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PhD in Nursing & Midwifery

An action research study evaluating the effect of an action learning programme on healthcare professionals' knowledge, attitudes and practice

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

By

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Dr. Catherine McCabe and Professor Sheila Payne

2015

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Summary

Background

Despite the advancement of pain management modalities, many patients continue to experience pain associated with cancer (Gordon *et al.* 2005, Solman *et al.* 2005, Solman *et al.* 2006, Fisch *et al.* 2012). Inadequate treatment of pain is a prevalent clinical problem in hospitalised patients (Beck and Falkson 2001, van den Beuken-van Everdingen *et al.* 2007a) resulting in significant physiological, psychological, and financial consequences (Weiss *et al.* 2001, Lin *et al.* 2003). This can result in a significant burden for the patient and may lead to complications that may cause further harm with consequent increased hospital lengths of stay, and additional cost to the healthcare system (Furrow 2002). There is a plethora of evidence from the literature reviewed that knowledge deficits and misconceptions of healthcare professionals with regards to cancer-related pain (CRP) management are essential barriers to effective pain management (Xue *et al.* 2007, Gordon *et al.* 2008, Messeri *et al.* 2008, Song *et al.* 2008, Yildirim *et al.* 2008). Similarly, it has been emphasised that under-treatment of pain is often mirrored by poor adherence to recommended documentation practices with regards to pain assessment and management (Chanvej *et al.* 2004, Ger *et al.* 2004, Jeba *et al.* 2009).

Study Aim

The aim of this study was to evaluate the effectiveness of implementing an action learning programme on healthcare professionals' knowledge, attitudes and practice in relation to CRP management in acute medical and surgical settings. This study was conducted in a major teaching hospital in Dublin, Ireland where there was no pain management team except a palliative care team whose availability was only limited to Monday-Friday, 9.00-17.00.

Study Design

This is an action research study utilising action learning sets as an intervention to improve cancer-related pain management through collaboration working and education by nurses and doctors. The 'Knowledge and Attitudes Survey Regarding Pain' (KASRP) questionnaire, audit, semi-structured interviews and the Action Learning Set Evaluation (ALSE) tool were used for data collection. One hundred and seventy healthcare professionals were invited to participate in the survey in both before and after the action learning programme. Fifteen patient charts were audited in each of the audits before and after the programme and five healthcare professionals were interviewed after the action learning programme in order to evaluate their views and experiences of participation in the programme.

Findings and Conclusion

Results from the study revealed numerous deficits regarding knowledge, attitudes and practices in relation to CRP management and assessment. Activities and actions related to CRP management were planned and taken during the action learning programme based on healthcare professionals' practices and clinical experiences. The results showed significant improvements of healthcare professionals knowledge, attitudes and practices after the action learning programme compare to before ($p<0.001$). The action learning sets were valued by participants and viewed as a feasible and effective tool for education, staff empowerment, enhancing management/leadership skills and practice improvement in the clinical care settings. Given the positive outcomes at individual, team and organisation level, despite the numerous organisational challenges to practice development and collaborative working in healthcare settings, this study recommends the use of action research as a methodology as well as action learning as an intervention for practice development and potentially an effective organisational change management strategy.

Acknowledgements

I would like to extend my warmest thanks to my supervisors, Dr. Catherine McCabe and Professor Sheila Payne for their continued support, guidance, patience, and encouragement.

This action research has been undertaken in combination with busy work commitments. I would like to thank my healthcare professional colleagues for all their practical work and support in this journey which could not have been completed without their invaluable participation.

I would like to thank team consultants, line managers for their support and assistance in facilitating the participation of healthcare professionals in the action learning programme.

I would like to express my gratitude to the palliative care team especially the nurse specialist for all their assistance, support, advice and encouragement.

I would like to thank the ward administrators and discharge coordinators in the hospital for their advice and assistance.

I would also like to thank all my friends for their support especially Elaine for her support and advice throughout this endeavour.

My special thanks to my wife, Reham for her great continued support, assistance and patience throughout this journey.

I would like to thank all the organisers of the Action Research Colloquiums in the Institute of Technology Tralee and the University College Dublin. The colloquiums provided a great opportunity to talk with world class experts and learn about action research.

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Abbreviations

ACS: American Cancer Society

AHCPR: Agency for Health Care Policy and Research

ALSE: Action Learning Sets Evaluation

ANOVA: Analysis of Variance

APS: American Pain Society

CRP: Cancer-Related Pain

EPIC: European Pain in Cancer

EU: European Union

HSE: Health Service Executive

IASP: International Association for the Study of Pain

IFMC: Iowa Foundation for Medical Care

IM: Intramuscular

IV: Intravenous

JCAHO: Joint Commission for the Accreditation of Healthcare Organisations

KASRP: Knowledge and Attitudes Survey Regarding Pain

NCF: National Cancer Forum

NCRI: National Cancer Registry Ireland

NCSS: National Cancer Screening Service

NRS: Numerical Rating Scale

NSAIDs: Non-steroidal anti-inflammatory drugs

PAT: Pain Audit Tool

PO: **Per Os (**Oral)

PRN: Pro-re nata (as required)

SC: Subcutaneous

SPSS: Statistical Package for the Social Sciences

VAS: Visual Analog Scale

WHO: World Health Organisation

Chapter One

Introduction

1.1 Introduction

The purpose of this action research study was to elicit information on the effect of implementing an action learning programme for healthcare professionals; doctors, nurses and pharmacists with regards to cancer-related pain (CRP) management in the acute medical and surgical settings. In this chapter, I provide an overview of the organisational context of CRP management in the study hospital and describe CRP as a systematic enquiry with my role as an action researcher. I also present a description of the learning of CRP between healthcare professionals. Concepts related to pain, CRP assessment and management are explained. Finally, I discuss the background and significance of the study and outline the aims and objectives of the study.

1.2 Organisational Context

This study was undertaken in a major teaching hospital in Ireland where access to pain management is limited to the palliative care team and is only available from Monday to Friday. In addition, there is no out of hours or weekend service available. From a professional perspective, there have been numerous occasions where issues related to the prescribing or administering of opioids have arisen despite patients with cancer displaying high scores on the pain assessment scale. One of the most common scenarios appears to be related to doctors' preferences to prescribe a

minor analgesic (non opioids) with the apparent reluctance of prescribing opioids despite the high pain score. From my professional experience, it has been evident that on many occasions, this is attributed to a lack of knowledge regarding opioids or misconceptions related to the fear of addiction and side effects. A second issue that arises is attributable to nurses' reluctance to administer opioids and their preference to administer a non-opioid analgesic despite a prescription for opioids being available. Similar to their medical counterparts, this appears to be due to a fear of side effects or their lack of knowledge regarding opioids. In addition, inadequate documentation and assessment of CRP seemed to compound the problem in terms of the type of analgesia to prescribe or administer; rather, these inadequacies made it more complicated and substantiated pre-existing concerns.

As an acknowledgement of the lack of palliative care team services during out of hours and weekends, healthcare professionals in the hospital have access to hospice facilities in the area in order to obtain information and advice on how to manage the pain in a cancer patient when it is needed. However, for this to be effective, healthcare professionals are required to be fully aware of this facility and most importantly agree to it. It is evident that healthcare professionals hold attitudes against hospice and palliative care as they believe that the management of their patient's pain is only their own duty and no one else's. For example, despite instructions from the medical/surgical or palliative care team to contact the hospice, if required during out of hours/weekend, on numerous occasions this did not happen, which could result in unnecessary patient suffering of CRP.

It is also notable that CRP is treated differently when a cancer patient is recognised as being near the *'end of life care'* rather than what is called *'full medical management'.* Healthcare professionals appear to place more emphasis on controlling the pain when the palliative care team is involved in the patient's CRP management. What adds significance to this point is that these patients are not referred to the palliative care team unless their own medical or surgical doctors do so, based on these doctor's perception and judgment. As previously acknowledged, this might be attributed to negative attitudes and unnecessary fear of opioids of compromising the medical treatment. Temel *et al.* (2010) maintain that despite strong randomised controlled trial evidence of the benefits of early referral for cancer patients, healthcare professionals fail to recognise the benefits of early referral to palliative care and equate it with end of life care only. This could also be due to the erroneous beliefs of healthcare professionals that opioids should only be limited to dying patients as they could hasten death (Hansson *et al.* 2006).

1.3 Systematic Enquiry and my Role as an Action Researcher

Working in the nursing field for over 15 years and being a clinical nurse manager in an acute medical ward for over 3 years, has provided me with great opportunities to observe and evaluate the quality and effectiveness of patient care in the clinical environment. As a clinical nurse manager, I'm required to attend clinical and multidisciplinary meetings on a regular basis where major concerns arise and issues are highlighted. A major clinical challenge that was identified from these meetings by both clinical nurse managers and doctors was CRP management in patients admitted to the acute medical and surgical wards. At an early stage of this project and as an action researcher, I started to to use careful, focused observation and

listening to the nurse managers and doctors, before I started to perform a critical reflection and evaluation of what each of them was looking for or what was needed most by them. It was evident that healthcare professionals were willing to take an action and do something about this issue. This represented the first phase of this action research enquiry where healthcare professionals started to talk openly about the issue of CRP management and related factors that required investigation and addressing. Consequently, the majority of doctors and nurse managers agreed to have some sort of formal meetings in order to address this issue and make the required actions and activities. Although it was not agreed at that stage that action learning sets was the intervention to be taken in this project, most importantly the identification of CRP management as an enquiry was informed by the experience of the healthcare professionals themselves. Simultaneously, a few clinical nurse managers and I were introduced to action learning sets by being participants and observers in an action learning-based programme in the hospital, where I work. It was suggested, and I agreed, to use action learning sets as an intervention for this enquiry. The key characteristic behind why healthcare professionals agreed to the use of action learning sets was its feasibility that it could be carried out during their working time and place. It was my role at that stage to ensure that prospective participants were introduced to action learning, what it was and where and how it worked. The phases of this action research enquiry are discussed in details in chapter four.

In order for effective CRP management to be achieved, it is imperative that not only doctors prescribe effective analgesics but most importantly is that this prescription is accompanied with efficient administration of the medication by nurses, based on

adequate pain assessment and documentation. Healthcare professionals need to acknowledge the importance of applying this knowledge in their own workplace using a collaborative approach based on teamwork, respect and equality. They also need to have an adequate level of understanding of the culture of the community they work in with sufficient acknowledgement of the available resources and environmental factors. For example, it is necessary for all healthcare professionals to be aware of the availability of the international guidelines on CRP management, but what is most important is how they have access to these guidelines and adhere to them. In figure 1.1, I provide a framework of the integrated key aspects of collaborative CRP management, which I chose to include based on what is most relevant to my study.



Figure 1.1 Integrated key aspects of collaborative CRP management

1.4 Healthcare Professionals' Education of CRP Management

A fundamental cause of suboptimal pain recognition, assessment and management is inadequate education of healthcare professionals (Vadivelu *et al.* 2013). Loeser (2012), former president and founding member of the International Association for the Study of Pain (IASP) agrees and also suggests that inadequate education of healthcare professionals about pain and how to manage it is a major crisis in pain management today. It has been asserted that improved healthcare professionals' education is the key factor to solving the problem of inadequate pain management (Vadivelu *et al.* 2012). However, despite the significant advancement in pain education, healthcare professionals continue to encounter many difficulties surrounding the management of pain in cancer patients (Wolfert *et al.* 2010, Donovan *et al.* 2012) Guidelines to ensure that healthcare professionals are effectively skilled and trained in pain management have been issued by the Joint Commission on Accreditation on Healthcare Organisations (JCAHO) for over a decade (JCAHO 2000, Phillips 2000). Therefore, one can conclude that the inadequacy in pain management is not rooted in a lack of guidance but in the insufficiencies in our current means of pain education (Max 1990, Gordon *et al.* 2005, Silvoniemi *et al.* 2012).

According to Heavner (2009), only 3% of medical schools in the United States had any part of their curricula particularly related to pain education. Briggs *et al.* (2011) emphasise that pain education comprised less than 1% of the university-based teaching for healthcare professionals in the UK, where the average pain-related content comprised only 12 hours and less than 15% of the programmes offered a specific pain teaching module. In another English study, Briggs *et al.* (2009) report a

significant inadequacy in the amount of pain education in the curricula of healthcare professionals considering the burden of pain in the general population in the UK. It was clearly reported that pain was underrepresented in the education of most healthcare professionals (Briggs *et al.* 2009). Although these are non-Irish studies, they still reflect on the current undergraduate curricula in the Irish fields of pain management.

This creates substantial challenges on healthcare professionals in pain management, especially the newly qualified ones because as yet, there is no evidence that they have received enough education at their undergraduate level. This consequently, highlights the essential role of third level (post graduate) education of healthcare professionals in pain management if an adequate level of learning is to be achieved. From personal and professional perspectives, the experience of working with patients with pain; the challenges that arise during this process including the correct conception of what pain is, how we treat it, what to prescribe and what to administer to treat the pain, is an crucial part of how we learn pain management. According to Vadivelu *et al.* (2013), patient residency is the prominent stage during which attitudes toward pain are conceived and nurtured. Vadivelu *et al.* (2013) argue that inspiring an early understanding and empathy for pain during residency can considerably enhance the chances that future healthcare professionals are more willing and able to manage pain. This understanding, joined with the necessary knowledge and skills for how pain is treated, may round out the three required domains of healthcare professionals' education: cognitive, psychomotor, and affective (Vadivelu *et al.* 2013). Professional expertise is often sought and achieved through a combination of professional knowledge-based

programmes, such as, academic courses and practical experience within the healthcare setting via reflective practice and revised experience. Therefore, clinical experience of healthcare professionals is of a key component in order for them to learn from each other's experience, reflect on learned lessons and past clinical practice during patient care of whether they did the right thing or what went wrong.

Healthcare professionals are frequently making informal evaluations and judgments about what they do through their observations and communications with each other. During a process of learning, healthcare professionals with higher level of experience, who are more likely to have undertaken a third level of education in CRP management, especially when there is a lack of access to specialised pain management or palliative care, are required to share their professional knowledge and expertise with their work colleagues. But for this process of learning and sharing to happen, a clinical learning environment based on effective communication skills, respect for others and teamwork is required. Senior doctors and nurses, and clinical nurse managers are required to deliver an adequate level of care in treating the CRP but most importantly to also contribute in bringing about change in their own practices by sharing their knowledge with their junior colleagues and to guide them to the best practice in accordance with the national and international guidelines on CRP management. With this in mind, clinical organisations should be offering healthcare professionals continuous education and training on pain management aiming at addressing the lack of knowledge related to assessment of CRP, fears about addiction and other side effects, and the cultural beliefs in order to keep them up to date with the most recent standards and guidelines. This will ensure that the knowledge or skills transferred among these healthcare professionals through cycles

of clinical learning or reflection is adequate and consistent with what they need to learn.

1.5 CRP Management

According to the International Association for the Study of Pain (IASP 1979, p. 249), pain was defined as an "unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage". McCaffery and Beebe (1994, p. 14) report that "the person with pain is the only authority about the existence and nature of that pain, since the sensation can only be felt by the person who has it". This definition emphasises that pain is a subjective experience. It also stresses that the patient, not the health care provider, has the authority on the pain and that his or her self-report is the most reliable indicator of pain. Although there has been a body of knowledge in the literature about the physiological aspects of pain (Melzack and Wall 1965, Melzack 1996, MacLellan 2006), these aspects were not discussed in this thesis as they are not related to the aims of the study.

Cancer-related pain is defined as the "pain experienced by adults and children with cancer in which the pain is due to the tumor itself, to cancer therapy or to associated problems" (Spross *et al.* 1990, p. 597). With episodic exacerbation or progression in severity such as with metastatic bone pain, CRP can last for many months or years (Devita *et al.* 2001). Miaskowski *et al.* (2006) identified three main types of CRP: acute, chronic, and breakthrough pain. Acute pain can be easily described and observed and may be as a result of many external events including fractured bones,

burns, and surgery. It may last for several days, increasing in intensity over time, or occur intermittently (Jansen 2008). Chronic pain refers to pain that lasts for more than three months, which may originate from a trauma or where there may be an ongoing cause of pain (Cleveland Clinic 2008). According to the ACS (2012), chronic CRP often involves both persistent pain and breakthrough pain, making it difficult to describe and treat. Persistent pain is continuous and may last all day (ACS 2012). Breakthrough pain is defined as intermittent exacerbations of acute pain that may occur unexpectedly or in relation to a specific activity, often on a background of well-controlled chronic pain (Abraham 2005).

Pain in cancer patients has been identified as one of the most common symptoms (Stromgren *et al.* 2006, McMillan *et al.* 2008, Stark *et al.* 2012). According to Hadjistavropoulos and Hadjistavropoulos (2008), cancer treatments, including surgical procedures, chemotherapy, radiotherapy, and multi-x-ray procedures, may cause discomfort in addition to the pain associated with the cancer and any other preexisting chronic conditions. As a consequence of these multiple treatments and causes of pain, persistent and undertreated pain is a foremost concern for cancer patients and considered to be a major public health problem by the American Cancer Society (ACS 2002) and a matter of priority. This is substantiated by Pharo (2005) who purports that inadequate provision of analgesia in patients with cancer remains a serious problem.

Pain management is an overall term used to describe the care and services provided for those in pain. It encompasses pain assessment, treatment, interventions, therapies, evaluation, staff and patient education (MacLellan 2006). According to several authors, it is unethical to allow patients to suffer from pain without adequate efforts to provide high quality treatment (Stegman 2001, Ferrell 2005, Gunningberg and Idvall 2007). The consequences of unrelieved pain on cancer patients may lead to major physical and psychological disabilities. Among the physical disabilities are: impaired wound recovery, increased metabolic rate and cardiac output, impaired insulin response, increased production of cortisol, and increased retention of fluids, lack of sleep, nausea, fatigue, anorexia and the risk of developing chronic pain (Gordon *et al.* 2005, Polomano *et al.* 2008). Such consequences may require medical interventions, which could further expose patients to additional risks and decreased quality of life (Wells 2000, ACS 2002). Conversely, psychological disturbances such as anxiety, anger, fear and depression might decrease pain tolerance, reduce coping effort and impair immune functions (Yates *et al.* 2002, Ferrell 2005, Kehlet *et al.* 2006). The eventual effect is increased suffering and poorer prognosis. Prerequisites for adequate pain control are frequent pain assessment, rapid intervention, and appropriate use of opioids and their adjuvants (Perron and Schonwetter 2001). Therefore, effective CRP management is paramount in order to achieve the goal of improving the quality of life and health outcomes for cancer patients.

1.6 Pain Assessment

Assessment is the basic step of any strategy for pain management. It can be defined as the determination of the intensity, quality, location and duration of pain (Mac Lellan 2006). Inadequate pain assessment by healthcare professionals represents a highly prevalent barrier to effective cancer patient care management and can subsequently lead to its undertreatment (Vallerand *et al.* 2004). Two of the most commonly suggested standardised used tools for pain assessment and measurement are the Numeric Rating Scale (NRS) and the Visual Analogue Scale (VAS). When using the NRS, the patient is asked to rate their pain intensity on a scale of 0 (no pain) to 10 (the worst possible pain). The VAS is a horizontal line, 100 mm in length, anchored by word descriptors (no pain/worst pain) at each end. The patient marks on the line the point that represents his current state. The VAS score is determined by measuring in millimeters from the left hand end to the patient's marks. If the patient has no pain or has some pain, he/she would mark somewhere along the line, which provides an illustration of perceived pain (appendix I).

Ongoing assessment is necessary to evaluate changes in pain and the effectiveness of its management. The American Pain Society (APS) stresses that healthcare professionals should consider pain as the fifth vital sign (Merboth and Barnason 2000, Chanvej *et al.* 2004). Therefore, the patient's pain should be assessed at least as often as vital signs are taken. Accuracy in pain assessment is a major factor in measuring the adequacy of pain management. This implies that healthcare professionals should identify the presence of CRP for each patient, and score its intensity using standardised scales (Agency for Health Care Policy and Research,

AHCPR 2002, Gordon *et al.* 2005). Pain scores should be documented in writing, making them readily available to all healthcare professionals. Simply recording a patient's response to the question "How is your pain?" invites misunderstanding and hinders quantification. According to the JCAHO (2000), pain must be assessed and documented at regular intervals after starting the treatment plan, and with each new report of pain. Pain must also be monitored at a suitable interval after each pharmacologic or non-pharmacologic intervention, such as 15 to 30 minutes after parenteral drug therapy and one hour after oral administration (APS 2005, Gordon *et al.* 2005).

The ultimate goal of pain treatment is to relieve pain, and pharmacological intervention is the initial starting point (Smeltzer and Bare 2004, Kehlet *et al.* 2006). The World Health Organisation (WHO1986) developed extensive guidelines on the management of CRP in adults, which were updated in 1996. These guidelines contained a stepped approach for providing analgesia in patients with cancer and were designed to simplify and allow the management of pain by healthcare professionals with limited knowledge of narcotic analgesics. The WHO's (1986) three-step ladder starts with basic analgesics, such as paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs). Combination therapy with opioids and basic analgesics is recommended at step two where pain is not controlled at step one. Step three advocates the addition of opioids including those available in sustained release formulations where pain control is not achieved with the first two steps (appendix II). According to the WHO (2007), the three-step analgesic ladder has represented an exceptional model that demonstrates a conceptual step-wise approach to CRP management. As there is a need to look at the problem of pain in a

comprehensive manner and because managing pain can only be addressed by a comprehensive approach, the WHO (2007) emphasised that the WHO analgesic ladder and WHO guidelines for CRP management must be followed as agreed by international pain experts.

According to Mercadante (1999) and Meuser *et al.* (2001), using a combination of appropriate dosage guideline with the use of the WHO (1986) pain ladder may achieve an effective pain relief in 70-90% of cancer patients. Furthermore, Mercadante and Fulfaro (2005) argue that the use of these guidelines could allow 90% of patients to achieve significant analgesic effects. The WHO (2007) asserts that, authoritative, clear and concise evidence-based guidelines from WHO could have a major impact on the correct use of CRP management drugs. The WHO (2007) also conclude that it is vital to provide updated information to new generations of healthcare professionals who have not used opioids and recommends that this key topic is kept visible. Although the WHO guidelines remain very useful (WHO 2007), Grossman *et al.* (2006) argue that it might be useful to expand the guidelines and the ladder to address the controversial issues encountering the new medications, newer routes and more interventional approaches. As the WHO guidelines can continue to serve as a guide to healthcare professionals from all disciplines, the WHO (2007) clearly recommended that these guidelines are updated periodically and their scope is expanded to include advancements in pain management.

1.7 Background and Significance of the Study

Inadequate treatment of pain is a prevalent clinical problem in hospitalised patients (Beck and Falkson 2001, van den Beuken-van Everdingen *et al.* 2007a) resulting in significant physiological, psychological, and financial consequences (Weiss *et al.* 2001, Lin *et al.* 2003). Poorly treated acute pain can lead to prolonged pain (Burton *et al.* 2012). This not only constitutes a significant burden for the patient but may lead to complications that can cause further harm with consequent increased hospital lengths of stay, and additional cost to the healthcare system (Furrow 2002).

Cancer in Ireland is a major cause of morbidity and mortality. For example, a total of 8,189 cancer deaths occurred in 2007 and lung cancer was, by far the commonest cause of cancer death by 20.3% (the National Cancer Registry Ireland, NCRI 2011). According to the National Cancer Forum (NCF 2006), each year about 20,000 Irish people develop cancer and 7,500 die of the disease. Ireland currently has the second highest diagnoses of all forms of cancer among the 50 countries analysed worldwide with 317 cases per 100,000 people (NCRI 2011). The NCRI (2011) reported that an annual average of 29,745 cancer cases was registered during the three year period 2007-2009. Colorectal cancer is the second most commonly diagnosed cancer among men and women with approximately 1,900 new cases diagnosed each year (National Cancer Screening Service, NCSS 2008). The number of new cancer cases the healthcare system can expect to deal with by 2020 will represent an increase of 107% compared with figures in 2000 (NCRI 2006). Congruent with these national figures, statistical figures of the study hospital report a significant increase of cancer cases admitted to the hospital. For example, colorectal

and upper gastrointestinal (GI) cancer cases increased from 27 and 52 in 2005 to 121 and 87 cases in 2010 respectively. Furthermore, lung cancer cases increased from 16 in 2008 to over 54 in 2014 (appendix III).

Despite the availability of the WHO guidelines and the advancement of pain management modalities many patients continue to experience pain associated with cancer (Gordon *et al.* 2005, Solman *et al.* 2005, Solman *et al.* 2006, Fisch *et al.* 2012). Research reports emphasise that more than 85% of patients with cancer still suffer from pain in the advanced stage of the disease (Stromgren *et al.* 2004, Wilson *et al.* 2004, Bradley *et al.* 2005). A great deal of research attention has been focused on the barriers that lead to the undertreatment of CRP, including factors related to both healthcare professionals (Ger *et al.* 2004, Yu and Petrini 2007, Song *et al.* 2008, Yildirim *et al.* 2008, Subhashini *et al.* 2009) and the patient and family (Schumacher *et al.* 2002, Yates *et al.* 2002, Caraceni *et al.* 2004, Song *et al.* 2008). However, it is beyond the scope of this research to investigate patients' and families' attitudes and knowledge, and therefore, I will only discuss factors related to healthcare professionals.

Effective pain management is reliant on the knowledge, attitudes and subsequent skills of healthcare professionals (Lewthwaite *et al.* 2011). Undertreatment of CRP is often delivered by healthcare professionals who lacked the appropriate knowledge to assess and manage pain effectively (Xue *et al.* 2007, Gordon *et al.* 2008, Messeri *et al.* 2008, Song *et al.* 2008, Yildirim *et al.* 2008). Several studies indicate that knowledge deficits and inadequate pain assessment are the most important barriers

for healthcare professionals in implementing effective pain management (Visentin *et al.* 2001, Wang *et al.* 2003, Eftekhar *et al.* 2007, Xue *et al.* 2007, Zanolin *et al.* 2007, Messeri *et al.* 2008). Misconceptions and negative attitudes among healthcare professionals in relation to pain management, particularly regarding the prescribing, administration and side effects of analgesics were also found to be barriers to effective pain management (Bird and Wallis 2002, Lasch *et al.* 2002, Chung and Lui 2003, Manias 2003, Dihle *et al.* 2006). Additionally, many other studies report poor adherence to recommended documentation practices with regards to pain assessment and management (De Rond *et al.* 2000a, Dalton *et al.* 2001, Chanvej *et al.* 2004, Ger *et al.* 2004, Jeba *et al.* 2009).

Plaisance and Logan (2006) emphasise that in order to achieve optimal patient outcomes, healthcare professionals must be knowledgeable and proficient in the clinical practice. Nurses and physicians are in a pivotal position for making decisions that play a major role in CRP management as these professionals have frequent contact with patients at different levels of care. It has been acknowledged that their improved assessment and documentation practices of pain may result in adequate analgesic prescription and better pain management (Anderson *et al.* 2000, Carr and Mann 2000, Horgas 2003, Erdek and Pronovost 2004). Pharmacists also play an instrumental role in the delivery of healthcare to patients by advising and evaluating the prescribing of pain management medication and ensuring that their patients' pain is adequately and safely managed (Craig 2012).

This puts healthcare professionals in a position of responsibility to identify the patients who have pain, to assess and manage their pain effectively, to prescribe appropriate types or doses of analgesics, and to educate the patients who are reluctant to take pain medications. Because of this central role in assessment and management of pain, healthcare professionals are expected to be knowledgeable about CRP management. Understanding what healthcare professionals know and what they feel about CRP management is fundamental to finding ways to improve quality of care provided to oncology patients.

There is a plethora of evidence inferring that educating healthcare professionals about pain management improves their knowledge and attitudes (Dalton *et al.* 1999, Patiraki *et al.* 2006) as well as their practice (Harmer and Davies 1998, Ger *et al.* 2004). Several authors concur that pain management should be based on a well-organised health care system that provides consistent nursing education regarding proper pain management techniques (Twycross 2002, Stomberg and Haljamae 2003). According to Beuwens *et al.* (2001) and Gordon *et al.* (2005), education to support healthcare professionals' knowledge requirements should be included in the hospitals' quality improvement programmes. However, healthcare professionals still report inadequate education and training in pain management skills (Donovan *et al.* 2012, Silvoniemi *et al.* 2012).

The impetus for this study derives from the need to develop a suitable interdisciplinary education programme for healthcare professionals in the acute care settings, which aims to develop their knowledge, attitude and practice with respect to

CRP management. Therefore, in this study action learning sets were utilised as a tool for educating healthcare professionals. The utility of action learning sets as an educational tool is discussed in a subsequent chapter. Knowledge attained from participation in these learning sets was expected to be disseminated to other healthcare professionals working in the participating wards with a resultant improvement in their knowledge, attitudes and practices in relation to pain management, assessment and documentation. Educating healthcare professionals to be more alert to patients' pain management requirements, may serve as a guide for implementing correct pain relieving measures based on best practice and ultimately improve the health outcomes for these patients. Findings from this study were expected to provide information on the feasibility of using action learning sets as an education tool in healthcare arenas and the potential applicability of action learning sets to other work related issues in the acute care setting.

1.8 Aims and Objectives of the Study

The principal aim of this study was to test the null hypothesis that implementing an action learning programme on CRP management has no effect on healthcare professionals' knowledge, attitudes and practice. The second aim was to evaluate the effectiveness of implementing an action learning programme on healthcare professionals' knowledge, attitudes and practice regarding CRP assessment and management within medical and surgical wards in a major academic teaching hospital in Dublin. The five main objectives of the study are as follows:

1. To identify changes in healthcare professionals' knowledge and attitudes in relation to cancer-related pain management between before and after implementing the action learning programme.
2. To evaluate if the use of action learning sets, as a means of education, results in a change in healthcare professionals' practice in cancer-related pain management.
3. To compare the effect of the action learning sets between healthcare professionals.
4. To compare healthcare professionals' views in relation to the action learning sets as a tool of developing practice.
5. To evaluate the effect of multidisciplinary action learning sets on the participants within their clinical areas.

Null Hypothesis: *The use of an action learning programme on CRP management has no effect on healthcare professionals' knowledge, attitudes and practice.*

1.9 Outline of the Thesis

In the following chapter, I provide a comprehensive review of the CRP management literature pertaining to knowledge, attitudes, practice and education programmes (Figure 1.2). A critique of previous research studies' methodologies, outcomes and limitations is provided. Chapter three describes action learning, the use of action learning sets, its use in Ireland and the utility of action learning sets in this study. In chapter four, I examine action research methodology by drawing on the literature that has informed the development of action research as a method of enquiry. I also discuss the origins and definitions of action research and explore the working definitions that most suited my study and provide a detailed account of the key

characteristics of action research. In chapter five, I explain the research methods employed in the current study. Sampling procedures, study settings, data collection techniques, researcher's role, access to study site, recruitment of participants and data analysis are presented. I also address issues of reliability and validity, and ethical considerations.

In chapters six and seven, I provide a detailed description of the process of this action research enquiry based on the action research phases. Therefore, in chapter six, I examine the initial phases, while the final phases are discussed in chapter seven including a detailed description of events, activities and taken actions during the action learning sets in this study. The outcomes of this action research enquiry are delineated in chapter eight. In chapter nine, I discuss the outcomes and their implications. Finally, in chapter ten, I summarise the study outcomes and provide an overview of the strengths and limitations of the study. I outline recommendations for professional practice and research and propose recommendations for theoretical development.

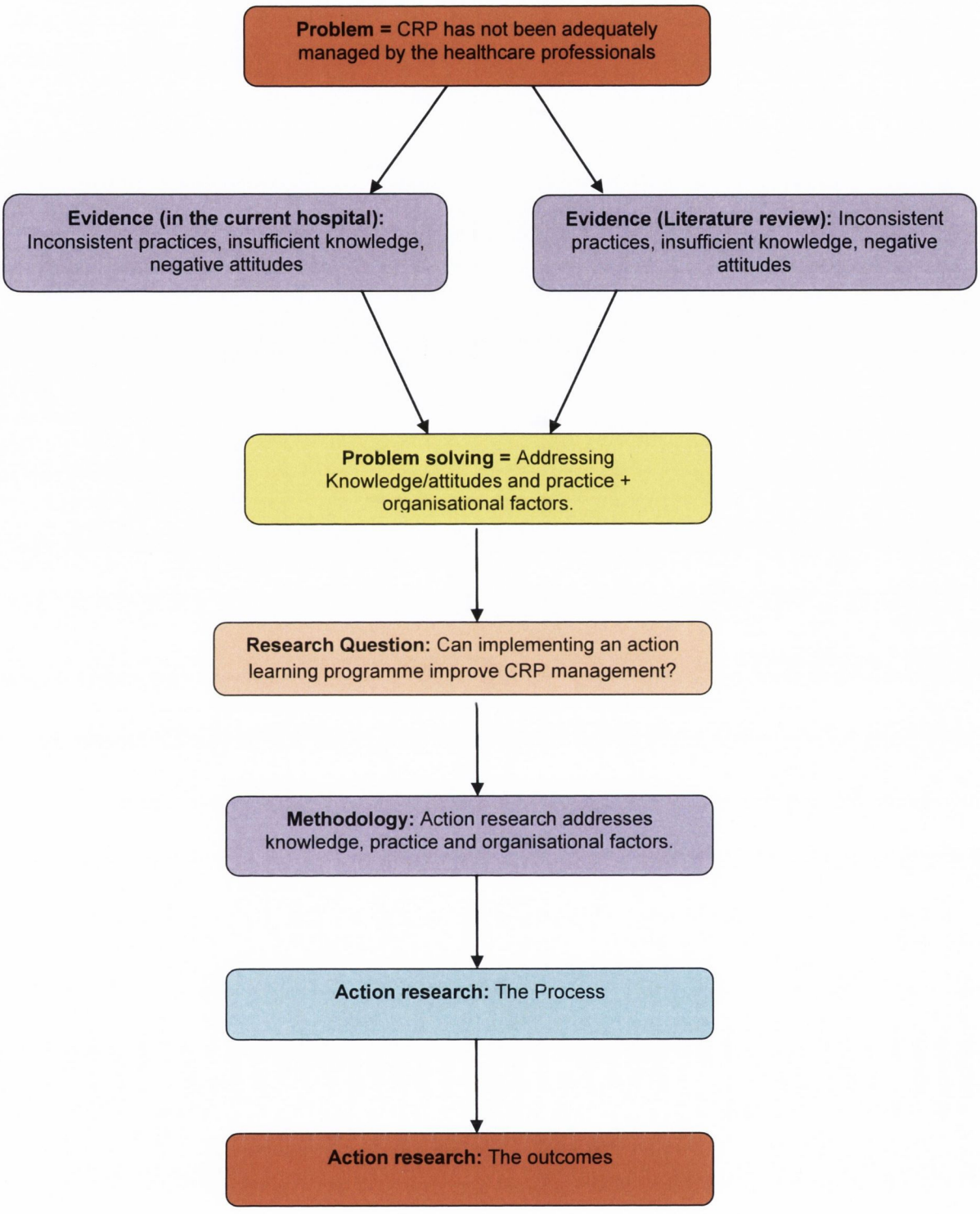

Figure 1.2 The study outline

1.10 Conclusion

Pain has been identified as one of the most common symptoms in patients with cancer (Stromgren *et al.* 2006, McMillan *et al.* 2008, Stark *et al.* 2012). Despite the availability of the WHO guidelines and the advancement of pain management modalities, many patients continue to experience pain associated with cancer (Gordon *et al.* 2005, Solman *et al.* 2005, Solman *et al.* 2006, Fisch *et al.* 2012). Understanding what healthcare professionals know about CRP management is fundamental to finding ways to improve quality of care provided to oncology patients. For the purpose of this study action learning sets were utilised as an educational tool for healthcare professionals with regard to CRP management. In this chapter, I provided an overview of the organisational context of this study and outlined my position as an action research within this study enquiry. I also provided a description of the concepts related to CRP assessment and management and background and significance of the study and outlined the aims and objectives of the study. In the following chapter, I provide a review of the CRP management literature.

Chapter Two

Cancer-Related Pain Management: Literature Review

2.1 Introduction

The aim of this chapter is to present a review of the literature with regard to CRP management. Findings from studies related to CRP assessment and management, with an emphasis on the barriers to effective pain management, documentation, healthcare professionals' knowledge and attitudes toward CRP are provided. An overview of the methods used in pain management programmes and their limitations are discussed in detail. The focus of the literature review was to address the following three questions:

1. What are healthcare professionals' practices with regard to CRP assessment and management?
2. What are healthcare professionals' knowledge and attitudes towards CRP management?
3. How effective are education programmes on healthcare professionals' knowledge, attitudes and practice regarding CRP management?

2.2 Search Strategy

A comprehensive search of the literature was conducted by accessing online, electronic searches of databases and journals including CINAHL, MEDLINE, PsycINFO, PubMed, Science Direct and Wiley-Blackwell. Manual searches of all relevant journals and related material were also carried out. A search was also conducted using the reference list provided in relevant articles. Papers were chosen based on the topic and content that was related to the literature review. The key

information extracted from each article included authors, year of publishing, methodology, location, sample and major findings. This information was used to consolidate prior research conducted in relation to how education programmes affected healthcare professionals' knowledge, attitude and practice. Initial search terms included combinations of *pain management, cancer, knowledge, attitudes, education, action research and action learning*. The search strategy was confined to the preceding 15 years although some older relevant literature is included to ensure that contemporary results were captured. This timeframe coincides with a greater proliferation of writings related to pain management and facilitates detection of changes in conceptualisations of pain over a reasonable period.

2.3 Concepts of Knowledge, Attitude and Behaviour

The concepts of knowledge, attitude and behaviour are discussed in detail for four main reasons. First, in order to conceptualise them within the context of the current study as knowledge, attitudes and practice are the key elements examined in this study. Second, these integral components embody the process of learning and reflection in both the action learning and action research cycles. Third, given that 'change' is the central focus of action research (Lewin 1952), measurement of the quality of an action research might not be successful without referring to these components as a change indicator of individuals. Finally, there has been an ongoing debate and confusion in the literature on whether or not any of these components affects or influences the other (Ajzen 2001). An example of this is the original developers of the Knowledge and Attitude Survey Regarding Pain (KASRP), which was used in this study, propose that it is difficult to differentiate between items as

measuring either knowledge or attitudes and suggest that one should avoid isolating these items (Ferrell and McCaffery 2008).

