several minutes to answer simple questions, may talk when no one is listening, and/or speaks loudly and rapidly	3	
Marked: Frequently talks as much as three minutes to answer simple questions; sometimes begins talking without social stimulation; difficult to interrupt	4	
Severe: Subject talks almost continually, cannot be interrupted at all, and/or may shout to drown out the speech of others	5	

Distractible Speech

During the course of a discussion or interview, the subject stops talking in the middle of a sentence or idea and changes the subject in response to a nearby stimulus, such as an object on a desk, the interviewer's clothing or appearance, etc.

Example: "Then I left San Francisco and moved to . . . where did you get that tie? It looks like it's left over from the 50's. I like the warm weather in San Diego. Is that a conch shell on your desk? Have you ever gone scuba diving?"

None	0	SS67
Questionable	1	
Mild: Is distracted once during an interview	2	
Moderate: Is distracted from two to four times during an interview	3	
Marked: Is distracted from five to ten times during an interview	4	
Severe: Is distracted more than ten times during an interview	5	

Clanging

A pattern of speech in which sounds rather than meaningful relationships appear to govern word choice, so that the intelligibility of the speech is impaired and redundant words are introduced. In addition to rhyming relationships, this pattern of speech may also include punning associations, so that a word similar in sound brings in a new thought.

Example: I'm not trying to make a noise. I'm trying to make sense. If you can make sense out of nonsense, well, have fun. I'm trying to make sense out of sense. I'm not making sense (cents) anymore. I have to make dollars."

Global Rating of Positive Formal Thought Disorder

In making this rating, the interviewer should consider the type of abnormality, the degree to which it affects the subject's ability to communicate, the frequency with which abnormal speech occurs, and its degree of severity.

None	0	SS68
Questionable	1	
Mild: Occurs once during an interview	2	
Moderate: Occurs from two to four times during an interview	3	
Marked: Occurs five to ten times during an interview	4	
Severe: Occurs more than ten times, or so frequently that the interview is incomprehensible.		

None	0	SS69
Questionable	1	
Mild: Occasional instances of disorder; subject's speech is understandable	2	
Moderate: Frequent instances of disorder; subject is sometimes hard to understand	3	
Marked: Subject is often difficult to understand	4	
Severe: Subject is incomprehensible	5	

Appendix XI

**SCALE FOR THE ASSESSMENT OF
NEGATIVE SYMPTOMS**

(SANS)

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(SAS Variable Name edition: 2000)

AFFECTIVE FLATTENING OR BLUNTING

Affective flattening or blunting manifests itself as a characteristic impoverishment of emotional expression, reactivity, and feeling. Affective flattening can be evaluated by observation of the subject's behavior and responsiveness during a routine interview. The rating of some items may be affected by drugs, since the Parkinsonian side-effect of phenothiazines may lead to mask-like facies and diminished associated movements. Other aspects of affect, such as responsivity or appropriateness, will not be affected, however.

Unchanging Facial Expression

The subject's face appears wooden, mechanical, frozen. It does not change expression, or changes less than normally expected, as the emotional content of discourse changes. Since phenothiazines may partially mimic this effect, the interviewer should be careful to note whether or not the subject is on medication, but should not try to "correct" the rating accordingly.

Not at all: Subject is normal or labile	0	SS11
Questionable decrease	1	
Mild: Occasionally the subject's expression is not as full as expected	2	
Moderate: Subject's expressions are dulled overall, but not absent	3	
Marked: Subject's face has a flat "set" look, but flickers of affect arise occasionally	4	
Severe: Subject's face looks "wooden" and changes little, if at all throughout the interview	5	

Decreased Spontaneous Movements

The subject sits quietly throughout the interview and shows few or no spontaneous movements. He does not shift position, move his legs, move his hands, etc., or does so less than normally expected.

Not at all: Subject moves normally or is overactive	0	SS12
Questionable decrease	1	
Mild: Some decrease in spontaneous movements	2	
Moderate: Subject moves three or four times during the interview	3	
Marked: Subject moves once or twice during the interview	4	
Severe: Subject sits immobile throughout the interview	5	

Paucity of Expressive Gestures

The subject does not use his body as an aid in expressing his ideas, through such means as hand gestures, sitting forward in his chair when intent on a subject, leaning back when relaxed, etc. This may occur in addition to decreased spontaneous movements.

Not at all: Subject uses expressive gestures normally or excessively	0	SS13
Questionable decrease	1	
Mild: Some decrease in expressive gestures	2	
Moderate: Subject uses body as an aid in expression at least three or four times	3	
Marked: Subject uses body as an aid in expression only once or twice	4	
Severe: Subject never uses body as an aid in expression	5	

Poor Eye Contact

The subject avoids looking at others or using his eyes as an aid in expression. He appears to be staring into space even when he is talking.

Not at all: Good eye contact and expression	0	SS14
Questionable decrease	1	
Mild: Some decrease in eye contact and eye expression	2	
Moderate: Subject's eye contact is decreased by at least half of normal	3	
Marked: Subject's eye contact is very infrequent	4	
Severe: Subject almost never looks at interviewer	5	

Affective Nonresponsivity

Failure to smile or laugh when prompted may be tested by smiling or joking in a way which would usually elicit a smile from a normal individual. The examiner may also ask, "Have you forgotten how to smile?" while smiling himself.

Not at all	0	SS15
Questionable decrease	1	
Mild: Slight but definite lack in responsivity	2	
Moderate: Subject occasionally seems to miss the cues to respond	3	
Marked: Subject seems to miss the cues to respond most of the time	4	
Severe: Subject is essentially unresponsive, even on prompting	5	

Lack of Vocal Inflections

While speaking the subject fails to show normal vocal emphasis patterns. Speech has a monotonic quality, and important words are not emphasized through changes in pitch or volume. Subject also may fail to change volume with changes of subject so that he does not drop his voice when discussing private topics nor raise it as he discusses things which are exciting or for which louder speech might be appropriate.

Not at all: Normal vocal inflections	0	SS16
Questionable decrease	1	
Mild: Slight decrease in vocal inflections	2	
Moderate: Interviewer notices several instances of flattened vocal inflections	3	
Marked: Obvious decrease in vocal inflections	4	
Severe: Subject's speech is a continuous monotone	5	

Global Rating of Affective Flattening

The global rating should focus on overall severity of affective flattening or blunting. Special emphasis should be given to such core features as unresponsiveness, inappropriateness, and an overall decrease in emotional intensity.

No flattening: Normal affect	0	SS17
Questionable affective flattening	1	
Mild affective flattening	2	
Moderate affective flattening	3	
Marked affective flattening	4	
Severe affective flattening	5	

Inappropriate Affect

Affect expressed is inappropriate or incongruous, not simply flat or blunted. Most typically, this manifestation of affective disturbance takes the form of smiling or assuming a silly facial expression while talking about a serious or sad subject. (Occasionally subjects may smile or laugh when talking about a serious subject which they find uncomfortable or embarrassing. Although their smiling may seem inappropriate, it is due to anxiety and therefore should not be rated as inappropriate affect.) Do not rate affective flattening or blunting as inappropriate. (This item was in the original SANS. However, subsequent analyses have shown that it loads on a disorganized dimension in factor analyses. Consequently, it should not be used as part of the global rating of affective flattening or in the sum of negative symptoms if three dimensions of psychopathology are being examined.)

Not at all: Affect is not inappropriate	0	SS18
Questionable	1	
Mild: At least one instance of inappropriate smiling or other inappropriate affect	2	
Moderate: Subject exhibits two to four instances of inappropriate affect	3	
Marked: Subject exhibits five to ten instances of inappropriate affect	4	
Severe: Subject's affect is inappropriate most of the time	5	

ALOGIA

Alogia is a general term coined to refer to the impoverished thinking and cognition that often occur in subjects with schizophrenia (Greek a = no, none; logos = mind, thought). Subjects with alogia have thinking processes that seem empty, turgid, or slow. Since thinking cannot be observed directly, it is inferred from the subject's speech. The two major manifestations of alogia are nonfluent empty speech (poverty of speech) and fluent empty speech (poverty of content of speech). Blocking and increased latency or response may also reflect alogia.

Poverty of Speech

Restriction in the amount of spontaneous speech, so that replies to questions tend to be brief, concrete, and unelaborated. Unprompted additional information is rarely provided. Replies may be monosyllabic, and some questions may be left unanswered altogether. When confronted with this speech pattern, the interviewer may find himself frequently prompting the subject in order to encourage elaboration of replies. To elicit this finding, the examiner must allow the subject adequate time to answer and to elaborate his answer.

No poverty of speech: A substantial and appropriate number of replies to questions include additional information	0	SS19
Questionable poverty of speech	1	
Mild: Occasional replies do not include elaborated information even though this is appropriate	2	
Moderate: Some replies do not include appropriately elaborated information, and some replies are monosyllabic or very brief--("Yes." "No." "Maybe." "I don't know." "Last week.")	3	
Marked: Answers are rarely more than a sentence or a few words in length	4	
Severe: Subject says almost nothing and occasionally fails to answer questions	5	

Poverty of Content of Speech

Although replies are long enough so that speech is adequate in amount, it conveys little information. Language tends to be vague, often over-abstract or over-concrete, repetitive, and stereotyped. The interviewer may recognize this finding by observing that the subject has spoken at some length but has not given adequate information to answer the question. Alternatively, the subject may provide enough information, but require many words to do so, so that a lengthy reply can be summarized in a sentence or two. Sometimes the interviewer may characterize the speech as "empty philosophizing."

Exclusions: This finding differs from circumstantiality in that the circumstantial subject tends to provide a wealth of detail.

Example: Interviewer: "Why is it, do you think, that people believe in God?" Subject: "Well, first of all because he uh, he are the person that is their personal savior. He walks with me and talks with me. And uh, the understanding that I have, um, a lot of peoples, they don't really, uh, know they own personal self. Because, uh, they ain't, they all, just don't know they personal self. They don't, know that he uh, seemed like to me, a lot of 'em don't understand that he walks and talks with them."

Blocking

Interruption of a train of speech before a thought or idea has been completed. After a period of silence which may last from a few seconds to minutes, the person indicates that she/he cannot recall what he had been saying or meant to say. Blocking should only be judged to be present if a person voluntarily describes losing his thought or if, upon questioning by the interviewer, the person indicates that that was the reason for pausing.

No poverty of content	0	SS20
Questionable	1	
Mild: Occasional replies are too vague to be comprehensible or can be markedly condensed	2	
Moderate: Frequent replies which are vague or can be markedly condensed to make up at least a quarter of the interview	3	
Marked: At least half of the subject's speech is composed of vague or incomprehensible replies	4	
Severe: Nearly all the speech is vague, incomprehensible, or can be markedly condensed	5	

No blocking	0	SS21
Questionable	1	
Mild: A single instance noted during a forty-five minute period	2	
Moderate: Occurs twice during forty-five minutes	3	
Marked: Occurs three or four times during forty-five minutes	4	
Severe: Occurs more than four times in forty-five minutes	5	

Increased Latency of Response

The subject takes a longer time to reply to questions than is usually considered normal. He may seem "distant" and sometimes the examiner may wonder if he has even heard the question. Prompting usually indicates that the subject is aware of the question, but has been having difficulty in formulating his thoughts in order to make an appropriate reply.

Not at all	0	SS22
Questionable	1	
Mild: Occasional brief pauses before replying	2	
Moderate: Often pauses several seconds before replying	3	
Marked: Usually pauses at least ten to fifteen seconds before replying	4	
Severe: Long pauses prior to nearly all replies.	5	

Global Rating of Alogia

Since the core features of alogia are poverty of speech and poverty of content of speech, the global rating should place particular emphasis on them.

No alogia	0	SS23
Questionable	1	
Mild: Mild but definite impoverishment in thinking	2	
Moderate: Significant evidence for impoverished thinking	3	
Marked: Subject's thinking seems impoverished much of the time	4	
Severe: Subject's thinking seems impoverished nearly all of the time	5	

AVOLITION-APATHY

Avolition manifests itself as a characteristic lack of energy, drive, and interest. Subjects are unable to mobilize themselves to initiate or persist in completing many different kinds of tasks. Unlike the diminished energy or interest of depression, the avolitional symptom complex in schizophrenia is usually not accompanied by saddened or depressed affect. The avolitional symptom complex often leads to severe social and economic impairment.

Grooming and Hygiene

The subject displays less attention to grooming and hygiene than normal. Clothing may appear sloppy, outdated, or soiled. The subject may bathe infrequently and not care for hair, nails, or teeth—leading to such manifestations as greasy or uncombed hair, dirty hands, body odor, or unclean teeth and bad breath. Overall, the appearance is dilapidated and disheveled. In extreme cases, the subject may even have poor toilet habits.

How often do you bathe or shower?

Do you change your clothes every day?

How often do you do laundry?

No evidence of poor grooming and hygiene	0	SS24
Questionable	1	
Mild: Some slight but definite indication of inattention to appearance, i.e., messy hair or disheveled clothes	2	
Moderate: Appearance is somewhat disheveled, i.e., greasy hair, dirty clothes	3	
Marked: Subject's attempts to keep up grooming or hygiene are minimal	4	
Severe: Subject's clothes, body and environment are dirty and smelly	5	

Impersistence at Work or School

The subject has had difficulty in seeking or maintaining

No evidence of impersistence at work

employment (or schoolwork) as appropriate for his or her age and sex. If a student, he/she does not do homework and may even fail to attend class. Grades will tend to reflect this. If a college student, there may be a pattern of registering for courses, but having to drop several or all of them before the semester is completed. If of working age, the subject may have found it difficult to work at a job because of inability to persist in completing tasks and apparent irresponsibility. He may go to work irregularly, wander away early, complete them in a disorganized manner. He may simply sit around the house and not seek any employment or seek it only in an infrequent and desultory manner. If a housewife or retired person, the subject may fail to complete chores, such as shopping or cleaning, or complete them in an apparently careless and half-hearted way.

Have you been having any problems at (work, school)?

Do you ever start some project and just never get around to finishing it?

Physical Anergia

The subject tends to be physically inert. He may sit in a chair for hours at a time and not initiate any spontaneous activity. If encouraged to become involved in an activity, he may participate only briefly and then wander away or disengage himself and return to sitting alone. He may spend large amounts of time in some relatively mindless and physically inactive task such as watching TV or playing solitaire. His family may report that he spends most of his time at home "doing nothing except sitting around". Either at home or in an inpatient setting he may spend much of his time sitting in his room.

Are there times when you lie or sit around most of the day?

(Does this ever last longer than one day?)

Global Rating of Avolition - Apathy

The global rating should reflect the overall severity of the avolition symptoms, given expectational norms for the subject's age and social status or origin. In making the global rating, strong weight may be given to only one or two prominent symptoms if they are particularly striking.

or school	0	SS25
Questionable	1	
Mild: Slight indications of impersistence, i.e., missing a couple days of school or work	2	
Moderate: Subject often has poor performance at work or school	3	
Marked: Subject has much difficulty maintaining even a below normal level of work or school	4	
Severe: Subject consistently fails to maintain a record at work or school	5	

No Evidence of Physical Anergia	0	SS26
Questionable	1	
Mild Anergia	2	
Moderate: Subject lies in bed or sits immobile at least a quarter of normal waking hours	3	
Marked: Subject lies in bed or sits immobile at least half of normal waking hours	4	
Severe: Subject lies in bed or sits immobile for most of the day	5	

No Avolition	0	SS27
Questionable	1	
Mild, But Definitely Present	2	
Moderate Avolition	3	
Marked Avolition	4	
Severe Avolition	5	

ANHEDONIA-ASOCIALITY

This symptom complex encompasses the schizophrenic subject's difficulties in experiencing interest or pleasure. It may express itself as a loss of interest in pleasurable activities, an inability to experience pleasure when participating in activities normally considered pleasurable, or a lack of involvement in social relationships of various kinds.

Recreational Interests and Activities

The subject may have few or no interests, activities, or hobbies. Although this symptom may begin insidiously or slowly, there will usually be some obvious decline from an earlier level of interest and activity. Subjects with relatively milder loss of interest will engage in some activities which are passive or non-demanding, such as watching TV, or will show only occasional or sporadic interest. Subjects with the most extreme loss will appear to have a complete and intractable inability to become involved in or enjoy activities. The rating in this area should take both the quality and quantity of recreational interests into account.

Have you felt interested in the things you usually enjoy?

(Have they been as fun as usual?)

Have you been watching TV or listening to the radio?

Sexual Interest and Activity

The subject may show a decrement in sexual interest and activity, as judged by what would be normal for the subject's age and marital status. Individuals who are married may manifest disinterest in sex or may engage in intercourse only at the partner's request. In extreme cases, the subject may not engage in any sex at all. Single subjects may go for long periods of time without sexual involvement and make no effort to satisfy this drive. Whether married or single, they may report that they subjectively feel only minimal sex drive or that they take little enjoyment in sexual intercourse or in masturbatory activity even when they engage in it.

Have you noticed any changes in your sex drive?

No Inability to Enjoy Recreational Interests or Activities	0	SS28
Questionable	1	
Mild Inability to Enjoy Recreational Activities	2	
Moderate: Subject often is not "up" for recreational activities	3	
Marked: Subject has little interest in and derives only mild pleasure from recreational activities	4	
Severe: Subject has no interest in and derives no pleasure from recreational activities	5	
No Inability to Enjoy Sexual Activities	0	SS29
Questionable Decrement in Sexual Interest and Activity	1	
Mild Decrement in Sexual Interest and Activity	2	
Moderate: Subject occasionally has noticed decreased interests in and/or enjoyment from sexual activities	3	
Marked: Subject has little interest in and/or derives little pleasure from sexual activities	4	
Severe: Subject has no interest in and/or derives no pleasure from sexual activities	5	

Ability to Feel Intimacy and Closeness

The subject may display an inability to form close and intimate relationships of a type appropriate for his age, sex, and family status. In the case of a younger person, this area should be rated in terms of relationships with the opposite sex and with parents and siblings. In the case of an older person who is married, the relationship with spouse and with children should be evaluated, while older unmarried individuals should be judged in terms of relationships with the opposite sex and any family members who live nearby. Subjects may display few or no feelings of affection to available family members. Or they may have arranged their lives so that they are completely isolated from any intimate relationships, living alone and making no effort to initiate contacts with family or members of the opposite sex.

Have you been having any problems with your (family, spouse)?

How would you feel about visiting with your (family, parents, spouse, etc.)?