2.3.1 Knowledge

Knowledge has been identified as "a human characteristic intrinsically manifested in the thinking, learning, artistic, behavioural, and problem solving capabilities of human beings acting in a social context" (Al Banna 2000, p. 12). Therefore, in order to make sense of external objects, one must apply information to enable reaction, evaluation and action-taking. Thus, knowledge may be viewed as a combination of information, insight, ideas and experience. Based on each of these elements, it can subsequently be decided whether our knowledge can or cannot lead to effective action. Further to the previous definition, knowledge has also been defined as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Davenport and Prusak 1998, p. 5).

Knowledge within workplaces is usually found in documentation and repositories but is also inherent in organisational daily practices, procedures and norms (Davenport and Prusak 1998). It is proposed that such knowledge is created through our practice experiences and is referred to as tacit *knowing-in-action* (Ghaye and Ghaye 1998). Schon (1987) established that the use of 'knowledge-in-action' is central to the originality of professional practice. Synonyms for this type of knowledge include attitude-relevant knowledge, issue-relevant knowledge or working knowledge (Wood *et al.* 1995). According to Knowles *et al.* (2001) Knowledge-in-action comprises two

main elements. The first is that professional development commences with reflecting on our actual practices and experiences which elicits a detailed knowledge base from clinical practice (Ghaye and Lillyman 2000). Secondly, this knowledge is what practitioners predominantly use in the course of their work and hence it becomes our *knowing-in-action*. This knowledge is often difficult to articulate verbally but is expressed in a practitioner's behaviour (Schon 1987).

2.3.2 Attitude

Attitude is a complex concept comprising *cognitive, emotional* or *affective* and *the action tendency* components and as such is difficult to define. Oppenheim (1992) defines an attitude as "a state of readiness, a tendency to respond in a certain manner when confronted with a certain stimuli" (p. 174). According to Oppenheim (1992), attitudes are based on beliefs (the cognitive component), are often influenced by strong feelings (the emotional component) which may lead to particular behavioural intention (the action tendency component). This behavioural manifestation, according to Ajzen (1991), is the observable reaction in a given situation in relation to a given aim. Eagly and Chaiken (1993) conceptualise attitude as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour" (p. 1). Further to Eagly and Chaiken's (1993) definition, Petty and Wegener (1998) referred to attitude as an individual's overall appraisal of other individuals, objects and issues.

It may be deduced from these definitions that evaluation is an essential part in attitude formation. Generally, a person's attitude refers to how favourably or unfavourably that person reacts to other persons, actions, events, ideas and objects

around him or her. Therefore, a tendency to evaluate becomes unavoidable. According to Petty and Wegener (1998), the intensity of an individual's evaluations may differ from one to another based on emotions, beliefs or a previous experience and behaviour. In other words, attitudes are learned through experience and therefore cannot be developed fully where experience is lacking (Petty and Wegener 1998).

2.3.3 Knowledge, Attitude and Behaviour

It is evident from the definitions of knowledge and attitude offered in the literature that the two terms are, in essence, closely related. Krosnick and Petty (1995) suggest that knowledge is the foundation of attitude and is a function of the number of beliefs and experiences linked to the attitude. According to Ajzen (1991), knowledge has a strong influence on components proposed to predict behaviour, namely, attitude, subjective norms and perceived behavioural controls. Knowledge is a prerequisite to the process of attitude formation that is directly linked to performing an issue-related knowledge (Wood *et al.* 1995, Ghaye and Ghaye's 1998). More recent findings support that the higher the current level of knowledge a person possesses the more positive their attitude (Sexton and Stewart 2007, Prokop *et al.* 2009). Furthermore, it has been reported that attitudes were more predictive of behaviour in individuals with high rather than low levels of knowledge (Davidson *et al.* 1985, Kallgren and Wood 1986).

According to Lewin's Field Theory of Learning (1952), attitudes precede behaviour because attitudes generate friction and the manifestation of that friction is one's behaviour. Many previous psychologists, who believed in attitude-behaviour

consistency, based their assumptions on Lewin's theory. During their trials in determining discrepancies between attitude and behaviour, Ajzen and Fishbein (1980), formulated the Theory of Reasoned Action. Because their theory was only limited to voluntary behaviour, Ajzen (1991) established the Theory of Planned Behaviour that predicts deliberate behaviours. According to these theories, behaviour change is brought about by altering an individuals' intention to perform an action. These authors believe that changes in intention to act are generated by influencing the immediate determinants of that intention to act, which are subsequently brought about by influencing fundamental beliefs (Ajzen and Fishbein 1980, Ajzen 1991). Ajzen (2001) belives that the capacity for attitudes to predict behavioural intentions and actual behaviour will continue to be an integral part of theory and research in the future. Both of these theories are relevant to this action research study where action learning sets are used in order to bring about changes in practice through altering knowledge and beliefs of healthcare professionals in relation to CRP management. In the following chapter, I refer to these three previously acknowledged concepts and conceptualise them from action learning perspectives.

Not all psychologists subscribe to attitude-behaviour consistency nor do they agree that there is any reliable connection between attitudes and human behaviours (Corey 1937, Linn 1965). Wicker (1969) found attitudes to be very weak predictors and strongly purported that attention be given to the attitude-behaviour inconsistency and suggested revision of the attitude construct itself. Furthermore, Festinger (1964) reported that there was no evidence to show that changing attitudes results in changing behaviour. Festinger (1964) even argues that the attitude-behaviour

relation works the other way around, illustrating our behaviours as the horse and attitudes as the cart.

2.4 Untreated CRP; Prevalence

Many patients continue to experience pain associated with cancer in spite of advances in pain management modalities (Gordon *et al.* 2005, Solman *et al.* 2005, Solman *et al.* 2006, Fisch *et al.* 2012). Two systematic reviews report that cancer pain is common and its prevalence is related to the stage of illness (Hearn 2003, van den Beuken-van Everdingen *et al.* 2007b). Forty eight percent of patients with early disease (Hearn 2003), 59% undergoing cancer treatment and 64-74% with advanced disease reported experiencing pain (van den Beuken-van Everdingen *et al.* 2007b). These findings are consistent with those reported more recently by the European Pain in Cancer (EPIC) survey of 11 European countries, which indicated an overall pain prevalence of 72% of patients with cancer (Breivik *et al.* 2009). This recent study's results are in keeping with others reported by van den Beuken-van Everdingen et al. (2007a), where a high prevalence of pain (55%) was found in the total population of cancer patients, and (75%) in patients for whom treatment was not feasible.

Less favourable results were found in a subsequent EPIC survey (Hawksley 2009) where more than half of patients with cancer (57%) experienced pain on a daily basis and the majority of patients (88%) experienced pain within the past month. All patients considered themselves to be in some level of pain, with an overwhelming 94% of survey respondents reporting moderate to severe pain. Despite the availability of effective pain medications, approximately 25% of patients with

moderate to severe pain did not receive any treatment. Among those who received treatment, many found that their prescription did not adequately control pain and breakthrough pain remained a significant problem. This survey was conducted in more than 5,000 cancer patients from 12 countries representing the largest study to date on the prevalence, treatment and impact of CRP. Results of this survey indicate that pain is widespread, frequent, and is often inadequately controlled.

Deandrea *et al.* (2008) reviewed 26 studies, which examined analgesic prescribing for cancer patients and found that the prevalence of under treatment ranged from 8%-82%, with a weighted mean of 43%. They concluded that nearly half of cancer patients received inadequate analgesia for their pain. Similarly, a study conducted in Italy showed that pain was present in all phases of cancer disease, and was inadequately treated in 56% to 82.3% of patients (Costantini *et al.* 2009). Fisch *et al.* (2012) found that 33% of cancer patients with pain had inadequate analgesic prescribing for CRP treatment. Additionally, a community-based study by Borgsteede *et al.* (2009) showed that many patients with cancer only received strong opioids in the last weeks of life when they may have been able to benefit from them earlier. While the main focus of these studies was the prevalence of CRP, few studies also included factors behind the undertreatment of CRP. In Hawksley (2009), 25% of patients reported that their doctor did not know how to treat their pain and only one in three patients recalled having their pain assessed on a pain scale. Additionally, 25% of patients reported that the healthcare professional never or rarely asked them about their pain and over 30% of patients believed that doctors did not have enough time to discuss pain with them (Hawksley 2009). Therefore, it may be deduced that lack of knowledge, inadequate assessment of CRP or some organisational factors,

such as lack of time due to heavy workload, can be a barrier to effective pain management of healthcare professionals.

2.5 CRP Assessment and Management Practices

Documentation of pain ratings, interventions and outcomes, provides visible patient information (Pasero and McCaffery 2004). Furthermore, by recording pain assessment scores and pain relieving interventions and ensuring visibility of this information, other members of the healthcare team can make a more effective contribution to the patients' pain management (Camp-Sorrell and O'Sullivan 1991, Carr and Mann 2000). In 1991, the Committee on Quality Assurance Standards (CQAS) of the APS developed quality assurance standards for relief of acute pain (APS 1995). Guidelines on acute pain management standards emphasised that pain should be assessed and documented on admission, after pain-producing procedures (such as dressing change, endoscopy, spinal tap etc), new complaints of pain, routinely, and at regular intervals depending on the severity of pain. However, despite recommendations, many studies report poor adherence to recommended documentation practices with regards to pain assessment and management (Briggs and Dean 1998, Dalton *et al.* 2001, Chanvej *et al.* 2004, Ger *et al.* 2004, Jeba *et al.* 2009). According to the JCAHO (2000), the majority of nurses are not meeting JCAHO standards of care in the management and documentation of CRP which can interfere with patient care.

2.5.1 Documentation of Pain

Audit and feedback have been shown to improve detection, assessment and management of pain in hospitalised cancer patients (Morrison *et al.* 2006, Goldberg and Morrison 2007). A review of the application of the JCAHO pain management standard was conducted by Cohen (2003) in five hospitals using 117 charts of 80 inpatients and 37 outpatients with cancer who had pain documented in their records. The purpose of the review was to determine whether application of these JCAHO standards was documented. Pain assessment and management were not documented for most patients. Pain intensity was noted for 57% of outpatients and 53% of inpatients. When pain was documented, treatment was noted in 86% of outpatients' charts and 89% of inpatients' charts. Moreover, pain location was documented only in 51% of inpatients, pain character; frequency and duration were documented less frequently (19% to 40% of the charts). Of those patients with documented pain, reassessment after treatment was reported in only 34% of the outpatient charts and 44% of the inpatient charts.

In a subsequent review of 384 patient charts, Ger *et al.* (2004) reported that just over 20% of patients had pain intensity recorded by nurses. The JCAHO (2000) states that regular, systematic and appropriate pain assessment is a patient's right. Interventions to effectively manage cancer pain needs to continue, and the JCAHO standards provide a mechanism to evaluate practice documentation in order to improve care. According to Horgas (2003), the most important components of pain management are regular assessment, the use of standardised tools and consistent documentation.

A ten-year prospective study of 2118 patients showed that prescribing according to the WHO cancer unit guidelines produced good and satisfactory pain control in 88% of patients (Zech *et al.* 1995). However, WHO guidelines did not appear to be adhered to during the process of pain management. Despite effective ways of controlling pain, it is a commonly ignored and uncontrolled symptom (Zech *et al.* 1995). Amid the array of investigations required to make a diagnosis, many patients are not prescribed analgesics, or do not receive them in the right dose and frequency, and suffer uncontrolled pain, despite being seen by doctors. A multicentre cross-sectional survey of cancer patients in France revealed that 30% of patients in pain did not receive any analgesics and 51% had inadequate pain relief, which was often because of poor assessment of pain and a discrepancy between the patient's and physician's assessment (Larue *et al.* 1995). The JCAHO for the assessment and treatment of pain require that all inpatient and outpatient healthcare facilities should systematically assess and document pain (JCAHO 2000).

A retrospective audit was conducted by Jeba *et al.* (2009) of inpatient charts to assess the adequacy of pain assessment and prescription of analgesics. An educational intervention was then introduced in the form of teaching, provision of pocket guidelines and posters displaying the WHO analgesic guidelines. Subsequently, within three months, the authors conducted a prospective audit of documentation of pain and prescribing practices against the following standards: documentation of pain, intensity and response, prescription of analgesics based on WHO guidelines, prescribing breakthrough analgesics and prescribing stimulant laxatives with strong opioids. The retrospective audit included 39 patients and the prospective audit had 34 patients. The results of the audit showed that pain was

documented in 89.7% and 82.4%, pain intensity in 12.8% and 8.8%, and pain relief response in 12.8% and 11.8%, in the retrospective and prospective audits, respectively. The WHO principles were correctly followed in 74.3% and 88.2%, and breakthrough analgesics prescribed in 38.4% and 61.8%, respectively. It was concluded that there was improvement in correctly following the WHO analgesic guidelines and prescribing breakthrough analgesics but not in documentation of pain. It was also concluded that clinical audits and interventions such as teaching, pocket guidelines and posters can result in better patient care (Jeba *et al.* 2009).

A retrospective audit of nursing documentation was undertaken by MacLellan (1997) in a large Irish teaching hospital with the aim of determining the way in which pain was managed by means of scrutinising nursing documentation. A comprehensive review of 136 patients' nursing notes was carried out in this Irish study in relation to the documentation of pain. The results of the study revealed that only 23% of patients had documentation regarding pain recorded in the patients' charts. It was reported that the amount of analgesia received by patients was only between 4-41% of the maximum dose possible (MacLellan 1997), which indicates that patients always received almost 60% less analgesia than prescribed but it is entirely possible that many received far less than this. It was also established that no numerical assessments of pain were documented apart from the patients who were receiving patient controlled analgesia. In relation to PRN (pro-re nata, as needed) prescribing, MacLellan (1997) reported that that nurses were too reluctant to make decisions regarding dosage and frequency of analgesic administration and she ascertained that the administration of such analgesics for patients is primarily an autonomous role of the nurse. Additionally, there was no follow up documentation in any of the

patient records with regard to pain relief. The findings of this study were in accordance with subsequent studies where minimal documented evidence of the effectiveness of interventions was noted (Briggs and Dean 1998, Manias 2003).

Although MacLellan's study (1997) did not focus on CRP particularly, the study highlighted numerous concerns related to pain management and, in particular, issues related to existing practices on pain management and assessment. MacLellan's study is very relevant to the current study as it is the only Irish study found in the literature to have focused on pain assessment and management in the Irish healthcare context. Therefore, both studies share similarities in terms of the Irish hospital context and the healthcare system where both of the studies were conducted. Also, analgesia prescribing and administration form a central part of MacLellan's audit study which is similar to the current study that utilised an audit in order to investigate healthcare professional's prescribing and administration practices on CRP. Therefore, one can assume that findings from the current study will support and extend the findings of MacLellan (1997) and provide a clearer understanding of how healthcare professionals assess, document and treat the CRP.

Clarke *et al.* (1996) conducted a study in which data were collected from nine clinical units in a large teaching hospital in an urban area of the Northeast of the USA. Demographic information was also collected to explore the relationship between nurses' characteristics, including previous pain education, clinical experience, area of clinical practice, knowledge and attitudes. The Pain Audit Tool (PAT) was used to gather data regarding pain assessment, documentation and treatment practices from

charts. Chart audits using the PAT revealed that 76% of the charts (N=82) lacked nursing documentation pertaining to the use of a patient self-rating tool to assess pain, despite a high reported use (76%) of such a self-rating tool. Ninety percent of the charts had no documentation of the use of non-pharmacological interventions to relieve pain. During some shifts, there was no documentation regarding pain although medication to relieve pain had been given. At other times, there was an isolated note regarding the patient's pain such as "Pain better," but no previous documentation of pain assessment or interventions.

Practical recommendations in Clarke *et al.* (1996) were presented for improving the quality and the consistency of the assessment, documentation and treatment of pain; and disseminating pain management information. These recommendations included conducting ongoing patient-centered studies to assess the knowledge and attitudes in terms of pain and its management on a patient's admission as well as adequate and current pain management information in all hospital orientation programmes for nurses (Clarke *et al.* 1996). Similarly, Dalton *et al.* (2001) audited 787 patients' records to evaluate the documentation of care provided by healthcare professionals including nurses, physicians and pharmacists who participated in an educational programme. The results, consistent with studies reviewed pertaining to CRP, revealed that there was inconsistency and infrequency in documenting pain assessment and treatment.

A subsequent audit conducted by Chanvej *et al.* (2004) of 425 patients' records evaluated the quality of pain documentation in the first 72 hours postoperatively. The results of the study showed that nurses documented pain assessment more often than doctors (98.8% versus 29.4%). An assessment of pain intensity using a numerical rating scale was found in 192 (45.2%) charts, and using a pain descriptor scale in 408 (96%) charts. The study revealed that documentation of pain both before and after giving analgesics was frequently omitted from the notes. Additionally, pain assessment items were documented inconsistently and were considered to be below the acceptable standards described by JCAHO (2000). Similar findings were established by Idvall and Ehrenberg (2002) who reported that there were inadequacies in the content and comprehensiveness of documenting pain management as only 10% of the nurses documented a systematic assessment using pain assessment instruments. Furthermore, only half of the nurses documented patients' self-reported signs such as the pain location and no records were found that included a nursing diagnosis or goals concerning pain management (Idvall and Ehrenberg 2002).

According to Berry and Dahl (2000), the standards of the JCAHO (2000) were very clear that patients with pain are identified in an initial screening assessment and a more comprehensive pain assessment is performed when pain is identified. The JCAHO (2000) also recommended that the results of the assessment are documented in a way that facilitates regular reassessment and follow-up and that required data are collected to monitor the appropriateness and effectiveness of pain management (appendix IV). Therefore, it is evident from these studies that

healthcare professionals' documentation of pain management is inconsistent and unsystematic.

2.6 Healthcare Professionals' Knowledge and Attitudes

Table 2.1 presents the main findings from a sample of 22 research studies conducted over a 15 year period which have examined healthcare professionals' knowledge and attitudes in relation to CRP management. The majority of studies presented investigated healthcare professional's knowledge and attitudes as a group, while others investigated doctors, nurses, or pharmacists separately.

Healthcare professionals have an ethical responsibility for pain management which serves as an integral part of caring for the patient suffering from pain (Stegman 2001, Innis *et al.* 2004). However, this may be influenced by the healthcare professionals' perception, knowledge and attitude toward pain and its management. Despite the advancement of pain management modalities, many patients continue to suffer unnecessarily (Gordon *et al.* 2005, Solman *et al.* 2005, Solman *et al.* 2006). Research reports suggest different factors contribute to the substandard treatment of CRP by healthcare professionals. Many researchers have provided insights into knowledge regarding CRP management. Among the most frequently cited factors are healthcare professionals' lack of knowledge and negative attitudes about pain assessment and management (Bauwens *et al.* 2001, Eftekhar *et al.* 2007, Xue *et al.* 2007, Messeri *et al.* 2008, Song *et al.* 2008, Yildirim *et al.* 2008).

Studies that investigate healthcare professionals' knowledge of pain and its management report that healthcare professionals are not sufficiently knowledgeable concerning the pharmacological management of pain. This specifically includes knowledge of commonly used analgesics, including preferred routes of administration, drug choice, equianalgesic dose, and the likelihood of addiction concerns (McCaffery and Ferrell 1997, Wells *et al.* 2001, Xue *et al.* 2007, Zanolin *et al.* 2007, Messeri *et al.* 2008). Other studies described healthcare professionals' lack of knowledge in terms of assessment and evaluation of pain, also in relation to opioid-induced respiratory depression and concerns about their side effects (McCaffery and Pasero 2002, Ponte and Johnson-Tribino 2005, Wolfert *et al.* 2010).

Broekmans *et al.* (2004) and Yanjun *et al.* (2010) suggest that healthcare professionals fail to understand the nature, origin and transmission of pain, the effects of anxiety and depression on pain, and differences and links between acute and chronic pain. Furthermore, other studies indicated that healthcare professionals tended to underestimate their patients' pain intensity, under-administer analgesics, and exaggerate fears on the likelihood of the development of untoward effects of opioid use such as addiction and respiratory depression (McCaffery and Ferrell 1995, Furstenburg *et al.* 1998, Mrozek and Stehle 2001, Bird and Wallis 2002, Lasch *et al.* 2002, Chung and Lui 2003, Manias 2003, Dihle *et al.* 2006).

Table 2.1 *Papers Reporting on Knowledge and Attitude of Healthcare professionals to CRP.*

Study Author/s, Year	Methodology	Location	Sample	Major Findings
Nimmaanrat *et al.* 2010	25-item survey	Thailand	125 medical interns Response rate 92.8%	• Over 80% did not think that patients required too much analgesic. • More than 32% preferred not to prescribe morphine vs. pethidine as they believed it had more harmful side effects. • 40% did not know about when to give morphine orally
Wolfert *et al.* 2010	32-item survey	USA	600 physicians Response rate 36%	• A majority considered addiction to be a combination of physiological and behavioural characteristics, rather than defining it solely as a behavioural syndrome. • Misconceptions about opioid prescribing.
Yanjun *et al.* 2010	Self-reported questionnaire	China	201 doctors, randomly selected. Response rate 95.7%	• Knowledge deficit was highlighted amongst doctors. • Doctors who had received education on CRP management significantly had a higher mean score.
Messeri *et al.* *2008*	13 item survey	Italy	4912 healthcare professionals from (16 hospitals). Response rate 18%	• Mean score of 70.2% • Great gap identified in opiates knowledge (51.4%)
Yildirim *et al.* *2008*	Survey- *KASRP	Turkey	68 Oncology Nurses Response rate 85%	• Mean score on the KASRP was only 35.4% • Low percentage correctly answered case studies regarding analgesia dosage. • Pharmacological knowledge deficits • Limitations: small sample size and the fact that the sample was taken from an oncology unit; the results cannot be generalised

Bernardi *et al.* 2007	Survey-KASRP	Italy	99 Hospice Nurses Response rate of 66.6%	• Mean score of 62.7% • Underestimation of patients' pain (30%) • Low percentage correctly answered case studies regarding analgesia dosage. • Incorrect self-evaluation about pain management knowledge. • Lack of opioids knowledge
Matthews and Malcolm 2007	Survey-KASRP	Northern Ireland	113 Registered Nurses Response rate 68.4%	• Mean score 73.8%. • Severe deficit in knowledge relating to opioid use • Significant misconception in relation to side effects including respiratory depression.
Wilson 2007	Survey-KASRP	UK	72 nurses (35 hospice/oncology nurses and 37 district nurses. Response rate of 86%	• Overall mean score of 71.9% • Hospice nurses' had a more comprehensive knowledge of CRP management with a mean score of 79.4%. • General Nurses' mean score of 64.9%. • Knowledge of the nurses wasn't related to their years of experience.
Xue *et al.* 2007	Questionnaire 'Cancer Pain Role Model Programme survey'	USA	*Convenience* sample of 96 healthcare professionals (50 nurses, 28 doctors, 18 pharmacists)	• Nurses; 80% rated their education and training in CRP as fair or poor (only 20% rated it as good or excellent). • Mean score of pain management knowledge 55% • Nurses believed that 59% (SD=22.3) of patients with cancer underreported their pain and 12% (SD=11.1) over- reported it. • Pharmacists; 76% rated their education/training as fair or poor • Doctors; only 31% rated their education as good (no one rated it as excellent) • Limitations: small sample size, population of doctors was only represented by interns.
Yu and Petrini 2007	Questionnaire-'pain management with respect to older people'	China	621 Registered Nurses Response rate 92.7%	• Knowledge deficits of pain and its management were identified. • Significant misconception about, respiratory depression, addiction and opioids use.

Zanolin *et al.* 2007	Cross sectional survey	Italy	4,961 healthcare professionals, volunteered to participate (1,348 doctors, 3,457 nurses, and 156 not specified)	• Overall mean score of 50.2% (95% Confidence Interval 49.7%-50.7%). • Doctors' mean score 57.3% • Nurses' mean score 47.6%
Young *et al.* 2006	open-ended questionnaire developed for this study	USA	Convenience sample of 52 acute care nurses	• Nurses believed they could interpret patients' pain through actions such as screaming. • Almost 10% of nurses had negative attitudes towards pain assessment tools.
Ponte and Johnson-Tribinos 2005	20-item survey was mailed.	USA	537 physicians Response rate of 34.6%	• Knowledge gaps were found in relation to opioids. • Majority of respondents felt that their formal medical training didn't prepare them to effectively manage the pain.
Broekmans *et al.* 2004	A structured questionnaire	Belgium	350 Nurses. Response rate of 89.1%	• Approximately, 36% of nurses had clearly negative attitudes towards the use of opioids during a diagnostic phase and the risk of possible addiction.
Kourbani *et al.* 2004	KASRP	Greece	46 nurses Response rate 45.7%	• Pain was perceived as a major issue • Nurses who are knowledgeable about pain management may be more likely to feel competent and satisfied with their pain management practices
Tse and Chan 2004	Survey-KASRP	China	601 nurses (3 hospitals) Response rate of 43%	• Mean score on KASRP 44.0% • Exaggerated fears of respiratory depression in patients. • Inadequate knowledge and attitude in relation to pain management.

Lai *et al.* 2003	Survey-KASRP	Taiwan	1900 Nurses, stratified sampling from 9 hospitals Response rate of 94.5%	• Mean score on KASRP of 50.5% • Only 7% correctly answered the morphine dosage. • Misconceptions and lack of knowledge about analgesics.
Sasahara *et al.* 2003	Survey, self-administered questionnaire	Japan	536 nurses Response rate of 70.2%	• General hospitals' nurses experienced a high degree of difficulty while caring for cancer patients. • Knowledge deficit and lack of self-esteem was reported.
Joranson and Gilson 2001	51-item developed questionnaire was mailed.	USA	899 pharmacists. Response rate of 61%	• Overall satisfactory level of knowledge with important exceptions.
Visentin *et al.* 2001	16 item-knowledge and attitude questionnaire	Italy	1106 healthcare professionals (782 nurses and 324 doctors) Response rate of 80.8% (85% of nurses and 69% of doctors).	• Mean score of 61% (doctors: 65% and nurses: 59%). • Significant knowledge deficit and erroneous beliefs were found.
Wells *et al.* 2001	Questionnaire	Scotland	158 nurses and doctors. Response rate of 63.9%	• Knowledge gained due to the influence of the palliative care team. • Less than 19% attended educational sessions. • The attendees (n=19) compared with those who did not attend (n=82) an educational offering was too small to show significance.
Brown *et al.* 1999	Survey-KASRP	USA	260 Registered Nurses. Response rate of 26%	• Mean score on KASRP of 64.6% • 73% of nurses felt successful in ability to manage pain despite their poor performance on the KASRP. • Significant gaps in the pharmacological knowledge.

KASRP=Knowledge and Attitudes Survey Regarding Pain

In their study to assess the knowledge and attitudes of Italian physicians and nurses towards pain using a questionnaire, Zanolin *et al.* (2007) reported a mean knowledge/attitude score of 50.2%. The results revealed a statically significant difference in percentage scores *($p<0.001$)* between physicians (56.5%) and nurses (51.3%). The overall mean score of correct answers from doctors and nurses was 57.3% and 47.6% respectively. The majority of healthcare professionals correctly agreed that if the treatment of CRP is to be effective, it is necessary to continuously assess the pain and the efficacy of the therapy (mean score of 91.2%). Interestingly, 75.7% incorrectly agreed that "it may often be useful to give a placebo to a patient in pain to assess if he is genuinely in pain". Similar results had been reported previously in a study by Visentin *et al.* (2001). Of the 782 nurses and 324 doctors directly involved in patient care, 669 nurses (85%) and 225 doctors (69%) completed a 16-item questionnaire (Visentin *et al.* 2001). The overall mean score of knowledge and attitudes was 61%. Physicians scored 65% and nurses 59% *($p<0.001$)*. The findings from both studies revealed knowledge deficits and erroneous beliefs that may hamper how pain is treated. It is important to note that current guidelines on the standards of pain management state that the single and most reliable indicator of the existence and intensity of pain is the patient's self-report of pain (JCAHO 2000, Macintyre *et al.* 2010). Acceptance of a patient's interpretation of pain is paramount in effective pain management. This pertinent point is discussed further in a subsequent section.

Messeri *et al.* (2008) report more favourable results when they investigated the knowledge among doctors and nurses of pain experienced by patients in the hospitals of Tuscany. In total, 3631 nurses and 1281 doctors completed and returned a thirteen-item questionnaire, yielding a response rate of 18%. Although yielding a low response rate, the authors of the study argued that the findings were representative of the population in the particular area given that the study comprised 16 hospitals (Messeri *et al.* 2008). The overall mean score corresponded to 70.2% with variability among questions ranging between 30.5% and 95.6%. However, findings should be interpreted with caution due to potential bias arising from the very low response rate. Congruent with Zanolin *et al.* (2007) and Visentin *et al.* (2001), this study showed that there was a statistically significant difference between the mean number of correct answers from doctors (9.57/13) and nurses (8.87/13). Doctors working in critical areas yielded significantly higher mean knowledge scores in comparison with other areas. Nurses working in surgical and critical areas showed a statistically significant difference in correct knowledge scores compared with the nurses of the general practice and other areas. Messeri *et al.* (2008) concluded that although the general knowledge of patient pain was good (86.5%), great gaps existed in the field of opioids (51.4%). Incidentally, almost 40% of respondents erroneously believed that morphine has a ceiling dose.

Consistent with findings from the three previous studies, Wells *et al.* (2001) who conducted a longitudinal study with a survey design to examine the knowledge and attitudes of nursing and medical staff on a surgical unit regarding the use of opioids for CRP management both before and after working with a newly established hospital palliative care team. Findings revealed that doctors tended to score better

with regard to knowledge than nurses. This occurred both initially and at the one year follow-up. Even though educational sessions were available throughout the year, very few staff members were able to attend due to organisational restraints. The attendees (n=19) compared with those who did not attend (n=82) an educational offering was too small to show statistical significance. The gains in knowledge and attitude were, therefore, interpreted to be due to the influence of the palliative care team. Knowledge gains were demonstrated in the following areas: "narcotics for pain relief are given at any time during the course of their disease" *(p=0.023);* "narcotic doses sufficient to relieve cancer pain inevitably decrease respiration to the point that it shortens the patient's life" *(p=0.01)*; and "patients who take narcotics early in their disease will have nothing to control their pain later" *(p=0.009).* The findings from the study reported exaggerated fears of opioid use due to erroneous beliefs related to potential side effects, which may compromise the management of pain.

A descriptive study was conducted by Nimmaanrat *et al.* (2010) using a questionnaire to survey the knowledge and attitudes among medical interns regarding CRP management. The sample included 125 newly qualified interns who had worked for approximately five months prior to graduation. The results showed that over 80% of the interns thought that patients were overprescribed analgesia. More than 32% favoured pethidine over morphine when a potent opioid was required as they believed it had less harmful side effects in long-term use. Forty percent of respondents did not consider administering morphine orally even when the patient was able to tolerate it. Seventy percent believed that they would prescribe opioids carefully to avoid tolerance and addiction. Moreover, almost 80% considered that barriers to effective CRP management were inadequate knowledge and inadequate

pain assessment. Similar findings were found by Yu and Petrini (2007) where nurses' poor knowledge and misconceptions pertaining to the use of analgesics and addiction was exposed. Additionally, Ferrell *et al.* (1993) stated that a lack of knowledge among nurses about pharmacological management is one of the major barriers to achieving comfort for those in pain. However, it is evident that issues related to prescribing practices are also a significant factor in ineffective pain management (Wolfert *et al.* 2010).

Yanjun *et al.* (2010) used a self-reported questionnaire to determine the degree of physicians' knowledge on morphine use and the factors that impede morphine use for cancer patients in clinical practice in China. Two hundred and one clinical physicians participated in the survey. Physicians who reported having received training in CRP management and drug use demonstrated a significantly higher mean score of basic knowledge compared to physicians who reported not having received training *($p<0.001$)*. Three top cited impediments to widespread clinical use of morphine for CRP were identified. These included lack of professional knowledge and training, fear of opioid addiction and physicians' personal preferences to select other drugs. These results are comparable with a previous study by Mystakidou *et al.* (1998) that aimed at evaluating the knowledge and attitudes among 1,200 Greek oncologists, surgeons, anesthesiologists, and general practitioners toward CRP management using a questionnaire. In addition, this study highlighted very substantial knowledge deficits in the treatment of CRP by the physicians evaluated. Both studies have highlighted a lack of pertinent knowledge and revealed misconceptions about the clinical use of morphine for cancer pain treatment.

Similar findings were revealed by Wolfert *et al.* (2010), who reported many misconceptions about the prescribing of opioids among Wisconsin physicians. The majority of the physicians had mistaken beliefs with regard to opioid addiction and over 15% admitted that fear of investigation led them to lower the dose prescribed or prescribe a schedule 3 or 4 drug rather than a schedule 2 opioid. It can be deduced from this study that the lack of knowledge and misconceptions with regard to opioid addiction may well result in underprescribing analgesia required to manage pain adequately which may lead to undertreating the pain.

In an earlier nationwide survey, Lai *et al.* (2003) revealed that nurses' knowledge about CRP management amongst Taiwanese nurses was far from optimal. The results showed that mean knowledge/ attitude scores were only 50.5%. Among the 37 pain knowledge questions assessed, the mean number of correctly answered questions was 18.52, with a range of 6 to 34 items correctly answered. Further analysis of the results showed four major areas of knowledge deficits: lack of analytic and assimilation abilities in making clinical pain judgment, over-reporting pain, concerns about developing addiction and respiratory depression and finally a lack of general knowledge about analgesia. Surprisingly, only 7% of the respondents correctly answered the PRN dosage of morphine which suggests a remarkable deficit in their knowledge that may result in ineffective treatment of the patient's pain. Similar results were revealed by Tse and Chan (2004), where the overall mean score on the KASRP was 44.0%.

Consistent with the preceding studies, low scores were also found among Turkish oncology nurses with regard to their knowledge about CRP management (Yildirim *et al.* 2008). The overall results showed that the mean score on the KASRP was only 35.4%, ranging from 5.13% to 56.4%. Among the 39 pain knowledge questions assessed, the mean number of correctly answered questions was 13.81, with a range of 2 to 22 items correctly answered. The highest percentage of incorrect answers were noted in relation to effectiveness of placebo injection to assess pain, recommended opioid administration route for prolonged pain, over-reporting pain, lack of analytic and integration abilities in making clinical pain judgment and finally likelihood of opioid addiction. The authors stated that owing to the small sample size the results may not be representative of all nurses in Turkey. Also the study sample was taken from an oncology unit, so it may not necessarily be generalised to other staff populations. However, the findings from this study highlight a considerable knowledge deficit with regard to CRP management.

Using a randomised sample in their cross-sectional descriptive study (n=350) on addiction, Broekmans *et al.* (2004) report the longer the patient receives analgesics the more concerned nurses become about developing addiction. The authors contend that these negative attitudes can hinder adequate pain treatment (Broekmans *et al.* 2004). A phenomenological study by Klopper *et al.* (2006) aimed to describe strategies that the nurses use to assess the patient's acute pain. A sample of 12 registered nurses were interviewed and asked to estimate pain intensity using the VAS. The study revealed that nurses relied on the patient's appearance in assessing the pain; some used the facial expressions while others used their observation. In addition, nurses were using their past experiences to judge

the patients' response to pain, and were predicting the patients' pain intensity according to the type of operations and not depending on patients' statements. In a more recent study (Matthews and Malcolm 2007) over half of the nurses incorrectly answered two items in relation to respiratory depression in patients receiving opioid therapy. When asked to estimate the likelihood of the development of clinically significant respiratory depression occurring in a patient receiving chronic stable opioid therapy, again over half of them incorrectly thought it was more than 1%.

Similar to Broekmans *et al.* (2004), Kourbani *et al.* (2004) described registered nurses personal and professional pain experiences and investigated the relationship with their pain management knowledge. The results showed that having a positive professional experience caring for patients with pain was related to pain management knowledge. Those who reported positive professional experiences described improved patient pain outcomes and an active role for the nurse. These results may be due to the application of their own knowledge in providing patient care or may be related to observations of patients cared for by others. The findings do not clarify whether greater pain management knowledge resulted in more positive professional experiences or whether positive professional experiences with pain management resulted in learning more about pain management. However, the qualitative findings on professional experiences with pain suggested that nurses who are knowledgeable about pain management may be more likely to feel competent and satisfied as a result of their pain management practice and that uncontrolled pain is perceived as a major issue for nurses. Ineffective pain management has been cited as a potential contributing factor to job dissatisfaction and nursing stress (Ferrell *et al.* 1995). These compelling reports might motivate nurses to strengthen

their understanding of pain management. Without understanding and using pain management knowledge, the opportunity for the kind of pain control promoted by the WHO and the APS will remain elusive. This is evident in the study by Kourbani *et al.* (2004) which provides evidence that attendance of continuing education programmes positively affects knowledge on pain management.

Despite oncology nurses having a higher level of knowledge about CRP management than their non-oncology counterparts, there is evidence to support that it remains insufficient to manage CRP. Using a survey during their assessment of 100 nurses' knowledge and attitudes towards effective CRP management, Williams *et al.* (2001) found that more than half of the nurse participants' knowledge and attitudes were very poor. Nurse participants felt that medical officers also lacked knowledge regarding the concept of CRP management. The researchers propose a need to develop education programmes for medical and nursing staff. These results are congruent with the majority of the studies that relate to nurses' views of pain management, in which the need for basic and continuous education in pain management was strongly highlighted (Lai *et al.* 2003, Rushton *et al.* 2003, Bernardi *et al.* 2007, Xue *et al.* 2007, Yildirim *et al.* 2008).

Rushton *et al.* (2003) conducted a survey to obtain information about the knowledge and attitudes among Utah nurses concerning CRP management. Forty-four oncology nurses and 303 non-oncology nurses chose to participate. Findings from the descriptive study showed that oncology nurses had better knowledge of CRP management principles than non-oncology nurses. However, it was also revealed that all nurses' pain-related pharmacology knowledge was inadequate (Rushton *et*

al. 2003). Furthermore, it was reported that 43% of all nurses did not understand that NSAIDs including aspirin were effective for bone pain related to cancer. Wilson (2007) found that oncology nurses' had a more comprehensive knowledge of CRP management with a mean knowledge score of 79.4% compared with a mean knowledge score of 64.9% among general nurses.

In a study conducted by Bernardi *et al.* (2007) results showed a mean score of 62.7% on the KASRP among the Italian hospice nurses with regards to CRP management. The researchers found that more than 30% of nurses underestimated patients' pain and did not treat the pain the correct way. The nurses studied believed that patients should not tolerate severe pain as it influenced their quality of life. Vallerand *et al.* (2004) also found among the American nurses studied, a belief that pain can and should be effectively managed. Additionally, nurses were found to incorrectly self-evaluate their knowledge of pain management (Bernardi *et al.* 2007). The authors found that despite the nurses believing that patients should not tolerate pain, little was done by the nurses to provide psychological support to patients. Additionally, a pain management team for terminally ill patients was not permanently available. The study revealed that due to lack of relevant education, nurses gain knowledge and develop attitudes by modeling their senior nurses' approaches. New nurses imitate senior nurses on the wards and acquire cancer nursing practice. This situation does not enable nurses to get attain new knowledge and they continue to practice within the usual routine pattern demonstrated by the seniors. These findings are consistent with the findings of Williams *et al.* (2001) and Rushton *et al.* (2003).

The findings by Bernardi *et al.* (2007) emphasise the need for suitable, continuous pain management education programmes for all healthcare professionals, particularly the newly qualified to maintain an adequate level of knowledge. Sasahara *et al.* (2003) have reported that healthcare professionals experience a high degree of difficulty overall while caring for the cancer patients in pain, predominantly with regards to pain treatment. Their study also revealed knowledge deficits in CRP management. A previous study by Furstenberg *et al.* (1998) found that the majority of nurses believed that they had received little or no training in CRP management, and education about CRP was inadequate. Furthermore, 55% of the nurses felt that the patients with CRP received poor care in relation to pain management and the majority (85%) thought that more emphasis should be given to management of CRP. Therefore it can be deduced that educating healthcare professionals may well result in improving healthcare professionals' knowledge which may consequently improve their pain management practices.

Congruent with Bernardi *et al.* (2007), nurses were also found to underestimate the intensity of their patient's pain in a study by Idvall (2004). This Swedish study described the nurses' opinions as to whether or not it was realistic to carry out good quality care in CRP management. The results showed that there was inconsistency between what the nurses considered to be realistic to carry out and what they actually thought they had effectuated for the patients. Remarkably, nurses may also believe patients' pain as imaginary if they do not believe that a patient's condition warrants the pain intensity as reported by the patient (Wakefield 1995). In a study by Taylor *et al.* (1984), nurses documented less intense pain when the hypothetical patient had no physical pathology and when pain was of long duration and chronic in

nature. These findings reflect the nurses' misconceptions which may contribute to how non-acute or prolonged pain could be mismanaged or wrongly assessed.

Despite numerous studies recommending the need for education programmes in order to address the deficiencies in knowledge amongst healthcare professionals, many healthcare professionals admit that their education and training remains insufficient (Ponte and Johnson-Tribinos 2005, Xue *et al.* 2007). Xue *et al.* (2007) utilised a comparative descriptive design to survey 96 healthcare professionals regarding their knowledge of and attitudes towards methods of CRP management. The majority of participating nurses (80%) rated their education and training in CRP as fair or poor, while only 20% rated it as good or excellent. Sixty percent of them reported working with patients in pain on a daily basis. The results also revealed that nurses believed that 59% of cancer patients typically underreported their pain and that 12% over-reported it. On a pain knowledge assessment, the nurses scored well on questions related to pain etiology and assessment, but faired more poorly on questions involving both pharmacologic and non-pharmacological pain therapies. Among the interns, only 31% rated their training and experience in pain management as good, none rated it as excellent, and most had less than 1 year experience working with cancer patients. Interestingly, the interns were more likely to believe that patients over-reported pain compared with the other groups. They demonstrated good knowledge on clinical assessment and therapy for pain but poorer knowledge in the areas of pharmacology and alternative therapies.

Seventy-six percent of pharmacists in the study rated their education and training in CRP management as fair or poor (Xue *et al.* 2007). They demonstrated good knowledge of pain medications and side effects, but were less knowledgeable regarding non-pharmacological methods or treatments of pain. Findings from a previous study suggest that the incorrect knowledge and inappropriate attitudes of some pharmacists could contribute to a failure to dispense valid prescriptions for opioid analgesics to patients in pain (Joranson and Gilson 2001). Furthermore a survey of pharmacists in Utah revealed deficiencies in knowledge about CRP management that could adversely influence their perception of the legitimacy of a prescription order and therefore the dispensing of opioids for the treatment of pain (Doucette *et al.* 1997). In a different study, Ponte and Johnson-Tribinos (2005) revealed that majority of physicians felt that their formal medical training did not prepare them to effectively manage pain. Knowledge gaps were uncovered in the areas of fentanyl administration, the use of propoxyphene in the elderly and the use of oxygen to manage opioid-induced respiratory depression (Ponte and Johnson-Tribinos 2005). In addition to the gaps in knowledge reported among healthcare professionals with regard to pain management, findings from these studies also highlight healthcare professionals' dissatisfaction with training and educational preparations for pain management.

Knowledge deficits and negative attitudes pertaining to CRP management not only require redress among qualified healthcare professionals, but also among medical and nursing students. Lasch *et al.* (2002) conducted a study to determine beliefs and attitudes toward CRP management held by medical and nursing students and faculty

who participated in a cancer education module for pain management. The purpose of the research was to comprehend why such knowledge deficits and attitudes persist and how they could be addressed in medical and nursing curricula. The data were collected by interviews and focus groups with a total sample size of 72. The tools utilised included interview, both individual and in focus groups, and observation. It was revealed that although pain control was a growing concern, faculty and students were unlikely to bring their misconceptions and biases about the meaning of pain and addiction into their interaction with patients unless they received education. It was recommended that pain and palliative care education become standard and integral to medical and nursing curricula (Lasch *et al.* 2002).

In summary, the reviewed literature highlights the deficiencies among healthcare professionals' with regard to their knowledge and attitudes of CRP management (McCaffery and Ferrell 1995, Howell *et al.* 2000, Bauwens *et al.* 2001, Wells *et al.* 2001, Xue *et al.* 2007, Zanolin *et al.* 2007, Messeri *et al.* 2008). These deficiencies were based on a predetermined criterion developed by the authors of the KASRP. Although Ferrell and McCaffery did not indicate an acceptable pass score when they originally developed the tool in 1987, in later studies a pass score of 80% was set (Brown *et al.* 1999, McCaffery and Robinson 2002). The majority of the reviewed studies report scores well below average. The mean score on the KASRP of the reviewed studies varied from 35.4% (Yildirim *et al.* 2008) to 73.8% (Matthews and Malcolm 2007). Findings from the majority of these studies support the view that healthcare professionals' inadequate knowledge and poor attitudes regarding CRP may source a barrier to effective pain treatment in cancer patients. As previously acknowledged, inadequate treatment of pain may result in significant physiological

and psychological consequences (Weiss *et al.* 2001, Lin *et al.* 2003) and can cause increased hospital length of stay and additional cost to the healthcare system (Furrow 2002).

Healthcare professionals' knowledge deficits regarding the mechanisms and management of pain compromise the adequacy of their assessment of pain and the effectiveness of their pharmacological and non-pharmacological interventions for pain management. Pharmacological knowledge proved to be the weakest domain among healthcare professionals' performance during the surveys. Pharmacological knowledge encompassed dosages, routes and side effects. Moreover, many healthcare professionals hold negative attitudes and values towards opioids tolerance, addiction and other side effect, such as, respiratory depression that mitigate the appropriateness of their decisions about pain management. Consequently, cancer patients may be left in pain because healthcare professionals doubt both the severity of patients' pain and their need for analgesia. Indeed, while a minority of healthcare professionals expect patients to be able to tolerate some pain, they also lack the knowledge and confidence to administer analgesia effectively. Lewthwaite *et al.* (2011) hypothesise that adequate treatment of pain is dependent on the knowledge and attitudes and skills of the healthcare professionals. Therefore, it may be of a major concern that the literature reflects that healthcare professionals have an insufficient knowledge and erroneous attitudes regarding pain management.

2.6.1 Methodological Issues

Studies that investigated healthcare professionals' knowledge and attitudes toward CRP management were abundant in the literature. Twenty-two studies were reviewed and discussed as they were considered to be most relevant to this study. The majority of the literature reviewed presented descriptive studies using survey designs. Postal questionnaires were the most common method utilised. The KASRP, by Ferrell and McCaffery (1987), was found to be the most frequently used tool (8 out of 22) to assess and evaluate the knowledge and attitudes among healthcare professionals towards pain management. Some researchers did not use the tool in its entirety but referred to a number of revised items. The tool was also used pre and post educational programmes in exploratory designs in order to assess/evaluate healthcare professionals' knowledge. The KASRP is described in detail in chapter five.

The vast majority of the reviewed studies used the 'mean' as a benchmark for the knowledge and attitudes scores during the data analysis. There was significant variation in sample sizes among the populations studied. Sample sizes varied from 46 (Kourbani *et al.* 2004) to 27000 in an extensive Italian study (Messeri *et al.* 2008). The response rate of participants varied from 18% (Messeri *et al.* 2008) to 95.7% (Yanjun *et al.* 2010). Although most of the studies found in the literature investigated the knowledge and attitudes of healthcare professionals in total, a few studies examined physicians, nurses or pharmacists separately. The majority of the research highlighted deficits in the knowledge and attitudes amongst healthcare professionals, which substantiated the need for continuing educational programmes

in order to address the gap in the healthcare professionals' knowledge and attitudes with respect to CRP management.

2.7 Pain Management Educational Programmes

In this section, I provide an overview of the findings of studies pertaining to the effectiveness of pain management programmes on healthcare professionals' knowledge, attitudes and practice as found in the literature. These studies were selected as they were the most recent, comprised large sample sizes and were relevant to the current study. Examples to illustrate the outcomes of pain education were drawn from 16 studies undertaken within the past fifteen years to provide an overview of research findings that would help to establish the degree of impact pain management programmes have on healthcare professionals' pain knowledge, attitude and practice (Table 2.2). Methodological issues and outcomes of pain programmes are also examined and limitations of the education programmes presented.

2.7.1 Methods and Findings

Despite the various complexities which influence the delivery of effective pain management, many studies propose that educational interventions targeting healthcare professionals play a crucial role in improving pain management in patients with cancer (Gordon *et al.* 2005, Karlsten *et al.* 2005, Goldberg and Morrison 2007). However, until recently, it is recognised that healthcare professionals still demonstrate inadequate education and training in pain management skills (Donovan *et al.* 2012, Silvoniemi *et al.* 2012). Therefore, it is

paramount that pain management is based on a well-organised health care system that emphasises reliable nursing and medical education regarding appropriate pain management techniques (Twycross 2002, Stomberg and Haljamae 2003, Wolfert *et al.* 2010). Additionally, education to provide healthcare professionals with knowledge should be included in the hospitals' quality improvement programmes (Beuwens *et al.* 2001, Gordon *et al.* 2005).

It is difficult to make comparisons between the research studies examined in this review, because of the variability in pain programmes, the aims, type and content of courses and the research methods used. However, course outcomes usually fell into two broad categories. The first category includes studies which were mainly concerned with the measurement of participants' knowledge and attitudes following a pain programme. The second category sought to establish whether there was an effect on healthcare professionals' pain practices and on patients' pain experience or satisfaction. In addition, some of the studies reviewed both outcomes yielding more comprehensive findings with regard to the effectiveness of such programmes (Weissman and Dahl 1995, Dalton *et al.* 1996, Dalton *et al.* 1999, Howell *et al.* 2000, Ger *et al.* 2004).

Many of the studies conducted investigated the impact of an educational programme as a means of improving knowledge and correcting misconceptions with regard to CRP management. However, overall there was no difference or no significant improvement found among healthcare professionals' after attending the programmes (Camp-Sorrell and O'Sullivian 1991, Clarke *et al.* 1996, Francke *et al.* 1997, Beuwens *et al.* 2001, Zernikow *et al.* 2008). Other researchers have similarly

concluded that education alone is in itself insufficient to change behaviour or impact on practice (De Rond *et al.* 1999, Seers *et al.* 2006). Additionally, although some other studies showed an improvement in participants' knowledge after the education programme, the improvement was not maintained at the following evaluation (Howell *et al.* 2000, Hansson *et al.* 2006). Furthermore, Wallace *et al.* (1995) report that attendance at classes on pain management was not of reported benefit. Conversely, Wells *et al.* (2001) argue that although the results of their study indicated that healthcare professionals' knowledge had improved after working along with the palliative care team in an educational programme, this can probably be attributed to good working relationships and case discussions rather than through formal teaching. Additionally, the authors concluded that their challenge after the programme was to work with staff to ensure that positive changes in knowledge and attitudes are translated into the everyday practice of hospital nurses and doctors caring for patients with cancer. In a subsequent study, MacLaren and Cohen (2005) reviewed outcomes from twelve pain management programmes amongst healthcare professionals and concluded that there was evidence of knowledge acquisition and cautiously deduced that some programmes resulted in behaviour change.

Table 2.2 *Papers Reporting on Education Programmes.*

Education programme	Study Author/s, Year	Methodology/methods	Location	Sample	Major Outcomes
Lectures/sessions	Zernikow *et al.* 2008	Pre/post-test. Used survey and interviews	Germany	68 departments participated passively and 8 participated actively. Participants comprised 76 heads of departments, 46 ward physicians, 63 head nurses, and 44 psychologists/social workers yielding a total of 229 respondents.	• Pain management knowledge improved (Chi2-Test, $p<0$ .01). • The median daily pain intensity ratings were significantly reduced (paired Mann–Whitney U-Test, p = .01). The frequency of severe pain significantly decreased (Chi2-Test, p = .001) • There was no difference between the median doses of opioids (morphine) and non-opioids. • In total, pain management practices improved in actively participating departments but not in passively participating departments
Lectures/sessions (2 months)	Hansson *et al.* 2006	Pretest/posttest survey questionnaire	Sweden	Cross-sectional intervention study including healthcare professionals and patients	• Patients' pain assessment improved significantly (p= 0.011) in the intervention group (mean=28.8%) compared to the control group (mean=16.7%). • No significant differences were found in patients' pain severity (p=0.4) or interference with function (p=0.58). • No difference was found in patient experience of pain; 33% of the patients had moderate to severe pain right now in both groups. • Pain treatment: no differences in how

					much the treatment relieved the patients' pain in the last 24 hours (61% vs 58%). • No significance was found in changing practices about returning to the patient to control the effect of treatment (81.7% Vs. 91.1%).
Videotapes and case scenarios	Patiraki *et al.* 2006	A pre-test posttest experimental design/randomized controlled study/KASRP was used pre and post	Greece	112 (66.3%) nurses was randomised into control and intervention groups	• Significant knowledge improvement post education (p<0.0001 for total scores). • the pre-test, the average number of correct answers was 17.58+/-7.58 (45.1%+/-19.3% of total questions • Intervention group participants provided 6.11+/-5.55 additional correct answers (15.66%+/-14.23% improvement, P < 0.0001)
Lectures/sessions Intensive 32-hour	McMillan *et al.* 2005	A pretest-posttest survey	USA	18 nurses	• Mean scores of knowledge significantly improved from 20.8 (67%) pre test to 24.9 (80%) post test (t=7.5, p<0.001). • Mean scores of attitudes towards patients with pain significantly improved (t=3.06, p < 0.007) from 11.8 (66%) to 15.6 (87%). • However, the improvement on attitude toward pain management was not as significant. The pre-test mean was 66.6 and the post-test mean was 69.3 (t=2.1, p < 0.055). • Limitations: small sample size and the higher education level of the RNs.
Lectures/sessions and a one-day workshop.	Ger *et al.* 2004	pre- and post-test survey/ a quasi-experimental.	Taiwan	645 nurses pre, 630 nurses post. The response rates were 92.6% and 91.3% for pretest and post-test surveys,	• Practice: mean of pretest 3.29 (SD=0.76) and mean of post test 3.48 (SD=0.75) statistically significant (p<0.001). However, was not sustained after a 6 month follow up.

				respectively.	• Moderate change in knowledge and attitudes towards CRP management.
Lectures/sessions three days	Bauwens *et al.* 2001	Pretest/ posttest survey questionnaire	Belgium	A convenience sample of 197 healthcare professionals (163 nurses, 7 physicians, 27 others). Post course response rate of 89% and 39% at the 3 month follow-up	• Improvement of knowledge ($p<0.001$) and attitudes ($p<0.05$) in the areas of opioids. • No significant improvement on the total CRP knowledge
Lectures/sessions	De Rond *et al.* 2001	a pretest-post-test design without a control group	Netherlands	277 nurses and 115 physicians	• Although healthcare professionals' practices improved during the first 5 months, their professional compliance decreased after 7 months.
Lectures/sessions using pain assessment tools (NRS)	De Rond *et al.* 2000b	a one-group pretest–post-test design/survey	Netherlands	252 nurses Response rate of 90.1%.	• The mean score on the pain knowledge questionnaire increased from 69.1% at pretest to 75.8% at post-test.
Lectures/sessions over three months using a conceptual framework	Howell *et al.* 2000	A pretest-post-test survey (KASRP).	Canada	53 Oncology Nurses	• Significant deficits in knowledge in relation to CRP management. • Improvement in knowledge was not maintained at the 3- month assessment.

Lectures/sessions multi-disciplinary programme	Dalton *et al.* 1999	Quasi-experimental pretest post-test	USA	Doctors, nurses and pharmacists from 6 hospitals	• Positive outcomes in nursing pain assessments • Highlighted the importance of nursing assessment and documentation of the pain.
Three seminar days (with participants' involvement in developing action plans)	Brockopp *et al.* (1998)	Questionnaire and interviews	USA	12 doctors and nurses	• Positive feedback and mild knowledge improvement • Major organisational difficulties • Limitations: small sample size.
Lectures/sessions	Francke *et al.* 1997	A pretest-posttest questionnaire	Netherlands	134 nurses Response rate of 79.1%	• No change in practice was found
Lectures/sessions Six days	Dalton *et al.* 1996	a quasi-experimental time series design/pretest/posttest	USA	29 nurses, 209 patient charts before and 163 patient charts after the programme	• Knowledge improvement was not significant • Practice change was not sustained
A seminar day (with participants' involvement in developing action plans)	Weissman and Dahl 1995.	Pretest post-test Questionnaire and interviews.	USA	196 doctors, nurses and pharmacists	• Significant improvement in CRP knowledge was demonstrated • Positive changes in clinical practice • Major organisational difficulties
A session	Camp-Sorrell and O'Sullivan 1991	pretest post-test	USA	87 oncology nurses	• No significant improvement was found in nursing practices.

Zernikow *et al.* (2008) conducted a project entitled 'Stop the Pain' that aimed to improve CRP management among healthcare professionals in Germany, and to evaluate the project's impact on the quality of CRP management. The project encompassed several phases to appraise current practice, develop practical recommendations for CRP management, engage participants in improvement strategies, and assess change. Data collected included surveys, interviews, and pre-/post-intervention documentation of CRP management. The educational interventions used were printed materials and lectures (Zernikow *et al.* 2008). Seventy six oncology departments comprising 358 healthcare professionals were contacted to participate in the study. Two hundred and twenty nine healthcare professionals responded yielding a response rate of 64%. Sixty eight departments participated passively (did not participate in quality management) comprising 193 healthcare professionals. Eight departments agreed to actively participate in quality management comprising 36 respondents. The results showed that the project objectively improved CRP management in the actively participating departments. All healthcare professionals demonstrated increased knowledge of CRP and its management after a three-year period in those departments. Additionally, doctors' knowledge of the treatment of neuropathic pain improved and CRP ratings significantly decreased. However, the patients did not feel there was any improvement in the quality of CRP management they received. Also according to participants' self-assessment, the project improved practical CRP management in actively participating departments, while in passively participating departments any change for the better was insignificant. The authors concluded that the project was insufficient to improve CRP management to a level significant to the patient (Zernikow *et al.* 2008).

Similar results were found in an earlier pre-test post-test study using an educational intervention conducted in Belgium by Bauwens *et al.* (2001). In this study, although, post-test results showed improvement in the areas of opioid therapy *($p<0.01$),* no significant improvement in their knowledge was identified after the three-day education course in relation to CRP management. The results revealed that 60% of the participants believed that CRP could be relieved with adequate treatment. In addition, 76% agreed that the majority of patients are undertreated, 42% agreed that addiction rarely occurs, and 17% agreed that psychological pain is a very frequent occurrence. In general, the participants had limited knowledge about morphine and its side effects before the sessions. Seventy-five percent of the participants were aware of the subjective nature of pain and that it is the patient who is most accurate in reporting the intensity of their pain (Bauwens *et al.* 2001). The findings from these two studies (Bauwens *et al.* 2001, Zernikow *et al.* 2008) did not report any significant change in healthcare professionals' knowledge or attitude that could have a positive impact on cancer patients experiencing pain.

Although some education programmes have been reported to result in positive outcomes on healthcare professionals, these programmes did not have any positive impact on the patients (Bauwens *et al.* 2001, Hansson *et al.* 2006). Hansson *et al.* (2006) reported that although the number of patients assessed with pain rating scales increased *($p=.011$*), there was no difference seen in patients' experience of pain severity, interference with function, or use of non-pharmacologic methods. However, the results showed the nurses' use of pain rating scales to assess pain at rest and on movement increased *($p<.001$)* after the intervention. Additionally, nurses

who participated in the educational programmes increased their knowledge of pain and changed their pain management practices.

Two studies pertaining to CRP education took an alternative approach to practice intervention, by asking participants to select their own practice interventions post-course. Brockopp *et al.* (1998) recruited physicians and nurses (n=12) from six US institutions. Following three seminar days, participants developed action plans to change CRP practices in their respective institutions. Data obtained from the questionnaires regarding seminar preparation was positive. However, the interview processes revealed a number of problems when participants had attempted to instigate CRP practice changes in their respective institutions. They encountered barriers ranging from lack of knowledge and misconception by colleagues about a range of CRP management issues, to non-facilitative attitudes from their institutions (Brockopp *et al.* 1998). More favourable findings were revealed by Weissman and Dahl (1995) where healthcare professionals had both education and clinical roles. At the conclusion of a one-day course, each team developed an action plan including a detailed list of plans for future educational and clinical activities in their practice settings. Data collected twelve months post workshop demonstrated that 56 of the 87 teams (64%) had either fully or partly met their action plan. There was significant improvement in participants' knowledge in relation to CRP management as a result of the one-day programme. This was an encouraging result as a total of 227 projects were completed, including instigation of an in-service education programme and development of pain assessment and treatment protocols. Positive outcomes were also reported in a later study by Weissman *et al.* (1997) when 13 of the 32 health

care facilities recruited to their study met or exceeded the action plans they had devised.

Fifteen of the studies reviewed that sought to evaluate the effect of a pain management programme on healthcare professionals' knowledge, attitudes and skills utilised pre and post- programme test designs using questionnaires (Table 2.2). Out of fifteen, three studies used a quasi-experimental design (Dalton *et al.* 1996, Dalton *et al.* 1999, Ger *et al.* 2004). Reporting on the results, Francke *et al.* (1996a, 1997) describe mixed outcomes when they reviewed the knowledge and skills nurses developed following participation in pain programme. They found no difference between control and experimental groups in relation to the number of nurses who made use of direct patient questioning and no differences on pain intensity ratings (Francke *et al.* 1997). In addition, there were no effects on the number of activities relevant to taking pain histories, or on the number of nurses who used direct questioning as a method to determine pain (Francke *et al.* 1997). Although, the programme resulted in an increase in the quality of physical and relaxation interventions in their previous study (Francke *et al.* 1996a) the programme did not lead to more positive attitudes towards psychosocial interventions, or to increases in the numbers of psychosocial, physical and relaxation interventions.

Using a similar pre- and post-test design, Ger *et al.* (2004) conducted a quasi-experimental study to evaluate the effects of an education programme on nurses' practice of CRP assessment and their acceptance of patients' pain reports. The differences between pre-programme and post-programme questionnaires completed by nurses demonstrated a statistically significant yet moderate change in knowledge

and attitudes towards pain assessment and acceptance of patients' reports of pain. Similar outcomes were found by Patiraki *et al.* (2006) where significant improvements were found in the knowledge of the intervention group in knowledge test items following education intervention.

Howell *et al.* (2000) investigated the effects of an educational intervention on nurses' knowledge, attitudes and practice in pain assessment and management over three months. The sample of 53 nurses for this descriptive study was drawn from six inpatient units at a university-affiliated hospital in Canada. According to the findings of the study, most of the nurses believed that CRP can be controlled and patients should be pain free. However, most nurses reported that more than 90% of patients had experience of pain longer than one month and most experienced discomfort before the next analgesic dose. The authors further highlighted significant differences in nurses' knowledge and attitudes immediately after the education intervention, but these were not maintained at the 3-month assessment. Similar outcomes were found by McMillan *et al.* (2005) when they reviewed the impact of an intensive 32-hour pain programme on 18 nurses. The post-course tests demonstrated significant improvement in pain knowledge, attitudes, and management. Although Howell *et al.* (2000) did not comment on why the change in knowledge and attitude was not maintained, their findings might raise issues around the sustainability of the effectiveness of the educational programme used in their study at the three month assessment.

Other studies used multiple methods to establish effects of pain education and as a result yielded more detailed information about course impacts (Dalton *et al.* 1996). The study aimed to increase knowledge about pain assessment practices. A review of data from nurses and from patients' charts prior to the programme and at intervals post-course, demonstrated gradual changes in pain assessments and treatment practices. Importantly, the authors concluded that although change in behaviour was slow, education did make a difference in practice. Other favourable outcomes were found in later study by Dalton *et al.* (1999), where improved interpretation and increased use of acute pain management guidelines among healthcare professionals was reported.

In a study by De Rond *et al.* (2000b), a pain monitoring programme for nurses was implemented, and evaluated. The results showed that nurses (n=252) had knowledge deficits and prejudices with regard to pain and pain management. The average score on the pain knowledge questionnaire increased from 69.1% at pretest to 75.8% at post-test. Nurses' attitudes changed with regard to their level of knowledge and skills in relieving pain, willingness to assess pain on a daily basis, and attention to patients' pain complaints. The authors concluded that the pain monitoring programme was effective in improving nurses' knowledge of pain management and focusing nurses' attention to patients' pain complaints. In a subsequent study De Rond *et al.* (2001) also reported satisfactory nurse compliance with daily pain assessment but did note a gradual decrease in assessment activity after seven months. These findings are consistent with others reported by Howell *et al.* (2000) who highlighted the non-sustainability of the effect of the education programme after a time period of a few months.

Camp-Sorrell and O'Sullivan (1991) designed a pain programme for oncology nurses that emphasised documentation of pain assessment. The study evaluated actions of a control group who attended a class on pain assessment and an experimental group who attended similar classes and additionally were provided with a validated pain questionnaire to use in practice. A third group of nurses did not participate in any education activity. Following education participation, the effectiveness of the intervention was measured by auditing patients' notes at intervals up to two months post course to evaluate documentation practices. No significant differences were found in nursing assessment and documentation practices among the three groups in this study. The authors acknowledge that the shortness of their programme of 45 minutes duration could have resulted in its ineffectiveness on the variables examined.

Although the majority of the research reviewed for this study originates outside of Ireland, there are still questions raised regarding the content of pain pharmacology, pain assessment and pain management in the Irish healthcare curricula, and is an area worthy of further investigation. Ongoing education and professional development of healthcare professionals involved in the management of CRP is important and therefore education should not stop in the academic setting but must continue into the clinical practicum (Dalton *et al.* 1996, Carr 2007). Accordingly, education programmes must not only focus on healthcare professionals' roles in pain control, but also on educating all healthcare professionals in facilitating a work culture with other disciplines to achieve a pain-free goal of care (Carr and Mann 2000, Moore 2001, Xue *et al.* 2007).

The current literature suggests that many nurses when compared with physicians, were more knowledgeable on the subject of pain assessment and management of pain, but they understand less about other aspects of pain, namely pharmacology (Furstenberg *et al.* 1998, Coyne *et al.* 1999, Manias and Bullock 2002, Chiu *et al.* 2003). In the Irish context, the Health Service Executive (HSE) has launched an online service called "*Encountering, Assessing and Managing Pain eLearning Programme*" in 2013 for all healthcare professionals involved in pain assessment and mismanagement (HSE 2013). The programme offers practitioners a sound introduction to the pertinent theories and models of pain. Although the programme provides clear and convenient guidance on the pain assessment across the care groups including, children, elderly and intellectual disabilities persons, it does not apply to CRP specifically. Additionally, the programme only offers an overview and key guidelines and precludes the essential principles of the WHO on CRP management. Furthermore, in the Irish context there is no undergraduate education specific to general healthcare professionals with regards to CRP. According to Collins (1999) and Carr and Mann (2000) the lack of such specific educational programmes possibly impacts on the extent of pain pharmacology, assessment and management content within the current healthcare professionals curriculum. This also impacts on how much of this knowledge is held by healthcare professionals undertaking clinical placement in the clinical practicum for the first time. Clearly, education is vital and undoubtedly required to improve clinical practice. Furthermore, most healthcare professionals today are more aware of the issues around pain management than they were a decade ago (Collins 1999, Carr and Mann 2000).

When beginning to practice for the first time, healthcare professionals are guided by competencies as set out by their governing body, and policies and protocols of the organisation and area that they work in. However, healthcare professionals' practice should be viewed as a continuum ranging from basic to advanced practice. The basic educational preparation provides a foundation for healthcare professionals beginning to practice. Coyne *et al.* (1999) noted that the understanding of pain and pain management needed to begin within the academic setting. All healthcare professionals' curricula should reflect a commitment to educate students in pain and the individual experience of pain. Similarly, Kerfoot (2002) talks about a model of nursing practice called the Synergy Model of Nursing Practice, in which she argues that if the competencies of the nurse match the needs of the patient, synergy occurs and outcomes are better. This concept may be considered in the context of pain management whereby the healthcare professionals' knowledge of pain assessment and management matches the needs of the patient, hence there is a far greater chance of effective pain management practice occurring.

In summary, despite the variance of the duration, the vast majority of the programmes were described as lectures/sessions (Zernikow *et al.* 2008, Hansson *et al.* 2006, Bauwens *et al.* 2001, De Rond *et al.* 2001, Howell *et al.* 2000, Dalton *et al.* 1999, Francke *et al.* 1997, Dalton *et al.* 1996, Camp-Sorrell and O'Sullivan 1991). Also many other studies conducted seminar days as a means of education (Grant *et al.* 1999, Brockopp *et al.* 1998, Weissman *et al.* 1997, Weissman and Dahl 1995). Although there were some positive outcomes from studies that used lectures/sessions, the majority of these studies did not result in any statistically significant outcomes. Furthermore, when there was a change in knowledge and/or

practice after these programmes, the change was not sustained and the application of gained knowledge was limited (De Rond *et al.* 2001, Howell *et al.* 2000, Dalton *et al.* 1996). It was evident that studies that used seminar days resulted in better outcomes than lectures/sessions. This could be attributed to the involvement of participants in the intervention as they were required to develop their own action plans. This point is supported by the findings from Zernikow *et al.* (2008) that revealed positive outcomes only when the departments were involved actively. However, despite the positive outcomes, these studies highlighted major organisational challenges during the implementation of action plans and when a follow up was required. It was also notable that the outcomes were more effective when there was multidisciplinary involvement or when doctors and nurses were involved together rather than when only one discipline was involved (De Rond *et al.* 2001, Dalton *et al.* 1999, Brockopp *et al.* 1998, Weissman and Dahl 1995).

2.7.2 Educational Programmes; Methodological Issues

There was significant variability among the pain management programmes implemented, the aims, type and content of courses and the research methods used. Information pertaining to the duration of programmes provided in the research reports, reported ranges from 45 minutes (Camp-Sorrell and O'Sullivan 1991) to longer programmes comprising 32 hours (McMillan *et al.* 2005) and six study days over a six week period (Dalton *et al.* 1996). As previously acknowledged, while the majority of programmes were described as lectures/sessions or seminar days, others also included videotapes and case scenarios and workshops (Patiraki *et al.* 2006, Ger *et al.* 2004). Ward based education programmes were composed of shorter hourly sessions spaced over specified timeframes (De Rond *et al.* 1999). Shorter

programmes appear most frequently in research reports, an observation that is consistent with findings from Francke *et al.* (1996b) who reviewed twelve studies on the duration of pain programmes. The authors found that the majority of pain programmes were less than eight hours in duration. The number of healthcare professionals who participated in the pain courses varied significantly from 10 nurses (Simons 2002) to the 2738 participants who took part in a large scale multi-centre study conducted in the UK by Harmer and Davies (1998).

Research studies that evaluated the impact of the pain programmes commonly collected both quantitative and qualitative data to ascertain if predetermined outcomes had occurred because of specific education interventions. Many researchers used approaches based on questionnaire surveys and pre-and post-test designs, which examined the effect of education intervention on participants' knowledge and attitudes (Weissman and Dahl 1995, Dalton *et al.* 1996, Francke *et al.* 1997, De Rond *et al.* 2000, Ger *et al.* 2004, Patiraki *et al.* 2006). The use of experimental designs using control and experimental groups also enabled comparisons between groups of nurses who had education input and groups that did not (Camp-Sorrell and O' Sullivan 1991, Francke *et al.* 1997, Patiraki *et al.* 2006). Post-course evaluations and qualitative interviews with participants were used to ascertain changes in pain management activities and the presence of barriers to pain practices (Brockopp *et al.* 1998, Simons 2002).

Absence of relevant clinical data may be due in part to methodological weakness in study designs and it is unclear whether courses, which did not go on to examine the effect of participation on patients, might have indicated encouraging outcomes had

they done so. For example, Grant *et al.* (1999) asked study participants to develop action plans for practice post pain course, but lack of follow-up meant that sustained effects of education on practice were not established. The limited evidence of examination of practice impact is supported by Adriaansen and Achterberg's (2007) review of 27 studies that examined the content and effect of palliative care courses for nurses. It was deduced from the studies reviewed that the effect of education participation on patients was only identified in seven studies (Adriaansen and Achterberg 2007). This does not mean that studies, which solely evaluated the acquisition of pain knowledge acquired post-course were incomplete, rather they were limited as they gave little indication of any practice impact or patient benefit.

It was evident that the majority of studies conducted education programmes in order to improve the knowledge and/or attitudes or the practice of healthcare professionals in isolation and only few studies aimed to examine these three elements together. Although the Statistical Package for Social Sciences (SPSS) was found to be commonly used for quantitative data analysis, it was found that there was no one way of conducting the analysis, and that each study was found to use its own test of analysing the data. However, it was clear that the vast majority of these studies provided a '*p*' value in order to evaluate the impact of their education programme on the participants. Due to the diversity in the test used for data analysis, meta-analysis was not possible. Therefore, means were presented as they were the most consistently used and reported test. Also, it was also evident that numerous studies were found to utilise the 'mean' especially when they examined the knowledge and attitudes.

Several studies used audit of patient notes to establish changes in care delivery or documentation practices (Camp-Sorrell and O'Sullivan 1991, Dalton *et al.* 1996, Dalton *et al.* 1999, Howell *et al.* 2000, Cohen 2003, Jeba *et al.* 2009). Patients were also surveyed pre- and post-programme intervention to establish whether changes in delivery of pain management post-course impacted on the patient experience (Harmer and Davies 1998, Dalton *et al.* 1999, De Rond *et al.* 2000a). Some studies confined their data collection to immediately post-programme (McMillan *et al.* 2005, Patiraki *et al.* 2006). Others conducted follow up surveys to establish longevity of programme benefits and followed up effects on participation for a longer period of time. This ranged from six months (Francke *et al.* 1997, Ger *et al.* 2004) to twelve months post-course (Weissman and Dahl 1995, Dalton *et al.* 1996, Brockopp *et al.* 1998).

It is noteworthy that studies which examined the effects of education programmes have suggested that one continuing education class is not sufficient to have an enduring effect (Dahlman *et al.* 1999). Findings from the reviewed research mainly conclude that a correlation exists between length of education input and degree of impact (McMillan *et al.* 2005, Young *et al.* 2006). However, Weissman and Dahl (1995) were confident that attendance at a one-day conference significantly improved the pain knowledge of participants in their study. While Camp-Sorrell and O'Sullivan (1991) acknowledged that the 45 minutes of theory offered to their participants would be deemed inadequate to have much impact, they make the valid point that educationalists routinely anticipate students will benefit from this type of input. The authors suggest that without such an assumption there would be an ongoing requirement for course updates.

2.7.3 Limitations of Pain Management Education Programmes

As previously acknowledged, it is evident from the review of the literature investigating the effect of educational programmes on healthcare professionals' that, in general, there was either no change in the knowledge, attitude or practice (Wallace *et al.* 1995) or the change was not significant (Camp-Sorrell and O'Sullivian 1991, Clarke *et al.* 1996, Francke *et al.* 1997, Beuwens *et al.* 2001, Zernikow *et al.* 2008). Education programmes in isolation were criticised for being insufficient in bringing about a change in healthcare professionals' practice (De Rond *et al.* 1999, Seers *et al.* 2006). Howell *et al.* (2000) and Hansson *et al.* (2006) highlight that the change in knowledge, attitude or practice was not sustained after a period of time following an educational programme. Furthermore, using seminar days as means of education programmes on pain management, Weissman and Dahl (1995) and Brockopp *et al.* (1998) did not conclude any recognised change in practice. Although there was improvement in participants' knowledge, this was not in itself enough to bring about any change in their practice. A challenge arose in relation to difficulties in transferring the learned knowledge into action, for example, when participants needed to instigate pain management practice changes in their institution due to individual and organisational factors.