Relationships with Friends and Peers

Subjects may also be relatively restricted in their relationships with friends and peers of either sex. They may have few or no friends, make little or no effort to develop such relationships, and choose to spend all or most of their time alone.

Have you been spending much time with friends?

Do you enjoy spending time alone, or would you rather have more friends?

Global Rating of Anhedonia-Asociality

The global rating should reflect the overall severity of the anhedonia-asociality complex, taking into account the norms appropriate for the subject's age, sex, and family status.

No Inability to Feel Intimacy and Closeness	0	SS30
Questionable Inability	1	
Mild, But Definite Inability to Feel Intimacy and Closeness	2	
Moderate: Subject appears to enjoy family or significant others but does not appear to "look forward" to visits	3	
Marked: Subject appears neutral toward visits from family or significant others. Brightens only mildly	4	
Severe: Subject prefers no contact with or is hostile toward family or significant others	5	

No Inability to Form Close Friendships	0	SS31
Questionable Inability to Form Friendships	1	
Mild, But Definite Inability to Form Friendships	2	
Moderate: Subject able to interact, but sees friends/acquaintances only two to three times per month	3	
Marked: Subject has difficulty forming and/or keeping friendships. Sees friends/acquaintances only one to two times per month	4	
Severe: Subject has no friends and no interest in developing any social ties	5	

No Evidence of Anhedonia-Asociality	0	SS32
Questionable Evidence of Anhedonia-Asociality	1	
Mild, But Definite Evidence of Anhedonia-Asociality	2	
Moderate Evidence of Anhedonia-Asociality	3	
Marked Evidence of Anhedonia-Asociality	4	
Severe Evidence of Anhedonia-Asociality	5	

ATTENTION

Attention is often poor in schizophrenics. The subject may have trouble focusing his attention, or he may only be able to focus sporadically and erratically. He may ignore attempts to converse with him, wander away while in the middle of an activity or task, or appear to be inattentive when engaged in formal testing or interviewing. He may or may not be aware of his difficulty in focusing his attention.

In some factor analyses, attentional impairment loads on the disorganized dimension, when three dimensions of psychopathology emerge. Consequently, analyses that examine three dimensions may choose to place this item in the disorganized dimension rather than the negative dimension.

Social Inattentiveness

While involved in social situations or activities, the subject appears inattentive. He looks away during conversations, does not pick up the topic during a discussion, or appears uninvolved or unengaged. He may abruptly terminate a discussion or a task without any apparent reason. He may seem "spacy" or "out of it". He may seem to have poor concentration when playing games, reading, or watching TV.

No Indication of Inattentiveness	0	SS33
Questionable Signs	1	
Mild, But Definite Signs of Inattentiveness	2	
Moderate: Subject occasionally misses what is happening in the environment	3	
Marked: Subject often misses what is happening in the environment; has trouble with reading comprehension	4	
Severe: Subject unable to follow conversation, remember what he's read, or follow TV plot	5	

Inattentiveness During Mental Status Testing

The subject may perform poorly on simple tests of intellectual functioning in spite of adequate education and intellectual ability. This should be assessed by having the subject spell "world" backwards and by serial 7's (at least a tenth grade education) or serial 3's (at least a sixth grade education) for a series of five subtractions. A perfect score is 10.

No Errors	0	SS34
Questionable: No errors but subject performs in a halting manner or makes/corrects an error	1	
Mild, But Definite (One Error)	2	
Moderate (Two Errors)	3	
Marked (Three Errors)	4	
Severe (More Than Three Errors)	5	

Global Rating of Attention

This rating should assess the subject's overall ability to attend or concentrate, and include both clinical appearance and performance on tasks.

No Indications of Inattentiveness	0	SS35
Questionable	1	
Mild, But Definite Inattentiveness	2	
Moderate Inattentiveness	3	
Marked Inattentiveness	4	
Severe Inattentiveness	5	

Appendix XII

Global Assessment of Functioning (GAF) Scale

(From DSM-IV-TR, p. 34.)

Consider psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. Do not include impairment in functioning due to physical (or environmental) limitations.

Code	(Note: Use intermediate codes when appropriate, e.g., 45, 68, 72.)
100 91	Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. No symptoms.
90 81	Absent or minimal symptoms (e.g., mild anxiety before an exam), good functioning in all areas, interested and involved in a wide range of activities. socially effective, generally satisfied with life, no more than everyday problems or concerns (e.g. an occasional argument with family members).
80 71	If symptoms are present, they are transient and expectable reactions to psychosocial stressors (e.g., difficulty concentrating after family argument); no more than slight impairment in social, occupational or school functioning (e.g., temporarily failing behind in schoolwork).
70 61	Some mild symptoms (e.g. depressed mood and mild insomnia) OR some difficulty in social, occupational, or school functioning (e.g., occasional truancy, or theft within the household), but generally functioning pretty well, has some meaningful interpersonal relationships.
60 51	Moderate symptoms (e.g., flat affect and circumstantial speech, occasional panic attacks) OR moderate difficulty in social, occupational, or school functioning (e.g., few friends, conflicts with peers or co-workers).
50 41	Serious symptoms (e.g., suicidal ideation, severe obsessional rituals, frequent shoplifting) OR any serious impairment in social, occupational, or school functioning (e.g., no friends, unable to keep a job).
40 31	Some impairment in reality testing or communication (e.g., speech is at times illogical, obscure, or irrelevant) OR major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood (e.g., depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children, is defiant at home, and is failing at school).
30 21	Behavior is considerably influenced by delusions or hallucinations OR serious impairment in communication or judgment (e.g., sometimes incoherent, acts grossly inappropriately, suicidal preoccupation) OR inability to function in almost all areas (e.g., stays in bed all day; no job, home, or friends).
20 11	Some danger of hurting self or others (e.g., suicide attempts without clear expectation of death; frequently violent; manic excitement) OR occasionally fails to maintain minimal personal hygiene (e.g., smears feces) OR gross impairment in communication (e.g., largely incoherent or mute).
10 1	Persistent danger of severely hurting self or others (e.g., recurrent violence) OR persistent inability to maintain minimal personal hygiene OR serious suicidal act with clear expectation of death.
0	Inadequate information.

Appendix XIII

International Journal of Law and Psychiatry 75 (2021) 101680



Contents lists available at ScienceDirect

International Journal of Law and Psychiatry

journal homepage: www.elsevier.com/locate/ijlawpsy

The association between perceived coercion on admission and formal coercive practices in an inpatient psychiatric setting

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ARTICLE INFO

Keywords:

Coercion
Involuntary admission
Mental health legislation

ABSTRACT

Involuntary care is a feature of mental health services around the world. In addition to involuntary admission and treatment, specific coercive practices include seclusion and physical restraint. Our study aimed to determine the relationships, if any, between these practices and perceived coercion on admission among psychiatry inpatients in Ireland, as well as any relationships between perceived coercion on admission and variables such as age, gender and diagnosis. We included 107 psychiatry inpatients aged 18 years or over who were admitted to the acute psychiatry admission units in Tallaght University Hospital and Connolly Hospital, Dublin, Ireland over a 30-month period between September 2017 and February 2020. Over a quarter (27.1%) of participating patients had involuntary status; nine (8.4%) had experienced at least one episode of seclusion, and ten (9.3%) had experienced at least one episode of restraint. Perceived coercion on admission was significantly associated with involuntary status and female gender; perceived negative pressures on admission were significantly associated with involuntary status and positive symptoms of schizophrenia; perceived procedural injustice on admission was significantly associated with fewer negative symptoms, involuntary status, cognitive impairment and female gender; and negative affective reactions to hospitalisation on admission were significantly associated with birth in Ireland and being employed. Total score across these four subscales was significantly associated with involuntary status and positive symptoms, and had borderline significant associations with birth in Ireland, being employed and female gender. Overall, perceived coercion on admission, assessed in retrospect by the patient, is more closely associated with involuntary status and symptoms than it is with subsequent formal coercive practices, such as seclusion and restraint. The role of gender merits particular attention in future research, especially in relation to procedural injustice on admission and perceived coercion on admission.

1. Introduction

Involuntary psychiatric admission is a common feature of mental health services around the world (Kelly et al., 2015). The demographic and clinical correlates of involuntary status have been widely studied, but are still not fully understood (Fiorillo et al., 2011; Kalisova et al., 2014).

In general terms, involuntary admission is commonly associated with a diagnosis of schizophrenia or a related disorder (Daly & Craig, 2019; Mulder et al., 2008; Zhou et al., 2015), severity of symptoms (Hustoft et al., 2013; Kalisova et al., 2014; Salize & Dressing, 2004), male gender (Hustoft et al., 2013; Myklebust, Sørgaard, & Wynn, 2014), perceived dangerousness (Gou et al., 2014; Zhou et al., 2015) and unemployment (Chang, Ferreira, Ferreira, & Hirata, 2013). There are increased rates of

involuntary admission among ethnic minorities in many countries including Switzerland (Lay, Nordt, & Rössler, 2011) and New Zealand (Wheeler, Robinson, & Robinson, 2005), but not, interestingly, Ireland (Curley et al., 2016). Reduced insight into illness is another possible correlate of involuntary status, but even models which take many of these factors into account still account for under 50% of the variance in admission status (Gou et al., 2014; Kelly et al., 2004).

From the patients' perspective, up to 78% of involuntary patients later feel that their involuntary admission was beneficial (O'Donoghue et al., 2010; O'Donoghue et al., 2011; Van der Post et al., 2014), and greater procedural justice is associated with better therapeutic relationships (Roche, Madigan, Lyne, Feeney, & O'Donoghue, 2014). More research is, however, needed into both the clinical correlates of involuntary care and patients' experience of coercion in mental health

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Received 8 December 2020; Received in revised form 22 January 2021; Accepted 8 February 2021

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care.

There is, in particular, a need to clarify precisely which aspects of involuntary care are most associated with perceived coercion both on admission and subsequently. This paper focuses on two such aspects of involuntary care: seclusion and restraint. There is some evidence that low levels of insight are associated with the use of these coercive measures (O'Donoghue et al., 2011), but their use is generally under-researched. In addition, patients' views on the use of these measures are shaped by both perceived fairness and effectiveness (Mielau et al., 2016), so patients' perceptions of their experiences during involuntary care are critical.

Against this background, our study aims to determine the relationships, if any, between perceived coercion on admission and subsequent formal coercive practices among psychiatry inpatients in Ireland, and any relationships between perceived coercion on admission and other variables such as age, gender and diagnosis.

In Ireland, involuntary admission is governed by the Mental Health Act, 2001, which sets out precise clinical and legal requirements for involuntary admission (Kelly, 2011). The legislation defines 'mental disorder' as 'mental illness, severe dementia or significant intellectual disability where (a) because of the illness, disability or dementia, there is a serious likelihood of the person concerned causing immediate and serious harm to himself or herself or to other persons, or (b) (i) because of the severity of the illness, disability or dementia, the judgment of the person concerned is so impaired that failure to admit the person to an approved centre would be likely to lead to a serious deterioration in his or her condition or would prevent the administration of appropriate treatment that could be given only by such admission, and (ii) the reception, detention and treatment of the person concerned in an approved centre would be likely to benefit or alleviate the condition of that person to a material extent' (Section 3(1)).

More detailed definitions are provided for 'mental illness', 'severe dementia' and 'significant intellectual disability'. The legislation states that 'a person may be involuntarily admitted to an approved centre [inpatient psychiatry unit] and detained there on the grounds that he or she is suffering from a mental disorder' (Section 8(1)), but cannot be so admitted 'by reason only of the fact that the person (a) is suffering from a personality disorder, (b) is socially deviant, or (c) is addicted to drugs or intoxicants' (Section 8(2)). The three-step involuntary admission procedure under the 2001 Act has been previously described in this journal (Feeney, Umama-Agada, Gilhooley, Asghar, & Kelly, 2019) and results in a 21-day 'admission order', which can be followed by a 'renewal order' of up to three and then 6 months' duration (Section 15), if the preceding order is affirmed by a mental health tribunal (Section 18).

Ireland's rate of involuntary admission is relatively steady at 47 involuntary admissions per 100,000 population per year (Daly & Craig, 2019). As in other countries, involuntary admission in Ireland is associated with specific diagnoses, including schizophrenia and related disorders (44%), mania (16%) and depression (10%).

During the course of involuntary admission, patients in Ireland, as elsewhere, may experience coercive practices including seclusion, physical restraint and mechanical restraint. The Mental Health Commission (2009a) defines 'seclusion' as 'the placing or leaving of a person in any room alone, at any time, day or night, with the exit door locked or fastened or held in such a way as to prevent the person from leaving' (p.17). In 2018, there were 17,000 admissions to Irish psychiatric units and hospitals, of which 13% were involuntary (Daly & Craig, 2019). In that year, 760 patients were placed in seclusion a total of 1799 times (Mental Health Commission, 2019). Two thirds of patients secluded were male and two thirds were under 40 years of age.

The Mental Health Commission (2009b) defines 'physical restraint' as 'the use of physical force (by one or more persons) for the purpose of preventing the free movement of a resident's [patient's] body when he or she poses an immediate threat of serious harm to self or others' (p.14). In 2018, 1207 patients experienced physical restraint a total of 5665 times (Mental Health Commission, 2019). Physical restraint was

essentially equally common among men and women, and 54% were over 40 years of age.

The Mental Health Commission (2009a) defines 'mechanical means of bodily restraint' as 'the use of devices or bodily garments for the purpose of preventing or limiting the free movement of a patient's body' (p.17). In 2018, there were fewer than five episodes of mechanical restraint in psychiatric units in Ireland, all within the National Forensic Mental Health Service, which is not part of this study (Mental Health Commission, 2019). As a result, mechanical restraint is not considered any further in this paper.

While cross-national comparisons are complex, it appears that Ireland's use of coercive measures is low by international standards. Our rate of involuntary admission, for example, is less than half of that in neighbouring England and, unlike England, Ireland does not have compulsory community treatment orders (Gilhooley & Kelly, 2019).

Against this background, this study aims to determine the relationships, if any, between perceived coercion on admission and subsequent formal coercive practices during the admission among psychiatry inpatients in Ireland, and any relationships between perceived coercion on admission and other variables such as age, gender and diagnosis.

2. Method

2.1. Design

This is a quantitative study using semi-structured interviews to determine the relationships between perceived coercion on admission, formal coercive practices and other relevant variables. We sought to include both voluntary and involuntary patients in our sample in order to examine any relationship between admission status and perceived coercion on admission. As involuntary admissions account for a minority (13%) of psychiatric admissions in Ireland (Daly & Craig, 2019), we preferentially selected involuntary patients for inclusion in our sample so as to provide greater focus on the variables of greatest interest (i.e. coercive practices). More specifically, it was our intention that our sample would include double the proportion of involuntary patients that we would expect from national data; i.e. we aimed that approximately 26% of our sample would be involuntary patients, compared to 13% nationally. This was to provide enhanced focus on involuntary patients while still permitting comparison with voluntary patients and keeping the overall sample as large as feasible.

2.2. Setting and sampling

This study included voluntary and involuntary psychiatry inpatients aged 18 years or over who were admitted to the acute psychiatry admission units in Tallaght University Hospital and Connolly Hospital in mixed urban and suburban areas of Dublin, Ireland over a 30-month period between September 2017 and February 2020. Both inpatient units are located in general hospitals and provide acute mental health-care to adults, including both voluntary and involuntary patients under Ireland's Mental Health Act, 2001. Ireland's public mental health service is arranged on a strict catchment-area basis, so that all public (non-fee-paying) psychiatry admissions of people resident within the geographical catchment area of these hospitals must occur in these admission units.

For inclusion in the study, each patient must have been admitted as an inpatient during the study period; be aged 18 years or over; be proficient in the English language; and possess decision-making capacity to provide valid, written, informed consent. It was not possible to assess all patients at the same time during their hospital stays, owing to differing lengths of stay, variable courses of illness (affecting ability and willingness to participate), differences in the times at which coercive measures were used, and unpredictable discharge dates. In order to control for different lengths of hospital stay at time of assessment, therefore, all multi-variable models included length of hospital stay at time of

assessment as an independent variable (see Section 2.5 and Table 2).

Nursing staff in both research sites were approached to identify patients who fulfilled criteria for inclusion in the study. After obtaining written, informed consent, we interviewed all participating patients using a semi-structured interview. Each interview took place over approximately 40 min.

2.3. Demographic and clinical details

We recorded each patient's gender, marital status, employment status, place of birth, date of birth, date of admission and date of assessment. We also recorded each patient's admission status under the Mental Health Act, 2001 and whether or not they experienced seclusion or physical restraint during the admission. Clinical diagnoses were recorded using the World Health Organisation's *International Classification of Mental and Behavioural Disorders (ICD-10)* (World Health Organisation, 1992).

Symptoms of schizophrenia were assessed using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984) and Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983). The SAPS comprises 30 items under the four domains of hallucinations (6 items), delusions (12 items), bizarre behaviour (4 items) and positive formal thought disorder (8 items), each rated on a 6-point scale ranging from 0 to 5, yielding a total SAPS score that can range between 0 and 150. The SANS comprises 20 items under the domains of affective blunting (7 items), avolition/apathy (3 items) anhedonia/asociality (4 items) and attention (2 items), each rated on a 6-point scale ranging from 0 to 5, yielding a total SANS score than can range between 0 and 100. On both scales, the more symptoms the patient has, the higher their score.

The Mini Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975) was performed to assess each patient's cognition. The MMSE was developed as a screening test to quantify cognitive impairment and comprises 11 questions that test five areas of cognitive function (orientation, immediate memory, attention/concentration, delayed recall and language), yielding a total MMSE score that can range between 0 and 30. Examination of the MMSE's psychometric properties shows moderate-to-high levels of reliability, with a score of 23 or lower indicative of cognitive impairment (Tombaugh & McIntyre, 1992).

Patients' level of functioning was assessed using the Global Assessment of Functioning (GAF), which is a numeric scale ranging from 1 to 100, with higher scores indicating better functioning (American Psychiatric Association, 1994). This widely used rating scale encompasses three dimensions of functioning: psychological, social and occupational (Aas, Sonesson, & Torp, 2018).

2.4. Perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to hospitalisation on admission

The MacArthur Admission Experience Survey (AES) (Short Form) was used to determine levels of perceived coercion on admission, negative pressures on admission, procedural injustice on admission and affective reactions to hospitalisation on admission among patients (Gardner et al., 1993). This is a widely used, validated, observer-rated scale which evaluates the level of perceived coercion experienced at the point of psychiatric hospital admission. The AES comprises 16 statements, divided into four subscales, to reflect these four elements of the person's hospital admission experience, each of which is rated as 'true', 'false' or 'don't know'.

The perceived coercion subscale comprises five items with an overall score ranging from 0 to 5, scored in this study such that a higher score indicates greater perceived coercion. The negative pressures subscale comprises six items with an overall score ranging from 0 to 6, scored in this study such that a higher score indicates greater negative pressures. The procedural justice subscale (also known as the voice subscale)

consists of three items with an overall score ranging from 0 to 3, scored in this study such that a higher score indicates lower perceived procedural justice.

The affective reactions to hospitalisation subscale comprises six emotions (angry, sad, pleased, relieved, confused and frightened) with an overall score ranging from 0 to 6. In this study, each positive emotion rated as 'true' scored 0 and as 'false' scored 1; each negative emotion rated as 'true' scored 1 and as 'false' scored 0; as a result, a higher score indicates a higher level of negative emotions.

Total score for the AES was calculated by adding scores of each of the four subscales; therefore, the AES total score range was from 0 to 20.

2.5. Analysis

Data were stored on a password-protected research computer, in a locked research office. Data were anonymised and encrypted. Data were stored, described and analysed using IBM SPSS Statistics Version 26. Data were normally distributed except where indicated otherwise.

To investigate correlates of each of the four AES subscale scores and total AES score, we generated five linear regression models with AES subscale scores and total AES score as the dependent variables. Independent variables were demographic and clinical characteristics shown in Table 2. The statistical modelling technique included corrections for multiple testing in each model. We also tested each model for multicollinearity, which is when two or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, we calculated a 'tolerance value' for each independent variable; tolerance values below 0.10 would indicate significant problems with multicollinearity (Katz, 1999). We calculated the r-squared value for each model to determine the predictive power of each model.

2.6. Ethics

Before commencement, this study was approved by Research Ethics Committees covering Tallaght University Hospital and Connolly Hospital, Blanchardstown, Dublin. Written informed consent was obtained from each participant. This study was performed in accordance with appropriate data protection legislation and the Declaration of Helsinki (World Medical Association, 2008).

3. Results

3.1. Demographic details

Our study sample included 107 patients of whom 29 (27.1%) had involuntary status for part or all of their admission. Forty-eight patients (44.9%) were female and 59 (55.1%) were male. Almost two-thirds were never married ($n = 69$; 64.5%); 15 (14%) were married; 17 (15.9%) were separated or divorced; and 6 (5.6%) were widowed. Majorities were born in Ireland ($n = 89$; 83.2%) and unemployed ($n = 79$; 73.8%). These proportions did not differ between patients recruited in Tallaght University Hospital ($n = 31$; 29.0%) and Connolly Hospital ($n = 76$; 71.0%) ($p > 0.05$ in all cases). Mean age was 43.3 years (standard deviation [SD]: 15.8).

Length of hospital stay at time of assessment was non-normally distributed (skewed to the right) with a median of 11 days (inter-quartile range: 5–23). Affective disorders were the most common diagnoses ($n = 50$; 46.7%) followed by schizophrenia and related disorders ($n = 29$; 27.1%), personality and behavioural disorders ($n = 12$; 11.2%), substance use disorders ($n = 9$; 8.4%) and neuroses ($n = 7$; 6.5%).

At time of assessment, nine patients (8.4%) had experienced one or more episodes of seclusion during their admission. Five patients (4.7%) had experienced one episode of seclusion; one patient (0.9%) had experienced two episodes; two patients (1.9%) had experienced three episodes, and one patient (0.9%) had experienced seven episodes. Ten

patients (9.3%) had experienced one or more episodes of physical restraint. Six patients (5.6%) had experienced one episode of physical restraint; one patient (0.9%) had experienced two episodes; one patient (0.9%) had experienced three episodes; one patient (0.9%) had experienced four episodes, and one patient (0.9%) had experienced ten episodes. Ten patients (9.3%) were nursed in 'high dependency units' (psychiatric intensive care) and the remainder ($n = 97$; 90.7%) were nursed in general acute psychiatric wards.

3.2. Clinical variables

Nineteen patients (17.8%) scored 0 on the SAPS (indicating a lack of positive symptoms of schizophrenia) and 88 patients (82.2%) scored at least 1. SAPS total score was non-normally distributed (skewed to the right) with a median of 8.0 (inter-quartile range: 1.0–17.0). Twenty-three patients (21.5%) scored 0 on the SANS (indicating a lack of negative symptoms of schizophrenia) and 84 patients (78.5%) scored at least 1. SANS total score was non-normally distributed (skewed to the right) with a median of 7.0 (inter-quartile range: 1.0–15.0). MMSE score was non-normally distributed (skewed to the left) with a median of 28 (inter-quartile range: 27–30). Eight patients (7.5%) scored 23 or lower, indicating the presence of cognitive impairment. Mean GAF score was 46.68 (SD: 14.47). The lowest score was 20 and the highest was 80.

3.3. Perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to hospitalisation on admission

MacArthur Admission Experience Survey (AES) total score on admission was non-normally distributed (skewed to the right) with a median of 6.0 (inter-quartile range: 3.0–13.0). On the perceived coercion subscale of the AES, mean score was 2.04 (SD: 1.89) (Table 1). On the negative pressures subscale, mean score was 1.56 (SD: 1.98). On the procedural injustice subscale, mean score was 1.10 (SD: 1.19). On the affective reactions to hospitalisation subscale, mean score was 2.98 (SD:1.80).

On multi-variable analysis, AES total score on admission was significantly associated with involuntary status ($p < 0.001$) and positive symptoms of schizophrenia ($p = 0.025$), and had borderline significant associations with birth in Ireland ($p = 0.046$), being employed ($p = 0.047$) and female gender ($p = 0.049$) (Table 2).

On multi-variable analysis of the AES subscales, perceived coercion on admission was significantly associated with involuntary status ($p < 0.001$) and female gender ($p = 0.040$), and had a borderline significant association with positive symptoms of schizophrenia ($p = 0.049$). Perceived negative pressures on admission were significantly associated with involuntary status ($p < 0.001$) and positive symptoms of schizophrenia ($p = 0.006$). Perceived procedural injustice on admission was

significantly associated with fewer negative symptoms of schizophrenia ($p = 0.006$), involuntary status ($p = 0.008$), cognitive impairment ($p = 0.014$) and female gender ($p = 0.015$). Negative affective reactions to hospitalisation on admission were significantly associated with birth in Ireland ($p < 0.001$) and being employed ($p = 0.026$).

Patient experience of seclusion or restraint during their admission was not associated with perceived coercion on admission, negative pressures on admission, perceived procedural injustice on admission, affective reactions to hospitalisation on admission or total AES score on admission (Table 2).

Each of the five regression models accounted for between approximately one quarter and one third of the variance in the relevant dependent variable (r^2 between 26.5% and 37.8%). All models attained statistical significance ($p < 0.05$ in all cases; Table 2). All tolerance values in all models were greater than 0.10, indicating no significant problems with multicollinearity.

4. Discussion

4.1. Summary of results

Our sample included 107 patients (27.1% involuntary) with a median length of hospital stay at time of assessment of 11 days. The most common diagnoses were affective disorders, schizophrenia (and related disorders) and personality and behavioural disorders. Nine patients (8.4%) experienced one or more episodes of seclusion during their admission; 10 patients (9.3%) experienced one or more episodes of restraint; and 10 (9.3%) were nursed in 'high dependency units'.

Perceived coercion on admission was significantly associated with involuntary status and female gender; perceived negative pressures on admission were significantly associated with involuntary status and positive symptoms of schizophrenia; perceived procedural injustice on admission was significantly associated with fewer negative symptoms, involuntary status, cognitive impairment and female gender; and negative affective reactions to hospitalisation on admission were significantly associated with birth in Ireland and being employed. AES total score on admission was significantly associated with involuntary status and positive symptoms, and had borderline significant associations with birth in Ireland, being employed and female gender.

Patient experience of seclusion or restraint during their admission was not associated with perceived coercion on admission, negative pressures on admission, perceived procedural injustice on admission, affective reactions to hospitalisation on admission or total AES score on admission (Table 2). Overall, variables in the five regression models accounted for between approximately one quarter and one third of the variance in perceived coercion on admission, negative pressures on admission, perceived procedural justice on admission, negative affective reactions to hospitalisation on admission and AES total score on admission.

4.2. Strengths and limitations

Methodological strengths of this study include the examination of a broad range of outcome variables (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and affective reactions to hospitalisation on admission) and co-variables (such as demographic factors, diagnosis, symptoms, cognition and level of functioning). Reliable, validated tools were used and multi-variable statistical analyses performed.

Limitations include the fact that patients were interviewed at different times during the course of their hospital admissions, owing to acute illness affecting their willingness and ability to participate, the variable timing of the use of coercive measures, and unpredictable discharge dates. Ideally, all patients would be interviewed either at the same stage during their admissions or at a defined time-point following use of coercive measures. It is also a limitation of the present study that

Table 1

Frequencies of scores on the four subscales of the MacArthur Admission Experience Survey (AES) on admission.

Score	Perceived coercion on admission ^a	Negative pressures on admission ^b	Procedural injustice on admission ^c	Affective reactions on admission ^d
0	35 (32.7%)	52 (48.6%)	50 (46.7%)	9 (8.4%)
1	17 (15.9%)	13 (21.1%)	16 (15.0%)	16 (15.0%)
2	13 (12.1%)	16 (15.0%)	21 (19.6%)	22 (20.6%)
3	9 (8.4%)	5 (4.7%)	20 (18.7%)	18 (16.8%)
4	17 (15.9%)	4 (3.7%)		17 (15.9%)
5	16 (15.0%)	11 (10.3%)		13 (12.1%)
6		6 (5.6%)		12 (11.2%)
Mean	2.04 (SD: 1.89)	1.56 (SD: 1.98)	1.10 (SD: 1.19)	2.98 (SD 1.80)

^a A score of 5 is the highest level of perceived coercion on admission.

^b A score of 6 is the highest level of perceived negative pressures on admission.

^c A score of 3 is the highest level of procedural injustice on admission.

^d A score of 6 is the highest level of negative affective reactions on admission.

Table 2
Multi-variable analyses of correlates of perceived coercion on admission, negative pressures on admission, procedural injustice on admission, negative affective reactions to psychiatric hospitalisation on admission and total score on the MacArthur Admission Experience Survey (AES) on admission.

Variable	Perceived coercion on admission		Negative pressures on admission		Procedural injustice on admission		Negative affective reactions to hospitalisation on admission		Total score on the MacArthur Admission Experience Survey (AES) on admission ^a	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Gender	-0.728	0.040	-0.562	0.123	-0.550	0.015	-0.226	0.527	-2.066	0.049
Age	-0.020	0.157	-0.015	0.281	-0.013	0.148	-0.025	0.079	-0.073	0.078
Marital status	-0.093	0.658	-0.082	0.705	-0.131	0.328	-0.096	0.654	-0.401	0.518
Place of birth	-0.707	0.144	-0.249	0.617	-0.095	0.758	-1.834	<0.001	-2.885	0.046
Employment status	-0.684	0.080	-0.534	0.185	-0.197	0.425	-0.893	0.026	-2.307	0.047
Admission status ^b	1.941	<0.001	1.769	<0.001	0.787	0.008	0.663	0.157	5.160	<0.001
Length of hospital stay at time of assessment	0.004	0.173	0.004	0.226	0.002	0.242	-0.005	0.141	0.006	0.531
Diagnosis	0.087	0.606	-0.043	0.806	-0.106	0.327	0.086	0.619	0.024	0.961
Experienced seclusion (yes/no)	0.681	0.552	-0.742	0.530	1.134	0.122	-0.043	0.971	1.030	0.761
Experienced restraint (yes/no)	-1.424	0.193	0.048	0.966	-1.230	0.079	0.317	0.776	-2.289	0.480
Nursed in a 'high dependency unit'	0.640	0.404	0.085	0.914	-0.442	0.366	0.435	0.578	0.718	0.752
Positive symptom score ^c	0.032	0.049	0.047	0.006	0.019	0.066	0.011	0.516	0.109	0.025
Negative symptom score ^d	-0.002	0.923	-0.013	0.499	-0.034	0.006	0.026	0.188	-0.023	0.677
Cognition ^e	-0.113	0.119	-0.078	0.295	-0.115	0.014	0.002	0.975	-0.304	0.158
Level of functioning ^f	-0.013	0.374	-0.023	0.125	-0.017	0.076	0.002	0.885	-0.051	0.243
Constant	6.756	0.020	5.128	0.086	6.544	0.001	6.709	0.024	25.136	0.004
<i>r</i> ²	35.9%		37.8%		34.3%		26.5%		34.7%	
Model <i>p</i>	<0.001		<0.001		<0.001		0.012		<0.001	

Notes

^a The total score on the MacArthur Admission Experience Survey (AES) on admission was calculated by adding scores of each of the four subscales (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to psychiatric hospitalisation on admission).

^b Admission status refers to whether or not the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

^c Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

^d Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

^e Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

^f Measured using the Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994).

data collection methods and data protection legislation at participating hospitals does not permit us to establish how many patients were voluntarily and involuntarily admitted over the 30-month time-period of the study; research ethics approval for this study covers only data relating to those patients who consented to participate.

Other limitations include the facts that patients were interviewed during the course of their hospital admissions rather than immediately prior to discharge (because discharge dates could change at short notice); it was not possible to recruit consecutive admissions to this study, possibly resulting in selection bias (although the likely direction of such bias is not clear); and this study was based in mixed urban and suburban areas of Dublin city and therefore might not be generalisable to other settings (such as rural areas).

Purposive sampling was used in this study, and, while widely used in order to identify participants who are willing to participate and able to communicate their experiences, this approach also has limitations, such as increasing potential for bias and reducing generalisability (Palinkas et al., 2015). In particular, the self-report nature of elements of this study present the possibility of recall bias, as this study took place during acute hospital admission and patients tend to over-report symptoms that correspond to current illness (Schmier & Halpern, 2014). In addition, patients in this study retrospectively reported their perceptions of coercion during admission; their views might have been different at the time of admission, especially if seclusion and restraint were used following admission and before participation in the study.

Future studies could usefully include larger sample sizes with greater statistical power than our sample. In particular, studies with greater statistical power and greater sample size could preferentially include more patients with involuntary status. Future studies could also usefully focus on some of the borderline statistically significant findings in our work; i.e. the borderline statistically significant associations we found between AES total score and birth in Ireland, being employed and female gender. There merit closer study.

4.3. Comparison with previous studies

The associations that we identify between perceived coercion on admission and involuntary status are consistent with much of the literature on this topic (Bindman et al., 2005; Cascardi & Poythress, 1997; Fiorillo et al., 2012). Many voluntary patients, however, also experience varying levels of coercion. Previous studies have shown that voluntary patients who are treated on secure or locked wards, as well as individuals who are brought to hospital under an involuntary admission order and subsequently agree to remain voluntarily (in some studies termed 'coerced voluntaries') are more likely to report high levels of perceived coercion (O'Donoghue et al., 2014). Other studies in both public and private (i.e. fee-paying) facilities have yielded results similar to our study (e.g. O'Donoghue, Lyne, Hill, O'Rourke, et al., 2011), although further work is still needed, ideally including studies specifically designed and adequately powered to identify differences between patient experiences in public and private psychiatric facilities (if any such differences exist).

Different data gathering techniques in different countries make cross-national comparisons challenging in this field. One study in India, however, found that physical restraint was particularly associated with higher perceived coercion (Gowda et al., 2018). More work is needed in this area, however, as legal frameworks, psychiatric practices and the definition of terms such as 'physical restraint' differ significantly between jurisdictions.

The relationship we identify between perceived coercion on admission and female gender merits close examination. There are limited data available on perceived coercion and gender, although a relationship has previously been identified (Fiorillo et al., 2012). In fact, the use of coercive measures including restraint and seclusion has been variably associated with both male (Carpenter, Hannon, McCleery, & Wandersling, 1988; Lay et al., 2011) and female genders (Mason, 1998; Salib, Ahmed, & Cope, 1998) in some previous studies, with yet other studies

failing to identify any gender pattern (Kalisova et al., 2014; Wynn, 2006).

The association we identify between perceived negative pressures on admission and positive symptoms of schizophrenia is also consistent with much of the literature on this topic. Higher levels of positive psychotic symptoms have previously been associated with use of coercive measures (Fiorillo et al., 2012; Kalisova et al., 2014), although there are limited data available linking these with perceived negative pressures. Previous studies have shown that individuals who felt coerced during admission were found to have experienced more negative pressures, and that hallucinations and bizarre behaviour are the symptoms most linked with perceived coercion (O'Donoghue et al., 2014). A significant association between negative pressures and perceived coercion has also been noted (Cascardi & Poythress, 1997; Iversen, Høyer, Sexton, & Grønli, 2002; Lidz et al., 1995).

We identify significant associations between perceived procedural injustice on admission and fewer negative symptoms of schizophrenia, involuntary status, cognitive impairment and female gender. These associations likely reflect the diversity of factors that shape perceptions of justice among psychiatry inpatients, including difficulties with engagement owing to negative symptoms, involuntary admission status and impaired cognitive ability to understand complex legal and medical processes. Again, the role of gender merits particular consideration in this context, owing to the limited literature available on differences in perceived coercion between males and females. Further work is needed.

We also report that negative affective reactions to hospitalisation on admission are significantly associated with birth in Ireland and being employed. These findings might reflect different expectations of hospital admission, especially among people whose work-life is disturbed first by mental illness and then by admission for inpatient care. These relationships clearly merit further examination, ideally using a more nuanced approach to assessing place of birth than the method used in this study, which (owing to limitations in source data) simply recorded if a person was born in Ireland or born elsewhere. This is an issue that merits more fine-grained examination before firm conclusions can be drawn.

It is interesting that there was no association between perceived coercion on admission, negative pressures on admission, perceived procedural injustice on admission, affective reactions to hospitalisation on admission, or total AES score on admission, on the one hand, and patient experience of seclusion or restraint during the admission, on the other hand. It is, of course, likely that perceived coercion would increase after episodes of seclusion and restraint, but it is nonetheless interesting that we found that perceived coercion on admission (even when assessed in retrospect by the patient) is *not* correlated with the use of such coercive measures.

One might imagine that patients who had experienced seclusion or restraint would, in retrospect, report higher levels of perceived coercion on admission. We did not find this to be the case, but future studies would ideally measure perceived coercion on admission *and* later in the hospital stay, after seclusion and restraint have occurred, in order to track changes in patterns of perceived coercion over time and in response to specific coercive measures.