In some studies, a practice initiative was delivered in conjunction with education participation (De Rond *et al.* 1999, 2001). This dual approach appeared to have a positive outcome, whereby practice interventions complemented pain education, bridged the divide between theory and practice and provided direction and impetus for change in pain management in practice (De Rond *et al.* 1999, 2001). However, although these efforts to encourage application of evidenced-based pain

management provide a structured and informed attempt to improve healthcare professionals' pain practice, this approach may not be appropriate for every situation. It cannot be assumed that education or premeditated interventions will have the same relevance and influence in every context. De Rond *et al.* (1999) acknowledge this limitation in their study. They recognised that a second daily pain assessment, which had been implemented as part of their research, led to an increased work burden for healthcare professionals who worked in an under-resourced surgical ward in relation to staffing levels. Consequently, it was recommended that an assessment of the practice context should be undertaken prior to implementation of a proposed intervention (De Rond *et al.* 1999). This limitation has also been reported by a number of other researchers (Weissman *et al.* 1997, Young *et al.* 2006). Therefore it can be deduced that being successful in achieving a change in knowledge, attitude or practice using some educational programme does not necessarily mean that using the same education programme will always attain a positive change.

Bennett *et al.* (2011) deduce that while educational innovations directed at healthcare professionals can improve knowledge and attitudes, these changes are not reflected by changes in practice, which may ultimately benefit patients. However, these researchers were confident to endorse that the change in healthcare professionals' practices can be achieved with more directed educational interventions within the clinical practicum in order to produce improvements in patients' outcomes. Therefore, it is paramount for researchers to debate whether education targeted at healthcare professionals, results in a change of knowledge and/or practice, and which in fact improves the experience of pain within patients by

addressing the barriers that seemingly reduce optimal pain control in cancer patients. Consequently, further research studies are needed to understand the best means of delivering educational interventions effectively in daily practice, particularly combining several components concurrently.

Recent reviews clearly identify the need for well designed studies that identify a generalisable and multidisciplinary intervention on this subject (Goldberg and Morrison 2007, Oldenmenger *et al.* 2009). This would encompass a multilevel approach which amends the practice of both healthcare professionals and patients (Ward *et al.* 2009, Lovell *et al.* 2010). Therefore, given that the literature is replete with research reports that provide significant evidence of the ineffectiveness of standard educational programmes, it was anticipated that a structured, dynamic and evolutionary group process could potentially lead the healthcare professionals towards sustained practice improvement. There is a need for an educational model that is based on the premise that the learner develops 'questioning insights' based on experiences at work, to find solutions to work related issues (Pedler 1997, Revans 1998), and the need for an approach that has the benefit of realising both personal and organisational objectives and helps to bridge the gap between theory and practice (Marquardt 2004). These elements are expected to be found in action learning where communication skills are advanced and developing self-awareness and leadership skills are constructed (Pedler 1997, Revans 1998, Marquardt 2004). In addition, this study is an individual-based research study funded solely by the researcher, but no costs were required to fund the development and implementation of the action learning programme. According to Raelin and Coghlan (2006), action learning reduces the cost of training by using existing resources and minimal

commercial products. Therefore, utilising an action learning programme in this study is a far more cost-effective approach as opposed to traditional education programmes requiring study leave and financial backing. The following chapter provides a detailed description, explanation and rationale for the use of action learning sets as an education tool for healthcare professionals.

2.8 Conclusion

The review of the literature showed that pain control in cancer patients remains a significant problem in health care. Recognition of the widespread undertreatment of CRP has prompted recent corrective efforts from healthcare professionals throughout the world. Numerous studies highlighted a prevalent deficit in healthcare professionals' knowledge with regard to CRP management and indicated that healthcare professionals still have negative attitudes that hinder the delivery of quality care to patients suffering from CRP. It is also demonstrable from the literature review that there is a lack of documentation pertaining to CRP management which consequently contributes to poor quality, sub-standard patient care. In addition, this lack of documentation leads to wasted time and patient frustration. Therefore, clear instructions about dose schedule, purpose, and guidelines for dose adjustment are essential to improving healthcare outcomes for patients with CRP. A clearly documented record of sequential assessments, analgesics, co-analgesics and side effects not only allows any physician who substitutes for the physician of record to manage the pain without repeating trials of failed analgesics or obtaining a history but also provides a clear communication and continuity of nursing care for following duties.

The majority of studies that investigated the effect of educational programmes on healthcare professional's knowledge, attitudes and practices in CRP management were conducted in Europe (Francke *et al.* 1997, De Rond *et al.* 2000b, Bauwens *et al.* 2001, De Rond *et al.* 2001, Patiraki *et al.* 2006, Hansson *et al.* 2006, Zernikow *et al.* 2008) and the USA (Camp-Sorrell and O'Sullivan, Weissman and Dahl 1995, Dalton *et al.* 1996, Brockopp *et al.* 1998, Dalton *et al.* 1999, McMillan *et al.* 2005). There was no comparable study conducted in Ireland. Although numerous researchers utilised alternate means of education in their studies in the fields of pain management, there was no significant sustainable improvement on healthcare professionals' knowledge, attitudes and/or practice. No studies were found to have used action learning sets in their educational programmes in the pain management area. In this study, I aspired to introducing such programmes in this un-researched geographical area with a view to implementing the findings to design interventions for improving care of patients with CRP. Given that no previous studies were done in the Irish context regarding healthcare professional's knowledge, attitudes, views and practice in relation to CRP further research investigation is warranted. In the following chapter, I examine action learning; its advantages and applicability as opposed to traditional approaches of education implemented in the studies reviewed in this chapter.

Chapter Three

Action Learning

3.1 Introduction

Action learning is described as a systematic approach to effective, collaborative problem solving, organisational change (Douglas and Machin 2004, Marquardt and Waddill 2004), individual development and professional practice (Rigg 2008). It is based on individuals learning from experience through reflection and action (McGill and Beaty 2001). In this chapter, I provide broad definitions and a description of action learning, reflection, the use of action learning sets, action learning in Ireland and why action learning was selected for this study.

3.2 Action Learning

Action learning is a continuous process of learning and reflection that takes place with the support of set of members working on a real issue with the intention of getting things done in order to benefit both the organisation and the individual (McGill and Beaty 2001, McGill and Brockbank 2004). This learning 'set' comprises a small group of people who meet regularly to act as a resource for each other in order to do and to learn (Weinstein 1999). Marsick and O'Neil (1999) advocate that the overriding value guiding the action learning approach is a pragmatic focus on learning for the sake of more effective instrumental problem solving. Action learning reverses the traditional learning process where the learning of something must occur first before that learning is applied.

Action learning is used by people working within complex organisations, addressing multi-layered situations with no obvious, easily applied solutions. According to Dick (1997), it is a process in which a group of people come together regularly to help each other learn from their experience, as it is based on the notion that people learn most effectively when working on real-time problems occurring within their own work setting (Raelin 1997). Action learning is based on two principles. Firstly, 'There can be no learning without action and no (sober and deliberate) action without learning' (Revans 1998, p. 83). Secondly, 'Those unable to change themselves cannot change what goes on around them' (Revans 1998, p. 85). The processes used by an action learning set are those of reflection, action and reflection-on-action by the group (McGill and Beaty 2001). The participation of colleagues who contribute their reflections on their experiences is fundamental to the process.

The power of action learning comes from the many ways it develops the skills and habits of questioning, listening and reflection. Unlike conventional problem-solving approaches that accept at face value what is presented as the right problem and solution, action learning is a process of empowering participants by encouraging them to take charge of their own problems (Mumford 1991). Action learning is gaining in popularity as a way to improve performance, promote learning, and position organisations in turbulent times (Dilworth 1998). It focuses on developing individual and organisational capabilities to adapt to the accelerating rate of change in the working environment (Revans 1998). The benefits of action learning extend beyond individual levels to the entire organisation leading to advanced organisational development through individual stakeholding in collectively determined problems that affect all (Rigg 2008). Individuals benefit from a new capacity to learn and develop

the skills needed to be successful in their jobs, along with a boost of confidence, comfort level, and leadership responsibility (Marquardt 2004). Additionally, action learning has the ability to transform an organisation into a learning organisation, which increases its competitiveness (Marquardt 2004).

In this study, action learning sets were used as an educational tool on CRP management for healthcare professionals in medical and surgical wards. It was anticipated that sustained, successful outcomes from these learning sets on the knowledge, attitude and practice of healthcare professionals may well result in developing skills and providing standardised care for the patient. The suitability of the educational tool selected for all healthcare professionals during their place and time of practice will determine the success of creating an environment conducive to learning. Action learning sets can create a feasible approach for healthcare professionals to learn and encourages teamwork in a collaborative manner. The positive impact on a healthcare professional can be immediately transferred back to the work setting and readily imparted to other colleagues working in the team as part of the learning experience (Raelin and Coghlan 2006).

Dilworth (1998) further complements action learning from various perspectives. One of the main advantages reported by Dilworth (1998) is that action learning builds a community of learners that allows a group of colleagues to transfer what they learn in the process of solving an urgent problem today to solving even more complex problems tomorrow. In this study, issues related to CRP management are discussed and addressed in the healthcare professionals' workplace using action learning sets which offers them an opportunity for personal development (Yorks *et al.*1999) as the

education is derived from their own setting (Raelin and Coghlan 2006). Because learning occurs in the workplace where the real problems and actions take place, both the organisation and individuals are saved from having to transfer the knowledge attained as it is generated from internal resources within the acute healthcare setting (Dilworth 1998, Revans 1998). As discussed in the previous chapter, not being able to transfer knowledge was a common critique of using traditional education programmes (Weissman *et al.* 1997, Young *et al.* 2006, Bennett *et al.* 2011). Therefore, it is argued that learning gained through action learning programmes can be transferred to the workplace more successfully (Yorks *et al.*1999). Moreover, a recent study concluded that action learning sets can be used as a supportive tool to empower nurses in the current challenging healthcare arena, as well as in an educational environment (Haith and Whittingham 2012).

Raelin and Coghlan (2006) highlight that action learning reduces the cost of training by using existing resources and minimal commercial products. The current study was conducted in an organisation where resources are extremely limited. The overall effect of the economical situation and the resultant recession has consequently led to cutbacks in funding education programmes in Ireland. Implementing an action learning programme in the acute healthcare setting is a far more cost-effective means of education as opposed to traditional education programmes requiring study leave and financial backing.

Possessing all these advantages did not however mean that action learning has not been criticised by other researchers. For example, de Haan (2004) raised concerns that emerged from the limited opportunities to use the 'convergence' learning styles

of action learning. De Haan (2004) argues that it is not necessary that action learning always attain the necessary focus to allow participants transfer what they have learned into their own workplace, because evaluation and advice are delayed and the participants' work remains outside the focus of the action learning group. This challenge was overcome in this action research study where participants are the co-researchers who prioritised CRP management as a main work related issue they wanted to address in their own area of work. Additionally, the evaluation of the actions taken throughout the action learning programme could be seen by them during their working hours simultaneously with action learning set meetings. Any improvement or effect on their practice was going to be evaluated by the participants themselves.

Another limitation of action learning was raised from a business school study where action learning was not found to be very successful (Jennings 2002). According to Jennings (2002), the two main factors that seemed to prohibit the effectiveness of action learning were: the strenuous relationships with other managers and with organisational politics and the time commitment required. This limitation is not related to this study as both the researcher (insider) and participants work in the same workplace and the participants had control of setting up the time frame for the action learning sets including the dates and time. I discussed this point in detail in chapter five.

3.3 Reflection and Knowledge, Attitude and Behaviour

Revan's (1982) formula of contextualising action learning (AL): *"L = P + Q"* provides a basis for linking action learning and reflection. He hypothesised that 'L' related to learning already attained, 'P' related to programmed knowledge or our knowledge in current use, that is, what we have been told or shown. Revans (1982) argued that this knowledge is not enough for dealing with our complex and ever-changing environment. Finally, 'Q' related to questioning to gain greater insight of said knowledge. It was this questioning of knowledge which he believed lacked attention and was essential to action learning. In other words, questioning insight, that is, tacit knowledge developed to make sense of our own unique experiences, as well as the world in which we live. Action learning sets have built in time for thinking in the midst of preparing to ask questions. Dewey (1933) also believed that reflection happens in the community with interaction with others, and action learning sets offer this type of setting the facility to allow for collective reflection to occur.

There are six primary components of action learning: a problem; the set; the reflective process; taking action; an equal emphasis on project completion and learning; and facilitation (Marquardt 2004). All of these components of action learning are incorporated in the history of reflection and learning, which supports the notion that a change can occur in one's reflective practices from participating in an action learning set. Dewey (1933) proposed that current, pertinent predicaments are challenged with each individual case of reflection. In action learning, the preface for each action learning group is being presented with a task or problem of high importance. The essential component of action learning is the capacity for one to self-examine and is often remiss in reflection (Revans 1982, Dilworth 1998). The

authors subscribe to the notion that the learning is derived from the reflective element of action learning rather than the action component. They suggest that the action component fuels the reflective examination, learning and change. To quote the American educator Drucker (1990): 'Follow effective action with quiet reflection, from the quiet reflection will come even more effective action'. Daudelin (1996) referred to reflection as a procedure of stepping back from an experience to deliberate with care and consistency using past or current events as a guide in order to extrapolate meaning and learning which serves as a guide for future behaviour. This suggests that reflection is integral to learning, when learning is defined as making sense of past experience in order to affect and understand future experience.

Broadly speaking, learning has been referred to as a change that occurs in the individual as a result of a particular intervention (Belkin and Gray 1977). Some authors describe learning as an enduring change in behaviour which encompasses demonstrable actions and intrinsic processes such as thinking, attitudes and emotions but suggests that these actions may not be observable until sometime after the educational endeavour (Burns 1995, Merriam and Caffarella 1999). Others describe learning as a gained change in an individual's attitude through presenting information in a related logical manner (Petty and Wegener 1998).

From action learning perspectives, it might be difficult to have a clear understanding of the process of learning apart from its fundamental components; knowledge, attitudes and behaviour, and their essential role as change indicators in the learning cycle. Knowledge attitudes and beliefs are key components in gaining sustained

change in an individual behaviour or in the workplace environment. It seems very common that our means of education are more focused on knowing rather than emotive aspects of learning that are more likely to emerge from experience. Action learning learning involves a problem, the use of prior thinking, questions to the learner from reflective experience, and the generation of new thinking while reflecting and taking action, which considers the notion of active experimentation. Action learning suggests that it is not sufficient to have an experience in order to learn, but it is necessary to reflect on the experience to make generalisations and formulate concepts, which can then be applied and tested out in new situations. Thus, the learner ultimately needs to make the link between theory and action by planning, acting out, and reflecting.

According to Miller (2012), a change in behaviour is achieved through experience and feelings of satisfaction with that new behavior (Figure 3.1). In my study, healthcare professionals, for example, may get a training or education that places emphasis on the WHO guidelines on CRP management. However, by itself, this may be considered ineffective knowledge and can only become useful when practiced. In other words, when healthcare professional adhere to these guidelines and demonstrate them during their daily practices in the treatment of pain in cancer patients, a change can only be valued. Healthcare professionals need to agree to the knowledge gained and consequently on the performed behaviour before an action is taken. However, this does not mean that the learning process is completed. Healthcare professionals will consequently need to apply and practice the new (learned) behaviour based on the action taken. They need to reflect (evaluate), plan

and perform an action in a spiral (continuous) cycle of learning which goes on for a new knowledge to be gained and next development aspect is learned.

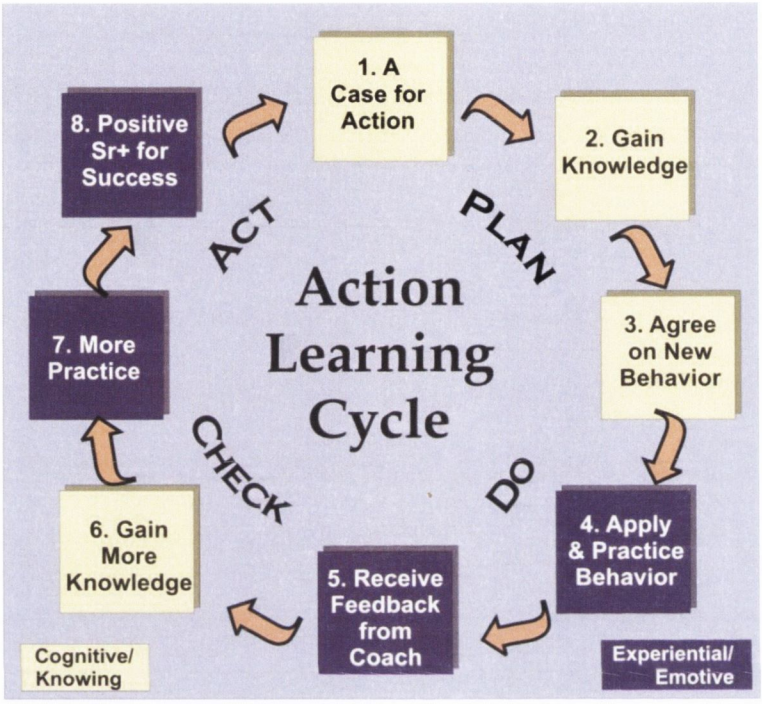

Figure 3.1 Action learning cycle (adapted from Miller 2012).

3.4 Action Learning Facilitator

The role of the facilitator is to clarify the processes of learning to enable set members to work together and to assist them in creating an environment within the action learning set which is supportive as well as deeply challenging (McGill and Beaty 2001). Once the group has started, the set advisor may assist individuals in gaining a better self-perception, confidence and commitment and may act as a resource by asking appropriate questions or suggesting appropriate references (Revans 1997). Rigg (2006) draws attention to the prominence of being what she phrases '*bilingualism*' in accomplishing the role of facilitator (p. 199), that is the

balance between the process and expert facilitation. She proposes that being a facilitator requires speaking both a public policy language as well as that of learning and development particularly in a public sector context. According to the author, a crucial value is a facilitator who is adequately skilled to combine these twin facilities and who becomes capable of creating an extensive knowledge regarding the entire organisation or wider system they are working in (Rigg 2006).

The original intention for this study was to recruit a specialised outsider facilitator to facilitate the action learning sets in the hospital. However, due to ethical constraints, I was unable to negotiate access to this service. It was also anticipated that a person external to the organisation may be more objective to the issues raised within the sets. Therefore, I took on the dual role in this study as an action researcher and a facilitator of the action learning sets. In chapter five, I examine positionality of the researcher in detail.

3.5 The Utility of Action Learning

Since its inception, Revan's work on action learning sets has underpinned an increasing amount of training practice throughout the world for nearly seven decades (Zuber-Skerritt 2002). These environments have ranged from private companies (Marquardt 2004) to public sector organisations (Blackler and Kennedy 2004) and even to developmental programmes in Third World nations (Mayoux 2005). This includes a variety of non-healthcare settings (Oliver 2006, Stewart 2009) and health care settings (Spurell 2000, Heidari and Galvin 2003, Ceeley *et al.* 2008, McCormack *et al.* 2008, Richardson *et al.* 2008). In Table 3.1, I provide a summary

of the most recent use of action learning sets including the countries where they were utilised.

Authors	Date	Country	Setting
Joyce	2012	Ireland	Healthcare Leadership Programmes
Abbott	2011	UK	Post-registration supervision programmes in midwifery
Hewison *et al.*	2011	UK	Palliative Care
Staniland *et al.*	2011	UK	Nursing Professional Development
Lamont *et al.*	2010	Australia	Mental Health
Lee and Porteous	2010	UK	Nursing education
Rivas and Murray	2010	Australia	Acute Nursing Setting
Young *et al.*	2010	UK	Nurse Consultants
Jenkins *et al.*	2009	UK	Community Nurse Preparation
Smedley and Penney	2009	Australia	Mentor Preparation
Wilson *et al.*	2008	Australia	Acute Nursing Setting
Bell *et al.*	2007	Ireland	Multidisciplinary leadership programmes

Table 3.1 *Most recent studies of the use of action learning*

The majority of studies presented in table 3.1 assert that benefits of action learning sets are seen at individual, team, and organisational levels. Authors indicated that positive outcomes of action learning sets extend beyond individuals in the group into their wider spheres of personal and professional practice. Stewart (2009) concluded that action learning does indeed deliver significant business benefits and provides a real opportunity for small and medium sized-enterprise leaders in the UK, to develop their leadership skills. Additionally, a previous action learning intervention

established that the employment of an action learning methodology had the capacity to capture the process of strategy making and successfully led to the development of a service management strategy (Oliver 2006). A previous UK study conducted by Spurell (2000), found that action learning sets resulted in changes in practice and procedures within relevant spheres of participants and was generally regarded as a success in enabling peer support, shared experience and themes for exploration. Similarly, Heidari and Galvin (2003) reported that nursing students viewed action learning sets as a vital part of their course, and action learning groups were perceived by the majority of the students as an important component of their training. The sets were seen as the common factor throughout the course and as the mechanism that linked theory to practice (Heidari and Galvin 2003).

Young *et al.* (2010) revealed how action learning sets resulted in organisational restructuring that enabled changes to strategic roles for newly appointed nurse consultants, and improved networking between community and hospital-based action learning sets members. Furthermore, Rivas and Murray (2010) found that after involvement in action learning sets, the Australian nurses investigated, were found to be open and cooperative in their participation, and were more capable of completing tasks themselves. Additionally, Bennett *et al.* (2010) indicated that prison nurses found action learning sets work led to feelings of empowerment, with increased understanding and confidence in issues such as accountability and clinical competence.

A study underpinned by the principles of action research was conducted by Hockley *et al.* (2005) to explore the impact of educative and facilitative support provided throughout the implementation of the change with staff involvement. Action Learning was utilised as part of a project that aimed at evaluating the implementation of an integrated care pathway for the last days of life as a way of developing quality end of life care in eight independent nursing homes across Lothian, UK. Facilitation of the implementation of the integrated care pathway included the use of action learning sets and education sessions on the use of the integrated care pathway documentation to key champions and subsequently to all participating staff. Results showed that 'prn' analgesia was used for 93% of residents compared to 23% prior to the implementation. The results also revealed better teamwork in end of life care and improved critical thinking around palliative care knowledge to influence practice (Hockley *et al.* 2005). Similarly, in a more recent study, it was reported that participants found action learning sets useful in organising and developing care within end-of-life workplace teams, enabling staff to gain necessary new knowledge and improve communication skills (Hewison *et al.* 2011).

From the numerous examples of studies that employed action learning sets, it is evident that action learning sets resulted in very positive outcomes. Despite the diverse environments in which the research was conducted, the majority of the authors of these studies recommended action learning as an educational tool (Heidari and Galvin 2003, Rivas and Murray 2010), a methodology (Oliver 2006) or in the palliative care setting (Hockley *et al.* 2005). Furthermore, action learning sets were found to be a suitable tool in multidisciplinary leadership strategies,

empowerment, and building confidence (Bell *et al.* 2007, Bennett *et al.* 2010, Joyce 2012).

3.6 Action Learning in Ireland

Following a comprehensive review of the literature for this study, only two published articles were found pertaining to the use of action learning sets in Ireland. These studies were utilised in differing areas including healthcare leadership programmes and a multidisciplinary programme in the HSE. These studies are discussed chronologically below.

A multidisciplinary action learning set was established in the HSE south in response to managers' feedback after participating in leadership programmes, which identified a need for a support structure for problem solving (Bell *et al.* 2007). Six set members were involved in the action learning set, including two health service managers, two with an education remit, one administrator and one clinical head of department. None of the set members had participated as members of an action learning set in the past. Additionally, the appointed facilitator had not facilitated an action learning set previously. The action learning set meetings were conducted over a one-year period with a fixed date at four-weekly intervals for the first half of the year and then at six to eight-weekly intervals for the second half. McGill and Beaty (2001) guidelines on action learning sets was used as a framework for the HSE project.

In Bell *et al.* (2007), the participants relayed that they gained growth and self-development and achieved increased problem solving skills and trust. Bell *et al.* (2007) highlight the success of action learning sets despite the limited experience of

action learning among the multidisciplinary participants within the HSE. Participants reported that their involvement in the action learning sets was a positive experience and that they came with a desire to develop, consolidate experience and learn (Bell *et al.* 2007). Similar to Bell *et al.* (2007), none of the healthcare professionals in this study had any experience of action learning. However, as previously reported (McGill and Beaty 2001, McGill and Brockbank 2004), the enthusiasm, willingness and commitment of the participants in this action research appeared to motivate the healthcare professionals to act on real issues within their workplace. Bell *et al.* (2007) also commented on the lack of any experience of the facilitator of the action learning sets and how her professional experience replaced her facilitation experience and resulted in success. Similarly, the researcher of this study had no previous experience of facilitating action learning sets, and therefore drew upon many years of clinical experience in order to fulfill the role of facilitator competently.

Joyce (2012) implemented action learning into an educational endeavour where action learning sets were used to support organisational change. The project aimed at engaging masters' students in organisational change initiatives. It was concluded that all students on the programme progressed well with their projects and implemented an initiative in their work place which was successful. It was also concluded that action learning facilitated students in disseminating their project ideas across healthcare settings within their groups and some were, during that time, actively networking with each other to replicate those changes in other institutions (Joyce 2012). This study reports the essential benefit of action learning sets as an alternative communication approach for delivering information and creating networks between workplaces within an organisation.

3.7 Conclusion

Action learning is systematic approach of collaborative problem solving that has approved its use successfully in a variety of both individual and organisational levels. In this chapter, I have provided an overview of action learning and its definitions and highlighted the increased use and success of action learning in diverse workplaces and settings. This included private companies (Marquardt 2004), public sector organisations (Blackler and Kennedy 2004), non-healthcare settings (Oliver 2006, Stewart 2009) and health care settings (Spurell 2000, Heidari and Galvin 2003, Ceeley *et al.* 2008, McCormack *et al.* 2008, Richardson *et al.* 2008). Only two published studies were found to have used action learning sets in Ireland (Bell *et al.* 2007, Joyce 2012). Based on the outcomes from studies that utilised action learning, this chapter concludes the unique utility of action learning as a problem solving and organisational development approach. In the following chapter, I provided a detailed description of the research methodology of this study.

Chapter Four

Methodology

4.1 Introduction

In this chapter, I explore action research methodology by drawing on the literature that has informed the development of action research as a method of enquiry. By methodology, I mean the approach that has influenced the design of my study, which seeks to inform and to influence aspects of healthcare professionals' CRP knowledge, attitudes and practice. I begin by examining the origins and definitions of action research where I explore the working definitions that most suited my study and review the way this definition reflects the particular characteristics and orientations of the study. I also provide a detailed account of the key characteristics of action research. Throughout this section, reference to the study methodology is integrated into the discussion to demonstrate how these characteristics influenced the direction of my enquiry. In addition, I draw on the power of utlising action research methodology for this enquiry as opposed to other forms of research that attempted to utilise traditional approaches, such as education programmes, in order to bring about change in the practice of pain management. This is achieved by making a link between this chapter and the literature review chapter where inability to sustain development in knowledge and/or practice was a major limitation on majority of the studies. Finally, quality in action research is discussed, action research phases are examined and ethical considerations are examined at the end of the chapter.

4.2 Action Research; Origins and Definitions

The development of action research is frequently credited to its earliest originator Kurt Lewin (1946) who coined the term 'action research' (Carr and Kemmis 1986, Greenwood and Levin 2006). Criticising his contemporaries' disconnected academic research and articulately makes the case for an interventionist type of research, Lewin states 'research that produces nothing but books, will not suffice' (Lewin 1946, p. 35). He stresses that research should be centred on social practices that are subject to improvement and those accountable for practice should be involved in research (Lewin 1946). Lewin asserts that social scientists should develop and apply research techniques to equip groups with the ability to change aspects of their social or organisational lives for themselves (Carr and Kemmis 1986). This encouraged Lewin to enlist research participants from a variety of areas they intended to help identify problems and develop strategies for improvement within the participants' own social contexts. Since Lewin's time (1940s), a variety of disciplines have utilised the fundamental elements he proposed and action research has extended into a method reflecting different epistemologies, ideologies and methodologies. Action research has become a generic term used to elucidate a variety of research approaches whose primary aim is to improve a practical situation (Carr and Kemmis 1986, Waterman *et al.* 2001).

Over the past 30 years, action research has been given numerous definitions. According to Reason and Bradbury (2008, p. 1), action research is 'a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview'. Amore distilled

definition was given earlier to action research by Shani and Pasmore (2010 [1985]) who defined it as:

'An emergent enquiry process, whereby applied behavioural science knowledge is integrated with existing organisational knowledge and applied to solve real organisational problems. It is simultaneously concerned with bringing about change in organisations, in developing self-help competencies in organisational members and adding to scientific knowledge. Finally, it is an evolving process that is undertaken in a spirit of collaboration and co-enquiry' (p. 439).

The two preceding definitions (Reason and Bradbury 2008, Shani and Pasmore 2010) differ from one another in some ways. For example, Reason and Bradbury place great emphasis on practical knowing and position practical knowledge ahead of propositional knowledge. They reject the action research features of producing theoretical or empirical knowledge that can be applied in action, rather they maintain that in action research knowledge may be defined as what has been learned based on working in a context of action and that is the result of the transformation of individuals' experience in conversation with both self and others that allows to generate worthwhile actions that improve and empower individuals as well as enquirers. Therefore, Reason and Bradbury (2008) value working with people in their everyday lives because they view them as agents who act in the world on the basis of their own sense making, which leads to generating knowledge that is a living, evolving process of coming to know rooted in everyday experience. These two authors contend that because action research starts with everyday experience and is concerned with the development of living knowledge, the process of enquiry can be as significant as specific outcomes.

Shani and Pasmore (2010) offer an interesting focus on organisational knowledge that might be understood as practical knowing. According to Shani and Pasmore real organisational problems are solved not by applied behavioural science knowledge alone, they suggest that there must be a bringing together of behavioural science knowledge and existing organisation knowledge. In other words, in order for an organisation to bring about a positive practice change, not only is the most recent evidence-based practice required, but most importantly evidence-based change and knowledge about how things work in that organisation; the culture, structures, processes, politics and so forth. Shani and Passmore's definition also gives an emphasis to action research being an emergent enquiry process whereby the process is allowed to unfold and it is difficult to predict in advance how it will unfold because organisational factors underpinning the enquiry are changing.

Waterman *et al.* (2001) provide a comprehensive definition of action research by describing it as:

'A period of enquiry, which describes, interprets and explains social situations while executing a change intervention aimed at improvement and involvement. It is problem oriented, context-specific and future-oriented. Action research is a group activity with a critical value base and is founded on a partnership between action researchers and participants, all of whom are involved in the change process. The participatory process is educative and empowering, involving a dynamic approach in which problem identification planning, action and evaluation are interlinked. Knowledge may be advanced through reflection and research, and qualitative and quantitative methods may be employed to collect data. Different types of knowledge may be produced by action research, including practical and propositional. Theory may be generated and refined, and its application explored through the cycles of the research process' (p.11).

Due to its comprehensiveness in embodying the most numerous varieties of action research characteristics, Waterman *et al. (*2001) established that this definition incorporates action research approaches used in healthcare research. As this definition reflects approaches of action research in healthcare, it offers a constructive orientation for what action research can attain in that context. For my enquiry, Waterman *et al.'s* definition *(*2001) was selected as the primary working definition. Although the lengthy construction of this definition makes it susceptible to criticism, it is consistent with the aims and research questions that informed and directed my enquiry. For example the definition reflects a key purpose of action research of improvement and involvement of participants which is the case in my enquiry. This definition also describes the process of enquiry and importantly refers to the expected outcomes. It reflects on the flexibility of the utility of qualitative and quantitative methods for data collection, which is also congruent with my study. Furthermore, the definition of Waterman and her colleagues reflects a variety of action research characteristics, which are discussed in the following section.

Having selected Waterman *et al.*'s as the primary definition for my study, does not imply that the other two were rejected. In fact, I will also be drawing on the two of them. Shani and Pasmore's (2010) definition places great importance on action research from contextual perspectives. Their definition is concerned with organisational perspectives not only in terms of the particular problem but also with regards to the relationships and process of enquiry. Given that this action research project was carried out in my own organisation and considering my positionality as an insider researcher (this is discussed in the following chapter), the aspects identified in Shani and Pasmore's definition are relevant to my study. With regards to

Reason and Bradbury (2008), a key feature of their definition is the participatory nature of action research that braces the enquiry and most importantly underpins the practical knowledge created from individuals' participation. This is also relevant to my study where CRP management knowledge is generated from the healthcare professionals' participation based on their everyday's work in their clinical setting with great emphasis on their clinical views and experiences.

Waterman *et al.*'s (2001) definition is comprehensive by combining most of the action research characteristics contained in the two aforementioned definitions (Reason and Bradbury 2008, Shani and Pasmore 2010) such as participatory, a problem focused, context-base and emergent enquiry. While these can be seen as commonalities between Waterman *et al.*'s definition and the other two, some differences may also be considered. For example, Waterman *et al.*'s place great emphasis on reflection as a key aspect of action research, which can be seen in the other definitions but in a less significant view. In addition, Reason and Bradbury (2008) and Shani and Pasmore (2010) prioritise practical knowledge over propositional knowledge (from different perspectives), whilst Waterman *et al.* (2001) do not.

4.3 Characteristics of Action Research

Numerous action researchers have attempted to identify the characteristics that illuminate the exclusivity of action research and distinguish it from other methodologies. For example, according to Waterman *et al.* (2001), action research is a reflective problem-oriented enquiry based on collaborative relationship between action researchers and participants. Coghlan and Brannick (2014) outline four broad

characteristics of action research: research in action rather than research about action, a collaborative democratic partnership, research concurrent with action and a sequence of events and an approach to problem solving. Shani and Pasmore (2010) provide a complete theory of action research in terms of four aspects: contextual factors, quality of relationships, quality of the process and action research outcomes. Furthermore, Reason and Bradbury (2008) maintain that action research must comprise participatory, empowering and improving (contribution to knowledge and practice) elements.

Although different terminology was used by different researchers, most of these researchers shared the same essential ideologies of action research. For example, in congruent with Reason and Bradbury (2008), Coghlan and Brannick (2014) assert that action research has a collaborative intent; that research is done with persons (not on them) and that a primary aim of action research is to develop practical knowing. In my study, the involvement of healthcare professionals in solving their own issues around CRP management based on their own clinical experiences entailed generating different sorts of practical knowledge. Additionally, consistent with Reason (2006), Brydon-Miller (2003) outlines that action research aims to develop theory that is a guide to enquiry and action. This is an essential aspect of organisational change management but also is an approach that produces new knowledge attitudes and skills of CRP management. Drawing on action research literature, I have identified four of the key characteristics pertaining to action research in the following sections. These broadly recognise qualities of action research and essentially help to distinguish action research from other qualitative

approaches. I also present the significance and integration of these into the context of my study.

4.3.1 Participatory

This key feature of action research was established by Lewin (1946) who highlighted the significance of engaging participants throughout the research process. Based on Lewin's notion and describing its impact on his work, Coghlan (2002) asserts that the powerful tenet of action research is that human systems could only be understood and changed if one involved the system individuals in the enquiry process itself. This participatory nature of action research is underpinned by collaboration between the researcher and participants. Brydon-Miller *et al.* (2003) argues that research that is conducted without a collaborative relationship with the relevant members is likely to be incompetent. Participation as a characteristic of action research can take a number of forms and for the purpose of this study it was helpful to consider this characteristic from three perspectives.

First, an essential feature of action research is a perspective of collaboration that reflects the way teamwork, rather than individual effort. It has been emphasised that practice involves other people and action research is necessarily a democratic participative process (Kemmis 1988, Greenwood and Levin 2006). Reason (2006) comments on this by emphasising that participation is vital at a methodological level because self-evidently one cannot examine and change practice without deep engagement of those involved in that practice. Action research is a collaborative, democratic partnership where members of the system being studied participate

actively in a cyclical process with the main focus on how they engage in the processes of action and enquiry (Coghlan and Brannick 2014). Therefore, a primary value of action research strategies is to increase people's involvement in the creation and application of knowledge about them and about their worlds (Reason 2006).

In relation to my study, participants were healthcare professionals who shared a common interest in CRP management but were also attracted to the research by the possibility of working collaboratively to influence/change problematic aspects of CRP management within their practice. As acknowledged in chapter one, effective pain management is a team task that can only be achieved if all involved healthcare professionals succeed in delivering their duties of care adequately including both analgesic prescribing (by doctors) and administration (by nurses). Reason (2006) argues that action research places great importance on collaboration between all those engaged in the enquiry project, aiming to help the involved individual develop skills of reflective practice and organisation and community members establish a culture of open enquiry as part of their work life, to develop learning organisations or communities of enquiry. Therefore, collaboration in the context of this study can be viewed as a means of networking for CRP management, where common ground is discovered with other healthcare professionals involved in this enquiry, whereby shared interests are advanced through a process of discussion and co-operation. Additionally, not only are healthcare professionals offered the opportunity to gain knowledge and improve practice in their own workplace but also their workplace became an environment of learning in relation to CRP management.

A key point that Reason (2006) makes in relation to participation is that participation is both epistemological and political. Essentially, participation is epistemological because the individual who engages within an enquiry is the one who determines the kind of knowledge that is produced. Therefore, involving both doctors and nurses in my study was expected to generate a more comprehensive kind of knowledge about how evidence-based CRP management was understood in the study hospital. Participation is also political because giving voice to one worldview or stakeholder group over another is a very political act (Reason 2006). By bringing a group of nurses and doctors together in order to ensure representation from nurses and doctors in my study means that I address participation in the context of people. However, these nurses and doctors can also be viewed as representatives of a particular view that stems from their clinical backgrounds. Therefore, CRP management is looked at from different perspectives. For example, while surgical nurses/doctors might see pain as purely physical, medical nurses/doctors might see it as being multi-dimensional. Still others might see CRP management as being simply about training where others might see it as being about poor communication and so forth. Reason (2006) rejects the possibility to do research without persons, including them both in the questioning and sense making that informs the research, and in the action which is the focus of the research. Therefore, bringing a fruitful mixture of different perspectives in this enquiry helps the production of broader range of work-based knowledge.

Second, fundamental to action research is its participatory and collaborative endeavour between the researcher and participants. Waterman *et al.* (2001) highlight the importance of partnership between action researchers and participants

as an essential part of the involved member's activity. Commenting on the term 'participant' in action research, Holter and Schwarz-Barcott (1993) refer to it as an individual who knows the workplace from 'the inside' and who is seen as the expert for the setting under study. However, the extent of collaboration between researcher and participant can vary as the process of enquiry progresses. This can be an expected result to another feature of action research described as an emergent developmental form (Reason 2006). Reason (2006) advocates this as the process of enquiry becomes more established, individuals skills improve, community of enquiry develops, understanding of the issue deepens and practice grows overtime. Waterman *et al.* (2001) assert that the sustainability of collaboration throughout all the stages of the research provide more opportunity to obtain practical solutions to problems identified for investigation.

Herr and Anderson (2005) contend that a key challenge for the researcher is to define positions within an action research endeavour. However, I would argue that failure to do so might pose questions about the trustworthiness of the study. Therefore, it was necessary to identify the scope of collaboration between myself, as the researcher, and the participating healthcare professionals. Although Herr and Anderson (2005) go on to talk about several forms of positionalities and different factors that determine them, my view of my position as an insider in this study was only based on the organisation, which Coghlan (2001) and Coghlan and Brannick (2014) place great emphasis on in deciding positionality. Positionality and its implications for my study are discussed in the following chapter.

As the original impetus for my study was directly related to PhD study, and reflected my interest in the outcomes of CRP management and education, the topic area and research questions were therefore influenced by these conditions. Because early stages of an action research are crucial and making sense of an early engagement is worthwhile (Coghlan 2001, Coghlan and Brannick 2014), collaboration with participating healthcare professionals started at an early stage in the study where they identified particular problems and potential solutions related to CRP. They proceeded throughout the course of the research to put into practice a range of solutions to improve or influence aspects of CRP management and evaluated their effects. As will be discussed in a following section, this was performed in line with the action research cycle of joint planning, action, observation and reflection, with the reflection phase playing an integral part in proceeding for further cycles of planning, acting, observing and reflecting in a spiral of learning.

Third, action research is collaborative in that participants locate their enquiry in their social world and in doing so may involve others in aspects of the research. According to Carr and Kemmis (1986) and Reason and Bradbury (2008), as action research progresses, there is an expectation that a widening circle of those affected by practice would be involved in the research process. From clinical perspectives, this view of participation reflects the reality of patient care as a collaborative endeavour participated in by a range of healthcare professionals. In relation to this enquiry, there was an expectation that any attempt to influence or change practice would ultimately include the entire healthcare professionals of the medical and surgical wards involved in the delivery of patient care.

4.3.2 People's Own Enquiry

Central to action research is that its tenet of research about practice conducted by those involved in that practice, with the intention to change it and/or improve it. Action research has been distinguished from other forms of research by its ability to help practitioners to identify problems in their own workplace and subsequently to develop strategies to improve this practice (Carr and Kemmis 1986, Hart and Bond 1995, Vallenga *et al.* 2009). A key benefit shared by action researchers, is this enduring respect for people's knowledge and for their ability to understand and address the issues encountering them and their communities (Brydon-Miller *et al.* 2003). Vallenga *et al.* (2009) go on to say 'action research is a disciplined systematic process, starting with the identification of what is going on in a situation and the concerns of those involved' (p. 82). Therefore, from epistemological angle, what may distinguish action research from other forms of research is that the creation of knowledge and practice is embedded in each of the different participants' critical and practical experience of the enquiry under study. This is crucial because these practitioners not only have access to local knowledge, but also have insight into the clinical area and have access to the structures, processes and cultures of where they work (Holter and Schwartz-Barcott 1993, Coghlan and Brannick 2014). The production of this knowledge is rooted in the generation of emerging understanding and not with a view of incorporation into practice, the case in other forms of researches (Vallenga *et al.* 2009). Reason and Bradbury (2008) outline that the key purpose of action research is to generate practical knowledge that is useful to people in the everyday conduct of their lives. This form of knowledge provides an insight into an enquiry, a process that was described by Carr and Kemmis (1986) as an access to practical theories, which in turn results in informed action or praxis. Emphasising

the integral role of the practitioners' understanding and experience in the process of action formation, Hammersley (1993) highlights the significance of the ideal situation, whereby participants are able to test theoretical ideas in a way an observer never could and provide particular insight into the evaluation phase.

With regards to this study, it was clear that the issue of CRP management and other related concerns represented an existing dilemma for majority of healthcare professionals in the undertaken hospital for a lengthy time. It is also evident that the context of practice is fundamental in terms of the management of CRP where every involved practitioner is required to perform an effective way of assessing, controlling and treating the CRP. Involving healthcare professionals in this project provided a worthy opportunity to acquire their experiences, views and insights of CRP management and issues surrounding it. Thus, healthcare professionals were encouraged not only to identify or investigate but most importantly to overcome individual and contextual barriers that could have contributed to ineffective management of CRP. The studies reviewed in this section conclude that participants who investigate their own practice are more likely to identify and implement suitable interventions to change practice. With this in mind, Coghlan and Brannick (2014) argue that unless a planned change is aligned with individual values, local organisational needs and wider policy the change may not be embedded. In my study, these factors are acknowledged as CRP management was identified by participants as a work-related issue a companied by support and guidance from relative stakeholders in the study hospital. Therefore, any change in these participants' practices, knowledge or/and attitudes will be emerging from the participants perspectives and also supported and driven in by their organisation.

4.3.3 Practice Change Focused

There is a plethora of evidence from the literature on action research that emphasises the practical nature of this type of research and its commitment to practice change and improvement (Carr and Kemmis 1986, Hammersley 1993, Bell 1999, Reason and Bradbury 2008, Koshy *et al.* 2010). Reason and Bradbury (2008) maintain that action research is about working towards practical outcomes and that it is also about producing different forms of understanding. Therefore a key feature of action research is a problem-solving approach that makes it attractive to practitioner-researchers (Bell 1999). Meyer (2000) establishes that the strength of action research lies in its focus on producing solutions to practical problems and its ability to empower practitioners by encouraging them to engage with research and the subsequent development or improvement activities. In addition to Meyer (2000), many other action researchers referred to the term 'improvement and involvement' as a key purpose of a change in an action research enquiry, whereby practitioners have the opportunity to identify solutions to problems and also apply them within their own practice setting (Hart and Bond 1995, Waterman *et al.* 2001, Brydon-Miller *et al.* 2003, Reason 2006).

By engaging participants in both investigation and change of their practice, two main outcomes can be achieved. First, there is a belief that change is more likely to be relevant and sustained if participants implement it. According to Lazes (2007), this sustainability is due to the notion that action research promotes ownership of practice change. This is also based on Lewin's principle that the interaction between the participants and the social system results in solutions for practical problems and changed practice (Holter and Schwartz-Barcott 1993). However, this sustainability

was criticised for its difficulty to translate across institutions due to its emphasis on relationships between individuals in a particular system (Leykum *et al.* 2009). These authors argue that action research is more feasible if the problem is owned and solutions initiated by staff, based on the fact that individuals may change over time. For my study however, this was not an issue because of the following four key aspects.

First, the purpose of the investigated enquiry of CRP management was only relevant to the undertaken hospital. Therefore, any direct change or improvement of practice was expected to be relevant to the investigated problem of CRP management in the particular hospital, whereby any need for practice change translation was not required. Second, a key component to action research is that it normally occurs in the present and includes the implementation of solutions as a part of the research process. There is therefore no delay between completion of the project of enquiry and the implementation of solutions to problems identified. In fact, the research process itself includes actions or implementation of change and importantly, subsequent evaluation of that action. Third, although healthcare professionals' turnover in this study was inevitable, the majority of them were expected to stay in their current workplace for longer period of time than that of the project on this study. With this in mind, at an early stage of this project, prospective participants were encouraged to choose the venue, time and dates that most suited them to engage in this project. Therefore, those who knew they would not be available were expected to express so. Finally, a key value to action research is its talent to bring about change to individuals' knowledge and practices and also most significantly to the organisation in terms of change management or practice development (Brydon-Miller

et al. 2003, Reason 2006, Coghlan and Brannick 2014). Therefore, even in a situation where individuals or staff are not guaranteed staying in the site of the enquiry, it is expected that this change can be handled and absorbed by other participant colleagues and stakeholders in a positive way in order to maintain sustainability. For this study, stakeholders include Nursing Practice Development Department, nursing administration, clinical nurse managers and medical consultants who were all aware of this project and agreed to either participate or support it in different ways. For example although it was not feasible for clinical division managers and medical/ surgical consultants to engage directly in this project, their invaluable support and guidance was accessible throughout the entire project (I refer to this point in a separate section). The positions reviewed in this section conclude that solutions and interventions are more relevant and sustaining if generated by participants. As acknowledged in the literature review chapter, in direct contrast to action research, inability to sustain development in knowledge and/or practice was a major limitation on majority of other forms of research that attempted to utilise traditional approaches of education programmes in order to bring about change in the fields of pain management.

The second outcome is the intentionality of action research in integrating theory and practice. Many action researchers attempt to quote Lewin, who states, 'there is nothing so practical as a good theory' (1952, p. 169), as a key indicator of their work. Brydon-Miller *et al.*'s (2003) perception of Lewin's theory goes beyond the belief that theory can inform practice and extends to a recognition that theory can be produced through practice. Therefore, action research can generate a different type of knowledge or practical knowing that is generated by other research methods, which

is possibly more useful in practice because it has emerged from practice. As acknowledged in chapter two, another major limitation of the traditional form of researches that focused on pain management education was the difficulty of transferring knowledge into practice and how to instigate the change into the clinical settings. In contrast to that, Stringer (2004) establishes that action researchers engage in careful diligent enquiry not for the purpose of learning new facts or altering accepted theories, but to obtain information that has practical application to the solution of specific problems related to their work.

The intentionality for action research to act as a vehicle for knowledge transfer is well regarded. For example, Waterman *et al.* (2001) contend that a key reason why action research was developed as a method was to bridge the research-practice gap. With reference to the key aims of action research, Kemmis and McTaggart (2005) maintain that action research aims to transform both practitioners' theories and practices and the theories and practices of others of different perspectives and practices that may contribute to forming the conditions of life and work in particular workplace. In this way, action research does not consider either theory or practice as superior in the relationship between theory and practice; rather, it aims at alteration and development of each in relation to the other through critical reasoning about both theory and practice and their outcomes (Kemmis and McTaggart 2005). In terms of my research questions, the focus on bringing about change in healthcare professionals' knowledge attitudes and most importantly practice, with regards to CRP management, is a key aim of this study. Central to this is the way in which participants can enhance CRP management practices by using knowledge acquired through participation in this enquiry and transferring that knowledge and attitudes

into related practice and improving the understanding of that practice among healthcare professionals.

4.3.4 Contextual Nature

Fundamental to action research is that it is a context-bound and involves action which is designed to change local situations (Koshy *et al.* 2010). According to Parkin (2009), a key purpose of conducting action research is to bring about change in particular contexts. Shani and Pasmore (2010) provide a framework, whereby action researchers need to reflect on the four following aspects: context, quality of relationships, quality of the action research process itself and outcomes. According to Shani and Pasmore (2010), there are three context areas: the broad general business context at global level, the local organisational context and the specific topic area. For the purpose of this study, only the local organisational context and specific topic area will be discussed. Quality of action research is discussed in detail in a separate section.

Organisational or discipline context that is what is going on in the involved institution (Shani and Pasmore 2010). According to Coghlan and Brannick (2014), this contextual area includes organisational, environmental and individual factors. These factors perform an integral part in any project of enquiry. For example, organisational factors (such as resources) can have an essential impact on the readiness for participating in action research whilst environmental can provide the larger context where action research is carried out (Coghlan and Brannick 2014). Additionally, while collaboration is enhanced through shared goals, individual ambitions can have a negative impact on the project and its development (Coghlan and Brydon-Miller

2014). Furthermore, success, improvement or progress in an action research project would reflect on the quality of relationships between the researcher and members of the organisation and how the relationships are required to be managed through trust, respect, equality and concern for others (Coghlan and Brydon-Miller 2014). The learning that takes place and the knowledge that emerges in action research is a context-based in terms of the individual participants in terms of the participants' values/beliefs/needs as well as organisational factors. Therefore, the gained practical knowledge and improved practice stand as a benchmark for a successful change in the organisation. This change was considered by Coghlan and Brannick (2014) a consensus and contextual based process of learning through action, self reflection and iterative feedback within an ongoing collaborative process.

The second context area is the specific topic of enquiry. Broadly speaking, action research has been recognised as an approach commonly used for improving conditions and practices in a variety of healthcare settings, whereby healthcare professionals conduct systematic enquiries to help them improve their practices in the clinical settings (Waterman *et al.* 2001, Whitehead *et al.* 2003, Koshy *et al.* 2010). Waterman *et al.* (2001) attribute this to the practicability of action research of providing realistic solutions for what is required in a healthcare situation. This is based on their notion that by emphasising practice improvement rather than the practice transformation, the focus on practice enhancement rather than change is a realistic outcome of healthcare action research.

Whitehead *et al.* (2003) outline that the role of action research in the healthcare settings is an imperative and relatively unacknowledged activity, a situation in which many healthcare researchers are missing out a valuable resource for effective practice change. Koshy *et al.* (2010) reflect on the feasibility and practicality of action research in the healthcare settings. These authors maintain that the users of healthcare services can often be involved in an action research study where they are not 'researched on' as is the case in traditional forms of research. They add that this may also involve several healthcare professionals working together within a geographical area, multidisciplinary teams such as medical social workers or even members of one or two institutions (Koshy *et al.* 2010). Hughes (2008) provides a strong argument for the utility of action research in healthcare environments. Citing the declaration of the WHO (1946) that 'health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity', Hughes contends that the health of persons and communities is based on environmental factors, the quality of individuals relationships and their beliefs, values and attitudes as well as genetic factors, and therefore in order to understand our health we must see ourselves as interdependent with human and non-human factors in the system we take part in.

The management of CRP is a multidisciplinary endeavour whereby every involved healthcare professional in the particular area is expected to perform his/her duties effectively. In order for them to do so, difficulties related to the system complexity, its hierarchical structure and also barriers to collaborative teamwork by healthcare professionals, acknowledgement of existing workload and organisational factors need to be considered in the management of CRP. This position was successfully

managed in this study due to two main factors. First, as previously acknowledged, based on the notion that the role of CRP management is embedded in teamwork, it was necessary for each member of the multidisciplinary team to engage in this project with a great intention of solving CRP management or other related issues. Because, this topic was a main concern for these participants as a work-related longstanding clinical issue, it was their own choice not only to engage in a problem solving approach for this issue but also to perform actions and make plans for one another to help overcoming deficits surrounding it. As an action researcher in this study, I was fully aware of the integral part that I needed to play in the process of engaging participants and facilitating any emerging issues. As will be further explained, this was established by ensuring that effective communication skill, respect, equality, teamwork and successful professional relationships were all maintained throughout this project. Therefore, it was clear that all healthcare professionals had a great understanding that this enquiry is entirely underpinned by collaborative teamwork based on effective professional and interpersonal relationships. It was also necessary to keep all stakeholders, in the undertaken hospital informed of any updates during the project. This contributed to building a great level of confidence and co-operation between healthcare professionals.

Second, the intervention that was utilised in this action research project was action learning sets, where healthcare professionals were given the opportunity to participate during their working hours, in their own clinical setting and according to the date and time that suited them. This was found to motivate healthcare professionals to take part in this project despite any potential obstacles. For example, when another meeting came up or overlapped with the time of the action

learning set meeting, participants appeared to prioritise the action learning sets most of the times. It was also notable that participation continued mostly despite heavy workload. When an obstacle presented, it was their choice to work around it, solve it, and facilitate it or choose an alternative plan. For example, in relation to the planned timeframe of the action learning programme, when something came up in the middle and prevented the meeting, it was up to the participants to re schedule a new date and time for the next meeting. Therefore, it can be deduced from this section that not only the healthcare professionals but also the researcher had a great understanding of the organisational and environmental factors around them for the entire duration of this enquiry.

4.4 Quality of Action Research

The quality of the action research process is rooted in the dual focus on both the enquiry process and the implementation process (Coghlan and Brannick 2014). Waterman *et al.* (2001) refuse to rely on standard research quality criteria to judge action research, a premise that was further supported by Reason (2006). This is according to Waterman *et al.* (2001) because action research goes beyond the conventional boundaries of description and theory production of 'what ought to be'. Waterman and her colleagues establish that action research places emphasis on practice or behaviour, with research being the tool to bring about and support change. Therefore, these authors argue that research should not be judged purely by research outcomes or theory development. This might be seen as a strength of action research where, sometimes, the success in completing the action research project might be considered an achievement in itself (Waterman *et al.* 2001, Reason

2006, Reason and Bradbury 2008). Waterman and her colleagues' assumption is based on the suitability of action research for healthcare settings where numerous existing challenges, hierarchical structure and complex environment distinguish them from other organisations.

Waterman *et al.* (2001) underline three aspects that need to be considered in order to assess action research. These are the process of action research, the management of change, and how the two of these relate to reflection and research. By considering these aspects, Waterman *et al.* (2001) concur with both Shani and Pismore (2010) and Reason and Bradbury (2008) who also place great importance on the process as well as the outcomes. According to Coghlan and Brannick (2014), the process of shared enquiry would reflect on the outcomes of project, such as sustaining outcomes (human and economic) and the development of self-help and competencies out of the action and the formation of new knowledge from the enquiry. Despite their three identified aspects, Waterman *et al.* (2001) however, argue that the quality of research in action research cannot be viewed in isolation. They contend that consideration needs to be given to the philosophical background and purpose of the project, and how the processes of change and other contextual factors influence the type and extent of the research.

The aforementioned identified aspects of quality are consistent with the purposes of my study for two main reasons. First, although my study aimed for direct outcomes of bringing about a change in healthcare professionals' practices, knowledge and attitudes of in relation to CRP management, the study also places importance on

why and how these participants identified their own concerns with regards to CRP management by providing a detailed description of the process of the enquiry and what went on. The study also aimed to explore views and experiences of these participants on their involvement in this unique (for the majority) work-related project. Therefore, in addition to outcomes, the study also was concerned about how the change might occur and not only has it occurred or not. By drawing the participants' to engage in an action learning programme in order to solving their own work related problems, they were required to work collectively and collaboratively as a team where respect of others and interpersonal/professional relationships were ensured. If so, the quality of the relationships between these participants, the quality of the process, outcomes and organisational factors were considered.

Second, bringing healthcare professionals into a unique dual approach of action research and action learning in the healthcare settings can be considered a change management approach. Action research has been recognised as an approach that is located in the participatory worldview and that its exclusivity is attributed to it is being context-bound and involves action, which is designed to change local situations (Reason 2006, Reason and Bradbury 2008, Parkin 2009). According to Reason and Bradbury (2008), participatory worldview places human persons and communities as part of their world. A participatory view requires persons to be both situated and reflexive, to be explicit about the perspective from which knowledge is produced, to see enquiry as a process of coming to know, serving the democratic, practical nature of action research (Reason and Bradbury 2008).

This study involved nurses/nurse managers and doctors with great acknowledgement of relevant stakeholders' support, advice, guidance and encouragement. Therefore, these nurses and doctors represent a particular view that stems from their clinical backgrounds who might have different views not only of CRP but also the entire project and its progress. For example, while surgeons draw on their medical training to view CRP as purely physical, nurses might draw on their clinical experience or a specialised postgraduate qualification to view CRP as multidimensional, and so forth. With this in mind, Waterman *et al.* (2001), maintain that action research arose from a desire to democratise research in order to present a challenge to the institutionalisation of research which was viewed as being exclusive and exploitative. The point of Waterman and her colleagues in this position is to encourage stakeholders, who are actually excluded from the process of informing it, thereby making it participatory. Therefore, any success in the organisation can be transferred from practice into management not only due to the involvement of human persons from varied communities but also stakeholders' engagement. In other words, the utility of action research as well as action learning sets can be adopted as an approach that exceeds education to other organisational aspects including service improvement, patient and service user's problems, staffing management and clinical management and leadership.

4.5 Action Research Phases

This section presents the four action research phases used in this study. Each phase is classified as a discreet component and represents a sequential development of events that move from one phase of the enquiry to the next. However, in reality all

phases overlap and depict part of a reflective, iterative process where initial plans can become obsolete based on learning from experience.

As previously acknowledged, a key characteristic that distinguishes action research from other approaches is its reflective nature that is based on the notion of a cyclical process of reflection that involves a number of phases. Although there are some variations in the exact understanding of this cycle, the key principle continues to reflect Lewin's ideology of research and action. For example, according to Kemmis and McTaggart (2005), action research comprises a spiral cycle of planning, acting, observing and reflecting. O'Leary (2004) describes action research as a cyclical process that takes shape as knowledge emerges. According to O'Leary's (2004) model, cycles join towards better understanding of a situation and are based on evaluative practice that changes between action and critical reflection.

Waterman *et al.* (2001) provide a description of action research cycle that involves problem identification, planning, action (change) and evaluation. For the purposes of this study, Waterman *et al.'s* (2001) description will be used. This description depicts a process where research participants are engaged in activities that involve identification of particular problems, planning and development of strategies to address identified problems, actions formation and finally evaluation of the outcomes. Although steps identified may suggest a reasonable and almost rigid structure of events, these stages are commonly interconnected and therefore, in reality the process may not be as neat as planned. According to Kemmis and McTaggart (2005), the process is liable to be more fluid, open, and responsive. Figure 4.1 illustrates the meta cycle of this action research including the phases of

the enquiry and aims and methods of data collection in each phase. However, each phase also has its own action research cycle that includes the process of identifying the problem, planning action, taking action and evaluating it.

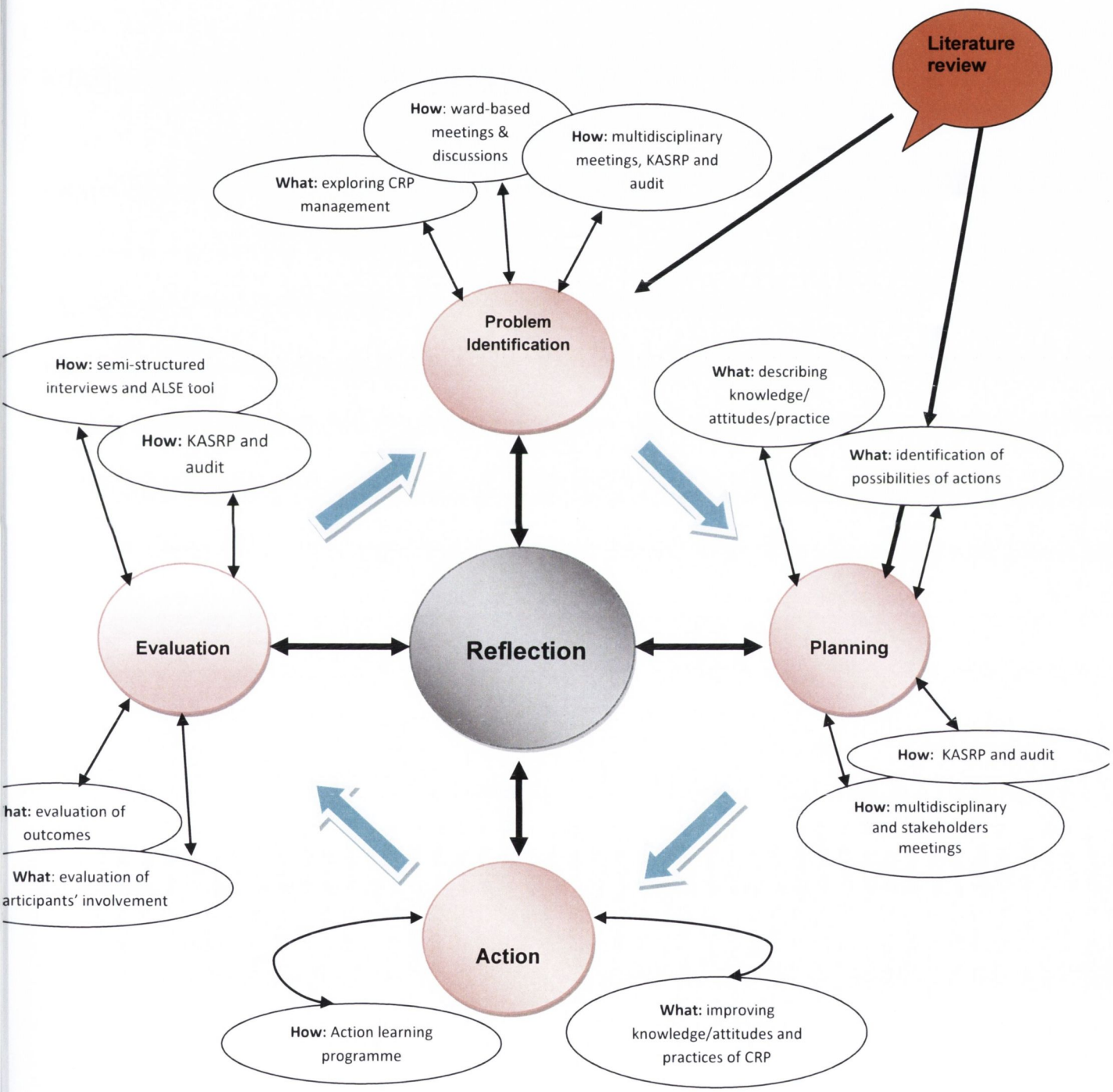

Figure 4.1 Meta-cycle of the action research and the aims and methods contained with each of the enquiry phase.

4.5.1 Problem Identification

Fundamental to solving a problem, is the necessity to clearly identify and define the problem. Identifying a problem usually takes place when a situation is found to be unsatisfactory, and there is recognition of ways whereby things could be done better. Problem identification represents the first phase of this enquiry, where it was essential to obtain an overall understanding of healthcare professionals' knowledge, attitudes and practices with regards to CRP management and assessment. It was also necessary to determine the main contributing factors to ineffective CRP management that required investigation from the participants' own perspectives. In essence, this was an exploratory phase, which Waterman *et al.* (2001) regard as a period of fact finding. As acknowledged in the first chapter, CRP management was recognised by healthcare professionals as a major clinical issue that required investigation and addressing. This was agreed during healthcare professionals' daily clinical practice and routine interdisciplinary and multidisciplinary meetings based on that clinical practice and work experience.

Rycroft-Malone (2006) establishes that the need for questioning in order for dissonance between current practice and what best practice should be is recognised during initial reviews of practice. A review of healthcare professionals' knowledge, beliefs and practices pertaining to CRP was performed by these healthcare professionals in this study. This is imperative because this review established an initial baseline for actions taken. Healthcare professionals highlighted barriers and facilitators to CRP management and were encouraged to examine their own involvement and accountability for aspects of CRP management. While healthcare professionals' work-related meetings were central to this exploratory phase, problem

identification was also informed by other sources. For example, the literature review presented in chapter two helped me to make decisions about the research area, facilitated detailed exploration of the nature of problems associated with CRP assessment and management practices and the potential value and limitations of education interventions. From the outset, examination of literature provided the enquiry with a particular focus and informed the research questions.

Central to this phase is its essential role in setting up a 'communicative space', which is considered a fundamental aspect of any success of an action research enquiry (Kemmis and McTaggart 2005, Wicks and Reason 2009, Williamson *et al.* 2012). Wicks and Reason (2009) refer to this phase as 'opening up the communicative space'. Based on this this phase, difficulties encountering open communication, participation and engagement are established. Hart and Bond (1995) emphasise the importance of early stage meetings in providing opportunities for negotiation around the detail of the enquiry. In this respect, the first phase of this study provided an opportunity for clarifying roles and expectations about the purpose of the study. This phase also enabled participants to establish relationships and provided a collaborative perspective to the enquiry. Furthermore, the initial meetings also helped healthcare professionals promote commitment and partnership between the collaborating multidisciplinary teams. Despite the hierarchical organisational structure, healthcare professionals in this study showed strong enthusiasm, high expectations of themselves, their own knowledge and clinical experience. They also conveyed willingness to work collaboratively based on equality and respect for others.

4.5.2 Planning

Although this phase aimed at setting out the sequences, activities, tasks and timeframe required to deliver the project, it overlapped with the previous phase where exploration of CRP and pertaining issues and planning were bound up in the same activity. For example, while the agreement on the need for investigating CRP management emerged from work related multidisciplinary meetings in the first phase, further meetings were required in this phase in order to determine precisely what actions needed to be taken and how these could be achieved based on the available resources. Central to action research is its cyclical nature (Carr and Kemmis 1986, Dick 2001) and emergent developmental form (Reason 2006) that reject the linear and logical pathways features of an approach. Willingness or intentions to change knowledge, attitudes or practice, expressed at the outset of the study, in reality became part of a cyclic process that was adjusted throughout the duration of the study, in response to a range of conditions that influenced any planned change. For example, while healthcare professionals identified potential actions in the early stages of the study, this was not the only time they engaged in planning activities. There was recognition that as healthcare professionals' knowledge of CRP management developed and practice conditions changed, these factors would also influence their plans for changing aspects of CRP management.

Another essential task required in this phase was procuring ethics approval for the research from the undertaken hospital. In addition to its cyclical and developmental natures, a key characteristic of action research is its context-specific form where organisational challenges and environmental barriers commonly arise (Waterman *et al.* 2001, Shani and Pasmore 2010, Coghlan and Brydon-Miller 2014). This is

consistent with this study. For example, when ethics approval was delayed, a change of planned timeframe and a delay in commencing the action phase was inevitable. Ethics approval is discussed in the following chapter.

Abma (2000) underlines the importance of the involvement of all stakeholders in preventing exclusion, giving voice to marginal groups, encouraging equality, and rebalancing power. In addition, involving stakeholders in decision-making about the research topic can encourage engagement and ownership as the topic will be important for participants (Abma *et al.* 2009). A key purpose of this phase was meeting with relevant stakeholders in the undertaken hospital. I performed meetings with the Director of Nursing, medical and surgical consultants, chief pharmacist, clinical division managers, Nursing Practice Development Coordinator. It has been maintained that unsupportive organisational cultures and little support from management can lead to poor participation and hinder engagement (Khresheh and Barclay 2007). From meetings with stakeholders, I was seeking agreement, support, facilitation and advice. Furthermore, some of the stakeholders (such as clinical division managers and medical consultants) were indirect participants and expressed interests in receiving updates at regular intervals throughout this project. Medical consultants received feedback from their own team participants and clinical nurse managers on how things were going or if assistance was required. Additionally, their expert advice was considered invaluable. For example their recommendation to start the meetings in the afternoon to avoid any peak work time was effective. Building positive relationships with stakeholders established a great level of confidence and empowered both participants and the researcher.

4.5.3 Action

This third phase of an action research enquiry is basically a period where participants take action described as an intervention phase (Meyer 2006). With regards to logical sequence, this phase follows planning and illustrates the actions that healthcare professionals have engaged in. However, similar to the planning phase, this is a deceptively simple explanation of events. The action phase is also cyclic as participants engage in a cycle of planning, intervention, reflecting, re-planning and so on. Reflection is an imperative component of this phase. When engaging in reflection, participants think about the way the new action has affected them and has impacted on their practice. Modifications to action may be reviewed at this stage in response to the outcome of the interventions. If the action has been successful, this can also act as an indicator to continue with the intervention or to amend it.

The action learning sets formed a crucial part in terms of the action elements of this study. However, more actions generated through the cycles of learning in the action learning sets that reflect both individual and collective actions. Based on the current professional practice and existing challenges on CRP management, healthcare professionals were encouraged to evaluate the relevance and suitability of these actions to their current knowledge, attitudes and practices of CRP management. It is vital that these actions were also based on participants' knowledge and beliefs about critical incident and new emerging clinical issues pertaining to CRP, which helped to develop a deeper understanding of the enquiry and to identify key aspects and dynamics.

4.5.4 Evaluation

This phase comprised reviewing performance and outcomes, identifying successes, strengths, weaknesses in change implemented. This phase also included planning remedial actions, planning ways of improving instruction and learning based on how the interventions had developed. In addition, the evaluation phase also considered new or previously unplanned actions that had arisen. In order to obtain a worthwhile evaluation, Jenks (1999) maintains that this phase involves reflection on what has been achieved and factors which have assisted or hindered this achievement. This is a key element of evaluation in this study, as understanding of the factors that facilitated or hindered healthcare professionals' CRP interventions, in addition to strategies they used to lessen the impact of barriers to CRP management, are essential.

Evaluation in my study occurred on different levels. While there was a continuous evaluation of actions taken throughout the action learning sets, the entire action learning programme was evaluated in terms of its effect on healthcare professionals' knowledge, attitudes and practices with regards to CRP management. This was conducted using the KASRP and audit. Furthermore, evaluation of the outcomes and impact of the action learning programme on the participants was carried out using semi-structured interviews and the ALSE tool. This latest evaluation took account of the participants' views and experiences in participating in the action learning programme. Both of these evaluations identified the improved aspects of CRP management, as well as the conditions under which a change or improvement occurred.

4.5.5 Closing up

Although 'closing up' an action research is not a discrete phase identified in action research literature, I believe it is a phase of the research that is worth recognition. It has been considered as the phase of ending the study and a process of moving on (Hart and Bond 1995). However, the very nature of action research with its cyclic phases and continuing potential for action may result in interventions being continued beyond the timeframe of the study. Waterman *et al.* (2001) caution against research that discourages the establishment of an end-point, yet an issue can arise when considering the lasting impact of an action research study. Waterman *et al.* (2001) suggest that studies that have a lasting effect or influence can be considered as having impact. I contend this may be difficult to determine by a set time on study completion. Nevertheless, I agree that while there may be no definitive end to the way healthcare professionals' involvement in CRP management progressed, there was a need to identify a point of participant withdrawal from the study. Furthermore, Martin (2006) recommends that the researcher must let go at some point and allow participants to take responsibility for their learning and actions. I refer to this phase in the final chapter of the thesis.

4.6 Ethical Considerations

Research in nursing is essential for providing nurses with a specialised scientific knowledge base that empowers and enables them to anticipate and meet the needs of a constantly changing health care environment (LoBiondo-Wood and Haber 2010). Research brings together theory, education and practice in an attempt to ensure that nursing practice is evidence based, is of the highest possible standard and will optimally benefit patients. It is, therefore, vital to ensure that all research is

conducted in an ethical manner and that participants' rights are observed and protected throughout any research study.

The basic principles governing the legal and ethical obligation of researchers were produced by the Declaration of Helsinki (1989), where the basis of current codes of practice were also formed (World Medical Association 2008). Three main ethical principles have been identified (Polit and Hungler 1999, LoBiondo-Wood and Haber 2010) as relevant to the conduct of research involving human subjects; *Autonomy*, *Beneficence* and *Justice.* I contend that these principles were upheld throughout this endeavour.

4.6.1 Autonomy

Individuals have the right to self-determination, that is, they are free to choose whether or not to participate in a research study (LoBiond-Wood and Haber 2010). In order to implement this right, individuals must be informed of any proposed research study that could possibly involve them. For this study, a written consent was provided to prospective participants as well as a cover letter to provide information pertaining to the study. Information included the purpose, duration, participants' role, potential benefits and any potential risks of the study. It was made explicit in the cover letter that participation was voluntary and prospective participants were free to withdraw from the study at any time. They were approached and treated in a respectful and non-coercive manner. Participants were afforded the opportunity to ask questions to ensure full understanding of the information and its implications.

4.6.2 Beneficence

The principle of beneficence involves an obligation to do no harm and maximise potential benefits (LoBiond-Wood and Haber 2010). In order to adhere to this principle, nurse researchers must choose a significant topic and design the study so that it will optimise the findings without subjecting the participants to any undue discomfort or distress in the process (Polit and Hungler 1999). This information should then be disseminated to nursing communities. Participant health (physical and psychological), safety and comfort must take priority over the research study, and the researcher must be prepared to abandon the study should a threat to participant safety arise. The aim of this study was to evaluate the effect of an action learning programme on the knowledge, attitudes and practices of the participants and as such no potential harm or risk to the participants was anticipated. The results from the study provided information about the impact of the action learning programme on healthcare professionals' knowledge, attitudes and practice with regard to CRP management. Furthermore, the results obtained will be disseminated among other relevant professionals in the remaining wards and units in the hospital in order to improve patient outcomes.

4.6.3 Justice

This principle refers to the fair and equitable treatment of research participants including protection of their privacy (Polit and Hungler 1999). Participants in this study were treated equally. Data were obtained via patients' records and participants' questionnaires regarding their knowledge and attitudes to CRP management. All participants were given the same questionnaires to complete.

Based on the findings of the study, recommendations, suggestions and possible modifications will be discussed with relevant professional groups, including the palliative care team, oncology nurse specialist, practice development and stakeholders in the hospital to inform the continuing education needs of the participants. The data collected were private and confidential, and treated as such. Participants were assured of *anonymity* and *confidentiality*. They were also assured that their individual identities would not be published or linked in any way to the information they provided. The researcher alone took responsibility for the distribution and collection of questionnaires. Data collected were managed to protect participants' rights under the Data Protection Act (Government of Ireland 2003). All documentation pertaining to the study was handled in accordance with Trinity College Dublin guidelines (2012). I discuss ethics committee and data management in detail in the following chapter.

4.7 Conclusion

In this Chapter, I have reviewed relevant definitions with great focus on the working definition chosen for this study. I also explored the key tenets of action research enquiry, conceptualised them within the context of my study and described the utility of action research for meeting the aims and research questions posed in my enquiry. An action research design guided this project due to its capacity to better understand and to engage with the organisational challenges surrounding CRP management as suggested in the literature. I examined quality in action research and explored the action research phases. Ethical considerations were also discussed in this chapter. Research methods are discussed in detail in the following chapter.