5. Conclusions

Our results show that perceived coercion on admission, assessed by the patient in retrospect, is more closely associated with involuntary status and symptoms than it is with subsequent formal coercive practices, such as seclusion and restraint, which were the primary variables of interest at the start of this study (O'Donoghue, Lyne, Hill, O'Rourke, et al., 2011). While the relevance of these practices should not be overlooked and all effort should be made to minimise or eliminate them, our data suggest that other factors (such as admission status and symptoms) play decisive roles in shaping perceptions of coercion and procedural injustice in psychiatry inpatient settings, independent of the

impact of seclusion and restraint.

Finally, it is worth remembering that the variables examined in our study account for approximately one third of the variance in perceived coercion on admission among psychiatry inpatients. Further work is needed to explain the remaining two-thirds of this variance, which may relate to contextual factors, such as the physical environment of hospitals, rather than patient factors. The role of gender also merits particular attention in future research, especially in relation to perceived coercion on admission and procedural injustice on admission.

Declaration of Competing Interest

There is no conflict of interest to declare.

Acknowledgements

The authors are very grateful to all the staff who cooperated with this study and all the patients who took part. The authors are most grateful to the editor and reviewers for their comments and suggestions.

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Appendix XIV

International Journal of Law and Psychiatry 81 (2022) 101777



Contents lists available at ScienceDirect

International Journal of Law and Psychiatry

journal homepage: www.elsevier.com/locate/ijlawpsy

The association between objective necessity for involuntary treatment as measured during admission, legal admission status and clinical factors in an inpatient psychiatry setting

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ARTICLE INFO

Keywords:

Perceived coercion
 Psychiatry
 Involuntary treatment
 Compulsory treatment checklist

ABSTRACT

Involuntary psychiatric admission is a common feature of mental health services around the world, but there is limited research about tools to support clinical assessment of objective necessity for compulsory care. Our study aimed to determine the relationships between objective necessity for involuntary treatment as measured by the Compulsory Treatment Checklist (CTC), legal admission status (voluntary or involuntary) and various clinical parameters (e.g. symptoms, insight) in an Irish inpatient psychiatry setting. The CTC is relatively new tool, developed and described by [Brisso et al. \(2017\)](#) in Portugal and designed to evaluate the necessity for compulsory treatment; its total score ranges from 0 to 50 (with higher scores indicating greater need for involuntary care). In our study, we used validated tools, including the CTC, to perform detailed assessments of 107 adult patients admitted to the acute psychiatry inpatient units of two general hospitals in Dublin, Ireland over a 30-month period. The most common diagnoses were affective disorders (46.7%), schizophrenia and related disorders (27.1%), and personality and behavioural disorders (11.2%). Over a quarter (27.1%) of patients had involuntary legal status. Higher CTC scores were significantly and independently associated with involuntary status ($p < 0.001$), more positive symptoms of schizophrenia ($p < 0.001$), and younger age ($p = 0.031$). The original Portuguese study of the CTC identified an optimal cut-off score of 23.5, which detected compulsory treatment with a sensitivity of 75% and specificity of 93.6% in that sample. In our sample, the optimal cut-off score was 16.5, which detected compulsory treatment with a sensitivity of 82.8% and specificity of 69.2%. We conclude that the CTC is a useful tool not only in Portugal but in other countries too, and that its performance will likely vary across jurisdictions, resulting in different optimal cut-off scores in different countries.

1. Introduction

Involuntary psychiatric admission is a common feature of mental health services around the world ([Kelly et al., 2015](#)), but there are very few tools to support clinical assessment of objective necessity for involuntary care. This is an important issue, owing to the deprivation of liberty involved in compulsory treatment. In addition, the 2013 report of the United Nations (UN) Special Rapporteur for the Prevention of Torture noted that severity of mental illness alone is not sufficient to justify detention, and that any detention or non-consensual psychiatric treatment should be necessary to protect the safety of the person or of others ([United Nations General Assembly, 2013](#)).

The importance of this issue is underlined by the fact that rates of

involuntary admission vary significantly between countries, with one large comparative study showing rates ranging from 14.5 involuntary admissions per 100,000 population per year in Italy to 282 in Austria ([Sheridan Rains et al., 2019](#)). This study found that these variations are, for the most part, unexplained, despite higher rates being associated with lower rates of absolute poverty, higher gross domestic product and healthcare spending per capita, higher proportions of foreign-born individuals in a population, and larger numbers of inpatient beds. There is also evidence that rates of involuntary hospitalisation vary between countries which allow such admissions on the basis of need for treatment and countries which require justification on grounds of risk ([De Stefano & Ducci, 2008](#)).

Overall, however, most of the variation in rates of involuntary

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<https://doi.org/10.1016/j.ijlp.2022.101777>

Received 12 October 2021; Received in revised form 17 December 2021; Accepted 8 January 2022

Available online 17 January 2022

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admission across jurisdictions remains unexplained, confirming the need to better understand the factors that shape perceived necessity for compulsory treatment (Salize & Dressing, 2005). While previous studies have emphasised clinical and socio-demographic characteristics linked with involuntary care (Lorant, Depuydt, Gillain, Guillet, & Dubois, 2007), there has been insufficient examination of the variables that drive the decision process of compulsory admission and thus determine rates (Kallert et al., 2011).

Differences in mental health legislation across jurisdictions could potentially complicate this area of study, but Sheridan Rains et al. (2019) report that characteristics of legislative systems appear unrelated to involuntary hospitalisation rates. This suggests that this topic is amenable to study across jurisdictions, although there are still very few clinical tools that attempt to understand and objectively assess the necessity for compulsory care in any country, let alone internationally. Such tools could potentially help to identify key factors driving involuntary admission rates in different jurisdictions and help standardise practices across clinical settings.

One such tool, the Compulsory Treatment Checklist (CTC), was recently developed and described by Brissos et al. (2017) in Portugal. The CTC is a 25-item, observer-rated checklist that aims to assess the necessity for involuntary psychiatric treatment, based on relevant legal factors, danger items, historic factors, and cognitive factors. CTC total scores range from 0 to 50, with higher scores indicating greater need for involuntary care. Brissos et al. (2017) identified an optimal cut-off score of 23.5, which detected compulsory treatment with a sensitivity of 75% and specificity of 93.6%. This tool has not, however, been studied outside Portugal to date and we were unable to find evidence of its use outside of a Portuguese setting.

Against this background, our study aims to assess the usefulness of the CTC in a different jurisdiction (Ireland), and to determine the relationships, if any, between objective necessity for involuntary treatment (measured using the CTC) and legal admission status, as well as various clinical parameters (such as symptoms and insight), among adult psychiatry inpatients in Ireland.

2. Method

2.1. Design

This is a quantitative study, utilising semi-structured interviews to determine the relationships between CTC scores and other relevant variables. We preferentially selected involuntary patients for inclusion in our sample because involuntary admissions account for a minority (13%) of psychiatric admissions in Ireland, and the key variables of interest in this study are associated with involuntary status (Daly & Craig, 2019).

2.2. Setting and sampling

Both voluntary and involuntary psychiatry inpatients were included in this study. All study participants were aged 18 years or older, and were admitted to the acute psychiatry admission units in either Tallaght University Hospital or Connolly Hospital, two hospitals based in mixed urban and suburban areas of Dublin, Ireland over a 30-month period between September 2017 and February 2020. These inpatient units provide acute mental healthcare to adults, including both voluntary and involuntary patients under Ireland's Mental Health Act, 2001. Ireland's public mental health service is arranged geographically on a catchment-area basis, so all public (non-fee-paying) psychiatry admissions of people resident within the catchment areas of these hospitals must occur in these admission units.

Each patient included in this study must have been admitted to one of the two acute units during the study period; be aged 18 years or over; be proficient in the English language, and possess the decision-making capacity necessary to provide valid, written, informed consent. We

identified patients who fulfilled inclusion criteria by liaising with nursing staff in both research sites. Following receipt of written, informed consent, we interviewed all participating patients using a semi-structured interview which took place over approximately 40 min.

2.2.1. Study sample and clinical details

Details for each patient were recorded, including gender, date and place of birth, employment status, marital status, date of assessment and date of admission. We recorded each patient's admission status (voluntary or involuntary) under the Mental Health Act, 2001. We used the World Health Organisation's (WHO) *International Classification of Mental and Behavioural Disorders (ICD-10)* (World Health Organisation, 1992) to record clinical diagnoses.

We assessed the cognitive function of each patient using the Mini Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975). The MMSE is a tool that was developed as a screening test to quantify cognitive impairment. It comprises 11 questions covering five areas of cognitive function (language, delayed recall, attention/concentration, immediate memory and orientation), providing a total MMSE score that can range between 0 and 30. Examination of the psychometric properties of the MMSE shows moderate-to-high levels of reliability when a score of 23 or lower is used to indicate cognitive impairment (Tombaugh & McIntyre, 1992). This scale was chosen due to these psychometric properties and because alternative scales such as the Montreal Cognitive Assessment (MoCA) were deemed to be over-inclusive for the scope of this study.

The Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984) and Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983) were used to assess symptoms of schizophrenia. The SAPS consists of 30 items divided into four categories: hallucinations (6 items), bizarre behaviour (4 items), delusions (12 items), and positive formal thought disorder (8 items). Each of these items is rated on a 6-point scale with scores ranging from 0 to 5, yielding a total SAPS score ranging between 0 and 150. The SANS consists of 20 items divided into five categories: attention (2 items), anhedonia/asociality (4 items), avolition/apathy (3 items), alogia (4 items), and affective blunting (7 items), each of which is rated on a 6-point scale ranging from 0 to 5, providing a total SANS score that can range between 0 and 100. For both of these scales, a higher score is associated with more symptoms.

2.2.2. Therapeutic alliance

We assessed each patient's therapeutic alliance with their consultant psychiatrist and treating team using the Working Alliance Inventory – Short Revised (WAI-SR), a 12-item self-report questionnaire that assesses three key aspects of the therapeutic alliance, each of which comprises a 4-item subscale: agreement on tasks of therapy, agreement on the goals of therapy, and development of an affective bond. The WAI-SR was developed by Horvath and Greenberg (1989) and is validated in both inpatient and outpatient settings (Busseri & Tyler, 2003; Hatcher & Gillaspay, 2006). Each item is rated on a seven-point Likert scale ranging from 1 to 7 (1: 'never'; 2: 'rarely'; 3: 'occasionally'; 4: 'sometimes'; 5: 'often'; 6: 'very often'; and 7: 'always'), with two items in the goals of therapy subscale (4 and 10) reverse scored. Each of the three subscale scores ranges from 4 to 28, and total score ranges from 12 to 84, with higher scores indicating a better therapeutic alliance (Munder, Wilmers, Leonhart, Linster, & Barth, 2010).

2.2.3. Insight

The eight-item self-report Birchwood Insight Scale was used to measure insight (Birchwood et al., 1994). This scale has construct validity in both schizophrenia spectrum and bipolar disorders (Büchmann et al., 2019). The Insight Scale assesses three dimensions of insight: ability to re-label symptoms, awareness of mental illness, and recognition of a need for treatment. It comprises eight items, each rated on a three-point scale ranging from 0 to 2. Added together, these yield a total score that ranges from 0 to 16, with a higher score indicating better

insight. A score of 0 to 8 indicates no insight; 9 to 11 indicates good insight, and 12 to 16 indicates full insight. Scoring can be broken down into three subscales, with items 1 and 8 added to generate a score for 'awareness of symptoms' (0–4); items 2 and 7 added to generate a score for 'awareness of illness' (0–4), and items 3 to 6 added together and then divided by 2 to generate a score for 'need for treatment' (0–4). For each of these subscales, a score of 1 or 2 indicates poor insight, and a score of 3 or 4 indicates good insight.

2.2.4. Necessity for involuntary psychiatric treatment

The CTC was used to evaluate the necessity for involuntary psychiatric treatment (Brissos et al., 2017). This checklist comprises 25 items identified as relevant to involuntary treatment, with four item clusters: legal, danger, historic and cognitive. It is a psychometrically oriented evaluation of the need for compulsory psychiatric treatment that has been shown to be appropriate for use in the emergency setting, inpatient ward or outpatient consultations.

The CTC legal cluster evaluates factors that commonly must be present by law to validate detention: serious mental disorder; imminent or short term danger; absence of treatment, which can result in significant deterioration; refusal to submit to necessary medical treatment, but lack of discernment required to evaluate the meaning and implications of non-consent; and creation of danger to legally protected rights of relevant value.

The CTC danger cluster evaluates factors commonly referred to in the literature as being associated with dangerous situations, thus leading to risk of violence. History of violence, anti-social behaviours, impulsiveness, anti-social personality traits, and anti-social cognitions are all included due to their predictive value for violence.

The CTC historic cluster address past evidence of non-adherence with treatment and supervision failure, as well as substance misuse (due to its association with violent behaviour).

The CTC cognitive cluster addresses cognitive factors that can interfere with a patient's ability to decide about treatment, including insight, understanding of information, psychotic symptoms, and the behavioural and affective impact of symptomatology, owing to the importance of all of these factors in shaping decisions about involuntary care.

Each item in the CTC is recorded as 'absent' (0), 'possible' (1), or 'present' (2). As a result, total CTC scores range from 0 to 50, with a higher score indicating a higher probability that the patient needs and would benefit from involuntary psychiatric treatment. In the original Portuguese study, the optimal CTC total cut-off score of 23.5 (out of 50) had a sensitivity of 75% and a specificity of 93.6% in detecting compulsory treatment.

2.3. Analysis

We stored patient data on a password-protected research computer in a locked research office. All data were anonymised and encrypted, and were stored, described and analysed using IBM SPSS Statistics (Version 27).

Data were normally distributed except where specified otherwise. For bi-variable analysis, we used the Student *t*-test, Pearson Chi-square test, Mann Whitney *U* test, Pearson correlation coefficient and Spearman correlation coefficient where appropriate. Receiver operating characteristic (ROC) curve analysis was used to calculate a new optimum cut-off point. The ROC curve is a widely used method when figuring out a diagnostic test's accuracy and a cut-off point of the test. This analysis draws a plot of sensitivity (true positive rate) by 1-specificity (false positive rate) at every test value in order to determine the test value where the sensitivity and specificity are highest as the cut-off point (Zweig & Campbell, 1993).

To investigate correlates of total CTC score, we generated a linear regression model with total CTC score as the dependent variable. Independent variables were demographic and clinical characteristics shown

in Table 3. We tested the model for multicollinearity, which is when two or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, we calculated a 'tolerance value' for each independent variable; tolerance values below 0.10 would indicate significant problems with multicollinearity (Katz, 1999).

2.4. Ethics

This study was approved by the Research Ethics Committees covering Tallaght University Hospital and Connolly Hospital, Blanchardstown, Dublin, prior to commencement. Our study was performed in accordance with appropriate data protection legislation and the Declaration of Helsinki (World Medical Association, 2008). Written, informed consent was obtained from each participant prior to participating in the study.

3. Results

3.1. Study sample

Our study sample included 107 adult psychiatry inpatients, of whom 29 (27.1%) had involuntary legal status for some or all their time in hospital. Fifty-nine patients (55.1%) were male and 48 (44.9%) were female. Almost two-thirds of patients were never married ($n = 69$; 54.5%); 17 (15.9%) were separated or divorced; 15 (14%) were married, and six (5.6%) were widowed. Majorities were unemployed ($n = 79$; 73.8%) and born in Ireland ($n = 89$; 83.2%). These proportions did not differ between the two hospital sites; i.e. Connolly Hospital ($n = 76$; 71.0%) and Tallaght University Hospital ($n = 31$; 29.0%) ($p > 0.05$ in all cases). Mean age was 43.3 years (standard deviation [SD]: 15.8).

At time of assessment, length of hospital stay was non-normally distributed (skewed to the right), with a median of 11 days (interquartile range [IQR]: 5–23). There were no significant differences found in length of stay between the two study sites. The most common diagnoses were affective disorders ($n = 50$; 46.7%), followed by schizophrenia and related disorders ($n = 20$; 27.1%), behavioural and personality disorders ($n = 12$; 11.2%), substance use disorders ($n = 9$; 8.4%) and neuroses ($n = 7$; 6.5%).

3.2. Clinical variables

Nineteen patients (17.8%) scored 0 on the SAPS, indicating a lack of positive symptoms of schizophrenia. Eighty-eight patients (82.2%) scored at least 1 on the SAPS scale. SAPS total score was non-normally distributed (skewed to the right), with a median of 8.0 (IQR: 1.0–17.0). Twenty-three patients (21.5%) scored 0 on the SANS, indicating a lack of negative symptoms of schizophrenia. Eighty-four patients (78.5%) scored at least 1 on the scale. SANS total score was non-normally distributed (skewed to the right), with a median of 7.0 (IQR: 1.0–15.0). MMSE score was non-normally distributed (skewed to the left) with a median of 28 (IQR: 27–30). Eight patients (7.5%) scored 23 or lower on the MMSE, indicating cognitive impairment.

3.3. Compulsory treatment checklist

CTC total score was non-normally distributed (skewed to the right). Involuntary patients had higher median CTC total scores than voluntary patients (median CTC total score for involuntary patients: 26.0; IQR: 18.0–34.0; median CTC total score for voluntary patients: 11.0; IQR: 7.0–20.0; mean ranks: 79.5 vs 44.5, respectively; Mann-Whitney $U = 391.5$, $p < 0.001$). Involuntary patients had higher scores on the legal, history and cognitive clusters of the CTC ($p < 0.001$), but not the danger cluster (Table 1).

In the original Portuguese study of the CTC, the optimal cut-off point of 23.5 had a sensitivity of 75% and specificity of 93.6% in detecting

Table 1
Median scores on the Compulsory Treatment Checklist (CTC).

	Involuntary	Voluntary	Mann Whitney U	p-value
CTC total ¹	26.0 (IQR:18.0–34.0)	11.0 (IQR:7.0–20.0)	391.5	<0.001
CTC legal cluster ²	8.0 (IQR:5.0–10.0)	4.0 (IQR:3.0–5.0)	305.0	<0.001
CTC danger cluster ³	2.0 (IQR:1.0–5.0)	2.0 (IQR:0.0–4.0)	956.0	0.212
CTC history cluster ⁴	4.0 (IQR:2.0–6.0)	2.0 (IQR:0.0–4.0)	577.0	<0.001
CTC cognitive cluster ⁵	12.0 (IQR:4.0–14.0)	2.0 (IQR:2.0–7.0)	421.0	<0.001

Notes

CTC: Compulsory Treatment Checklist (Brissos et al., 2017).

IQR: Inter-quartile range.

¹ Total scores range from 0 to 50, with a higher score indicating a higher probability that the patient needs and would benefit from involuntary psychiatric treatment.

² Total scores range from 0 to 12, with a higher score indicating a higher probability that factors that commonly must be present by law to validate compulsory detention are present.

³ Total scores range from 0 to 14, with a higher score indicating a higher probability that factors commonly referred to in the literature as being associated with dangerous situations, thus leading to a risk of violence, are present.

⁴ Total scores range from 0 to 8, with a higher score indicating a higher probability that evidence of non-adherence with treatment and supervision failure, as well as substance misuse (due to its association with violent behaviour), are present.

⁵ Total scores range from 0 to 16, with a higher score indicating a higher probability that cognitive factors that can interfere with the patient's ability to decide about treatment are present.

compulsory care (Brissos et al., 2017). In our sample, patients scoring above 23.5 had less insight, poorer therapeutic alliances and more positive symptoms of schizophrenia compared to those below the cut-off (Table 2), but this cut-off had a sensitivity of 51.7% and specificity of 85.9% in our sample. Analysing alternative cut-off points using a ROC curve, we identified an ideal cut-off point in our sample of 16.5, which had a sensitivity of 82.8% and specificity of 69.2%.

3.4. Multivariable analysis

On multi-variable analysis, higher CTC total scores were significantly and independently associated with involuntary status ($p < 0.001$), more

positive symptoms of schizophrenia ($p < 0.001$) and younger age ($p = 0.031$) (Table 3). This regression model accounted for approximately one half of the variance in CTC total score ($r^2=50.5\%$). The model attained statistical significance ($p < 0.001$). All tolerance values were greater than 0.10, indicating no significant problems with multicollinearity.

4. Discussion

4.1. Summary of results

Our study found that higher CTC total scores are significantly and independently associated with involuntary status, more positive symptoms of schizophrenia, and younger age in our Irish sample. This association with schizophrenia is unsurprising as previous studies of involuntary admissions in an Irish population have shown that schizophrenia group disorders are the most common diagnoses among involuntary patients (Cunningham, 2012; Feeney, Umama-Agada, Gilhooley,

Table 3
Multi-variable analysis of correlates of Compulsory Treatment Checklist (CTC) total score.

Variable	Standardised β	t	p
Admission status ¹	0.554	6.553	<0.001
Gender	0.029	0.378	0.706
Age	-0.213	-2.185	0.031
Marital status	-0.036	-0.386	0.700
Employment status	-0.018	-0.236	0.814
Place of birth	0.030	0.384	0.701
Length of hospital stay at time of assessment	0.000	0.000	1.000
Diagnosis	-0.074	-0.933	0.353
Positive symptom of schizophrenia ²	0.284	3.591	<0.001
Negative symptoms of schizophrenia ³	0.094	1.160	0.249
Cognition ⁴	-0.156	-1.899	0.061
Constant	-	1.846	0.068

Notes

Model r^2 50.5% ($p < 0.001$).

¹ Admission status refers to whether or not the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

² Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

³ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁴ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

Table 2
Correlates of Compulsory Treatment Checklist (CTC) total scores using different cut-off points.

Scale	CTC cut-off of 23.5 (out of 50) ¹				CTC cut-off of 16.5 (out of 50) ²			
	Mean rank of patients above cut-off (n = 26)	Mean rank of patients below cut-off (n = 81)	Mann- Whitney U	p value	Mean rank of patients above cut-off (n = 48)	Mean rank of patients below cut-off (n = 59)	Mann- Whitney U	p value
Insight ³	29.1	62.0	405.5	<0.001	36.08	68.58	556.0	<0.001
Therapeutic alliance ⁴	41.02	58.17	715.5	0.014	46.84	59.82	1072.5	0.031
Positive symptoms of schizophrenia ⁵	68.7	49.3	672.0	0.005	67.57	42.96	764.5	<0.001
Negative symptoms of schizophrenia ⁶	62.27	54.56	1008.0	0.742	55.36	52.89	1350.5	0.680
Cognition ⁷	50.71	55.06	967.5	0.527	55.97	52.40	1321.5	0.547

Notes

CTC: Compulsory Treatment Checklist (Brissos et al., 2017).

¹ The original study of the CTC identified an optimal CTC total cut-off score of 23.5 (out of 50) in Portugal (Brissos et al., 2017).

² Our study identified an optimal CTC total cut-off score of 16.5 (out of 50) in Ireland.

³ Measured using the Birchwood Insight Scale (Birchwood et al., 1994).

⁴ Measured using the Working Alliance Inventory - Short Revised (WAI-SR) (Horvath & Greenberg, 1989).

⁵ Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

⁶ Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁷ Measured using the Mini Mental State Examination (MMSE) (Folstein et al., 1975).

Asghar, & Kelly, 2019; Ng & Kelly, 2012), and this is also consistent with previous international studies (Corrigan & Bhugra, 2013; Hansson et al., 1999). However, previous studies in an Irish population have shown no difference between voluntary and involuntary patients in terms of age (Feeney et al., 2019; Ng & Kelly, 2012). In this context, further study of whether the factors measured within the CTC are disproportionately associated with younger age is worth considering.

The original Portuguese study of the CTC identified an optimal cut-off score of 23.5, which detected compulsory treatment with a sensitivity of 75% and specificity of 93.6% in that setting (Brissos et al., 2017). In our sample, the optimal cut-off score was 16.5, which detected compulsory treatment with a sensitivity of 82.8% and a specificity of 69.2%. In our sample, patients above these cut-off points (23.5 and 16.5) had less insight, poorer therapeutic alliances and more positive symptoms of schizophrenia, but while the cut-off point of 23.5 was optimal in Portugal, the cut-off point of 16.5 performed best in Ireland.

4.2. Strengths and limitations

Strengths of this study include the examination of a novel tool to assess the necessity for compulsory care (the CTC), the use of validated tools to measure other relevant clinical parameters (e.g. insight), the inclusion of a broad range of independent variables in our analysis, the use of multi-variable modelling to control for relevant co-variables, and our use of the CTC in a jurisdiction other than the one in which it was developed, in order to explore the potential cross-jurisdictional usefulness of this innovative tool.

Limitations include the fact that patients were interviewed at various different points during their hospital admissions rather than immediately following admission or immediately prior to discharge; this was necessary in order to recruit sufficient involuntary patients with capacity to consent to the study. Ideally, all patients would be interviewed either at the same stage during their admissions or at a defined time-point in order to enhance the power of this study. We controlled for any resultant bias by including length of stay at time of assessment in our multi-variable model. It was not possible to recruit consecutive admissions to this study, which might result in selection bias. While the likely direction of such bias is unclear, future work could usefully focus on consecutive admission samples.

As the sampling procedure for this study was largely convenience-based, this is a limitation of this study as it may lead to exclusion of more unwell patients and this may obscure the generalisability of findings. Unfortunately it is also a limitation of this study that we are not in a position to provide information about the clinical picture for patients who were approached and found to be ineligible, because ethical approval of this study only permits collection, analysis and publication of data pertaining to patients who were deemed eligible and then consented to participate. Finally, this study was based in mixed urban and suburban areas of Dublin city and therefore might not be generalizable to other settings (e.g. rural areas or other jurisdictions).

4.3. Comparison with previous studies

The CTC was designed to evaluate the necessity for compulsory psychiatric treatment and was initially evaluated in a Portuguese setting, with patients admitted under the Portuguese Mental Health Act (Law 36/98) (Brissos et al., 2017). While legislation and rates of involuntary treatment vary across jurisdictions (Kallert et al., 2011; Steinert et al., 2010), Sheridan Rains et al. (2019) suggest that characteristics of legislative systems appear unrelated to involuntary hospitalisation rates. Consistent with this, our findings suggest that the CTC can be usefully applied in Ireland and therefore possibly in other jurisdictions too, although certain aspects of its performance might vary between countries.

This is important because the literature on the objective assessment of need for involuntary admission is very limited. Various studies

examine associations between involuntary status and demographic and clinical parameters, including (but not limited to) agitation, aggression, being married, poor insight and low levels of general functioning (Braitman et al., 2014). In our study, too, poor insight was associated with involuntary status, but very few studies attempt to quantify the necessity for compulsory care (as the CTC does).

This reluctance might reflect the enormous variety and complexity of factors associated with involuntary treatment. For example, one retrospective study of patients in Brussels who were being considered for involuntary committal concluded that involuntary committal chiefly occurred due to the inability of the mental healthcare system to provide more demanding patients with alternative forms of care (Lorant et al., 2007). In that study, more than half of all requests for involuntary committal were turned down in favour of less restrictive alternatives, although alternative care was less available for psychotic individuals, foreigners, and patients not living in a private household.

These findings are consistent with a study from Norway which reported that immigrants from non-western countries may experience more compulsory treatments, although their referrals to psychiatric emergency departments were not more frequent than the indigenous Norwegian population (Berg & Johnsen, 2004). This study suggested that immigrants have greater difficulties presenting their psychiatric problems to general practitioners and might thus develop more severe symptoms before referral. In our study, higher CTC scores were not associated with place of birth but were associated with more positive symptoms of schizophrenia, consistent with this idea.

The CTC places considerable emphasis on apparent risk of violence, but it is notable that risk of violence is not consistently associated with involuntary admission across the published literature. One study of 1543 admissions to three Finnish psychiatric university hospitals found that a public threat did not play a crucial role in involuntary admission (Tuohimäki et al., 2003). Under the Finnish Mental Health Act 1990/1116 the preconditions for compulsory psychiatric hospital admission are that the individual suffers from a mental illness, or, if under 18, a serious mental disorder which necessitates treatment because leaving the condition untreated would result in worsening of the psychiatric condition and/or a threat to the health or safety of the individual him or herself and/or a threat to the health or safety of others and all other mental health services are inapplicable or inadequate. In this study, the predominantly male patients who were admitted under the criterion of 'potentially harmful to others' were not treated more frequently with coercive measures and their length of stay was similar to that of patients detained for other reasons.

Our results tend to support this finding, as the CTC danger subscale was the only subscale that did not differ between voluntary and involuntary patients. Under Irish legislation, danger to self or others can form part of the criteria for involuntary admission, but, as with the Finnish Mental Health Act, is not mandatory. In Ireland, an involuntary patient needs to have "mental illness, severe dementia or significant intellectual disability where (a) because of the illness, disability or dementia, there is a serious likelihood of the person concerned causing immediate and serious harm to himself or herself or to other persons, or (b) (i) because of the severity of the illness, disability or dementia, the judgment of the person concerned is so impaired that failure to admit the person to an approved centre would be likely to lead to a serious deterioration in his or her condition or would prevent the administration of appropriate treatment that could be given only by such admission, and (ii) the reception, detention and treatment of the person concerned in an approved centre would be likely to benefit or alleviate the condition of that person to a material extent" (Mental Health Act, 2001; Section 3 (1)).

In Portugal, criteria for involuntary admission and treatment are that a person is suffering from a serious mental disorder and by virtue of this condition represents a danger to him- or herself, or others, and refuses to submit to the necessary medical treatment, or that a person is suffering from a serious mental disorder and lacks the necessary capacity to

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evaluate the meaning and implications of consent and the absence of treatment could result in a significant deterioration of his or her condition (Law 36/98) (Almeida & Molodynski, 2016).

The differing criteria for compulsory admission across European Union member states is notable, with mandatory danger criterion in place for Austria, Belgium, France, Germany, Luxembourg and the Netherlands; danger criterion or need for treatment present in Denmark, Finland, Greece, Ireland, Portugal and the UK, and need for treatment only with no reference to danger criterion in Italy, Spain and Sweden (Dressing & Salize, 2004). The lack of compulsory dangerous criterion may impact the overall danger score and relevance of this section within the CTC, indicating potential modification required across different jurisdictions.

5. Conclusions

It is essential that clinicians aim to be objective in providing compulsory treatment for patients in order to limit the deprivation of liberty involved to those cases in which this is clearly justified. This objectivity can be difficult to achieve and tools which aim to support this decision-making process such as the CTC are a welcome addition. Our study has shown that this is a useful tool not only in Portugal but in Ireland too, although its performance will likely vary across jurisdictions, resulting in different optimal cut-off scores in different countries. It is likely that a study such as ours would need to be replicated across different jurisdictions in order to clarify these cut-off points. We found strong associations between involuntary status and the legal, historic and cognitive item-clusters in the CTC, but not the danger cluster.

Future work could usefully examine the performance of the CTC in other settings and, in particular, its performance in jurisdictions where apparent dangerousness is a mandatory criterion for compulsory care and jurisdictions where it is not. The tool might also possibly help identify an admission unit that was an outlier in terms of unnecessarily lengthy involuntary admission orders that might not score highly on the CTC. It is also essential that future studies of the CTC analyse the effects of the use of the CTC on compulsory admission decision-making in individual cases, and not only at group-level.

Acknowledgements

The authors are very grateful to the patients who took part in this study and the staff who facilitated it. The authors are most grateful to the editor and reviewers for their comments and suggestions.

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Research Article

Seclusion, Restraint, Therapeutic Alliance, and Legal Admission Status: What Really Matters?

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Objective: To determine the relationships, if any, between use of seclusion and restraint and factors such as demographic parameters, diagnosis, legal admission status (voluntary or involuntary), symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, and insight, among psychiatry inpatients in Ireland.

Methods: We used validated tools to perform detailed assessments of 107 adult psychiatry inpatients admitted to acute psychiatry units at 2 general hospitals in Dublin, Ireland over a 30-month period, between September 2017 and February 2020.

Results: The most common diagnoses in our sample were affective disorders (46.7%), schizophrenia and related disorders (27.1%), and personality and behavioral disorders (11.2%). Over a quarter (n = 29, 27.1%) of the participating patients had involuntary legal status. Of the 107 patients, 11 patients (10.3%) experienced sedation and/or physical restraint, with 9 patients (8.4%) experiencing at least 1 episode of seclusion and 10 patients (9.3%) experiencing at least 1 episode of physical restraint. On the basis of multivariable analyses, seclusion was associated with younger age and involuntary status, while physical restraint was associated with involuntary status. Each multivariable model explained just over one third of the variance in the distribution of these seclusion and restraint practices.

Conclusions: Use of seclusion and restraint was most strongly associated with involuntary admission status and, in the case of seclusion, younger age, rather than sex, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, or insight. The network of interactions between involuntary status and use of seclusion and restraint merits much closer attention, especially as use of seclusion and physical restraint appears to be associated with involuntary

legal status independent of level of symptoms, therapeutic alliance, or insight.

(*Journal of Psychiatric Practice* 2022;28:454–464)

KEY WORDS: seclusion, restraint, involuntary admission, therapeutic alliance, insight

Psychiatric patients who are involuntarily admitted to the hospital often experience seclusion, physical restraint, and mechanical restraint, in addition to their involuntary status. For example, on psychiatric wards in Finland in 2017, the most commonly used restrictive measure was seclusion, followed by involuntary medication, mechanical restraint, and physical (manual) restraint, with considerable variation between wards in the use of these measures.¹ On a male psychiatric ward in Israel, 31.3% of patients experienced restraint or seclusion, 98% of whom had been aggressive in the past.²

The effects of seclusion and restraint on therapeutic alliances require careful consideration, not least because a positive physician-patient working alliance is associated with improved patient satisfaction and greater adherence to treatment.³ The

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ACKNOWLEDGMENTS: The authors are grateful to all of the patients who took part and all of the staff who cooperated with this study, as well as to the editor and reviewers for their comments and suggestions.

The authors declare no conflicts of interest.

DOI: 10.1097/PRA.0000000000000665

SECLUSION, RESTRAINT, AND LEGAL ADMISSION STATUS

relationship between these practices and insight also merits attention, owing to continued uncertainty about the clinical correlates of involuntary admission; even relatively comprehensive models, which take into account a range of the most relevant clinical variables, still explain <50% of the variance in legal admission status.^{4,5}

The clinical correlates of seclusion and restraint also need further study.⁶ Interestingly, there is evidence that the last 2 decades have seen attitudes to these practices change significantly, at least among nurses, with attitudes shifting from a therapeutic paradigm, in which seclusion and restraint were seen to have positive effects on patients, to a safety paradigm, recognizing seclusion and restraint as undesirable but necessary for ward safety.⁷ The effect of such a shift has yet to be determined but might well be significant, as practices such as seclusion and restraint are relatively common.

In Ireland, the Mental Health Commission defines “seclusion” as “the placing or leaving of a person in any room alone, at any time, day or night, with the exit door locked or fastened or held in such a way as to prevent the person from leaving.”^{8(p17)} In 2018, there were 17,000 admissions to Irish psychiatric units and hospitals, of which 13% were involuntary.⁹ In that year, 760 patients were placed in seclusion a total of 1799 times.¹⁰ Two thirds of the patients who were secluded were male, and two thirds were under 40 years of age. Although some evidence suggests that low levels of insight are associated with the use of seclusion and restraint, the use of seclusion and restraint is generally underresearched.¹¹

The Mental Health Commission defines “physical restraint” as “the use of physical force (by 1 or more persons) for the purpose of preventing the free movement of a resident’s [patient’s] body when he or she poses an immediate threat of serious harm to self or others.”^{12(p14)} This involves the use of manual holds for safety or for the purpose of administering medication. In 2018, 1207 patients experienced physical restraint in Ireland a total of 5665 times.¹⁰ The use of physical restraint was essentially equally common among men and women, and 54% of those who were physically restrained were over 40 years of age.

The Mental Health Commission defines “mechanical means of bodily restraint” as “the use of

devices or bodily garments for the purpose of preventing or limiting the free movement of a patient’s body.”^{8(p17)} In 2018, there were <5 episodes of mechanical restraint in psychiatric units in Ireland, all within the National Forensic Mental Health Service, which was not part of this study.¹⁰ As a result, mechanical restraint is not considered any further in this paper.

Against this background, our study aimed to determine the relationships, if any, between use of seclusion and physical restraint and factors such as demographic parameters, diagnosis, legal admission status (voluntary or involuntary), symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, and insight among psychiatry inpatients in Ireland.