Chapter Five

Research Methods

5.1 Introduction

In this chapter, I describe the research methods used to conduct my study. I begin by examining the sampling procedures, study settings, access to study site and recruitment of participants. I also explore my position in terms of the strengths and weaknesses of the outsider and insider researcher roles and describe how I managed to control potential bias of being insider researcher. In addition, I examine data collection techniques, issues of reliability and validity and data analysis. Finally, I outline ethical procedures and data management at the end of this chapter.

5.2 Sample/Sampling

Sampling refers to the process of selecting representative units of the entire population (Polit and Beck 2008). The purpose of sampling is to enable the findings to be generalised or extrapolated beyond the actual sampling units without having to study each element of the target population and is an important goal in post-positivist research (LoBiondo-Wood and Haber 2010). Sampling strategies are typically divided into two groups: probability and non-probability sampling. Probability sampling is the more rigorous sampling strategy due to the random selection of elements from the population (LoBiondo-Wood and Haber 2010). Probability sampling includes simple random, stratified and cluster sampling. A non-probability sample is less representative of the wider population as every element in the population does not have a chance of being included in the sample (Lo-Biondo-

Wood and Haber 2010). Non-probability sampling includes convenience, quota and purposive samples.

Purposive sampling techniques have been defined as the selection of units of the population in accordance with specific purposes related to answering the research study's questions (Teddlie and Yu 2007). This method of sampling was chosen for this study as the target population delineated was all healthcare professionals working on the medical and surgical wards. In order to overcome the limitation of under-representation, multiple sites were chosen including two medical and two surgical wards.

As will be acknowledged in chapter six, the overall population of this study is 170 healthcare professionals who were expected to participate in the KASRP and audit. However, the participants of the action learning programme were not included nor they should be for two main reasons. First, a key aspect to action research is its participatory nature where it is underpinned by collaboration between the researcher and participants who are the co-researchers. As discussed in chapter four, participation is political (Reason 2006). Therefore, participating healthcare professionals who were engaged in this enquiry in order to find solutions for issues surrounding CRP management formed a group of representatives who had control over their own discipline. According to Coghlan and Brannick (2014), the members of the system being studied participate actively in a cyclical process with the main focus being on how they engage in the processes of action and enquiry.

Second, as concluded from chapter two and three, central to both action research and action learning is reflection (Figure 5.1). In action learning, reflection is integral to the learning process, as learning is based on making sense of participants' past experience in order to affect and understand future experience (McGill and Beaty 2001, McGill and Brockbank 2004). Likewise, reflection forms a crucial part in the action research cycle not only for proceeding effectively in further cycles of the enquiry (Waterman *et al.* 2001, O'Leary's 2004) but also in the learning process where it interconnects the phases of each cycle (Kemmis and McTaggart 2005, Coghlan and Brannick 2014). As acknowledged in the previous chapter, the cycles of an action research enquiry join towards better understanding of a situation and are based on evaluative practice that changes between action and critical reflection. Therefore, any change in healthcare professionals' knowledge, attitudes and/or practice was expected to be achieved based on a reflective process where the change obtained is transferred to the entire population through reflection. In other words, reflection played a dual role in this action research enquiry. While it was an essential part in the learning process in the action learning sets, which is a phase of the action research cycle, it also (combined with actions) formed an integral part in transferring the learning outcomes outside the action learning sets to the entire population.

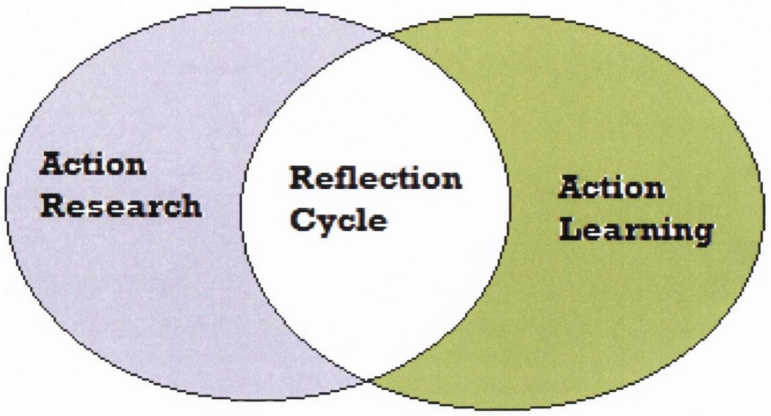

Figure 5.1 Reflection in action research and action learning

5.3 Eligibility Criteria

5.3.1 Inclusion Criteria:

- All healthcare professionals (doctors, clinical nurse managers, registered nurses and pharmacists) involved in assessing, prescribing, administering, and evaluating analgesia who are working on the medical and surgical wards in the particular hospital. Doctors comprised Registrars, Senior House Officers and Interns

5.3.2 Exclusion Criteria:

- Medical, nursing or pharmacy students
- Agency nurses that had only been on the wards for a short period of time
- Locum doctors who were on the wards for a short period of time

5.4 Study Setting

The sample was obtained from a major academic teaching hospital in Dublin, serving the local and national population. The number of beds in the research site is approximately 250. Two medical and two surgical wards were accessed to collect data with a total of 110 registered nurses and 70 doctors comprising physicians (medical doctors) and surgical doctors. The medical wards are covered by 5 different medical specialist consultants including respiratory, rheumatology, endocrinology, gastroenterology and gerontology. The surgical wards are mainly covered by 4 surgical consultants. The pharmacy department within the hospital consisted of 8-10 pharmacists.

5.5 Access to Study Site

Ethical approval was obtained from the local research ethics committee (appendix V) and the Faculty of Health Sciences Research Ethics Committee in Trinity College Dublin following written application (appendix VI). Procuring ethics approval from the hospital ethics committee proved to be challenging necessitating three written revisions of the application before approval was granted. The process also required me to attend a meeting with the committee to explain and clarify any unclear ideas or steps of the research project. Additionally, permission was sought in writing from the Director of Nursing (appendix VII). Permission was sought and granted by stakeholders of participating teams (Medical/Surgical consultants, chief pharmacist, clinical division Managers) seeking their permission and support for the study (appendices VIII, IX, X).

5.6 Recruitment of Participants

Following ethical approval, I displayed posters on the wards advertising the study and inviting all eligible healthcare professionals to take part in the study (appendix XI). Each category of healthcare professionals was recruited in slightly different ways. The issue of CRP management among nurses and nurse managers emerged from frequent professional and clinical ward meetings. Events related to CRP management were identified as a major concern among nurses themselves and also between nurses and doctors. Many of the medical doctors contacted me directly and showed interest in participation. According to Mumford (1991), the process of action learning set empowers participants by encouraging them to take charge of their own problems. Essentially, it is the participant's own problem that motivates their participation in the action learning set (Revans 1997, McGill and Beaty 2001). Furthermore, according to Marquardt (2004), 'a problem' is one of the six most primary components of action learning. The problem in this study was identified locally by the healthcare professionals who represented a sub-group of staff at ward level, and not by the researcher or any academic institution.

To ensure that those interested healthcare professionals understood the principles of taking part in the action learning sets, I subsequently arranged information exchange meetings with both doctors and nurses/nurse managers where areas of uncertainty and issues related to CRP management were discussed. During the meetings, it was observed that the majority of participants had significant concerns regarding CRP management and considered the issue to be important and work-related. I also met with the chief pharmacist to explain the purpose of the programme and to invite the

hospital pharmacists to participate in the study. Although some pharmacists were initially keen to participate, they were unable to commit to the undertaking and subsequently withdrew their interest owing to severe staff shortages. This point is discussed in detail in chapter six.

Rigg (2008) highlights the important role of action learning sets in public sectors where internal problems and muddied boundaries limit opportunity to examine possibilities for successful partnership to work and suggests that this is best established through individual stakeholders raising concerns collectively that influence everyone. Some researchers emphasise the systematisation and feasibility of using action research in organisations where available resources are limited (O'Leary 2004, Koshy 2005). In this study, it was not possible for the action learning sets to convene during paid employment time due to the current fiscal difficulties, lack of resources and staff shortages. Therefore, participants were invited to take part in the action learning set meetings during lunch time where food was provided. Each of the prospective participants was sent an email with a link to a YouTube video identifying and describing action learning and main recommended ground rules of action learning sets. They were also informed that the expected duration of the meetings would be one hour. Once individuals confirmed their participation, as previously acknowledged, an informed consent form describing the study, its voluntary nature, and the expectations of the participants was sent to interested individuals with the researcher's contact details. An information leaflet was included detailing the risks, procedures and benefits involved (appendix XII).

Although the majority of set members' experiences of action learning were limited, their professional experiences were adequate and relevant. It was emphasised to all prospective participants that there was no imposed timeframe for these meetings; rather they would be arranged in a systematic manner and adapted to suit working hours. Therefore, although most of the set meetings were conducted during lunch time, as planned, some of the meetings were held in the afternoon after the members' working hours. This was requested by the set members as they had more time, where the meetings lasted longer than the planned timeframe. Hospital nursing administration and team consultants were informed of the date and time of the action learning sets in advance and were supportive and encouraging.

5.7 Researcher Positionality

The term '*Outsider/Insider*' researcher is frequently cited in the literature and describes the status of a researcher in action research studies specifically. It has been implied by the literature that it is more likely to be able to achieve successful outcomes if the action researcher is an insider (Coghlan and Brannick 2014, Hockley *et al.* 2013). Insider researchers are already immersed in the organisation and have a pre-understanding from being an actor in the processes being studied, which plays an important role in the political process of framing and selecting their action research project (Coghlan 2001*)*. On the other hand, for action researchers who are external to an organisation, different approaches to how best to engage with potential research participants have to be considered. Action research involves conducting research with people as opposed to on people where research participants are considered less as subjects and more as research partners (Reason and Bradbury 2008). Therefore, at the core of the action research method are

principles of democracy and humanity within research, involving respect for persons participating, opportunities for self-representation and decision making and frequent self-evaluation by those who are involved in the research. General ethical considerations relevant to the research project are discussed separately in a following section.

5.7.1 External Researcher

Titchen and Binnie (1993, p. 859) report 'tension between the researcher and the actors in the outsider model of action research'. Several studies were found in the literature to be congruent with Titchen and Binnie in that regard. Among the most interesting publications in the UK, Canada, and Ireland, several authors (Hockley *et al.* 2013, Dickson and Green 2001 and O'Leary 2012) reflect on their own previous work as outsider researchers in action research studies. Hockley *et al.* (2013) reflects on her experience of being an outsider researcher during a previous action research study where she worked nursing early shifts, late shifts and night shifts in order to get to know staff and for them to get to know her (Hockley 2005).

Hockley *et al.* (2013) states that when it came to feeding back data from the exploratory phase, her outsider/insider position as an action researcher was highlighted (Hockley 2005). *"I was not prepared for the reaction to feeding back data from the exploratory phase with a formal report to management prior to feeding back informally to all staff. The written feedback provoked a strong reaction from the owners of Nursing home 1 and the nurse manager"* (Hockley *et al.* 2013, p. 21). Although the feedback highlighted the excellent physical care of residents and the

keenness of many staff for quality end-of-life care, she further states that her outsider position in the action research process was highlighted and she was told it was not for her to comment on how care was managed in the home even though it influenced end-of-life care (Hockley *et al.* 2013).

The crucial role of trust when outsiders work with participants within an organisation was emphasised by Meyer (2000). Hockley *et al.* (2013) reports that it appeared that trust had developed very easily with the care staff, nurse manager and the owners of nursing home 1 from the beginning (prior to presenting the formal feedback). Hockley reports that to have set up a 'communicative space' as part of the management of the study, where care staff and management could speak together about end-of-life care, might have facilitated greater responsibility and ownership for the study on the part of the nursing home and at the same time defuse the issue of insider/ outsider position.

A previous study of reflection on the role of outsider researcher is that by Dickson and Green (2001), where the first author reflects on her experience and challenges as an external researcher guiding older Aboriginal women to assess their own health using participatory action research. Dickson (2001) states *"My entire time guiding the research was spent with an underlying feeling of uncertainty, wondering whether our unconventional approach would materialise into a health assessment or not. I often felt as if I were holding my breath, hoping that things would fall into place, repeating my mantra, Trust the processes!"* (p. 253). Dickson stresses that she, not the potential participants, was proposing the research, emphasising the need for it, and insisting that research could be empowering rather than exploitative. With the

grandmothers, she felt she had to constantly rationalise, defend, justify and persuade; a role she did not like. Furthermore, Dickson indicates that staff felt uneasy in the early months of the project about broaching the topic of research and her role in it for fear of driving the grandmothers away from the project altogether. Despite her interest and background, there were constraints to Dickson's role in the research. As an outsider to the study community, she felt she had to acknowledge to herself and to the other research participants the inherent contradiction between her role and presence in the research and the aim of research to reduce power inequities.

O'Leary (2012) outlines a number of issues she encountered owing to her status as an outsider action researcher in several research and consulting projects. "*My position as an outsider means that I begin each endeavour struggling with a sense of only scratching the surface.* Similar to Hockley *et al.* (2013) and Dickson and Green (2001), O'Leary (2012) indicates that her position of outsider meant that she entered each situation knowing little or nothing about that particular situation, which could consequently make negotiations difficult due to unfamiliarity with individuals, structures, politics, culture and jargon. She further reports *"my lack of knowledge about the situation meant that I was unaware that within the main group were subgroups with which group members socially identified"* (p. 2). It is evident from these three studies that the authors encountered many challenges as external researchers. As an insider researcher with respect to this study, it was anticipated that the challenges identified above would not be encountered owing to the researcher's familiarity with the organisation.

5.7.2 My Role as an Insider Researcher; Training and Preparation

As a clinical nurse manager who is part of the organisation in which the study was conducted, I engage in many interdisciplinary clinical and work-related issues and as such I am considered an insider researcher. I agreed to assume the role of the action learning sets' facilitator. In doing so, I form part of the set with the intention of further highlighting the issues and facilitating staff at ward level to find solutions. It is noteworthy that this does not conflict with my agenda in attaining a PhD. Action research is a way of producing practical results for the people involved and is a knowledge generation process that produces insights not only for the participants but also the researcher and therefore benefits both (Auger and Wideman 2000, Dick 2001, Greenwood and Levin 2006).

Having worked in a specialised clinical area (Medical nursing) for over 15 years, I have built a high level of competence, experience, confidence and familiarity within the organisation's multidisciplinary teams. In addition, I have undertaken many academic and clinical courses for both personal and professional development. This has enabled me to work according to current best practice and has enhanced my clinical credibility among fellow healthcare professionals. Consequently mutual respect and good working relationships have been maintained between the medical teams and I and other healthcare professionals over a lengthy period. This has resulted in a safe, convenient and participatory communicative space; the ideal environment for conducting an action research project. In addition, in order to overcome potential challenges and experience-related issues with regards to facilitating, it was vital for me to obtain some necessary preparation to be able to demonstrate that role successfully. This preparation involved essential

recommended reading on action learning, and interviews with experts on the subject both nationally and internationally (Prof David Coghlan-Trinity College Dublin, Prof Sheila Payne-Lancaster University, Dr Pauline Joyce-Royal College of Surgeons Ireland, Dr Jo Hockley- St Christopher's Hospice, UK). The interviews proved to be very beneficial in terms of how to facilitate the action learning sets, organising the set, facilitating time, laying ground rules and other related topics. I also had frequent meetings with a private action learning consultant outside working hours to become proficient in facilitating action learning.

In 2011, Ireland joined a quality improvement NHS initiative called "*The Productive Ward: Releasing Time to Care*", which aimed at empowering frontline staff to drive improvements in the health service through redesigning and streamlining the way they deliver care. Consequently, a National Advisory Group was established to oversee the implementation of the Productive Ward in the four HSE regional areas. In December 2011, seventeen pilot sites commenced their productive ward journey. The ward where I work was nominated with another 4 wards from different hospitals within the HSE Dublin North East area. The process included frequent groups meetings, conferences, presentations and discussions and was based on an action learning framework. Therefore, I was a participant as well as an observer in this action learning-underpinned programme over the year. This experience resulted in me becoming more confident and willing to use action learning, as well as improving skills and performance to facilitate the action learning sets.

5.7.3 Insider Researcher Benefits and Bias

Insider researchers are expected to know many of the strengths, weaknesses, opportunities and threats that currently exist within their practice arena and organisation. According to Coghlan and Brannick (2014), insider researcher engages in inter-level processes involving individuals, teams, the inter-departmental group and the organisation in processes of learning and change to ensure that the action research project contributes to the organisation's learning. Insiders are already familiar with the common language within the organisation, group or area of practice including the 'jargon' and 'window dressing' (Coghlan and Brannick 2014, p.115).

Wicks and Reason (2009) place great importance on insider researchers in overcoming any difficulties encountering open communication, participation and engagement. Williamson *et al.* (2012, p. 74) maintain that "It is highly unlikely that a project will succeed without both managers' commitment to protected time for the co-researchers and the commitment of the co-researchers to attend their regular meetings and engage in a communicative space". The success or failure of an action research project may depend on what happens when the enquiry process is first initiated, the way access is established and how participants are engaged at an early stage (Wicks and Reason 2009). According to Carr and Kemmis (1986), these initial steps in action research are essential to the process. They emphasise that the formation of a communicative space allows issues of concern to be articulated, facilitates participants to voice opposing views within a democratic perspective and permits the mutual understanding and the development of new practices which arise and are tested through genuine engagement (Carr and Kemmis 1986). With this in

mind, there is a plethora of evidence inferring that insider researchers play an essential role in setting up a communicative space, which is considered a fundamental aspect of any success of an action research enquiry (Kemmis and McTaggart 2005, Wicks and Reason 2009, Coghlan and Brannick 2014, Williamson *et al.* 2012). A safe communicative space enables both the action researcher and participants to share their knowledge and experience in a mutually supportive environment and also to expose their lack of knowledge and expertise, without embarrassment or fear of intimidation (Williamson *et al.* 2012).

Despite the previously acknowledged benefits of insider researcher, this position is not without its critics. Gerrish (1997) raises concerns regarding over-familiarity of the insider researcher within an organisation as there is potential for the researcher to start making conclusions without necessarily seeking the rationale underpinning the particular actions. Additionally, Ashworth (1994) expressed concerns about the inability of the researcher to achieve adequate distance. Therefore, although I believe that being an insider was very empowering, I still needed to be fully aware of the potential problems created by that position. Hence, I was required to balance my dual role as insider researcher and being a facilitator of the action learning sets. Over the 6 months of the action learning programme, it was important that I retained my professional position while also working as a researcher on a clinical related issue in order to fulfil both obligations equally and successfully. This was achieved by affording the participants respect, regard and confidentiality in accordance with the HSE Dignity at Work Act (2009). Ground rules and general ethical principles were also implemented throughout this endeavour to ensure a professional distance was maintained without compromising my role as an insider researcher. I eliminated any

inappropriate influence on decisions healthcare professional made about CRP management actions or activities by ensuring that the aim of the research was sufficiently defined so that clear focus was maintained throughout the lifetime of the study. It was vital that healthcare professionals participating understood the importance of exploring their own knowledge and practice and were not dependant on researcher views. Conversely, it was important that I did not seek to impose ideas for CRP management actions practice; rather I provided opportunities through the action learning programme and the research process for participants' reflective review of their own CRP practices.

In order to maintain the balance between my roles as an insider researcher and a facilitator of the action learning sets, it was also imperative to establish that not only participants' engagement in this project was entirely voluntary but also their commitment was embodied by their own motivation to bring about a change. Carr and Kemmis (1986) place great importance on 'commitment to action' in the process by which those involved deepen their understanding of theory and context and therefore can be encouraged to change. They suggest that common commitment to prudent action results in more desirable outcomes. Within any research framework it is particularly important that people should not be coerced into participation. Fundamental to action research is the notion of volunteering rather that participant selection, as motivation to change is an essential element of the approach (Webb and Hope 1995). I was aware that willingness to participate and become involved was essential to the participatory approach. If keen interest was not expressed by potential participants, the project could not happen or progress. Therefore, it was not in my interest to coerce participation from healthcare professionals who were not

enthusiastic about the prospect of participating in the research. This was ensured by conducting one-to-one meetings with prospective participants at an early stage of this enquiry. From these meetings it was important to recognise if the healthcare professionals had felt obliged to volunteer as a result of a perceived power relationship between them and myself as a nurse manager. Furthermore, I needed to be aware that, even if unwittingly, coercion to participate must not be used. Hart and Bond (1995) caution against the possibility that friendship might be used, even unintentionally, to oblige participant obligation. Therefore, any cooptation on my part would have been inappropriate and ethically suspect. I maintained a professional relationship by constantly focusing attention on the purpose of the project and how issues pertaining to CRP management could be addressed.

Finally, the participants in this action research study were not only co-researchers but they also initiated the actions taken throughout the course of the action learning programme. Participants' full engagement in each phase of this enquiry provided them with great opportunity to create and review information was considered interventions to minimise the effects of bias or faulty conclusions made by the researcher. Retaining independence through willing engagement provided further distance and helped maintain the boundaries.

5.8 Challenges for the Researcher

In this section, I explore the key challenges posed for me in conducting this project. Notably, these challenges are not attributed to any aspects of methodology, positionality, or any particular factor identified in the literature; rather, they reflect my own experience and personal views as a novice researcher throughout the evolvement of this journey. The challenges comprise two main aspects: financial and organisational. Brydon-Miller *et al.* (2003) and Stinger and Genat (2004) place great emphasis on the role that the organisation or academic institution can play in supporting action researchers financially and emotionally. This study was conducted at an individual-based research, and therefore, in addition to college fees and other financial academic obligations, the whole project was entirely self-funded. Additionally, from organisational perspectives, when any challenge or hiccup arose across the way throughout this project, it was only my duty to overcome it and find a solution. Also, as an action researcher, I needed to conduct numerous meetings throughout the action research phases with relevant stakeholders and participants of each discipline, which resulted in significant time demands. These meetings were crucial and aimed at proposing the project, seeking advice and support in addition to clarifying issues around the project and the intervention. What adds significance to this point is my professional role as a full time nurse manager; a role that is, in itself, a demanding job. In order to try overcome this challenge, I consumed my annual leave and study days. It was also necessary for me to reduce my working hours in order to allow the time that is required to fulfill my role as a researcher, which resulted in further financial obligations.

The lack of healthcare professionals' experience of action research and action learning as well as being a novice action researcher with no previous experience or training formed another challenge during this project. Engaging healthcare professionals in an action research where never the majority had participated in a similar project as co-researchers resulted in further time demands required to explain their role and encourage them to be vocal and be actively involved as being part of the enquiry. Likewise, on part of lacking the experience of carrying out an action researchers before took me a noteworthy time to adjust my position as a researcher and a professional. Another part of this pertained to my position as a PhD student during writing up the thesis. Putting the action research language and terms into the thesis required a notable effort.

Another significant challenge was that my study was concerned with examining the knowledge, attitudes and practice together, which implied numerous methods of data collection and analysis. Notably, the reviewed literature in chapter two concluded that the vast majority of studies were only concerned with investigating the knowledge, attitudes or practice alone. Being a first time facilitator of the action learning sets presented an additional challenge, particularly as the majority of participants lacked the experience as they had never been participants in action learning sets before. Therefore, extensive training, preparation and explanation were required. Although all these preceding challenges were overcome, the experience of going through them I feel was tough and worthwhile reporting in terms of my development as a researcher and also the development of my study as an action research.

5.9 Data Collection

The successful outcome of a study is largely reliant on the method of data collection used (LoBiondo-Wood and Haber 2010). This section examines my approach to data collection and reviews the relevance of the strategies chosen, both for meeting the aims of my study whilst also being congruent with the spirit of action research. Reflecting this challenge, Waterman *et al.* (2001) refer to the dual purpose of data collection that also facilitates the action research process.

Action research is described as a family of approaches that accommodates an eclectic range of data collection methods (Coghlan and Brannick 2014). This study aimed to describe the knowledge, attitudes and practices of healthcare professionals in relation to the CRP management as well as to explore their views and experiences with regard to their participation in the action learning sets. Hence, for the purposes of this study, four different data collection instruments were utilised, combined in a form of mixed-methods approach, including the KASRP, audit, interviews and the ALSE tool (Lamont *et al.* 2010). Johnson and Onwuegbuzie (2004) maintain that the purpose behind the use of a mixed-methods approach is to provide an in-depth analysis of a research area in order to answer the research questions. According to Bryman (2006), some research questions can only be answered by using a mixed methods approach. Using a variety of data collection methods in this study provides a more complete depiction of a phenomena than either method could provide alone (Creswell and Plano Clark 2007). In addition to the four preceding methods, action learning sets in conjunction with field notes, were also utilised as a fifth data collection instrument. Although it is beyond the study objective to conduct an

analysis on the data obtained by the field notes, this data was essential in forming a rich source of clinical and organisational aspects pertaining to actions taken, the process of learning and reflection of the action research phases. Table 5.1 presents the data collection instruments used according to the action research phases. Therefore, data were generated at all phases of the research cycle. However, as acknowledged on the previous chapter, the phases overlapped with each other resulting, occasionally, in using the same data collection instrument in more than one phase. Thus, in this section, some of the phases are presented together.

Action Research Phase	Data collection Instrument
1. Problem Identification	The KASRP and Audit
2. Planning	The KASRP and Audit
3. Action	Action Learning Sets (Field Notes)
4. Evaluation	The KASRP, Audit, Semi-structured Interviews and the ALSE tool

Table 5.1 *Instruments used for data collection according to the action research phases.*

5.9.1 Problem Identification and Planning of Actions

The problem Identification and planning phases were commenced and completed before implementing the action learning programme. The two phases aimed at assessing the current level of knowledge, attitudes and practice of healthcare professionals with regard to CRP management. Data collection comprised two instruments; audit and survey (KASRP). Initial data collected represented baseline

information regarding pain assessment and management knowledge, attitudes and documentation practices prior to the action learning programme.

5.9.1.1 Audit

An initial audit was conducted to elicit baseline data on healthcare professionals' monitoring, documentation, assessment and evaluation practices of CRP. Healthcare professionals' decision making processes on prescribing and administering adequate analgesia were also evaluated as this is an essential part of their role in the CRP management process. A modified version of the validated tool by The Kansas Foundation for Medical Care (KFMC 2006) was used to conduct the audit (appendix XIII) in accordance with the KFMC criteria (appendix XIV). The key audit criteria were based on the presence of CRP according to the patient care plan, regardless whether the palliative care team were involved in the patient CRP management or not. The tool is accessible on line at *www.kfmc.org/qio/images/docs/ComparePain.*

The tool comprises 10 sections with a total of 22 items. Each of section 2, 5, 6, 7, 8, 9, and 10 has only one item. Sections 1, 3 and 4 comprise different numbers of items. The first section has four items that focus on patient's screening for pain on admission, from the nursing notes in the previous 24 hours, the nursing care plan and medical team progress notes. Section two comprises one item asking about the availability of pain related care plan. Section three comprises 9 items on the comprehensive assessment of pain when the pain is identified, in accordance with

JCAHO (2000). Section four comprises 2 items including nurses' and doctors' documentation and descriptions of pain.

Section five asks whether the patient received the appropriate pain treatment according to the WHO analgesia ladder. Section six asks if orders for analgesia were received within 24 hours of identification of the pain. Section seven asks if the care plan includes pharmacological interventions. Section eight examines if the effectiveness of administered analgesia was evaluated (WHO 2005). Section nine elicits if a follow-up evaluation was charted for medication including increasing a dose or changing routes (WHO 1986). The final section asks if medication was adjusted or the route/dose was changed if breakthrough analgesia was given frequently. In addition to the 10 sections, the tool also contained 4 demographic questions including, type of cancer, stage of the disease, current patient treatment and the involvement/or not of the palliative care team in the patient's pain management.

During the audit, 15 patients' charts from the participating wards were retrospectively audited over a one-week period. This included a review of nursing and medical pain assessment documentation as well as patient medication kardex. The maximum achievable score from the audit was 22; equivalent to a 100%. Each '*yes*' was scored '1' and each '*no*' was scored '0'. Charts were accessed by the researcher through gatekeepers (an administrator, patients discharge officer, the wards clinical nurse managers and the palliative care nurse specialist). The ward nurse managers and the palliative care team assisted in tracking patients with CRP and who met the criteria for auditing.

5.9.1.2 The Knowledge and Attitude Survey Regarding Pain (KASRP)

The KASRP is a 40-item questionnaire, developed by Ferrell and McCaffery (1987) and has undergone several revisions up to 2008 resulting in minor edits. The questionnaire is web-accessible at http://www.prc.coh.org. Its usage was encouraged through the City of Hope Palliative Care and Pain Research Centre, an advanced and specialised American Institute for treatment and management of cancer and its related issues. The instrument comprises three sections. The first consists of 22 True or False statements, the second 14 multiple choice questions and the third 2 case vignettes with 2 questions of each, a total of 40 items. However, only 37 items were used for this study because 3 items were not relevant to the research study's questions (appendix XV). This is discussed in the pilot study section. In addition, ten questions to elicit the demographic characteristics of respondents were constructed by the researcher of this study.

This KASRP has been used extensively throughout the USA, Canada, Australia, Asia, and Europe over several years to measure healthcare professionals' knowledge and attitudes to CRP management. As acknowledged in chapter two, its developers purport that it is difficult to differentiate between items as measuring either *knowledge* or *attitudes* and suggest that one should avoid isolating these items (Ferrell and McCaffery 2008). Hence, many of the items which measure knowledge also determine attitudes and as such there is no distinction between the items in the tool utilised. This tool measures knowledge and attitudes towards pain, use of opioids, beliefs about opioid prescribing and administering, the most accurate judge of the intensity of the patient's pain, beliefs about patient over or under

reporting pain and use of placebos in treating the pain. Sixteen of the 37 items on the KASRP are pharmacological and drugs related. This highlights the necessity for healthcare professionals to obtain an adequate level of knowledge in this essential domain in the area of CRP management. A total score is obtained by summing each item score with a higher score reflecting a more positive attitude.

5.9.1.3 Procedure

Posters were placed prominently in the wards inviting all eligible individuals to participate in the survey. Ward clinical nurse managers willingly agreed to act as gatekeepers to encourage and support prospective participants. Self-administered questionnaires are particularly useful in healthcare settings, where the sample population is easily accessible (Jack 1998). As previously acknowledged, a modified version of the KASRP was self-administered. Survey packs were left on the wards for distribution by the gatekeepers. A cover letter detailing the nature of the research and the researcher's contact details accompanied the instrument (Appendix XVI). An information leaflet was included detailing the risks, procedures and benefits involved. Voluntary participation in the study was made explicit. Collection boxes were provided on the wards for anonymous return of questionnaires. Although return of questionnaires assumed implied consent and voluntary participation, a consent form was provided. I examine issues pertaining to consent in a subsequent section of this chapter.

5.9.2 The Action Phase

The action phase of this study is the period when the action learning programme (intervention) was implemented. This is also the phase in which participants take and engage in actions with reflection forming an essential part in both the action learning and action research cycles. Actions generated through this phase are based on the current professional knowledge, beliefs and practices of healthcare professionals and on the existing challenges encountering CRP management.

5.9.2.1 Participant Selection

The participants were chosen in this study based on specific criteria: healthcare professionals who are involved in assessing, prescribing, administering, and evaluating analgesia and had a willingness to use action learning as a problem solving tool for their assigned problem. As previously discussed, it was my original intention to enlist the participation of the pharmacists but due to limited resources within the pharmacy department, this was not possible. Therefore, participants recruited in the action learning sets were divided into three six-member groups; nurses (group A), doctors (group B) and a third mixed disciplinary group (C). Group A comprised three clinical nurse managers and three senior nurses. Group B consisted of six doctors including four registrars and two senior house officers. Group C was subsequently formed, comprising a mixture of members from both groups A and B including three nurse managers and three registrars.

Revans (1997) suggests the principle of adhering to unfamiliarity in the action learning sets brings a fresh look at organisational behaviour, cultures and subcultures. In an Irish study, exploring their experience in participating in an action learning set, participants reported that a multidisciplinary group was useful for effective self and professional development (Bell *et al.* 2007). Dixon (1998) recommends a set of individuals of differing functional backgrounds, but who are of approximate equal status. Therefore, a mixed disciplinary group was expected to bring a variety of views and experiences from medicine and nursing perspectives and their management and leadership skills, in addition to generating knowledge and actions within the organisation.

For the first two months of the six-month programme, members of both group A and B met every two to three weeks. For the remaining four months of the programme, members of group C continued to meet once every three to four weeks. The dividing of participants into three action learning groups created an effective 'layering' of the action learning process. Commencing the programme with group A and B was expected to have two main advantages. Firstly, it afforded participants with similar status and backgrounds the opportunity to build confidence and commit to the programme as participants already knew each other. Secondly, this was considered to be a '*preparatory stage*' to the remaining four months of the programme where participants were more likely to raise topics at a higher level particularly where disparities between doctors and nurses were expected to arise. Additionally, commencing the programme with group members drawn from the same level, category, professional and clinical experience gave a significant advantage to the set members participants as they all knew each other. This created an environment of

trust and confidence, and lead to very positive relationships between participants. This also resulted in saving a lot of time, which would be needed for introducing members to each other and to develop relationships within the group dynamic. As members were already introduced to the nature of action learning sets at the outset (via online links), only a short introduction was needed by the facilitator to welcome the members and commence the session. The my role as researcher was to provide time to respond to members' particular needs and ensure that this approach was appropriate, effective and met their needs.

Group C represented those participants '*directly*' engaged in the programme whereas the remaining participants of the two groups were still *'indirectly'* engaged and involved in the process of action research and action learning sets via emails. Group C comprised three nurse managers and three registrars of the teams. Team consultants were also indirectly engaged in the programme as updates were continuously sent to their emails and any participation or suggestions were welcomed. This encouraged teams' doctors to be involved in the process of action research effectively and enthusiastically. I refer to this point in the following chapter.

5.9.2.2 The Action Learning Sets; Process and Outline

Although the framework of the action learning sets in this study followed the guidelines outlined by McGill and Beaty (2001), Dixon (1998), Pedler (1997) and Mumford (1991), the researcher had considered the substantial feedback and advice prior to arranging the action learning sets from meeting up with the experts previously acknowledged in action research and action learning. Their suggestions and recommendations were considered and prioritised in terms of convening the

sets, the composition of the groups, numbers of members and sets as well as designing the timeframe for the sets. The framework of the action learning set in this study was conducted in accordance with the key components outlined by McGill and Beaty (2001), Dixon (1998), Pedler (1997) and Mumford (1991) (appendix XVII).

Once ground rules were set and met, the learning set meetings were commenced. The main ground rules *included commitment* and *attendance, confidentiality, equal share of time*, *speaking and listening* among participants. The role of the facilitator was explained to the participants. All participants were assured that anything discussed during the meeting would be confidential. At the start of the process, participants were asked to identify a CRP management issue or problem that they wanted to change or improve. Several individuals selected the same area although additional areas were also chosen. At an early stage of the action learning programme, the participants of set A and B expressed interest in mixing with participants from the other set in order to hear from them and explore issues around CRP from the other discipline perspectives. Therefore, the participants were prepared that a third mixed disciplinary group from the two sets would be established after the first two months of the programme in order to gather a mixture of feedback and suggestions from both doctors and nurses. It was explained that, at that stage, the remaining participants who might not be available and 'directly' involved in group C would still be involved in the programme and that their feedback was still valid. They were told that they would receive email correspondence with feedback and updates as well as an invitation to suggest or participate in any actions. They were also told that at the end of the programme, there would be a joint concluding meeting

for all the original members from the three groups (A, B, C). Figure 5.2 outlines the process of the action learning programme in this study.

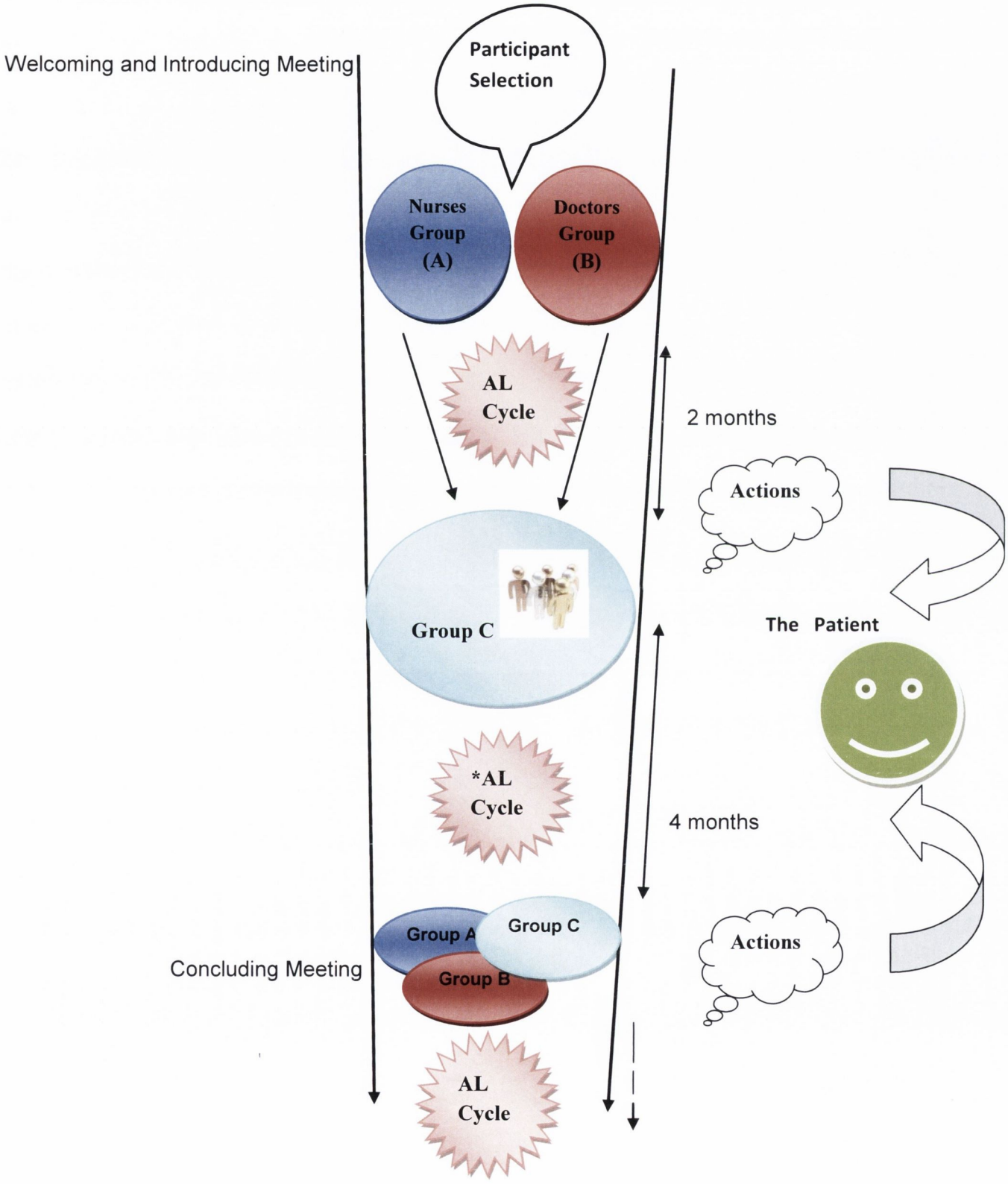

Figure 5.2 Outline of the process of the action learning programme (*AL=action learning)

Marquardt (2000) and Revans (1982) emphasise the importance of ensuring an equal environment for all set members. It was emphasised that every member had a set of unique experiences that contributes to his or her perception and no experience is worth more or less than another. All members were considered to be of equal importance; there was no rank or hierarchy within the sets, and as such members were expected to respect and value the contributions made by other set members. As a facilitator, I highlighted these principles at an early stage of the programme to minimise any reluctance that some members might feel due to the presence of others from a different category in the group. Furthermore, a vital role of being a facilitator was to emphasise to all members that disparities among members during the meetings would not supercede the importance of achieving the ultimate goal; reducing patients suffering by improving the management of their pain.

In order to establish an agreed set of behaviours during action learning sets, Brockbank and McGill (1998) recommend discussing the working relations amongst the set members. Therefore, as a facilitator, my discussion was extended to include how each member of the group would make decisions, perform actions or plan them, and communicate within as well as beyond the group. This resulted in positive behaviours including honesty, trust, and respect of each other's perspectives and experience. According to McGill and Beaty (1995), all meetings should take place in private, quiet, and relatively comfortable surroundings. The meetings were held in the seminar rooms on the wards as these were convenient to all participants. A flipchart was used during the set meetings to document suggestions and take notes. As a facilitator, I also used a special diary of observational field notes in the action learning sets. Additional feedback was received after the meetings via emails where

participants were still involved in the process of *learning* and *reflection*. Any updates or new ideas with regard to the previous action learning set meetings or time changes for subsequent meetings were circulated to all participants. The timeframe of the six-month action learning programme can be seen in appendix XVIII.

The action learning programme was implemented on the wards over a six month period. Twelve healthcare professionals were divided into two groups with 6 members; (A) the nurses and nurse managers and (B) the doctors. The groups met every 2 to 3 weeks for the first 2 months of the programme. After the first 2 months, group C was formed from a mixture of participants from groups A and B. Group C consisted of 3 nurse mangers and 3 registrars who met every 3 to 4 weeks. A brief introductory meeting was held to welcome the 12 interested healthcare professionals. The aim of this meeting was to discuss participant selection and their roles, to facilitate the exchange of email addresses and set up a provisional date for the next meeting. The action learning programme comprised 12 action learning set meetings as follows: Each of group A and B had 4 meetings, group C had 3 meetings and a final concluding meeting that combined participants from the three groups. The remaining 6 healthcare professionals from groups A and B were still indirectly involved in the action learning programme via emails or through direct contact with colleagues during work. They continued to receive feedback and submit proposed actions and their contributions were considered to be valuable throughout the action learning programme.

For group A, one nurse missed the second meeting, resulting in attendance rates of 6, 5, 6, 6 for the four meetings respectively (Table 5.2). Attendance rates for group B were 5,6,5,6 with two doctors missing a meeting each. For group C, there was full attendance at all meetings, that is, 6, 6, 6. For the concluding meeting, all participants of group C and 4 of the remaining 6 participants from the original groups (A and B) attended. Those who missed a meeting were updated with feedback from the meeting with email. While the meetings were held during lunch time during the first two months, the majority of the meetings in the subsequent 4 months were held after working hours. Participants chose times and dates convenient to them which allowed more flexibility for all involved.

Group	**Action learning set number with participants number of each**			
	First	Second	Third	Fourth
Nurses Group (A)	6	5	6	6
Doctors Group (B)	5	6	5	6
Mixed Group (C)	6	6	6	___
The concluding meeting Group (A,B, and C)	10 (5 of each discipline)	___	___	___

Table 5.2 Action learning set participants' attendance outline

The principal purpose of the action learning sets was to elicit the major themes in relation to issues that healthcare professionals had in relation to CRP management with the aim of learning from each other with the ultimate goal of changing practice in relation to CRP management. As a facilitator, at the commencement of each of the action learning sets, I explained that each member would be allocated equal time as

was feasible within the time structure of the session. In addition, I explained that time would be provided for the group members and the facilitator at the end of each meeting to comment on how well they did for improving their identified clinical practices during the set. Similar to other phases, the process in this phase followed the cycle of action research starting with identifying main issues surrounding CRP management, making plans for solving these issues, taking actions and evaluating these actions either at the end of the action learning set meeting or in the next meeting. Therefore, members were asked to identify a CRP management related topic or issue, which they had encountered during the course of their work based on their own clinical experience. The clinical situations represented the core element of the action learning sets where participants reflected on and learned from their own as well as their colleagues' experiences. During these discussions, participants provided examples of solutions and alternative plans as an answer to "what would you do if it was you?" Or "how would you manage if it happened to you again?" The recipient of the feedback was able to take note of the responses/suggestions and reflect on the acknowledged experiences of the group.

As the meetings progressed, various issues were raised and several actions taken throughout the cycle of action learning. Additionally, actions continued to be taken in the weeks following the action learning programme as they had been planned for during the programme. At the conclusion of the meetings, the set members thanked each other for their feedback and assistance with finding solutions for issues related to CRP management and subsequent meetings were planned. The three main CRP management related topics raised by participants during the meetings were; assessment and documentation, inadequate knowledge and misconceptions related

to CRP management in addition to insufficient education/training and poor communication. In chapter seven, I examine these topics in detail and discuss critically the process of learning and actions taking during the action learning programme.

5.9.3 The Evaluation Phase

Similar to the pre intervention phases, in this phase data were collected using the KASRP and audit tool in order to evaluate the healthcare professionals' knowledge, attitudes and practice on CRP management after the action learning programme was completed. Medical records of 15 patients were retrospectively audited again over one week. McGill and Beaty (2001) suggest that it is important to show evidence of the value that action learning holds for individual participants, the action learning set, the facilitator and the organisation, through well planned evaluations. Whilst a great deal is known about action learning, there has been little emphasis and inadequate research on the process of learning (Mumford 1997) or research published beyond programme descriptions (Day 2001). It is therefore important that action learning programmes be evaluated and reported to ensure that the potential of this method of learning can be clearly established.

5.9.3.1 Evaluation of the Action Learning Sets

Upon completion, the action learning programme was evaluated using *semi structured interviews* and the *ALSE tool* (Lamont *et al.* 2010). The purpose of the interviews and the ALSE tool was to obtain healthcare professionals' views and experiences on the action learning sets. However, the focus in this study will be on the interviews, and the use of the ALSE tool was only to strengthen qualitative data

collected from the interviews. The questions in the ALSE tool focus on the importance of: the action learning set meeting, the opportunity to present the participant's problem, the use of support within the sets, engaging in reflective enquiry and helping one's ability to problem-solve (appendix XIX). Questions one to seven contain a 10 point likert scale (1= not very, 10= very) where participants were asked to rate the level of importance of each statement. Three open questions are included to afford respondents the opportunity to add qualitative comments with regard to what they liked most or least about the action learning sets. It is noteworthy that the ALSE tool was recently used in Ireland to evaluate postgraduate students' views and experiences of action learning sets (Joyce 2012).

Semi-structured interviews are becoming increasingly popular in health research for identifying individual's experience or beliefs as well as why they behave in the way they do (Rabiee 2004). Semi-structured interviews are used where the researcher has a list of questions or quite specific topics to be covered, often referred to as an interview guide (Patton 2002). Despite the interview guide, questions may not follow the exact outline of the schedule as interviewees' responses may steer the interview requiring the question schedule to be revised (Patton 2002). An interview guide was developed comprising seven main questions for this study (appendix XX). According to Mason (2004), it is vital when using semi-structured interviews that the information generated is relevant to the interviewees and their needs. To pursue this, two research assistants who had academic experience participated in developing the interview guide and ensured that the questions asked were of interest to the interviewees and relevant to the topic. I adhered to a supportive but not judgmental

approach in order to instil confidence and trust between the researcher and the interviewees and to provide reassurance (Tod 2006).

The interviewees in this study were healthcare professionals who carry out their duties in busy, acute clinical care settings. Bernard (2000) reported that semi-structured interviews are appropriate when dealing with people who are adjusted and used to the well-organised use of their time. Central to being a researcher was to ensure that the interviews conducted with the participants utilised their time efficiently. It was ensured that the least number of questions about the healthcare professional's views were tackled from multi-dimensional angles when developing the interview guide. Furthermore, to sharpen skills and improve practice, I performed a pilot interview on an outsider interviewee.

The intention was to interview all the participants of the action learning sets which included three doctors and three clinical nurse managers. However, one doctor could not attend for interview. I provided a relaxing and convenient venue for the interview. Participants were asked if they had any preferences regarding time and place prior to the interview. As none of the interviewees had any preference, the interviews took place in the ward's tutorial room, which is a 'staff only' restricted access area. Before starting the interviews, *"please do not disturb; meeting in progress"* was signed on the door. For the purpose of confidentiality, participants agreed to be given a pseudonym, such as Dr or Ms Smyth. Each participant was previously informed that the interview would take approximately 20 to 30 minutes.

During the interview, questions were asked with an appropriate pace and tone and interviewees were given time to finish and think.

On completion of the interview, each interviewee was given a copy of the ALSE to fill out at their convenience. Collectively, the analysis of the interviews focused on healthcare professionals' views, experiences and opinions of how they felt about participating in the action learning sets. The themes that emerged during the interviews are discussed in chapter eight. The two research assistants who assisted in developing the interview guide agreed to assist me in selecting the themes that emerged from the interviews. This was used to avoid any bias (Patton 2002, Braun and Clarke 2006). Furthermore, in this study, the use of the ALSE tool in addition to the interviews substantiated and enriched the data collected.

5.10 Pilot Study

In order to evaluate and refine an instrument, researchers typically subject it to rigorous pre-testing (Polit and Beck 2010). This ensures that the instrument is comprehensive and easy to use, which results in increased reliability and validity of the findings (LoBiondo-Wood and Haber 2010). A pilot study identifies any problems with the questionnaire relating to comprehension, language, time required to complete and whether the format of the questions are suitable to the population. This gives the researcher time to make any required modifications (Murray 1999). As any adaptation of the original questionnaire could compromise reliability and validity, a pilot study was conducted prior to issuing the questionnaire. The purpose of the pilot study was to test the reliability and validity of the questionnaire, thereby highlighting

any unforeseen problems that can be corrected before the finalised questionnaire was administered.

Forty-four draft questionnaires were distributed to registered nurses in wards similar to those studied in the parent investigation, but were precluded from the final study. Twenty four chose to participate, yielding a response rate of 54.5%. Participants were asked if they objected to any of the questions, if all instructions and questions were clear, the time it took to complete the questionnaire and if they had any suggestions that may improve the questions or the layout. Four weeks were allocated to conduct the pilot study allowing a further two weeks to review findings and make changes. On completion of pilot study, three out of forty questions in the original questionnaire were excluded as they were not related to the aim of the study. No major modifications were needed. As the original questionnaire was developed in America, minor changes were made to items pertaining to pharmacology and consistent with terminology used in the Irish context. The final modified version of the KASRP consisted of thirty-seven items divided into three sections. Section one consists of twenty 'true' or 'false' questions related to CRP knowledge and attitudes. Section two consists of thirteen multiple choice questions. Finally, section three comprised two patient case vignettes with two questions in each, where healthcare professionals' knowledge and attitudes of CRP management were examined. In addition, 10 demographic questions were included. It was estimated by participants that the questionnaire would take fifteen to twenty minutes to complete.

5.11 Issues of Reliability and Validity

A measuring tool has to be reliable to be valid (Parahoo 2014). Reliability of a research instrument refers to the extent to which the instrument yields the same information if administered repeatedly (LoBiondo-Wood and Haber 2010). Reliability is confirmed by the consistency in respondents understanding and ability to answer questions, thus the less variance an instrument produces on repeated measurements of an attribute the greater the reliability (Pilot and Hungler 1999). Reliability is demonstrated statistically through test-retest, inter-rater and internal consistency (LoBiondo-Wood and Haber 2010). Validity refers to the ability of a data-gathering instrument to measure what it is supposed to measure (Polit and Beck 2010) and therefore addresses the research questions and objectives set by the researcher (Parahoo 2014).

The reliability of the KASRP was established by its original authors (Ferrell and McCaffery 2008) through test-retest reliability ($r>.80$) by repeated testing of a class comprising 60 nurses (Ferrell and McCaffery 2008). The authors also established the internal consistency reliability (Cronbach's alpha $r>.70$) with items reflecting both to the knowledge and attitude domains (Ferrell and McCaffery 2008). In this study, internal consistency reliability was established during the period of the pilot study. Twenty-four participants completed the survey and Cronbach's alpha of the overall 37 items was > 0.71. Notably, omitting any of the items was not going to significantly increase the overall internal consistency score. According to Knapp (1998) and DeVellis (2003), Cronbach's alphas above 0.7 are considered acceptable.

As acknowledged in a previous section, the content of the KASRP includes aspects of pain assessment, pharmacological and non-pharmacological interventions for pain, and attitudes about pain management. The questionnaire has many items related to CRP management. The content of the tool is derived from current standards of pain management such as the APS, the WHO, and the AHCPR. The original authors of the KASRP also determined the content validity of the tool following review by pain experts (Ferrell and McCaffery 2008). The extent to which an instrument measures what it reports to be measuring is referred to as construct validity (Polit and Beck 2010). Construct validity of the KASRP was also established by Ferrell and McCaffery (2008) by comparing scores of nurses at various levels of expertise such as students, new graduates, oncology nurses, graduate students, and senior pain experts. The tool was identified as discriminating between levels of expertise. In this study, the content validity of the KASRP was established by submitting the questionnaire to a panel of five external evaluators, considered experts in the field. The panel consisted of a palliative care nurse specialist, palliative care team registrar, an oncology nurse specialist, and two external specialists who have a master's degree in palliative care and pain management. In order to ascertain if the questionnaire items fully represented the constructs being measured, the panel was asked to complete a spreadsheet denoting whether or not questions were clear or unclear and to comment accordingly. All questions were weighed equally. For each item a response of 'clear' was given a value of 1 and an 'unclear' response or comment was given a value of 0. A total score was computed using the number of "clear" responses. Scores ranged from 0 to 37. The respondents' total score was divided by the maximum score of 37, and then multiplied by 100% to be expressed

as a percentage. The validity score was 97.3%, and all feedback were considered (appendix XXI).

In relation to the audit tool used in my study, the content validity was tested by submitting the tool to a panel of four external evaluators, considered experts in the field. The panel consisted of a clinical nurse manager, palliative care nurse specialist, an oncology nurse specialist, and a patients' discharge coordinator. In addition to their relevant clinical experience, these external specialists have a lengthy experience in auditing in the healthcare sector. The content of the tool is derived from current standards of pain management of the WHO, and the JCAHO. After the items were weighed equally and reviewed by the panel, all items were clear and no major change was required. In relation to the internal consistency reliability of the audit tool for this study, post hoc reliability testing using Cronbach's alpha was >0.87, which indicates reliability of the audit tool. This test was performed using the overall 30 patients' charts of the pre and post intervention audits.

5.12 Data Analysis

The principle of data analysis is to make sense of the data obtained (Parahoo 2014). The data were analysed using the SPSS (version 19) and thematic analysis. The analytical processes used to meet the research objectives of this study are outlined below:

5.12.1 Analysis of Research Objectives One, Two and Three

Descriptive statistics reduce, summarise and describe quantitative data obtained from empirical observations and measurements (Polit and Beck 2010). The first three objectives of this study are focused on the level of healthcare professionals' knowledge and attitudes in relation to CRP management. Data from the completed KASRP surveys were analysed in order to elicit the level of knowledge and explore the attitudes of healthcare professionals regarding CRP management. The content items on the KASRP relate to four main aspects. These are assessment of the pain, pharmacological knowledge, addiction and side effects of opioids. It has been emphasised by the original authors of this instrument that it is difficult to specify which items measure either knowledge or attitude as many of the items which measure knowledge also determine attitudes (Ferrell and McCaffery 2008). The authors therefore recommended that the most advantageous means of evaluating the data is by analysing complete scores and individual items (Ferrell and McCaffery 2008).

Descriptive statistics were used in order to obtain frequencies and nominal data. These data were derived from the KASRP and the audit before and after the action learning programme. Frequencies and percentages were used to describe the distribution properties of the data. As several data collection methods were employed frequencies and percentages of items pertaining to each data collection tool are presented in separate tables. Graphical displays are offered where necessary. The mean was mainly used to describe central location. Standard Deviations and inter-quartile ranges were used to describe score dispersions.

In order to establish the relationship between the knowledge/attitude scores and the healthcare professionals' demographics, one-way analysis of variance (ANOVA) was also utilised to describe associations between the variables. According to Pallant (2010), an independent-sample t-test is used when there is a need to conduct a comparison between mean scores of two different groups of people. Thus, an independent samples t-test was used in this study to compare mean scores on the KASRP and the audit tool before and after the action learning programme to test the hypothesis: H_o: $\mu_{pre} = \mu_{post.}$ The null hypothesis states that the true means on the practice variable both prior to (pre), and after (post) the action learning programme are equal (H_o: $\mu_d = 0$) or that the difference between these two parameters is zero. In the context of the present inquiry, the null hypothesis affirms that the effectiveness of the action learning programme (μ_d) is zero or that the programme is ineffective.

5.12.2 Analysis of Research Objectives Four and Five

Semi-structured interviews were conducted to explore healthcare professionals' views and experiences of the action learning sets and to evaluate the effect of these multidisciplinary meetings on the participants within their clinical areas. Data were recorded using a digital recorder. The qualitative data from these interviews were then transcribed verbatim and thematic analysis was conducted. The small sample size allowed for this type of data analysis. In this section, Braun and Clarke's (2006) published work on thematic analysis will be the key reference.

Thematic analysis is a method for identifying, analysing, and reporting on data as it establishes patterns and thereby organises and describes data sets in detail (Braun and Clarke 2006). A theme captures something important about the data in relation to the research questions and presents a meaning within the data set. Braun and Clarke (2006) argue that thematic analysis should be recognised as a fundamental method for qualitative analysis since it provides core skills that will be useful for conducting many other forms of qualitative analysis. However, Fine (2002) maintains that although thematic analysis as a method of data analysis contributes to making the results of qualitative research more available to a wider audience, it also has a potential for use within action research projects. Thematic analysis was used in this study due do its flexibility, accessibility and ability to offer an approach to data analysis that teaches the technicalities of coding and analysing qualitative data systematically. According to Braun and Clarke (2006), thematic analysis comprises familiarisation, coding, defining themes (concepts), categorising and producing a report.

Coghlan and Casey (2001) ascertain that action researchers need to go with the story as it develops. In order to initially familiarise myself with the data, it was useful to return to filed notes collated before the interviews in addition to the completed original transcripts. This helped me to maintain the context of both participants and interview accounts and the connections between the data and the research story as a whole. Coding refers to the part of analysis that deals with the labelling and categorising of concepts (phenomena) that emerge from the data. In this study, data were coded manually. This process of labelling and categorising concepts forms the basis of theory construction. In thematic analysis, codes analysis identify a feature of

the data which is interesting to the researcher and refer to the most basic element of the raw data that can be assessed in a meaningful way regarding the phenomenon (Braun and Clarke 2006). From my perspective, identification of concepts was the stage of analysis whereby the development of a cycle between understanding and action, and action and understanding started to become apparent. In other words, both practical and propositional knowledge emerged from the data.

Braun and Clarke (2006), argue that although there is no right or wrong method for determining the prevalence of a theme, it can be counted at either the level of the data item which is a theme appearance anywhere in each interviewee's talk, or in terms of the number of different interviewees who articulated the same theme across the entire data set. One specific approach to theme development from initial coding with thematic analysis is that of counting the prevalence of a code within the data set. However, Braun and Clarke (2006) assert that counting is not the most important criterion for identifying themes, researcher judgement and study aims are also important. The two authors place great importance on the researcher's judgement in establishing what a theme is and maintain that the number of instances of a theme within the data does not, in itself, make the theme more essential. They highlight that part of the flexibility, an essential advantage of thematic analysis, is that it allows researchers to determine themes and prevalence in a number of ways (Braun and Clarke 2006).

In this study, to help develop concepts, I was guided at each stage of the analysis by my research questions and topics discussed in the interviews. The themes that emerged were not identified due to their prevalence alone but because they captured

the important views and experiences of the healthcare professionals regarding their participation in the action learning programme. Subsequent analysis of data reviewed actions that healthcare professionals took to improve practice related to CRP management and the conditions under which these occurred. My first attempts at coding and concept identification were quite descriptive, and were largely reflective of the raw data (and reflected my inexperience as a novice researcher). However by application of what is referred to as 'the comparative method', that is, the asking of questions such as 'what' and 'why', data was compared and similar incidents were grouped together and given the same conceptual label. As data analysis progressed, concepts became more refined as I compared similarities and differences in healthcare professionals' views and experiences.

The next phase was to group concepts at a higher, more abstract level, referred to as categorising. Categories are higher in level and more abstract than concepts (Corbin and Strauss 1990). These were developed through the same analytic process as concept development by making comparisons to highlight similarities and differences between categories. In this way, concepts that represented different understandings or action took on different forms, becoming more theoretical and less descriptive. The categories were compared and contrasted to determine any connections, discrepancies or similarities between participants' views and experiences. However, this activity did not attempt to achieve convergence or saturation of data, instead, I looked for depth of data to explain healthcare professionals' experience of CRP management and the research questions. For example, I was interested in what healthcare professionals perceived as a strength of the action learning sets for their practices of CRP management and what

accounted for the differences between the possibilities identified by healthcare professionals for influencing CRP knowledge attitudes and/or practice and any subsequent actions undertaken.

The last step of analysis is producing a report or, as referred to by Sandelowski (1995), 'the knowledge produced' (Sandelowski 1995). Although this signifies the last phase of analysis and interpretation, in reality it occurs through iterative processes, in that theory is developed progressively and reflexively as the data are collected and analysed. Sandelowski (1995) establishes two main criteria for judging the adequacy of the emerging theory; that it fits the situation, and that it helps the people in the situation to make sense of their experience and to manage the situation better. In this regard, the aim of this study was concerned with practical and propositional knowledge as well as practice change that emerged as outcomes of the action learning sets and taken actions. Furthermore, as has been established in the previous chapter, the substantive position of theory in action research is subservient to construction and development of practice intervention. The five main themes emerged from the interviews are discussed in chapter seven.

5.13 Ethics Committee and Data Management

All aspects of the study were approved by the local research committee board in the selected hospital. As previously acknowledged, letters were issued to relevant stakeholders in the hospital including the director of nursing, clinical divisional managers, medical and surgical consultants and the chief pharmacist in order to gain their support and permission to conduct the study. Clinical nurse managers at ward level were enlisted as gate keepers to distribute the surveys. The role of the

gatekeepers was to protect the interests of the participants and to remove the direct link between the researcher and the participant. Also permission to access patients' records in the selected wards was obtained before data collection commenced. For the audits, an administrator and the ward managers as well as the palliative care nurse specialist agreed to act as gatekeepers, assuring that confidentiality and anonymity were maintained for both the patients and the healthcare professionals. No patient records or charts were removed from the research site at anytime during the study. Verbal permission was sought from each of the ward managers in the participating clinical areas. All prospective participants involved in the study were given a clear explanation as to the aims and objectives of the study. They were also required to sign an informed consent form prior to participation in the research (appendix XXX). Participants were made aware that the name of the hospital would not be disclosed when the results were published publicly.

Participants were informed that the key outcome of the research process was not publication; the focus was primarily on the resolution of the current clinical problem. Participants were also assured that their identifying features would not be included in the article on publication. They were ensured that no participant's identity would be released to individuals outside of the action learning sets. This was expected to encourage and reinforce participants' engagement in the research process as well as strengthen their relationship with the researcher. Participants were assured that there was not any predetermined set up or action. Therefore, dialogue and discussions among participants have the advantage of enabling research partners to express and assess their own perspectives, and enhance their knowledge base so that they can promote and initiate independent action. A key outcome involves

providing a chance for participants to feel empowered by their participation and that they have the skills to take the work forward should they wish to do so. Although the issue of CRP management was selected by the participants themselves as a matter of clinical priority, it was made explicit that their participation in the programme was wholly voluntary and that they may withdraw at any time in the process.

The main ground rules identified by Dilworth (1998) and McGill and Beaty (2001) were adhered to throughout. Confidentiality was maintained throughout the action learning programme as no information was released outside of the meetings. It was clearly explained that the action learning set meetings were exclusively used as a means of education and therefore no judgments were made among participants. Equality and respect for the person was met in a communicative space, an environment where opportunities were provided for the less powerful to express their opinions and have a voice. Issues around confidentiality and anonymity in consensus-building discussions were raised early in the research programme, and all research partners adhered to the agreed criteria. All set members were informed of exactly who was participating at any particular time throughout the period of the action learning programme. Furthermore, it was made clear to participants that information shared about their views and experiences were strictly contained within the action learning sets. Finally, data ownership and storage was discussed and agreed by participants at an early stage of the programme. Any feedback between participants was circulated via their own private, professional email addresses.

In accordance with the Data Protection Act (Government of Ireland 2003), data were managed and saved confidentially to protect the participants' rights. All documentation pertaining to the study was stored in a locked cabinet with access restricted to the researcher. All computerised data and information had restricted access and were password protected. No identifying material pertaining to any of the participants was entered into the computer. In accordance with Trinity College Dublin guidelines (2012), all records of collected data will be retained for five years after completion of the study.

5.14 Conclusion

In this chapter, I provided a comprehensive description of the methods employed in this action research study. Sampling procedures, the study setting, data collection techniques, access to the study site, recruitment of participants and data analysis were discussed. Issues of reliability and validity were addressed and ethical considerations outlined. This chapter also discussed the researcher's role in detail. Although some researchers criticised the insider role for their over-familiarity within an organisation (Gerrish 1997), the majority of the literature reviewed complemented the insider researcher as opposed to outsider for its numerous advantages in ensuring a communicative space in engaging co-researchers which are also evident in my role in this study (Coghlan 2001, Wicks and Reason 2009, Coghlan and Brannick 2014, Hockley *et al.* 2013). In chapters six and seven, I provide a description of the enquiry process based on the action research phases discussed in the previous chapter.

Chapter Six

The Process (Storytelling); Part 1

6.1 Introduction

Based on the action research phases, this chapter provides a description of the initial phases (problem identification and planning) of this enquiry and review the current knowledge, beliefs and practices of healthcare professionals with regard to CRP management. This was pursued based on healthcare professionals' views and clinical experiences through their comments during the multidisciplinary and ward-based meetings. I also present findings from the KASRP and audit using both descriptive and inferential statistics. These findings informed the current level of knowledge, attitudes and practices of healthcare professionals prior to implementing the action learning programme. Furthermore, findings from the literature review in chapter two helped informing the initial phases of this enquiry and provided me with ideas and information about CRP management. In the following sections, I provide explanation of the process of how each phase of enquiry was informed. This is essential because each phase established an initial baseline for the next phase. The outcomes of this enquiry are discussed in detail in the following chapter.

6.2 Current Practices; Diagnosing the Problem

In the first phase, I explore and review healthcare professionals' current practices of CRP management and assessment. I also evaluate their perception and understanding of CRP and how it was viewed from the healthcare professionals' own perspectives based on their clinical practices. As a researcher, my duty in this phase was mainly focused on collecting feedbacks and reviewing and evaluating these

concerns. I also expressed my intention to conduct a project that aimed to improve CRP management and other related issues. I showed my interest in any positive ideas that could contribute to any sort of a problem solving approach or means of education. It was evident that healthcare professionals showed great enthusiasm and willingness to do something about this issue, yet my role as a researcher was to help guide their ideas and establish a collaborative team approach for them in order to achieve this team task. In addition, as acknowledged in the previous chapter, the literature review (chapter two) informed this phase and provided me with positive ideas on making decisions throughout the process of enquiry. Drawing on previous studies from the literature and the challenges encountered these studies assisted in structuring this project and formed a learning approach of overcoming potential challenges or similar obstacles. This phase was divided into the following two main sections:

- Initial impressions of CRP management
- Prescribing and administration practices of analgesics

6.2.1 Initial Impressions of CRP Management

In this phase, CRP management was identified as a major complex issue in terms of healthcare professionals' daily clinical practices. On numerous occasions, challenging clinical scenarios arose regarding ineffective management of pain in cancer patients where team consultants and clinical nurse managers were required to be involved in order to resolve this conflict. In addition, it was not uncommon that CRP management and its pertaining issues were on the multidisciplinary meetings' agenda, as clinical challenges in the study wards, requiring discussion and addressing. From this phase all healthcare professionals including doctors, nurse

managers/ nurses and pharmacists shared negative impressions of CRP management (as discussed later, pharmacists' participation was only limited to the early phases of this enquiry and did not participate in the action learning programme). From the ward-based and multidisciplinary meetings, healthcare professionals expressed serious concerns and had negative views about the current practices pertaining to CRP and agreed on poor CRP management being an existing challenging clinical problem.

6.2.2 Prescribing and Administration Practices of Analgesics

The consensus in the literature is that the ultimate goal of pain treatment is to relieve pain, and pharmacological intervention is the initial starting point (Smeltzer and Bare 2004, Kehlet *et al.* 2006). The pharmacological approach to pain management is based on the prescribing and administration of analgesics. From healthcare professionals' perspectives, inadequate or inappropriate analgesic prescribing and/or administration were the most commonly reported issues on CRP management practices. Based on clinical scenarios with cancer patients, nurses' and doctors' views fell into two different categories. The first category is where nurses and doctors had different views and perceived aspects of CRP management from their own professional perspectives. For example while doctors appeared to think that ineffective CRP management is attributed to inadequate administration of analgesics, nurses seemed to place great emphasis on inadequate prescribing of these analgesics as a main inhibitor of successful management of CRP. In other words, each healthcare discipline attributes the fault for these problems with the other discipline's practices. Therefore, inconsistency between doctors' and nurses' perception of analgesics prescribing and administration practices and how they

impact on CRP management was evident. However, in the second category, nurses and doctors appeared to share similar views and expressed some sort of agreement on an existing gap in both doctors' prescribing and nurses' administration of analgesics.

To summarise, from this phase, healthcare professionals managed to diagnosis CRP management and other related issues as an existing clinical issue. They identified prescribing and administration of analgesics as a major issue pertaining to CRP management. Interestingly, some healthcare professionals did not seem to be aware of any gaps in their own practices yet they were critical of other professionals' practices. This may reflect that although some healthcare professionals acknowledged the existence of the problem, they did not actually realise it was their problem, a premise that could have contributed to their willingness to solve it. This might also reflect some communication problems between healthcare professionals. In the following section I provide a process description of the second phase of the enquiry.

6.3 Planning

This phase overlapped with the previous phase as CRP management and related issues continued to be explored, reviewed and evaluated through ward-based discussions as well as the multidisciplinary meetings. During the meetings, three clinical nurse managers including myself expressed their interest in using action learning sets as an intervention for the purposes of this enquiry. This idea emerged based on our positive experience of being participants and observers in a preceding action learning-underpinned programme in the undertaken hospital. I discussed this

proposition with each of the prospective participants by performing a one to one information exchange meetings with each of them. As acknowledged in the previous chapter, these information exchange meetings also aimed to ensure that prospective participants understood fully what they were agreeing to. These meetings provided an opportunity for the prospective participants to clarify issues pertaining to the project including potential venue of the action learning sets, their timeframe, the process and so forth.

The key nature of action learning sets being carried out during working hours and in the clinical workplace appeared to be the most attractive advantage for the majority of healthcare professionals. It was agreed that an action learning programme would be commenced according to a suitable timeframe for the participants. After the one to one meetings, participants who agreed to take part in this action learning programme were invited to a follow-up meeting in order to set further plans. The meetings in this phase tended to be more precise compared to the previous phase and focused on breaking down complex problems and analysing issues that were brought up in the previous phase. Participants understood that they were expected to make plans for the next phase based on their own perception and understanding of issues encountering CRP management identified in the previous phase. At the end of this phase, participants identified the main barriers that might have affected their practices in delivering evidence based CRP management and adversely impacted on patient suffering. They agreed that these barriers would be considered and discussed in the action phase and necessary actions would be taken. The barriers included inadequate CRP assessment, inadequate prescribing and

administration of analgesics based on lack of knowledge and wrong beliefs and lack of training/ education. This phase also comprised other activities that included:

- Meetings with stakeholders in the undertaken hospital
- Obtaining the hospital ethics approval
- Obtaining the college ethics approval
- Performing the initial audit and distributing the initial survey (KASRP)
- Setting up a provisional timeframe for the action learning sets

6.4 The KASRP and Audit; Initial Phases Findings

In this section, I examine the findings from the KASRP and Audit before the action learning programme, and therefore, I will also refer to these initial phases as the 'pre intervention' phase. I present the results separately with displayed evidence in individual tables and figures. In addition to clinical variables, the demographic profile of the respondents is presented and illustrated and includes area of practice, level of education and experience as well as participation in an education programme related to CRP management.

6.4.1 The KASRP

One hundred and seventy questionnaires were distributed to healthcare professionals working in two medical and two surgical wards, with differing levels of experience and education, over a two month period from May to July 2012. One hundred nurses, 8 clinical nurse managers, 54 doctors of various grades and 8 pharmacists were among the healthcare professionals eligible. A level of missing data of 10% was set for excluding returned questionnaires. Ninety questionnaires

were completed and returned yielding a response rate of 52.9% divided by varying healthcare professionals as follows: 28.9% doctors (n=26), 6.7% clinical nurse managers (n=6) and 64.4% staff nurses (n=58). These percentages are computed from the number of respondents (n=90) not the total population. No pharmacists responded to the survey. This is elaborated on further in chapter eight. Figure 6.1 illustrates percentages of respondents according to their profession.

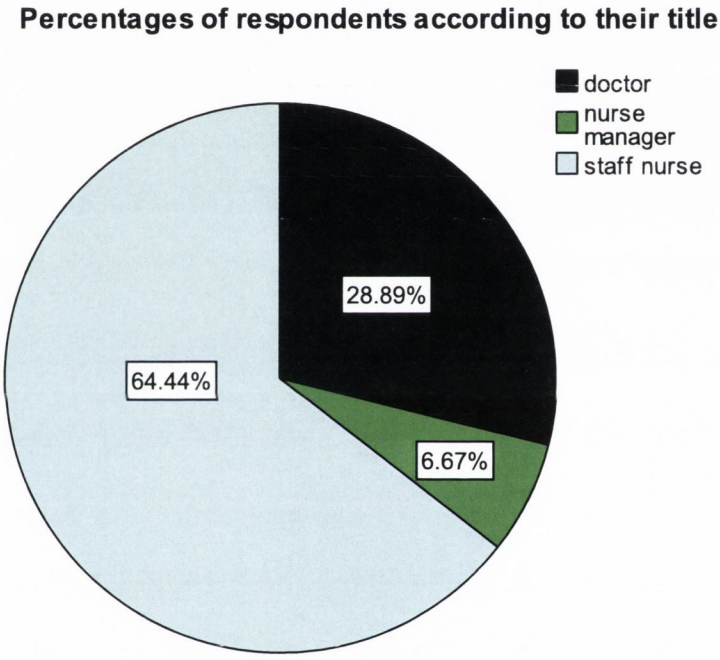

Figure 6.1 *Percentages of respondents of the pre intervention phase according to their profession*

6.4.1.1 Demographics

The demographic variables studied were gender, age, area of practice, job title, level of experience, level of education and previous attendance at any pain management education courses/programmes. For this section, the data described is nominal and ordinal and only descriptive statistics are examined. The results revealed that over

64% of respondents were female. When respondents were asked to indicate whether they had attended any education course or a study day with regards to CRP management over the preceding three years, the results showed that approximately 89% of respondents had not attended any course. Fifty nine percent worked in medical wards and 41% in surgical wards. The majority (63.3%) of respondents had a degree with only one holding a masters degree. Distributions of frequencies and percentages of demographic variables are illustrated separately in Table 6.1.

6.4.1.2 Current Knowledge and Attitudes

I have divided the KASRP into three different sections consisting of a total number of thirty-seven items. Section one consists of twenty 'true' or 'false' questions of CRP knowledge and attitudes. Section two consists of thirteen multiple choice questions and section three comprises two patient case vignettes with two questions in each examining knowledge and attitudes respectively. Knowledge of pain assessment on the pain NRS was examined and compared with patients' vital signs and symptoms. Healthcare professionals' attitudes were examined by testing their reaction to the pain score by prescribing (doctor) or administering (nurse) an appropriate dose of analgesia. Results of these sections are presented and illustrated respectively.