METHODS

Design

This study was quantitative in design and utilized semistructured interviews to determine the relationships between relevant variables. Involuntary admissions account for a minority (13%) of psychiatric admissions in Ireland but the key variables of interest in this study (seclusion and restraint) are associated with involuntary status.⁹ To allow for study of these variables, we included both voluntary and involuntary patients but preferentially selected patients who had been involuntarily admitted for inclusion in our sample. Enriching the sample with more involuntary patients permitted a greater focus on these variables of interest. We have previously examined perceived coercion on admission in this population.¹³

Setting and Sampling

Both voluntary and involuntary psychiatry inpatients were included in this study. All study participants were 18 years of age or older and were admitted to the acute psychiatry admission units in Connolly Hospital and Tallaght University Hospital in mixed urban and suburban areas of Dublin, Ireland over a 30-month period between September 2017 and February 2020. Both of these inpatient units provide acute mental healthcare to adults, including both voluntary and involuntary patients

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under Ireland's Mental Health Act, 2001. Ireland's public mental health service is arranged geographically on a strict catchment-area basis, meaning that all public (non-fee-paying) psychiatry admissions of people residing within the areas of these hospitals must occur in these admission units.

Each patient included in this study must have been admitted as an inpatient during the study period; be proficient in the English language; be 18 years of age or older; and possess decision-making capacity to provide valid, written, informed consent.

Patients who fulfilled criteria for inclusion in the study were identified by approaching nursing staff at both research sites. After written informed consent was obtained, we interviewed all participating patients using a semistructured interview that lasted ~40 minutes.

Study Sample and Clinical Details

Details concerning each patient were recorded, including sex, employment status, marital status, place and date of birth, date of admission, and date of assessment. We recorded each patient's admission status under the Mental Health Act, 2001 and whether or not the patient had experienced seclusion and/or restraint during the admission to date. The World Health Organization's *International Statistical Classification of Diseases and Related Health Problems, 10th Edition*¹⁴ was used to record clinical diagnoses.

The Scale for the Assessment of Negative Symptoms (SANS)¹⁵ and the Scale for the Assessment of Positive Symptoms (SAPS)¹⁶ were used to assess symptoms of schizophrenia. The SANS consists of 20 items divided into the 5 domains of attention (2 items), anhedonia/asociality (4 items), avolition/apathy (3 items), alogia (4 items), and affective, blunting (7 items), each of which is rated on a 6-point scale ranging from 0 to 5, providing a total SANS score that can range between 0 and 100. The SAPS consists of 30 items divided into the 4 domains of hallucinations (6 items), bizarre behavior (4 items), delusions (12 items), and positive formal thought disorder (8 items), each rated on a 6-point scale with scores ranging from 0 to 5, yielding a total SAPS score ranging between 0 and 150. On both of these scales, a higher score represents a greater number of symptoms.

The cognitive function of each patient was assessed using the Mini-Mental State Examination (MMSE).¹⁷ The MMSE is a tool that was developed as a screening test that quantifies cognitive impairment. It consists of 11 questions covering 5 areas of cognitive function (language, delayed recall, attention/concentration, immediate memory, and orientation), providing a total MMSE score that can range between 0 and 30. Examination of the psychometric properties of the MMSE has shown moderate-to-high levels of reliability when a score of 23 or lower is used to indicate cognitive impairment.¹⁸

The Global Assessment of Functioning (GAF) was used to assess patients' level of functioning. The GAF is a numeric scale with scores ranging from 1 to 100, with higher scores indicating better functioning.¹⁹ This widely used rating scale assesses 3 dimensions of functioning: occupational, social, and psychological.²⁰

Therapeutic Alliance

The patient's therapeutic alliance with the consultant psychiatrist was assessed using the Working Alliance Inventory-Short Revised (WAI-SR), a 12-item self-report questionnaire that assesses 3 key aspects of the therapeutic alliance: agreement on tasks of therapy (*task*; 4 items), agreement on the goals of therapy (*goal*; 4 items), and development of an affective bond (*bond*; 4 items). Developed by Horvath and Greenberg,²¹ the WAI-SR has been validated in both inpatient and outpatient settings.^{22,23} Each item is rated on a 7-point Likert scale ranging from 1 to 7 (1 = never, 2 = rarely; 3 = occasionally; 4 = sometimes; 5 = often; 6 = very often; 7 = always). As a result, each of the 3 subscale scores ranges from 4 to 28, and total score ranges from 12 to 84, reflecting the strength of the therapeutic alliance.²⁴

Attitudes Toward Medication and Medication Compliance

Patients' negative attitudes toward prescribed medication are one of the strongest contributors to nonadherence, and a positive attitude toward psychopharmacological treatment is associated with a lower risk of re-hospitalization.²⁵ We assessed attitudes toward medication and medication adherence using the Drug Attitude Inventory (DAI), a self-report, true/false questionnaire comprising 30 statements about perceived effects of medication.²⁶

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This tool was created to measure attitudes toward medications in adults and predicts adherence in schizophrenia and depression.^{27,28}

The DAI consists of 15 statements that a patient who adheres to medications is likely to answer as “True” and 15 statements that the same patient is likely to answer as “False.” Each statement that is answered positively is given a score of +1 and each statement that is answered negatively is given a score of -1. The total score is calculated as the sum of positive scores minus the negative scores. This generates a total score ranging from -30 to +30. A positive total score indicates adherence, and a negative total score indicates nonadherence.

Insight

Insight has previously been defined as being composed of 3 distinct dimensions: the recognition that one has a mental illness, adherence with treatment, and the ability to re-label unusual mental events (eg, delusions and hallucinations) as pathological. Insight was measured with the 8-item self-report Birchwood Insight Scale.²⁹ This scale has demonstrated construct validity in patients with both schizophrenia spectrum and bipolar disorders.³⁰ The scale assesses the 3 recognized dimensions of insight: ability to re-label symptoms/unusual mental events (eg, delusions and hallucinations) as pathological, awareness of mental illness, and recognition of a need for treatment. The 8 items are each rated on a 3-point scale ranging from 0 to 2. Added together, these yield a total score that ranges from 0 to 16, with a higher score indicating better insight. A score of 0 to 8 indicates no insight; 9 to 11 indicates good insight, and 12 to 16 indicates full insight.

The scoring of the Birchwood Insight Scale can be broken down into 3 subscales, with items 1 and 8 added to generate a score for “awareness of symptoms” (0 to 4); items 2 and 7 added to generate a score for “awareness of illness” (0 to 4), and items 3 to 6 added and divided by 2 to generate a score for “need for treatment” (0 to 4). For each of these subscales, a score of 1 or 2 indicates poor insight and a score of 3 or 4 indicates good insight.

Analysis

Patient data were stored on a password-protected research computer in a locked research office. All

data were anonymized and encrypted, and were stored, described, and analyzed using IBM SPSS Statistics, Version 27.

For bivariable analyses, we used the Student *t* test, χ^2 test, and Mann-Whitney *U* test, as appropriate. For multivariable analyses of correlates of seclusion and physical restraint, we generated 3 binary logistic regression models with seclusion (yes/no) and physical restraint (yes/no) as the dependent variables, in addition to a third model with either seclusion or physical restraint (yes/no) as the dependent variable. Demographic and clinical characteristics associated with the dependent variables on bivariable testing were entered as independent variables in the regression models. We tested each regression model for multicollinearity, which is when 2 or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, we calculated a “tolerance value” for each independent variable; tolerance values <0.10 were considered to indicate significant problems with multicollinearity.³¹ We calculated the *r*² value for each model to determine the explanatory power of each model.

Ethics

This study was approved by the Research Ethics Committees covering Tallaght University Hospital and Connolly Hospital, Blanchardstown, Dublin, before the study began. The study was performed in accordance with appropriate data protection legislation and the Declaration of Helsinki.³² Written informed consent was obtained from each participant before participating in the study.

RESULTS

Study Sample

The study sample included 107 patients, 29 of whom (27.1%) had involuntary legal status for some or all of their time in hospital. Fifty-nine patients (55.1%) were male and 48 (44.9%) were female. Almost two thirds of the patients were never married (*n* = 69; 64.5%); 17 (15.9%) were separated or divorced, 15 (14%) were married, and 6 (5.6%) were widowed. The majority of the patients were

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TABLE 1. Background Characteristics of the Seclusion and/or Restraint Group Versus the Control Group

Variables	n (%)		χ^2	P
	Seclusion and/or Restraint (N = 11)	No Seclusion or Restraint (N = 96)		
Sex				
Female	6 (54.5)	42 (43.8)	0.495	0.537
Male	5 (45.5)	54 (56.3)		
Marital status				
Never married	9 (81.8)	60 (62.5)	0.205	0.321
Ever married	2 (18.2)	36 (37.5)		
Place of birth				
Ireland	6 (54.5)	83 (86.5)	0.007	0.019
Not Ireland	5 (45.5)	13 (13.5)		
Employment status				
Employed	1 (9.1)	27 (28.1)	0.174	0.282
Unemployed	10 (90.9)	69 (71.9)		

unemployed (n = 79; 73.8%) and born in Ireland (n = 89; 83.2%) (Table 1). These proportions did not differ between the 2 hospital sites (Connolly Hospital n = 76, 71.0% of the sample and Tallaght University Hospital n = 31, 29.0% of the sample) ($P > 0.05$ in all cases). The mean patient age was 43.3 years (SD: 15.8 y).

At the time of assessment, the length of hospital stay was non-normally distributed (skewed to the right), with a median of 11 days [interquartile range (IQR): 5 to 23 d]. The most common primary diagnoses were affective disorders (n = 50; 46.7%), followed by schizophrenia and schizophrenia-related disorders (n = 29; 27.1%), behavioral and personality disorders (n = 12; 11.2%), substance use disorders (n = 9; 8.4%), and neuroses (n = 7; 6.5%).

Nine patients (8.4%) had experienced at least 1 episode of seclusion at the time of inclusion in the study: 5 patients (4.7%) had experienced 1 episode of seclusion; 1 patient (0.9%) had experienced 2 episodes; 2 patients (1.9%) had experienced 3 episodes, and 1 patient (0.9%) had experienced 7 episodes. Ten patients (9.3%) had experienced at least 1 episode of physical restraint: 6 patients (5.6%) had experienced 1 episode of restraint; 1 patient (0.9%) had experienced 2 episodes; 1 patient (0.9%) had experienced 3 episodes; 1 patient (0.9%) had experienced 4 episodes, and 1 patient (0.9%) had experienced 10 episodes.

One patient (0.9%) experienced seclusion but not restraint; 2 patients (1.9%) experienced restraint

but not seclusion; 8 patients (7.5%) experienced both seclusion and restraint; and 96 patients (89.7%) experienced neither seclusion nor restraint. Owing to the substantial overlap between those who experienced seclusion and those who experienced restraint, these 2 groups were further analyzed as a single group, that is, we studied 2 groups: those who experienced seclusion, restraint, or both (n = 11) and those who experienced neither seclusion nor restraint (n = 96) (Table 1).

Ten patients (9.3%) were treated in psychiatric intensive care or in "high dependency units," and the remainder (n = 97; 90.7%) were treated in general acute psychiatric wards.

Clinical Variables

Twenty-three patients (21.5%) scored 0 on the SANS, indicating no negative symptoms of schizophrenia. Eighty-four patients (78.5%) scored at least 1 on the scale. SANS total scores were non-normally distributed (skewed to the right), with a median of 7.0 (IQR: 1.0 to 15.0). Nineteen patients (17.8%) scored 0 on the SAPS, indicating no positive symptoms of schizophrenia. Eighty-eight patients (82.2%) scored at least 1 on the scale. SAPS total scores were non-normally distributed (skewed to the right), with a median of 8.0 (IQR: 1.0 to 17.0). MMSE scores were non-normally distributed (skewed to the left) with a median of 28 (IQR: 27 to

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30). Eight patients (7.5%) scored 23 or lower on the MMSE, indicating cognitive impairment. The mean GAF score was 46.68 (SD: 14.47; range 20 to 80).

Therapeutic Alliance

WAI-SR total scores were non-normally distributed (skewed to the left), with a median of 66.00 (IQR: 51.00 to 74.00). The task subscale of the WAI-SR was non-normally distributed (skewed to the left), with a median of 22.00 (IQR: 16.00 to 27.00); the bond subscale was non-normally distributed (skewed to the left), with a median of 24.00 (IQR: 19.00 to 28.00), and the goal subscale was normally distributed, with a mean of 19.06 (SD: 5.57).

Attitudes Toward Medication and Medication Adherence

A majority of patients showed positive attitudes toward psychiatric medication on the DAI: 80 patients (74.8%) had positive total scores, indicating adherence with medications, while 27 (25.2%) had negative scores, indicating nonadherence or negative attitudes. Total scores were non-normally distributed (skewed to the left), with a median of 12.00 (IQR: -2.00 to +20.00).

Insight

Total scores on the Birchwood Insight Scale were non-normally distributed (skewed to the left), with a median of 14.00 (IQR: 8.00 to 16.00). Twenty-eight patients (26.2%) had no insight (scores between 0 and 8), 9 patients (8.4%) had good insight (scores between 9 and 11), and 70 (65.4%) had full insight (scores between 12 and 16). Scores on the awareness of symptoms subscale were non-normally distributed (skewed to the left), with a median of 3.00 (IQR: 2.00 to 4.00); scores on the need for treatment subscale were non-normally distributed (skewed to the left), with a median of 3.00 (IQR: 2.00 to 4.00), and scores on the awareness of illness subscale were non-normally distributed (skewed to the left), with a median of 4.00 (IQR 2.50 to 4.00). The mean total score on the Insight Scale of patients who were secluded and/or restrained did not differ from the mean total score of those who were not (1.91, SD: 0.94, vs. 2.45, SD: 0.86; $t = 1.81$, $P = 0.095$).

Correlates of Seclusion

The mean age of patients who were secluded ($n = 9$) was lower than the mean age of those who were not secluded (30.22 y, SD: 10.58, vs. 44.55 y, SD: 15.66; $t = 3.71$, $P = 0.003$). Patients who were secluded did not differ from those who were not secluded in terms of sex (55.6% male vs. 55.1% male, respectively; $\chi^2 = 0.001$, $P = 1.000$), proportion who were never married (77.8% vs. 63.3%; $\chi^2 = 0.758$, $P = 0.487$) or proportion who were employed (11.1% vs. 27.6%; $\chi^2 = 1.153$, $P = 0.440$).

The proportion of patients who were born in Ireland and were secluded was lower than the proportion who were not born in Ireland and were secluded (5.6% vs. 22.2%; $\chi^2 = 5.358$, $P = 0.042$). The proportion of patients who were voluntary and were secluded was lower than the proportion who were involuntary and were secluded (2.6% vs. 24.1%; $\chi^2 = 12.772$, $P = 0.001$). (When a voluntary patient is secluded in emergency circumstances, a process is begun to change the patient's status to involuntary.)

Patients who were secluded did not differ from those who were not secluded in terms of diagnosis (substance use disorders: 11.1% vs. 8.2%; schizophrenia group: 33.3% vs. 26.5%; affective disorders: 33.3% vs. 48.0%; neuroses 0% vs. 7.1%; and personality and behavioral disorders: 22.2% vs. 10.2%; $\chi^2 = 2.308$; $P = 0.679$), SANS scores (mean rank: 42.00 vs. 55.10; Mann-Whitney $U = 333.00$, $P = 0.223$), MMSE scores (mean rank: 57.22 vs. 53.70; Mann-Whitney $U = 470.00$, $P = 0.740$), WAI-SR total scores (mean rank: 48.50 vs. 54.51; Mann-Whitney $U = 391.50$, $P = 0.578$), or length of stay at time of assessment (mean rank: 61.72 vs. 53.29; Mann-Whitney $U = 510.50$, $P = 0.435$).

SAPS total scores were significantly higher among patients who were secluded than among those who were not secluded (mean rank: 73.72 vs. 52.19; Mann-Whitney $U = 618.50$, $P = 0.046$). A higher proportion of secluded patients also had negative DAI scores compared with patients who were not secluded (55.6% vs. 22.4%; $\chi^2 = 4.789$, $P = 0.043$). Total scores on the Birchwood Insight Scale were also significantly lower among patients who were secluded compared with among those who were not (mean rank: 30.22 vs. 56.18; Mann-Whitney $U = 227.00$, $P = 0.015$).

On multivariable analysis, seclusion was associated with younger age ($P = 0.023$) and involuntary

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TABLE 2. Multivariable Binary Logistic Regression Analyses of Correlates of Seclusion and Physical Restraint

Variables	Seclusion (N = 9)		Physical Restraint (N = 10)		Seclusion and/or Physical Restraint (N = 11)	
	B	P	β	P	B	P
Age (y)	-0.092	0.023	—	—	-0.59	0.062
Place of birth (Ireland or not Ireland)	0.967	0.268	1.330	0.092	0.968	0.227
Admission status*	2.658	0.017	2.156	0.021	2.979	0.005
Positive symptom†	0.003	0.934	0.043	0.156	0.027	0.417
Attitude to medication‡	1.671	0.213	-0.508	0.630	0.017	0.639
Insight§	-0.199	0.129	-0.017	0.887	-0.040	0.733
Constant	-5.101	0.109	-6.883	0.012	-5.672	0.034
r^2	44.2%		36.5%		43.3%	
Model P	<0.001		0.001		0.003	

*Admission status: whether or not the patient had involuntary status under Ireland's Mental Health Act, 2001, during their admission.

†Measured using the Scale for the Assessment of Positive Symptoms (SAPS).¹⁶ A higher score indicates a greater number of symptoms.

‡Measured using the Drug Attitude Inventory (DAI).²⁶ A positive total score indicates adherence, and a negative total score indicates nonadherence.

§Measured using the Birchwood Insight Scale.²⁹ A higher score indicates better insight.

status ($P = 0.017$) (Table 2). This regression model accounted for 44.2% of the variance in seclusion and attained statistical significance ($P < 0.001$). All tolerance values were > 0.50 , indicating no problems with multicollinearity.

Correlates of Physical Restraint

Patients who were physically restrained ($n = 10$) did not differ from those who were not physically restrained in terms of mean age (34.40 y, SD: 14.93, vs. 44.27 y, SD: 15.64; $t = 1.98$, $P = 0.073$), sex (40.0% male vs. 56.7% male, respectively; $\chi^2 = 1.022$, $P = 0.339$), proportion who were never married (80.0% vs. 62.9%; $\chi^2 = 1.159$, $P = 0.489$), or proportion employed (10.0% vs. 27.8%; $\chi^2 = 1.493$, $P = 0.449$).

The proportion of patients who were born in Ireland and were physically restrained was lower than the proportion who were not born in Ireland and were physically restrained (5.6% vs. 27.8%; $\chi^2 = 8.678$, $P = 0.012$). The proportion of patients who were voluntary and were physically restrained

was lower than the proportion who were involuntary and were physically restrained (2.6% vs. 27.6%; $\chi^2 = 15.623$, $P < 0.001$). (When a voluntary patient is restrained in emergency circumstances, a process is begun to change the patient's status to involuntary.)

Patients who were physically restrained did not differ from those who were not physically restrained in terms of length of stay at the time of assessment (mean rank 61.55 vs. 53.22; Mann-Whitney $U = 560.50$, $P = 0.419$), diagnosis (substance use disorders: 10.0% vs. 8.2%; schizophrenia group: 40.0% vs. 25.8%; affective disorders: 30.0% vs. 48.5%; neuroses: 0.0% vs. 7.2%; personality and behavioral disorders: 20.0% vs. 10.3%; $\chi^2 = 2.851$, $P = 0.583$), SANS scores (mean rank: 43.65 vs. 55.07; Mann-Whitney $U = 381.50$, $P = 0.265$), MMSE scores (mean rank: 54.15 vs. 53.98; Mann-Whitney $U = 486.50$, $P = 0.987$), or WAI-SR scores (mean rank: 44.25 vs. 55.01; Mann-Whitney $U = 387.50$, $P = 0.296$).

SAPS total scores were significantly higher among patients who were physically restrained than among those who were not physically

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restrained (mean rank: 76.00 vs. 51.73; Mann-Whitney $U = 705.00$, $P = 0.018$). A higher proportion of patients who were physically restrained had negative DAI scores compared with patients who were not physically restrained (60.0% vs. 21.6%; $\chi^2 = 7.067$, $P = 0.016$). Total scores on the Birchwood Insight Scale were significantly lower among patients who were physically restrained than among those who were not physically restrained (mean rank: 33.80 vs. 56.08; Mann-Whitney $U = 283.00$, $P = 0.028$).

On multivariable analysis, physical restraint was associated with involuntary status ($P = 0.021$) (Table 2). This regression model accounted for 36.5% of the variance in physical restraint and attained statistical significance ($P = 0.001$). All tolerance values were > 0.50 , indicating no problems with multicollinearity.

Correlates of Seclusion or Physical Restraint or Both

Patients who were either secluded or physically restrained or both ($n = 11$) were younger than those who were not secluded or physically restrained or both (33.18 y, SD: 14.73 vs. 44.51, SD: 15.54; $t = 2.402$, $P = 0.032$), and were less likely to have been born in Ireland (Table 1). On multivariable analysis, being secluded or physically restrained or both was associated with involuntary status ($P = 0.005$) (Table 2). This regression model accounted for 43.3% of the variance in seclusion or physical restraint or both, and it attained statistical significance ($P = 0.003$). All tolerance values were > 0.50 , indicating no problems with multicollinearity.

DISCUSSION

Summary of Results

The study sample included 107 patients, with a median length of hospital stay at the time of assessment of 11 days. The most common diagnoses were affective disorders (46.7%), schizophrenia and related disorders (27.1%) and personality and behavioral disorders (11.2%). Over a quarter (27.1%) of participating patients had involuntary legal status; 9 patients (8.4%) experienced at least 1

episode of seclusion, and 10 patients (9.3%) experienced at least 1 episode of physical restraint. On multivariable analyses, seclusion was associated with younger age and involuntary status, while physical restraint was associated with involuntary status. Neither practice was independently associated with sex, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, or insight. Each multivariable model explained just over one third of the variance in the distribution of seclusion and restraint in this sample.

Strengths and Limitations

The methodological strengths of this study included examination of a broad range of outcome variables and covariables. Reliable, validated tools were used and both bivariable and multivariable statistical analyses were performed.

Limitations of this study included the fact that patients were interviewed during the course of their hospital admissions rather than immediately before discharge. In addition, it was not possible to recruit consecutive admissions to this study, possibly resulting in selection bias (although the likely direction of such bias is unclear). It would be informative to include information about the timing of the research interviews in relation to the last episode of restraint or seclusion, but this information was not available for this study. Future research could usefully examine this variable in this group of patients.

A key limitation of this study was that the sample was small, and the number of patients who were restrained or secluded was very small indeed. This low frequency of incidents is a significant limitation that could be addressed in larger studies in the future.

Other limitations included the fact that we applied the SANS and SAPS to patients with diagnoses other than schizophrenia; while these tools are commonly used in such patients, they are primarily validated for patients with schizophrenia. In addition, while the WAI-SR has been validated in inpatient samples, its validity is less clear in samples with a rather brief inpatient length of stay (ie, median of 11 d); further validation of this tool would be helpful.

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Another limitation of this study was that we are not in a position to provide information about patients who were approached and found to be ineligible, because ethical approval of this study only permitted collection, analysis, and publication of data pertaining to patients who were deemed eligible and then consented to participate. Data pertaining to patients who were deemed ineligible and therefore did not consent to participate were not covered by this ethical approval. In addition, our procedure for “oversampling” involuntary patients, to increase power to examine variables of interest, was largely convenience-based, further obscuring the generalizability of findings. This strategy, allied to the fact that the study sample did not consist of consecutive admissions, might have introduced a bias, particularly given that legal status was a key main finding. Further studies, with greater numbers of patients overall, might not need to engage in such oversampling and might therefore avoid any such bias.

Finally, this study was based in mixed urban and suburban areas of Dublin city and therefore might not be generalizable to other settings such as rural areas.

Comparison With Previous Studies

Our study found that seclusion was associated with younger age and involuntary status. No association was noted in this study between seclusion and sex, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, or insight. This result is consistent with studies internationally, with the majority of studies showing an association between seclusion and younger age. An audit of the use of seclusion in Canadian hospitals found that younger age, schizophrenia or other psychosis, bipolar and personality disorder, and longer stay in hospital were predictors of an episode of seclusion with or without restraint.³³

One retrospective study of all inpatient admissions to an Australian adult acute psychiatric unit over a 12-month period found those who were secluded were more likely to be young, admitted involuntarily, and have a diagnosis of schizophrenia.³⁴ They also noted that seclusion was more likely to occur in the evenings, when staff/patient ratios were lower, a factor that was not

explored in our study. One study of adult patients admitted to general adult and psychiatric intensive care units in South London found secluded patients were more likely to be younger and legally detained.³⁵ Unlike in our study, they also noted that female sex increased the odds of seclusion. The likelihood of seclusion was also found to decrease with time since admission in that study, which was not noted in our study. A retrospective study of psychiatric inpatients in Malawi found that male patients had increased odds of being secluded.³⁶ In that study, no association was found between seclusion and age; diagnosis of alcohol use disorder, marijuana use disorder or schizophrenia; involuntary admission; presence of hallucinations; suicidality; or commission of violent acts before admission.

In our study, physical restraint was found to be associated with involuntary status. No association was found in our study between physical restraint and sex, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, or insight. Different data gathering techniques in different countries make cross-national comparisons challenging. An international systematic review of seclusion and restraint from 1990 to 2010 found that the variables most frequently associated with the use of seclusion and restraint were male sex, young adult age classes, foreign ethnicity, schizophrenia, involuntary admission, aggression or trying to abscond, and the presence of male staff.³⁷

One Japanese study that looked at use of both seclusion and restraint found that a history of epilepsy, dementia in Alzheimer disease, and anti-psychotic usage were all significantly associated with the use of seclusion and restraint.³⁸ Of note, prescribed medications were not considered in our study. Another study examined use of seclusion and restraint in the geriatric psychiatry division of Geneva University Hospital.³⁹ In this setting, risk factors for seclusion and restraint were younger age, male sex, being divorced or married, cognitive disorders, previous psychiatric hospitalizations and involuntary referrals from the emergency department.

One retrospective Norwegian study examined the use of restraint from 2004 to 2011 and found that the majority of restraint use was associated with diagnosis (substance abuse, psychotic, or affective

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disorders), age, sex, and legal status of hospitalization, with the majority of restraint cases concerning male patients under 50 years of age.⁴⁰ A Danish longitudinal study analyzing mechanical restraint in an inpatient dual diagnosis population from 2006 to 2012 found that a diagnosis of schizophrenia, the use of stimulant substances, and male sex were associated with an increased risk of mechanical restraint.⁴¹ One Spanish retrospective analysis of mechanical restraint use between 2007 and 2014 found that the best predictor of restraint was involuntary admission, followed by a diagnosis of personality disorder.⁴² We did not study mechanical restraint in our study (as it was not used), but we found that physical restraint was associated with involuntary status, consistent with most other studies in the literature.

Clinicians already make efforts to admit patients voluntarily whenever possible. The knowledge that involuntary status is a risk factor for seclusion and restraint adds to the importance of these efforts, as these links reflect key aspects of the experience of involuntary admission and care. It is especially notable in our findings that seclusion and restraint were linked with involuntary status regardless of positive symptoms, attitude to medication, or insight. This has potential implications concerning the psychological impact of such measures and the long-term implications of patient disapproval of treatment.

CONCLUSIONS

In Ireland, use of seclusion and restraint is most strongly associated with involuntary admission status and, in the case of seclusion, younger age, rather than sex, diagnosis, symptoms, cognitive function, global functioning, therapeutic alliance, attitudes toward medication, or insight. The network of interactions between involuntary status and use of seclusion and restraint merits much closer attention, especially as use of seclusion and physical restraint appears to be associated with involuntary legal status *independent* of level of symptoms, therapeutic alliance, or insight.

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'The medical gaze': Foucault, anthropology and contemporary psychiatry in Ireland

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Received: 10 July 2021 / Accepted: 19 July 2021
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Abstract

Michel Foucault developed the concept of 'the medical gaze', describing how doctors fit a patient's story into a 'biomedical paradigm, filtering out what is deemed as irrelevant material' (Misselbrook, 2013). Doctors are perceived within this model to focus on selecting the biomedical elements of patients' problems only, filtering out all other elements of a person's life story, but this paper argues that in the subspecialty of psychiatry, this is not the case, and such a filter is not so easily applied.

Keywords Foucault · Medical anthropology · Psychiatry

Introduction

What is the medical gaze? Michel Foucault developed the concept of 'the medical gaze', describing how doctors fit a patient's story into a 'biomedical paradigm, filtering out what is deemed as irrelevant material' [1]. Doctors are perceived within this model to focus on selecting the biomedical elements of patients' problems, but this paper argues that in the subspecialty of psychiatry, this is not the case, and such a filter is not so easily applied. Psychiatrists hold a unique position in the field of medicine, with more emphasis on subjective individual experience.

The American Psychiatric Association defines Psychiatry as 'the branch of medicine focused on the diagnosis, treatment and prevention of mental, emotional and behavioural disorders' [2], and the psychiatrist as 'a medical doctor who specialises in mental health, qualified to assess both the mental and physical aspects of psychological problems'. This appears at first glance as a role which should fit well into the needs of a modern society. From where then did this subspecialty spawn such staunch opposition, with anti-psychiatry movements questioning both the legitimacy of the specialty, and the validity of their definitions and roles? There is an increased awareness of the gap between

diagnostic definitions and the lived personal experience of wellness or illness. The WHO defines health as 'A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' [3]. Is this definition of health the focus of the modern psychiatrist; or is the focus instead on the absence of illness as defined within narrow diagnostic criteria?

Power within social systems

Michel Foucault (1926–1984) was a French historian and philosopher who had a strong influence in both philosophy and a wide range of humanistic and social science disciplines. His work *Madness and Civilisation: A history of insanity in the age of reason* explored his view of 'the moral hypocrisy of modern psychiatry' [4]. He argued that what was presented as 'an objective, incontrovertible scientific discovery (that madness is mental illness) was in fact the product of eminently questionable social and ethical commitments' [4]. This may have had some truth in an Irish 1960's asylum system, which was often used not as a centre for treatment but as a forum for social control, when one in every fifty citizens of the Republic of Ireland was a resident in a psychiatric institution [5]. But is this still the case in a modern, if underfunded, psychiatry system, with individualised care plans and a focus on outpatient treatment in the community? Following the introduction of antipsychotic medications and formalised treatment pathways for previously untreatable diagnoses, Ireland has moved to a system that is no longer reliant on a long-term asylum system.

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Foucault was particularly interested in the exercise of power within social systems, and he explored perceived relationships between knowledge and power within medicine in his work *The Birth of the Clinic*. Foucault argued that those in power set the agenda. This is a concept which remains palpable in today's medical systems in the context of involuntary detention under the Mental Health Act. This power exists only in the initial period of a patients' illness, and the current system focusses on empowering people once they retain capacity through adequate treatment, a situation only made possible by that initial therapeutic power dynamic. This power does not go unchecked, and the Irish Mental Health Act reflects patients' rights and adequately allows opportunity for neutral observers to ensure this power is being appropriately used via second opinions and tribunal reviews.

Treatment ideologies and professional approaches within clinical medicine have changed over the years. Nicholas Jewson described the production of medical knowledge as rooted in society, and not within a purely objective science [6]. He described the move from person-orientated to object-orientated to laboratory medicine, which he described in his work *The disappearance of the sick-man from medical cosmology, 1770–1870* [8]. This corresponds with the emergence of Foucault's described clinical gaze, which no longer views the patient as a whole but instead as a series of disconnected parts.

Medical systems and socio-cultural contexts

Arthur Kleinman, a psychiatrist and anthropologist, stated that 'medicine deals with two kinds of reality, "scientific" and "ordinary"; both a biophysical and human science' [7]. Medical systems do exist in socio-cultural contexts, and 'the experience of illness is a cultural or symbolic reality' [7]. Kleinman argued that the narrow traditional medical gaze exists in a system which is 'an ordered, coherent body of ideas, values, and practices embedded in a given cultural context from which it derives its signification' [7]. While there is an assumption of power on the behalf of the clinician, 'the acts of ordering, naming, interpreting, and offering therapy for illness are aspects of symbolic reality common to both the sick individual, the healer, and their society' [7]. What then is the role of classificatory systems? In psychiatry practice, there is a reliance on the World Health Organisation's ICD-10 criteria, or the American DSM criteria when applying diagnostic classifications. Having an overarching conceptual understanding of the individuals' experience helps to guide treatment and provide prognostic clarity that can be comforting and empowering to both patients and their families. This supports the use of diagnostic classification systems despite their flaws and in some cases lack of pure objectivity.

In psychiatry, it is clear that 'the experience of illness involves feelings, ideas, values, language and non-verbal communication' [7], all of which are included in a thorough mental state examination. Kleinman argued that there are 'systematic attempts to restrict medicine's symbolic reality to a single discipline, psychiatry, peripheral to the central core of medical research interests and practices' [7]. Kleinmann recognised that psychiatry retains the wider biopsychosocial gaze that is missing in Foucault's medical gaze, despite its narrow diagnostic classificatory systems.

Patient narratives of illness

The medical model and its use in the medical gaze ties in with rationalism, black-and-white thinking and beliefs within Western medicine. Byron J. Good, a medical anthropologist, defined the primary role of clinical medicine as 'the interpretation of the patient's symptoms by relating them to their functional and structural sources in the body and to underlying disease entities' [7]. However, he also notes that 'all medicine joins rational and deeply irrational elements, combining an attention to the material body with a concern for the moral dimensions of sickness and suffering' [7]. Subjectivity exists for both patient and clinician and inter-rater reliability may not be consistent, and psychiatrists called to provide expert opinion do not always agree in their assessments.

Diagnostic definitions lose their importance if the focus can instead be on individualised treatment of the suffering and distress of each individual, using overarching diagnostic definitions in order to guide these treatments. Good speaks of symptoms as 'expressions of the experience of distress, communicated as an ordered set of complaints', but how can this order be ensured? In psychiatry, an understanding of language and culture is integral to definitions of diagnoses themselves. A delusion is defined as 'a false, unshakeable idea or belief which is out of keeping with the patient's educational, cultural and social background' [8]. This is increasingly important in an Irish society which is becoming more diverse.

Conclusion

Foucault's concept of the medical gaze is not relevant to the modern psychiatric clinician. The power he speaks of exists only in the initial period of a patients' illnesses as a treatment tool. While the medical gaze ties clinicians to the use of narrow diagnostic criteria in the treatment of patients, focus should instead be on individualised treatment of the suffering and distress of every individual. It is both increasingly important and difficult for psychiatry services to retain

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this open perspective to treatment of suffering and distress in a setting where there is increasing pressure secondary to underfunding and increased presentations. Clinicians should continue to focus on helping rather than controlling patients, particularly within a specialty with such direct exposure to the human suffering resulting from trauma, control and societal pressures.

Acknowledgements The author is most grateful to the editor for their comments and suggestions.

Funding Open Access funding provided by the IReL Consortium.

Declarations

Conflict of interest The author declares no competing interests.

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Short Report

What is the role of gender in perceived coercion during psychiatric admission?

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Abstract

Objectives: This paper explores factors linking gender with increased perceived coercion, perceived negative pressures and procedural injustice during psychiatric admission.

Methods: We used validated tools to perform detailed assessments of 107 adult psychiatry inpatients admitted to acute psychiatry admission units at two general hospitals in Dublin, Ireland, between September 2017 and February 2020.

Results: Among female inpatients ($n = 48$), perceived coercion on admission was associated with younger age and involuntary status; perceived negative pressures were associated with younger age, involuntary status, seclusion, and positive symptoms of schizophrenia; and procedural injustice was associated with younger age, involuntary status, fewer negative symptoms of schizophrenia, and cognitive impairment. Among females, restraint was not associated with perceived coercion on admission, perceived negative pressures, procedural injustice, or negative affective reactions to hospitalisation; seclusion was associated with negative pressures only. Among male inpatients ($n = 59$), not being born in Ireland appeared more relevant than age, and neither restraint nor seclusion were associated with perceived coercion on admission, perceived negative pressures, procedural injustice, or negative affective reactions to hospitalisation.

Conclusions: Factors other than formal coercive practices are primarily linked with perceived coercion. Among female inpatients, these include younger age, involuntary status, and positive symptoms. Among males, not being born in Ireland appears more relevant than age. Further research is needed on these correlations, along with gender-aware interventions to minimise coercive practices and their consequences among all patients.

Keywords: Perceived coercion; gender; seclusion; restraint; involuntary admission

(Received 8 May 2022; revised 17 November 2022; accepted 30 December 2022)

Introduction

In 2021, the Mental Health Commission (MHC), which is based in Ireland, reported on the use of restrictive practices in approved centres (psychiatric inpatient units) during 2020 (Mental Health Commission, 2021). The MHC (2009a) defines 'seclusion' as 'the placing or leaving of a person in any room alone, at any time, day or night, with the exit door locked or fastened or held in such a way as to prevent the person from leaving' (p.17). In 2020, 699 patients were placed in seclusion a total of 1840 times; majorities were male in 2020 (62%) and 2019 (67%) (MHC, 2021).

'Physical restraint' is 'the use of physical force (by one or more persons) for the purpose of preventing the free movement of a resident's [patient's] body when he or she poses an immediate threat of serious harm to self or others' (MHC, 2009b; p.14). In 2020, 1211 patients experienced physical restraint; slight majorities were male in 2020 (51.7%) and 2019 (53.9%) (MHC, 2021).

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Cite this article: O'Callaghan AK, Plunkett R, and Kelly BD. What is the role of gender in perceived coercion during psychiatric admission?. *Irish Journal of Psychological Medicine* <https://doi.org/10.1017/ipm.2023.6>

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In apparent contrast with the MHC findings associating formal coercive practices with male gender, our research group previously showed that female gender is associated with increased perceived coercion on admission and perceived procedural injustice (O'Callaghan *et al.* 2021). It is important to clarify this relationship between gender and perceived coercion owing to reported associations between perceived coercion and increased suicide attempts post-discharge (Jordan & Mcniel, 2020), in addition to reduced therapeutic alliance (Katsakou *et al.* 2010; Sheehan and Burns 2011) and patient perceptions of treatment as dehumanising (Newton-Howes & Mullen, 2011).

In light of the differences between our initial published findings and the MHC findings, we sought to further explore our original dataset with particular focus on the gender differences in this area, with a view to informing interventions.

Method

Design

We conducted a quantitative study using semi-structured interviews to determine the relationships between perceived coercion

during inpatient psychiatric admission and formal coercive practices, among other factors (O'Callaghan *et al.* 2021).

Setting and sampling

This study was conducted in Tallaght University Hospital and Connolly Hospital, Dublin between September 2017 and February 2020. We included voluntary and involuntary inpatients aged 18 years or over who were admitted to these units during the study period, proficient in English, and possessed capacity to consent.

Demographic and clinical details

We recorded demographic information and other relevant features of each admission, including seclusion, physical restraint, and clinical diagnoses (World Health Organisation, 1992). We assessed patients using the Scales for Assessment of Positive and Negative Symptoms (SAPS and SANS) (Andreasen, 1983, 1984), Mini Mental State Examination (MMSE) (Folstein *et al.* 1975), and Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994). We used the MacArthur Admission Experience Survey (AES) (Short Form) to measure perceived coercion, negative pressures, procedural injustice, and affective reactions to hospitalisation on admission (Gardner *et al.* 1993).

Analysis

Data were anonymised, encrypted, stored, and analysed using IBM SPSS Statistics (Version 26). Multivariable analyses were conducted of correlates of perceived coercion on admission, negative pressures, procedural injustice, negative affective reactions to psychiatric hospitalisation, and AES total score, stratified by gender. Our statistical modelling technique included corrections for multicollinearity, which is when two or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, we calculated a 'tolerance value' for each independent variable; tolerance values below 0.10 indicate significant problems with multicollinearity (Katz, 1999). We calculated the r-squared value for each model to determine the predictive power of each model.

Results

Demographic details

Our sample included 107 patients of whom 48 (44%) were female; no patients reported nonbinary gender identities. Twenty nine patients (27.1%) were involuntary for part or all of their admission. Patients were only recognised as involuntary if their involuntary admission orders were completed following admission, meaning those who were brought in on Mental Health Act forms but agreed to stay voluntarily were not included as involuntary patients in this study. Length of hospital stay at time of assessment was non-normally distributed (skewed to the right) with a median of 11 days (interquartile range [IQR]: 5–23). Mean length of stay at time of assessment for voluntary patients was 20.15 days (standard deviation [SD]: 32.43), and involuntary patients was 51.48 days (standard deviation [SD]: 90.04). Eighty-nine patients (83.2%) were born in Ireland and 79 (73.8%) were unemployed. Mean age was 43.3 years (standard deviation [SD]: 15.8). Affective disorders were the most common diagnoses ($n = 50$; 46.7%) followed by schizophrenia and related disorders ($n = 29$; 27.1%), personality

and behavioural disorders ($n = 12$; 11.2%), substance use disorders ($n = 9$; 8.4%), and anxiety disorders ($n = 7$; 6.5%).

At time of assessment, nine patients (8.4%) had experienced one or more episodes of seclusion; 10 (9.3%) had experienced one or more episodes of physical restraint; 10 (9.3%) were nursed in 'high dependency units' (psychiatric intensive care), and the remainder ($n = 97$; 90.7%) were in general psychiatric wards.

Clinical variables

SAPS total score was non-normally distributed (skewed to the right) with a median of 8.0 (IQR: 1.0–17.0); 88 patients (82.2%) scored at least 1. Total SAPS score can range between 0 and 150. SANS total score was non-normally distributed (skewed to the right) with a median of 7.0 (IQR: 1.0–15.0); 84 patients (78.5%) scored at least 1. Total SANS score can range between 0 and 100. On both SAPS and SANS scales, the more symptoms the patient has, the higher their score. MMSE score was non-normally distributed (skewed to the left) with a median of 28 (IQR: 27–30); eight patients (7.5%) scored 23 or lower, which is indicative of cognitive impairment with moderate-to-high levels of reliability. Mean GAF score was 46.68 (SD: 14.47; range: 20–80). This scale ranges from 1 to 100, with higher scores indicating better functioning.

Perceived coercion on admission, negative pressures, procedural injustice, and negative affective reactions to hospitalisation

See Tables 1 and 2 for full results of multivariable analyses of correlates of the AES and all subscales. Beta coefficients are included, and these compare the strength of each individual independent variable to the dependent variable, with the higher absolute value indicating the stronger effect.

Among female patients, higher AES total score was associated with younger age ($p = 0.005$) and involuntary status ($p = 0.010$) (Table 1). The strongest effect was noted with involuntary status ($\beta = 7.465$). Statistically significant associations were also found within the AES subscales. Perceived coercion was associated with younger age and involuntary status ($p = 0.012$ in both), and the stronger effect was noted with involuntary status ($\beta = 2.442$). Perceived negative pressures were associated with positive symptoms of schizophrenia ($p < 0.001$), younger age ($p = 0.002$), involuntary status ($p = 0.005$), and not experiencing seclusion ($p = 0.041$), and the strongest effect was noted with not experiencing seclusion ($\beta = -4.310$). Procedural injustice was associated with younger age ($p = 0.018$), involuntary status ($p = 0.010$), fewer negative symptoms ($p = 0.027$), and cognitive impairment ($p = 0.033$), and the strongest effect was noted with involuntary status ($\beta = 1.597$). There were no statistically significant associations within the negative affective reactions to hospitalisation subscale.

In the male patient group, AES total score was associated with not being born in Ireland ($p = 0.006$) and involuntary status ($p = 0.001$) (Table 2). The strongest effect was noted with involuntary status ($\beta = 5.436$). Statistically significant associations were also found within the AES subscales. Perceived coercion was associated with involuntary status ($p < 0.001$) and not being born in Ireland ($p = 0.018$), and the strongest effect was noted with involuntary status ($\beta = 2.256$). Perceived negative pressures were associated with involuntary status ($p < 0.001$), not being born in Ireland ($p = 0.021$), longer stay ($p = 0.018$), and reduced functioning ($p = 0.022$), and the strongest effect was noted with involuntary

Table 1. Multivariable analyses of correlates of perceived coercion on admission, negative pressures on admission, procedural injustice on admission, negative affective reactions to psychiatric hospitalisation on admission and total score on the MacArthur admission experience survey (AES) on admission in females

Variable	Perceived coercion on admission		Negative pressures on admission		Procedural injustice on admission		Negative affective reactions to hospitalisation on admission		Total score on the MacArthur Admission Experience Survey (AES) on admission ¹	
	β	p	β	p	β	p	β	p	β	p
Age	-0.068	0.012	-0.073	0.002	-0.041	0.018	-0.046	0.070	-0.228	0.005
Marital status	0.023	0.946	0.345	0.247	0.109	0.622	-0.004	0.991	0.474	0.644
Place of birth	-2.049	0.115	-2.074	0.063	-1.500	0.071	-1.723	0.163	-7.346	0.058
Employment status	-0.504	0.445	-0.570	0.313	-0.176	0.675	-0.336	0.594	-1.586	0.417
Admission status ²	2.442	0.012	2.372	0.005	1.597	0.010	1.054	0.239	7.465	0.010
Length of stay at time of assessment	0.004	0.547	0.000	0.948	0.001	0.731	-0.009	0.143	-0.004	0.855
Diagnosis	0.013	0.966	-0.152	0.551	-0.135	0.478	-0.039	0.890	-0.313	0.722
Experienced seclusion (yes/no)	-0.667	0.781	-4.310	0.041	-0.265	0.86	1.335	0.561	-3.906	0.583
Experienced restraint (yes/no)	-2.404	0.150	0.424	0.762	-1.143	0.279	-0.836	0.595	-3.959	0.417
Nursed in a 'high dependency unit'	0.120	0.944	0.693	0.634	-0.483	0.657	-0.048	0.977	0.282	0.955
Positive symptom score ³	0.040	0.178	0.098	<0.001	0.030	0.116	-0.10	0.729	0.159	0.075
Negative symptom score ⁴	-0.032	0.321	-0.003	0.232	-0.047	0.027	0.027	0.380	-0.084	0.372
Cognition ⁵	-0.181	0.171	-0.101	0.365	-0.183	0.033	0.000	0.998	-0.466	0.232
Level of functioning ⁶	-0.031	0.285	-0.003	0.900	-0.015	0.409	-0.016	0.572	-0.065	0.448
Constant	12.016	0.026	7.611	0.093	9.359	0.007	7.412	0.141	36.398	0.023
r^2	41.1%		59.9%		43.6%		38.2%		44.2%	
Model p	0.117		0.001		0.077		0.183		0.069	

¹The total score on the MacArthur Admission Experience Survey (AES) on admission was calculated by adding scores of each of the four subscales (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to psychiatric hospitalisation on admission).

²Admission status refers to whether or not the patient had involuntary status under Ireland's Mental Health Act, 2001 during their admission.

³Measured using the Scale for Assessment of Positive Symptoms (SAPS) (Andreasen, 1984).

⁴Measured using the Scale for Assessment of Negative Symptoms (SANS) (Andreasen, 1983).

⁵Measured using the Mini Mental State Examination (MMSE) (Folstein *et al.* 1975).

⁶Measured using the Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994).

status ($\beta = 2.067$). Procedural injustice was associated with fewer negative symptoms only ($p = 0.042$) ($\beta = -0.038$). Negative affective reactions to hospitalisation were associated with not being born in Ireland ($p = 0.001$), being unemployed ($p = 0.026$), and increased positive symptoms ($p = 0.041$), and the strongest effect was noted with not being born in Ireland ($\beta = -2.234$).

All tolerance values were greater than 0.10, indicating no problems with multicollinearity. The r -squared values indicate that these models generally account for between one third and a half of the variance between individuals in these scales and subscales (Tables 1 and 2).

Discussion

Summary of results

This paper explores the factors that link female gender with perceived coercion and procedural injustice during psychiatric admission. Reduced rates of formal coercive practices such as seclusion and restraint are reported among females. Our analysis examined female and male groups separately in order to clarify the relationship between gender and perceived coercion. While involuntary status was relevant to both groups, we found differences in factors between both groups, with younger age being more relevant to the female group and not being born in Ireland more relevant to the

male group. Overall, we found that factors other than formal coercive practices such as seclusion and restraint are primarily linked with perceived coercion in both groups.

Comparison with previous studies

Several studies have identified associations between female gender and increased perceived coercion (Fiorillo *et al.* 2012; Raveesh *et al.* 2016; Jordan & Mcniel, 2020) and some differ from our study in identifying greater exposure to formal coercive practices, outside of an Irish context (Odawara *et al.* 2005; Beghi *et al.* 2013; Gowda *et al.* 2018). Proposed reasons to date have included a possible increased willingness among females to report feelings of vulnerability and psychological discomfort (Rhodes *et al.* 2002) or a socially influenced, gender-based characteristic of greater emotional responsiveness among females (Georgieva *et al.* 2012). Our findings indicated that formal coercive practices played a lesser role than suggested in other studies. We report an association with younger age in female patients which had not been identified as a statistically significant factor in our previous study which did not analyse results by gender (O'Callaghan *et al.* 2021). Other studies vary in their associations with age, with one study that did not stratify by gender identifying greater age as a risk factor for increased perceived coercion (Bindman *et al.* 2005). Another study

Table 2. Multivariable analyses of correlates of perceived coercion on admission, negative pressures on admission, procedural injustice on admission, negative affective reactions to psychiatric hospitalisation on admission and total score on the macArthur admission experience survey (AES) on admission in males

Variable	Perceived coercion on admission		Negative pressures on admission		Procedural injustice on admission		Negative affective reactions to hospitalisation on admission		Total score on the MacArthur Admission Experience Survey (AES) on admission ¹	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Age	0.015	0.374	0.026	0.462	-0.001	0.918	-0.006	0.754	0.033	0.508
Marital status	-0.105	0.726	-0.449	0.164	-0.263	0.223	-0.677	0.056	-1.493	0.107
Place of birth	-1.391	0.018	-1.443	0.021	0.046	0.911	-2.234	0.001	-5.022	0.006
Employment status	-0.579	0.253	-0.570	0.291	-0.305	0.398	-1.340	0.026	-2.794	0.074
Admission status ²	2.256	<0.001	2.067	<0.001	0.496	0.185	0.616	0.309	5.436	0.001
Length of stay at time of assessment	0.007	0.059	0.010	0.018	0.003	0.243	0.002	0.705	0.022	0.062
Diagnosis	0.047	0.832	-0.023	0.924	-0.106	0.507	0.516	0.051	0.435	0.522
Experienced seclusion (yes/no)	0.378	0.811	0.555	0.742	2.023	0.079	-1.647	0.373	1.308	0.787
Experienced restraint (yes/no)	1.488	0.426	1.760	0.378	-1.899	0.158	2.298	0.292	0.645	0.522
Nursed in a 'high dependency unit'	0.453	0.605	0.0198	0.832	-0.220	0.725	0.183	0.857	0.615	0.818
Positive symptom score ³	0.028	0.175	0.017	0.430	0.018	0.221	0.050	0.041	0.113	0.075
Negative symptom score ⁴	0.014	0.587	-0.014	0.604	-0.038	0.042	-0.015	0.608	-0.053	0.493
Cognition ⁵	-0.030	0.731	5.929E-5	0.999	-0.088	0.156	-0.080	0.426	-0.198	0.453
Level of functioning ⁶	-0.011	0.549	-0.044	0.022	-0.024	0.064	0.021	0.300	-0.057	0.290
Constant	1.485	0.658	2.638	0.462	5.111	0.037	7.765	0.051	16.998	0.101
<i>r</i> ²	51.9%		53.7%		35.5%		35.5%		44.3%	
Model <i>p</i>	<0.001		<0.001		0.084		0.084		0.010	

¹The total score on the MacArthur Admission Experience Survey (AES) on admission was calculated by adding scores of each of the four subscales (perceived coercion on admission, negative pressures on admission, procedural injustice on admission and negative affective reactions to psychiatric hospitalisation on admission).

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of patients being treated for anorexia nervosa found those under the age of 18 reported more perceived coercion than adult patients and, of note, 98% of participants in that study were female (Guarda et al. 2007).

Also of note, we found that, for males, not being born in Ireland appears more relevant than age to perceived coercion. This is an important finding, particularly with an increasing immigrant population in Ireland. The Central Statistics Office estimated non-Irish nationals to make up 12.7% of the Irish population in 2019 (Central Statistics Office, 2019), and provisional figures from the 2022 census show the current estimate for net migration between 2016 and 2022 is 190,333 (Central Statistics Office, 2022). Migrants are noted to experience a greater level of psychological distress than native populations (Wittig et al. 2008). While this is not the core focus of this paper, it highlights an important area for further research.

Some work has been done on addressing perceived coercion in psychiatric care, including post-coercion review sessions, which can have significant impact, especially among female patients (Wullschleger et al. 2021). Further work is required to identify, implement, and evaluate any further gender-aware interventions that might play a role in these settings, with particular reference to nonbinary gender identities.

Strengths and Limitations

Strengths of this study include examination of a broad range of outcome variables, use of validated, reliable tools, and multivariable statistical analyses. Limitations include the fact that patients were interviewed at different times during their hospital admissions (although this was controlled for in the multivariable analyses); potential bias due to purposive sampling (rather than consecutive patients); and the exclusion of patients who lacked capacity to consent to research. It was not possible to assess all patients at the same time during their hospital stays, owing to differing lengths of stay, variable courses of illness, and unpredictable discharge dates. In order to control for different lengths of hospital stay at time of assessment, therefore, multivariable models included length of hospital stay at time of assessment as an independent variable (see Tables 1 and 2).

Conclusions

While the MHC reports that male inpatients account for most episodes of seclusion and restraint, we previously found increased perceived coercion on admission and procedural injustice among females (O'Callaghan et al. 2021). The analysis in the present paper confirms that factors other than formal coercive practices are

primarily linked with perceived coercion among females and males. Among female inpatients, these include younger age, involuntary status, and positive symptoms. Among males, not being born in Ireland appears more relevant than age. Further research is needed to better understand these correlations, not least because the *r*-squared values in our study indicate that these models generally account for between one third and a half of the variance between individuals in these scales and subscales; other factors are also likely to be relevant (e.g. decision-making capacity, substance misuse, etc.).

There is a need for gender-aware interventions to minimise perceived coercion and its consequent impacts on care among all patients. Research of interventions to date has focussed on reduced formal coercive measures such as seclusion and restraint as their primary outcome measures, and include interventions in the domains of organization, staff training, risk assessment, environment, psychotherapy, debriefings, and advance directives (Hirsch & Steinert, 2019). While these interventions may also be beneficial in reducing perceived coercion, it is essential that data on perceived coercion is gathered as part of future studies in this area.

Conflict of interest. The authors state that they have no conflict of interest.

Ethical standards. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The study protocol was approved by the ethics committee of each participating institution.

Financial support. This research received no specific grant from any funding agency, commercial, or not-for-profit sectors.

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