The maximum achievable score on the KASRP was thirty seven which would be equivalent to a 100% correct response. Each correct answer was scored a '1' and each incorrectly answered question was scored a '0'. According to the analysis, mean score of total correct answers obtained on the healthcare professionals' KASRP was 22.4 (out of 37) equating to 60.45%. Doctors scored fewer correct responses compared with nurses/nurse managers. The distribution of the overall

mean scores using compare means analysis for both doctors and nurses/nurse managers are presented in Table 6.2.

Variables	Percentage (N)
Gender:	
Female	64.4% (n=58)
Male	35.6% (n=32)
Age:	
20-29	24.4% (n=22)
30-39	47.8% (n=43)
40-49	23.3% (n=21)
50-59	4.40% (n=4)
Level of Education:	
Certificate	4.40% (n=4)
Diploma	12.2% (n=11)
Degree	63.3% (n=57)
Postgraduate Diploma	18.9% (n=17)
Masters Degree	1.10% (n=1)
Years of Clinical Experience:	
<3 years	10.00% (n=9)
3-7 years	22.2% (n=20)
8-12 years	32.2% (n=29)
>12 years	35.6% (n=32)
Area of Practice:	
Medical	58.9% (n=53)
Surgical	41.1% (n=37)
Title/Grade:	
Doctor	28.9% (n=26)
Nurse Manager	6.70% (n=6)
Staff Nurse	64.4% (n=58)
Course Attendance	
Attended course	11.1% (n=10)
Did not attend course	88.9% (n=80)

Table 6.1 *Demographic characteristics of respondents in the pre intervention phase*

Job title	Mean	N	Std. Deviation
Doctor	20.8	26	3.48
Nurse manager/staff nurse	23.0	64	5.48
Total	22.4	90	5.10

Table 6.2 *Means analysis of total scores in accordance with job title*

The total score of correct answers varied between very low to high. The lowest scoring item on the KASRP was only 25.6% where respondents were asked about the likelihood of developing respiratory depression in patients with persistent cancer pain receiving stable doses of opioid analgesics. On the other hand, the highest scoring item was achieved when respondents were asked to specify whether elderly patients could tolerate opioids for pain relief or not (87.8%). According to Brown *et al.* (1999), 80% or higher is an acceptable pass score on a test of general knowledge. Therefore, for the purpose of this study, scores below 80% were considered to be inadequate.

In section one of the KASRP, respondents were asked to circle 'T' (true) or 'F' (false) according to their belief and knowledge on each of the twenty items. The lowest score of correct answers in this section was 34.4% where the majority of respondents (65.6%) believed that opioids should not be used during the pain evaluation period if the source of the patient's pain was unknown. Likewise, in item number 3, only 41.1% of respondents answered correctly when asked to specify if patients might sleep in spite of severe pain. Results in this section showed that only six out of twenty items were found to be answered correctly by more than 80%. Six items had a correct answer rate of less than 50%, these were: 3,4,9,10,11 and 17.

Table 6.3 presents the percentage and frequency of correct answers on each item of section one.

In the second section, respondents were asked to choose the answer they believed was correct for each of the thirteen multiple choice items. The content of this section mainly focuses on pharmacological knowledge of analgesia including route of administering, effect, side effects as well as issues related to addiction. In total, less favourable results were found in this section compared with section one. As mentioned previously, the lowest result was found in relation to item 26 where only 25.6% answered correctly that the likelihood of developing clinically significant respiratory depression in a patient with persistent cancer pain. Additionally, only 30% knew what the recommended route of administration of opioid analgesics was for patients with persistent CRP (item 21). When respondents were asked about the time to peak effect for morphine given orally, only 38.9% answered correctly (item 32). Only 3 items were answered correctly with 80% or more (items 25, 29, 30). Table 6.4 illustrates percentages and frequencies of correct answers for each item of section two.

KASRP Item Number	Question Content For True/False Statements	Correct Answer Rate % and 'n'	'T' or' F' correct answer
1.	Vital signs are always reliable indicators of the intensity of a patient's pain.	62.2% (n=56)	F
2.	Patients who can be distracted from pain usually do not have severe pain	50.0% (n=45)	F
3.	Patients may sleep in spite of severe pain.	41.1% (n=37)	T
4.	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	45.6% (n=41)	F
5.	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.	63.3% (n=57)	T
6.	Cancer pain is usually best managed with a single analgesic rather than with a combination of drugs.	82.2% (n=74)	F
7.	The usual duration of analgesia of 1-2mg of morphine intravenous (IV) is 4-5 hourly.	63.3% (n=57)	F
8.	Beyond a certain dose of non-opioid analgesics (e.g., ibuprofen, paracetamol) increases in dose will **not** increase pain relief.	53.3% (n=48)	T
9.	Opioids should not be used in patients with a history of substance abuse.	47.8% (n=43)	F
10.	Morphine has a dose ceiling.	47.8% (n=43)	F
11.	Opioid analgesics are best ordered on a "prn" (as required) basis to encourage minimal dosing and reduce the risk of addiction.	46.7% (n=42)	F
12.	Elderly patients cannot tolerate opioids for pain relief.	87.8% (n=79)	F
13.	Patients should be encouraged to endure as much pain as possible before using an opioid.	82.2% (n=74)	F
14.	Patient's spiritual beliefs may lead them to think pain and suffering are necessary.	66.7% (n=60)	T
15.	After an initial dose of an opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.	86.7% (n=78)	T
16.	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	68.9% (n=62)	F
17.	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to diagnose the cause of pain.	34.4% (n=31)	F
18.	Anticonvulsant drugs such as gabapentin (neurontin) produce optimal pain relief after a single dose.	83.3% (n=75)	F
19.	Narcotic/Opioid addiction is defined as chronic neurobiologic disease, characterised by behaviours that include one or more of the following: impaired control over drug use, continued use despite harm and craving.	84.4% (n=76)	T
20.	Adjuvant analgesics such as the tricyclic antidepressants and anticonvulsants should **not** be used in combination with opioid analgesics or NSAIDS.	62.2% (n=56)	F
Total mean score (%)		12.6 (63%)	

Table 6.3 *Percentages and frequencies of correctly answered items on section one of the KASRP*

KASRP Question Number	Content for Multiple Choice Items	Correct Answer Rate % and 'n'
21.	The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is?	30.0% (n=27)
22.	The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is?	52.2% (n=47)
23.	The drug of choice for the treatment of prolonged moderate to severe pain for cancer patients is?	76.7% (n=69)
24.	Which of the following intravenous doses (IV) of morphine administered over a four hour period would be equivalent to 30mg of oral morphine every 4 hours?	50.0% (n=45)
25.	When should analgesics for post-operative pain be given?	81.1% (n=73)
26.	The likelihood of developing clinically significant respiratory depression in a patient with persistent cancer pain who has been receiving stable doses of opioid analgesics for 2 months is?	25.6% (n=23)
27.	The most likely reason a patient would request increased dose of pain medication?	78.9% (n=71)
28.	Which of the following medications are useful in the treatment of cancer pain?	51.1% (n=46)
29.	The most accurate judge of the intensity of the patient's pain is?	84.4% (n=76)
30.	Which approach describes the best approach for cultural considerations in caring for patients in pain?	82.2% (n=74)
31.	The time to peak effect for morphine given subcutaneously (SC)?	66.7% (n=60)
32.	The time to peak effect for morphine given orally (PO) is?	38.9% (n=35)
33.	Following abrupt discontinuation of an opioid, physical dependence is manifested by which of the following?	54.4% (n=49)
Total mean score and (%)		**7.7 (59%)**

Table 6.4 *Percentages and frequencies of correctly answered items on section two of the KASRP*

As stated earlier, section three comprised two case vignettes. The first case vignette was represented in questions 34 and 35, and the second was represented in questions 36 and 37. Each of the two patient scenarios had two items A and B. Item 'A' in both cases assesses the healthcare professionals' knowledge and/or attitudes on the assessment of pain where the healthcare professional was asked to circle the correct number on the NRS (from 0 to 10) that matched with the actual pain intensity

score. For the purpose of the analysis, results of item 'A' from the two case studies are presented below (Table 6.5). Items 'A' of the two case studies are presented in one table as both items are related to the pain assessment. Similarly, each item 'B' pertains to administration of analgesia in relation to pain assessment scores, therefore, B items are presented together in one table.

KASRP Question Number	(Numerical Rating Scale) Pain Intensity Score			Frequency 'n' out of 90	Correct answer Rate %
34	**Case vignette**	1	A*	60	66.7%
36	**Case vignette**	2	A*	65	72.2 %

Table 6.5 *Distribution of healthcare professionals' correct assessments scores in the two case studies. *A= the first item of each of the two case vignettes*

Item 'B' evaluates healthcare professionals' responses to the patient's pain intensity score. It is expected that a patient receives the correct dose of analgesia that corresponds with his current pain intensity score on the NRS. The results of item 'B' from the two cases were presented separately (Table 6.6). Neither of the two vignettes revealed any favourable findings in this section. In each of the two cases less than 35% of participants responded correctly to the patients' actual pain intensity score by identifying either administering the inappropriate dose of analgesia or not administering it at all. In this context, the word 'administering' by healthcare professionals is synonymous with 'prescribing' in terms of doctors.

KASRP Question Number	Healthcare professionals' responses to patients pain intensity score			Frequency N out of 90	Correct answer Rate %
35	Case study	1	B*	31	34.4%
37	Case study	2	B*	28	31.1%

Table 6.6 *Distribution of healthcare professionals' responses in relation to administering analgesia.*

**B= the second item of each of the two case vignettes.*

6.4.1.3 KASRP-Areas of Low Correctly Answered Items

Twelve ranked items on the KASRP were identified in terms of their low correct answer rate starting from the lowest (Table 6.7). These twelve items were specifically illustrated in a table in accordance with their very low correct answer rate (less than 50%). There were other items with low correct answer rates but with less extreme results (50 to 80%) (Tables 6.3 and 6.4). Areas of low correctly answered items in this section mainly focused on pharmacological knowledge including route, dose and side effects. For example, only 25.6% knew the correct likelihood of developing respiratory depression with persistent cancer pain. Also only 30% correctly knew that the recommended route of administration of opioid analgesics for patients with persistent CRP was "oral". In both case vignettes, respondents incorrectly answered that the patient's pain intensity score by either choosing not to give any morphine or giving the incorrect dose, 31.1% and 34.4% respectively.

KASRP Question Number	Ranked Number	Rank Order of Top 9 Items Most Frequently Answered Incorrectly	Correct Answer Rate % and 'n'
26.	**1.**	The likelihood of developing clinically significant respiratory depression in a patient with persistent cancer pain who has been receiving stable doses of opioid analgesics for 2 months is?	**25.6% (n=23)**
21.	**2.**	The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is?	**30.0% (n=27)**
37.	**3.**	Case study 1: How much morphine do you need to give (if you think you need to give)?	**31.1% (n=28)**
17.	**4.**	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to diagnose the cause of pain.	**34.4% (n=31)**
35.	**5.**	Case study 2: How much morphine do you need to give (if you think you need to give)?	**34.4% (n=31)**
32.	**6.**	The time to peak effect for morphine given orally (PO) is?	**38.9% (n=35)**
3.	**7.**	Patients may sleep in spite of severe pain.	**41.1% (n=37)**
4.	**8.**	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	**45.6% (n=41)**
11.	**9.**	Opioid analgesics are best ordered on a "prn" (as required) basis to encourage minimal dosing and reduce the risk of addiction.	**46.7% (n=42)**
9.	**10.**	Opioids should not be used in patients with a history of substance abuse.	**47.8% (n=43)**
10.	**11.**	Morphine has a dose ceiling.	**47.8% (n=43)**
2.	**12.**	Patients who can be distracted from pain usually do not have severe pain	**50.0% (n=45)**
Total mean score (%)			**4.7 (39%)**

Table 6.7 *Distribution of areas of low correct answer rate of the KASRP items*

When respondents were asked to identify the time to peak effect for morphine given orally, less than 39% answered correctly. In item 3, pertaining to both the knowledge and attitudes of the healthcare professionals, over 41% believed that patients may sleep in spite of severe pain. In item 4, the majority of respondents seemed to underestimate the effectiveness of aspirin and other combined analgesics for painful

bone metastases. In item 11, in terms of addiction risks, the majority of respondents (53.3%) incorrectly believed that opioid analgesics are best ordered on a "prn" basis to encourage minimal dosing and reduce the risk of addiction. In items 9 and 10, less than 48% incorrectly believed that opioids should not be used in patients with a history of substance abuse and that morphine has a dose ceiling. Finally, half of the respondents incorrectly thought that patients who can be distracted from pain usually do not have severe pain.

6.4.2 Audit; Current Practices

An audit of fifteen patients' charts was conducted over a one week period to elicit baseline data on healthcare professionals' monitoring, documentation, assessment and evaluation practices pertaining to CRP. The patients' charts included documentation of pain assessment, evaluation and prescribing from both medical and nursing disciplines.

6.4.2.1 Audit Demographics

The demographic data contained four sections pertaining to the type of cancer, stage of the disease, current treatment and the involvement/or not of the palliative care team in the patient's pain management. Results of the demographic data showed that among 15 cancer patients; 5 had bowel cancer, 4 lung cancer, and 2 of each prostate, breast and other types of cancer. Figure 6.2 illustrates percentages of each. The majority of cancer patients (80%) were admitted for other reasons than chemotherapy, radiotherapy or surgery. The palliative care team were involved in only 6 patients' pain management (40%). Eleven patients (73.3%) were in stage IV and four in stage III (26.7%).

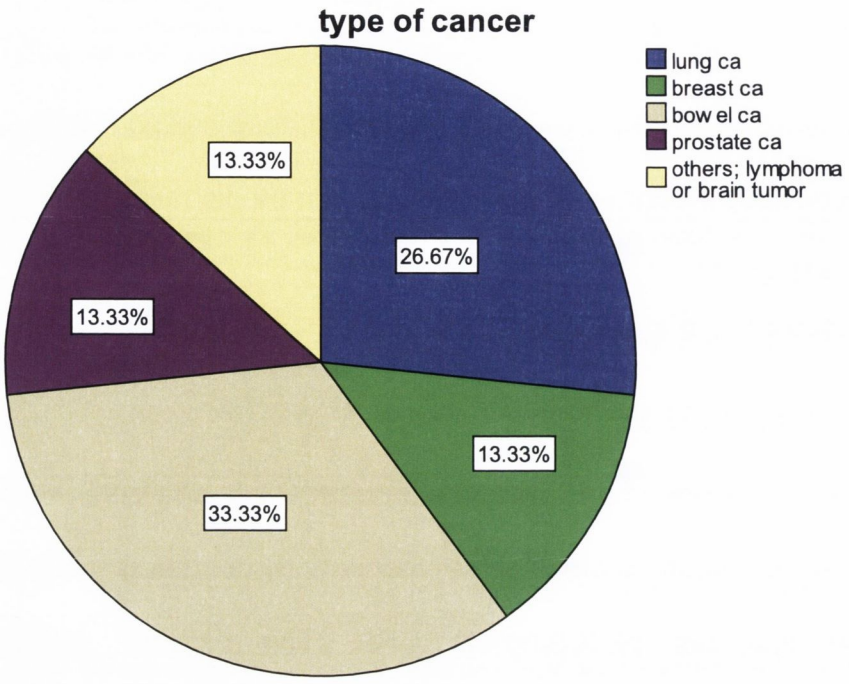

Figure 6.2 *Demographic data in terms of cancer type*

6.4.2.2 Audit Scores

The maximum achievable score of the audit was 22 which would be equivalent to 100%. Each 'yes' was scored a '1' and each 'no'" was scored a '0'. While the majority of audit sections (2, 3, 5, 7 and 8) are related to nurses, others are related to doctors (6, 9 and 10). Sections 1 and 4 are related to both nurses and doctors. Therefore, in total, 17 items are nursing-related and 5 items related to doctors. The descriptive analysis of data showed a total mean score of 7.27. The mean score of doctors' related items was 1.67 whereas the mean score of nurses' related items was 5.60 (Table 6.8).

	Doctors	Nurses	Total
Mean	1.67	5.60	7.27
Std. Deviation	1.59	2.53	3.71

Table 6.8 The pre intervention audit mean score.

Table 6.9 provides a distribution of the audit items with frequencies and percentages. The results showed that doctors scored very low (20%) on screening patients for pain using an appropriate tool. Additionally only 26.7 % of charts included adequate evaluation of the effect of analgesia administered in accordance with patients requests for breakthrough analgesia (item 10). With regards to nurses' related items, results showed that a CRP nursing care plan was present in the majority of patients' charts (73.3%). However, less favourable results were found on items related to assessment of pain location, radiation, duration, quality, frequency and emotional response (6.7%) only. Furthermore, the same low percentage (6.7%) was scored on evaluation of the effectiveness of administered analgesia and patient comfort level at appropriate intervals (item 8).

Audit Item	Frequency (n)	Percentage (%)	doctors or nurses' items
1. Patient screened for pain using appropriate tool on:			
• Admission	9	60%	Nurses
• During nursing notes –last 24 hrs	8	53.3%	Nurses
• Nursing care plan	10	66.7%	Nurses
• Medical team progress notes	3	20%	Doctors
2. There is a care plan related to pain management	11	73.3%	Nurses
3. If pain indicated in screening process, comprehensive pain assessment that includes evaluation of:			
• Pain intensity	10	66.7%	Nurses
• Type of onset	2	13.3%	Nurses
• Location	5	33.3%	Nurses
• Radiation	1	6.7%	Nurses
• Duration	1	6.7%	Nurses
• Quality	1	6.7%	Nurses
• Frequency	1	6.7%	Nurses
• Aggravating and relieving factors	1	6.7%	Nurses
• Emotional response	1	6.7%	Nurses
4. Documented descriptions of pain other than objective ratings for the previous 24 hrs. If present specify in both:			
• Physicians' progress notes	7	46.7%	Doctors
• Nursing notes	7	46.7%	Nurses
5. If pain present, patient received pain treatment appropriate for cause, type and intensity based on WHO Three-step analgesia ladder.	6	40.0%	Nurses
6. If pain present, orders for pain medication were received within 24 hrs of identification of the pain	6	40.0%	Doctors
7. If pain present, care plan includes pharmacological interventions	9	60.0%	Nurses
8. When analgesia administered, effectiveness of intervention and patient comfort level evaluated at appropriate intervals	1	6.7%	Nurses
9. A follow-up evaluation has been charted for medication including increasing dose or changing routes of analgesia or addition of adjuvant medication.	5	33.3%	Doctors
10. When there was/were number of days during which patient utilised >3 doses of breakthrough analgesia, documented actions included increase dose and/or change route of analgesia or addition of adjuvant medication.	4	26.7%	Doctors
Overall mean score (%)		**7.27 (33%)**	

Table 6.9 *Distribution of audit items with frequencies and percentages*

6.5 Conclusion

In this chapter, I have provided a description of the problem identification and planning phases of the action research cycle. I have established the baseline level of healthcare professionals' knowledge, attitudes and practices of CRP management in the pre action learning programme phase. While the findings from the KASRP and audit reflect the current knowledge/attitudes and practice in the study wards, prospective (at this stage) participants' views, perceptions and clinical experiences informed the initial phases and provided a detailed explanation of the evolvement of the process during these phases. The literature review has provided detailed insight into CRP management whereby I was able to find with positive ideas on the topic and related issues. The findings from the initial phases revealed numerous deficits among healthcare professionals' knowledge, attitudes and practices in the area of CRP management. In chapter seven, I examine the action phase in detail.

Chapter Seven

The Process (Storytelling); Part 2

7.1 Introduction

In this chapter, I provide a description of the process of the action and evaluation phases of this enquiry. While I discuss the action phase in detail and describe its cycles critically, the process of the evaluation phase is explained in less detail at the end of the chapter. This is because the outcomes of this study fall on the evaluation phase of this enquiry, and therefore, the outcomes of this action research enquiry are explored in the following chapter.

7.2 Action Phase

This is the phase where an action learning programme was implemented as an intervention in this study. Based on the action research cycles, I examine each cycle of this phase and explore the development and generation of actions from the action learning sets. This was achieved based on my dual-role as a facilitator of the action learning sets using a special diary of observational field notes used in the action learning sets. The findings from this phase are categorised by overarching themes that were evident from the data.

7.2.1 Identifying Issues

Based on the action research phase, this is the problem identifying phase of the action phase of the meta-cycle phase. Based on their own clinical experiences and clinical situations, healthcare professionals identified issues related to CRP management. The identified topics are presented including examples of comments

made by the participants to illustrate these topics. It was evident that there was some interconnection between the comments of each topic. This might be attributed to the multidimensional concept of CRP or due to the fact that there can be more than only one reason behind a problem. The three main topics identified are discussed in each of the cycles of this phase and these topics are:

- Lack of knowledge and negative attitudes and inadequate training
- Inadequate assessment and documentation practices
- Poor communication and lack of awareness

7.2.1.1 Lack of Knowledge/Training and Negative Attitudes

The majority of healthcare professionals who decided to be open about their perception or knowledge of CRP management appeared to attribute any existing deficits to organisational aspects such as lack of education and training. Additionally, presenting knowledge and attitudes together despite the numerous comments made about each was done based on that it is difficult to differentiate between comments as referring to either knowledge or attitudes; an assumption that was supported by Ferrell and McCaffery (2008). It was apparent that healthcare professionals placed great emphasis on clinical training as a key factor to effective pain management based on their perception of CRP as a multifaceted issue.

N1. A: *"Despite all the years in nursing, I still can't say I know much about it. I think cancer pain is very complex and multidimensional. But sure I haven't been to any sort of training since I started here".*

N1. C: *"We only get the basic in college, what pain is and how to assess the pain in general, don't mind cancer pain. I really think it is underestimated... how could you expect general trained nurses or doctors to manage cancer pain?"*

D1. C: *"I think our college education was very good but didn't include everything. I only came to learn about pain assessment when I started working... cancer pain can be very challenging and you do need a good back up training"*

The preceding extracts also reflect the multidimensional aspect of CRP opposed to what college training offers. Healthcare professionals emphasise the imperative role of clinical experience and place importance on it as a key aspect of improving clinical learning. In balancing the current qualification with the considerable requirement for further education and training, the preceding extracts also reflect an underestimation of the significance of CRP management as a clinical challenge. Furthermore, some doctors expressed concerns about the existing challenges that face the newly qualified healthcare professionals responsible for managing CRP without adequate training. It was also evident that some healthcare professionals acknowledged their possession of specialised training as opposed to not having done it. The following quote supports this assumption:

D1. B: *"I think the majority of the newly qualified doctors and also nurses don't have enough knowledge of how to manage cancer pain... I don't think it is their fault though. You can only expect someone to know when you have them trained".*

D2. C: *"I have actually done a post grad course 3 years ago...you know what my take home message from it all was? If I hadn't done it, how was I suppose to know all those things"*

From the previous comments, it was notable that doctors and nurses seemed reluctant to admit their lack of knowledge, and if they admitted, they had their reasons why that was the case. Central to their clinical experience, nurses identified numerous occasions where they felt the management of CRP was compromised. In those situations, the failure to treat CRP was attributed to patients receiving inadequate or ineffective analgesia, or maximum amounts of prescribed analgesia

dispensed without achieving desired therapeutic effect. Nurses expressed particular concerns in relation to prescribing practice that was not based on the evaluation of the analgesic effect. They explained that if a patient asked for additional analgesia that had not been prescribed, it was challenging and unlikely that they could get another analgesic prescribed. The nurses suggested that as a consequence, patients' experienced pain that could have been controlled with adequate and timely prescribed analgesia. As nurses identified situations where lack of prescription was a problem, there was a sense that the original cause was attributable to doctors and their prescribing practices. For example, nurses identified poor medical consensus about decisions regarding pain interventions and a perceived failure by doctors to reach treatment decisions and prescribe appropriately. According to the nurses' comments, this appears to be attributing to doctors fear of addiction and other side effects of opioids that might compromise the medical treatment of the patient from a different perspective. Failure to demonstrate adequate prescribing reflects inconsistent adherence to the WHO stepladder guidelines (1986, 2005).

N2. A*: "When I asked a doctor to add morphine as the tramadol (*analgesic*) did not work, she told me she was the one accountable for the prescribing not me if the patient developed addiction to morphine*".

N3. A*: "When an elderly cancer patient kept asking for more pain killers as her pain didn't improve after receiving a painkiller, she did not get it because her doctor said the priority was for her breathing and that more painkillers would worsen it".*

N2. C*: "I'm actually getting used to it now. Most of the times I ask for a review of a patient for his or her sever pain, I can see the answer either 'I am very busy now', 'I can do it later' and never done...makes you feel like they are actually escaping you*".

While the previous extracts might reflect a sort of criticism of doctors, nurses also indicated reluctance on their own part and that of other nurses to administer analgesia when patients were acutely ill and presented with multiple medical conditions. Nurses suggested this prompted a cautious and restrained approach to CRP management interventions. Other nurses were noted to perceive administering an opioid as a challenge due to time constraints considering the requirement of two registered nurses to do so. Nurses considered this as more challenging for the newly qualified nurses. This might be due to lack of confidence or less familiarity with other colleagues to ask their assistance in addition to their limited clinical experience.

N4. A*: "We are reluctant sometimes to give prescribed MDA drugs (*opioids*), I don't know, this might be because we are afraid of the side effects or maybe we are too busy to prepare them*".

N3. C*: "I must say, for a long time I used to find it very challenging to prepare an MDA. I used to prefer giving the minor painkillers. Only now I can imagine how the junior nurses find it".*

While nurses identified poor prescribing as a concern, doctors placed great emphasis on analgesics administration. In addition to inconsistencies in nurses' practices, doctors' comments also reflect non adherence to the WHO stepladder guidelines (1986, 2005) where mild or moderate analgesics are required to be administered before opioids are required.

D2. C: *"I was only called 2 days ago to review a cancer patient with severe pain to discover that she (*the patient*) was only given one minor pain killer while she was already prescribed two stronger pain killers. I did not think this was right".*

Similar to the nurses, doctors, also identified their own reluctance to prescribe opioids as a barrier to consistent CRP management. They also expressed their tendency to prescribe non-opioids as opposed to opioids. It appeared that this is attributed to exaggerated fear of side effects that might interfere with other medical conditions or treatment.

D3. B: "*I actually agree that we tend to treat pain as a priority in dying patients compare to patients who we consider not. We are too much concerned about these painkillers compromising medical conditions or medical treatment".*

D3. C: *"I think we (*doctors*) do tend to skip prescribing opioids, we are eager to prescribe less stronger analgesics for some reason".*

7.2.1.2 *Inadequate Assessment and Documentation Practices*

It has been maintained that adequate pain assessment is one of the first requirements of effective pain management (Carr and Mann 2000, Ger *et al.* 2004). A better understanding and a wider picture of CRP practices was achieved by obtaining a perspective of healthcare professionals' approaches to CRP assessment and their perception of the way this was implemented in their clinical areas. In this section, I first present the nurses' and then the doctors' comments as the majority of these comments were made at an early stage of the action learning programme where nurses and doctors participated in two different groups. Doctors will be referred to as 'D' whilst 'N' will be used for either nurse managers or nurses. I also use 'A' for group A, 'B' for group B and 'C' for group C.

Nurses in this study seemed to believe that their ability to participate in an adequate pain assessment was compromised by lack of time spent with their patients. They expressed concerns regarding the amount of documentation where they were left

without enough time to perform a proper assessment of CRP. Relative nurses' comments included:

N1. A: *"On a busy ward it is really hard to keep up with all these contemporary ways of documentation and care plans. I think it is almost impossible to assess someone's pain properly unless you spend time with them, which we don't actually have".*

This comment emphasises the importance of time as an essential aspect in the assessment of CRP. It was evident that lack of time spent with patients meant that nurses interacted with their patients at a fairly superficial level, even when the patients' pain could have been the focus of that interaction. For example, routine practices like checking the vital signs helped to ensure that patients were asked about their pain, but nurses admitted that neither follow-up nor review was consistently undertaken without checking the vital signs. What adds significance to this point is that cancer patients tend not to seek a treatment for their pain despite suffering as they believe it is part of the disease (Ferrell *et al.* 1995, McCaferry *et al.* 2007). This means that unless pain assessment was delivered closely at regular basis and as required, patient might be left suffering with an undiagnosed pain. The following comment reflects this point:

N2. A: *"I think checking the vital signs is crucial sometimes as it is the chance that you get to see your patient and ask them about their pain. How is the pain now? 'not bad nurse', 'Ok I will be back to you shortly' and never go back"*

An attributing challenge to CRP assessment identified by the nurses was based on its nature of severity that might hamper the patient ability to make the right judgement about their pain score and also hinder them to ask for pain treatment. Nurses also identified that causes of ineffective practices were mainly attributed to

individual healthcare professional interpretations of patients' pain. A nurse described how this situation transpires:

N3. A: "*One nurse can say that 'the pain isn't severe, they had no pain today' and then someone will come in and say, 'oh they are, they are in pain, I asked them, and they said so".*

N4. A: "*I think it's impossible sometimes for the patient to give you a clear answer what their pain score is...they are too sick and too many things running at the same time".*

N5. A: "*...many times when I go to the patient to take their temperature or to do something else, they ask me for painkillers. When I ask them why they didn't ring the bell for the nurse?' they say 'ah it's ok".*

From their perspectives, doctors discussed how they based part of their assessment on the patient diagnosis or the predicted pain associated with the stage of cancer or the palliative care team involvement. For example, assumptions were made about the degree of pain patients were expected to experience in their final stage of cancer:

D1. B: "*I feel that palliative care or 'dying' patients are actually prioritised for a close monitoring of their pain score whilst other cancer patients may be not".*

D2. B: *"Until very recently, I use to believe that a patient's pain score was determined by what they (*patients*) had been through, the stage of the disease. Now I think that was shocking".*

Other doctors' key concerns reflected gaps on the documentations of pain assessment. Doctors also identified some deficits in CRP assessment considering their full reliance on nursing assessment using the NRS and without doctors doing their own assessment on their review of the patient. Relative comments include:

D3. B: "*We are very dependent on the pain scale score, we don't assess the pain ourselves very often, and when we do, it is done verbally and not documented".*

D4. B: "*I refer a lot to the nursing notes because we don't routinely assess the pain unless we need to, so it's not really documented in the medical chart as much".*

The preceding comments reflect a position in which healthcare professionals are concerned with tasks, which may limit an evidence to suggest that the primary responsibility for CRP management resided with a named healthcare professionals. One of the implications was the failure to establish clear areas of accountability for carrying out the assessment of CRP. As a result, assessment and consequently the management of CRP decisions were described as insufficient. The following extracts illustrate the outcomes of this situation.

D5. B*: "It's very complicated when you have different people bumping into this patient to ask him or her how the pain was. Doctors, nurses, palliative care team, everyone has their own views to interpret what the patient says".*

7.2.1.3 Poor Communication and Lack of Awareness

Throughout the action learning programme, it was notable that healthcare professionals appeared surprised by the amount of unreported issues and concerns around CRP management to each other and they attributed this to insufficient communication between them. Although they had agreed on the existing issues regarding CRP management, they highlighted that they were not aware of the high frequency of these issues. Although some nurses were confident about their feeling of how challenging CRP was for them on many occasions, they did not feel that their colleagues shared them the same feeling. Similarly, some doctors' key comments reflected unawareness of the significance of this challenge due to lack of emphasis

on CRP or inadequate communication about it. Both doctors and nurses suggested that CRP was missed out or underestimated due to the gaps in communication.

N2. C: *"It is very handy to hear from everyone else. It makes you feel it isn't just about you. Almost every time I'm working there is something about it but I never hear a thing from the rest especially doctors".*

D1. C: "*What I can see now is that everyone here is concerned. It's interesting that I don't see this picture when I'm on the wards, we seem to undermine it".*

N3. C: "*I only pay attention to patients with pain when I know they are in pain. When I don't get a proper handover I don't know then. I don't have time to read the nursing notes until a very late stage in my shift, which is a bit too late I think".*

Some doctors were open about their perception of how communication was not performed adequately. Their description of events suggests that their handover required attention. Other doctors identified poor consensus about reporting issues unless they worsen. In this situation, doctors also identify concerns about adopting an individual way of handling issues where colleagues are not offered the opportunity to contribute in making decision nor learn from other colleagues.

D2. C: *"After a long shift, it's very hard to even remember what happened, we all forget. Maybe our handover sometimes is not done properly".*

D3. C: *"I think we are not very keen to talk about a solved problem. When it's sorted we say oh it's sorted no need to report it, therefore, your colleagues don't get to know and when they are in the same position they have to struggle gain".*

Healthcare professionals also lacked awareness of the existence of guidelines or protocols on CRP management. Although some of them were aware of the existence of the WHO guidelines of CRP management, others were not aware of their

existence on the undertaken wards. Although healthcare professionals made some reference to pain guidelines in few clinical occasions, they were unclear about the nature and application of guidelines that it was difficult to ascertain whether or not they were in use. For example, a nurse recalled seeing a copy of the analgesic ladder on her ward but was clearly not familiar with its purpose or practice application.

D3. C: *"I don't remember seeing the analgesic ladder anywhere... not sure if anyone refers to it or has time to do so".*

D3. C: *"Until just a minute ago, I had no clue about the availability of any guidelines in my ward".*

N3. A: *"I'm aware of these guidelines and did see them few times. But I actually always thought they were just there in the tutorial room never thought of referring to them if I needed".*

It was evident from the preceding extracts that healthcare professionals' clinical settings did not promote the use of protocols and guidelines to guide pain assessment and management practices. The healthcare professionals' limited use of guidelines reflects research findings that continue to report how guidelines have been slow to change practice behaviour (Pasero and McCaffery 2004). One nurse confirmed that clinical pain guidelines were available in her ward but she believed that no one read them, nor had the time to do so. There was a consensus by healthcare professionals that they were too busy to locate and read pain guidelines. This finding has been recognised as a barrier for interpreting evidence based knowledge in practice (Rycroft-Malone 2006).

In summary, this phase provided a description of the process of the first phase of the action phase where healthcare professionals expressed concerns and identified problems as well as constituting barriers to CRP management. These barriers included inconsistencies in CRP assessment and documentation, lack of knowledge and negative attitudes to CRP management and in particular to pharmacological issues and side effects. Other identified barriers included organisational barriers, for example, lack of education or training on pain management. Additionally, lack of time, heavy workload, and poor management facilitation were evident from participants' comments. Furthermore, poor communication and underestimation of CRP management were also identified as an existing challenge.

7.2.2 Preparations of Interventions and Actions

Based on the action research cycle phases, this is the planning phase of the action phase of the meta-cycle of action research. After exploring barriers and challenges during the action learning sets, healthcare professionals started to identify interventions and set the most suitable plans reflecting on these barriers and challenges. These interventions fell broadly into three areas. The first set of interventions reflected individual objectives to improve CRP knowledge and attitudes and to use that knowledge in practice. The second set of interventions was orientated towards broader, collaborative practice developments.

7.2.2.1 Improvement of Knowledge and Attitudes

Although the majority of them attributed their lack of knowledge and negative attitudes to lack of training and education, healthcare professionals were fully aware that it was their duty in this project to try improving knowledge and attitudes within

their capability. In order to achieve this objective, they placed great emphasis on their own recourses of clinical experience, professional knowledge and skills combined with reflection on each other's clinical experience and practices. Healthcare professionals focused on areas of CRP knowledge that they considered would be most appropriate for their individual practice. Pharmacological knowledge was identified as a priority for improvement because in addition of overcoming the gap knowledge, they believed it was directly related to erroneous beliefs about addiction and other side effects of analgesics. Healthcare professionals also wanted to gain perspectives into the causes and nature of pain and assessment practices. They suggested that in view of barriers encountering cancer patients' ability to perform/respond correctly during their pain assessment or when having pain, emphasis needed to be placed on the patient's relatives and family training. It was also suggested that a brief patients' education or encouragement to look for pain treatment when they have it, might be helpful. In the following examples nurses' emphasised how they anticipated improved analgesics knowledge would lead to enhanced CRP management:

N3. A: *"I think if our knowledge can be improved specially in relation to the morphine and other MDA drugs, then a big part of the problem is sorted".*

D2. C: *"how about training them? I think a short training will help...If the patient is too unwell to answer, maybe family members need to be explained things".*

7.2.2.2 Towards Practice Change

The inadequacy in CRP assessment and practices that healthcare professionals had examined during their discussions led them to consider the possibilities of improving CRP assessment practices. However, when nurses discussed their proposed

approaches to these initiatives, differences between the doctors and nurses were apparent. For example, one doctor from group C suggested changing the pain scale from the NRS to the face pain scale as they believed it would suit cancer patients better. On the other hand, a nurse manager from the same group suggested a palliative care team involvement to perform full assessment of pain. From nursing perspectives, this was expected to encourage nurses to follow the palliative care team instructions. Both doctors and nurses agreed that attention needed to be made in order to address the existing gaps in nurses' assessment practices and most importantly doctors' documentation in the medical notes, which had been identified in the previous phase as a major concern. I discuss the action phase with relative actions and activities in a following section.

7.2.2.3 Communication Enhancement and Organisational Awareness

There has been a consensus from healthcare professionals about poor communication and lack of awareness about the significance of CRP management among them and most importantly from the stakeholders in the undertaken hospital. It was evident that healthcare professionals raised concerns in relation to lack of time, heavy workload. Although hospice facilities were available as an acknowledgement of lack of palliative care during out of hours, this was not enough. Healthcare professionals stressed that it was not clear that this service was available and claimed unfamiliarity of how or when to use it. They were also concerned that while this service was well known to palliative care team, it was not the case for other healthcare professionals. In other words, patient who had not been referred to the palliative care team did not benefit from it as much. It was notable that healthcare professionals were expecting more attention from the organisation to this issue as

CRP management training/education has not been provided compared to other clinical issues. In view of all of these, the suggestions made by healthcare professionals were mainly focused on raising concerns about CRP management in the hospital. They highlighted the essential role of improving communication between healthcare professionals in the clinical areas and also between these healthcare professionals and relative stakeholders. From nurses' perspectives, it was integral for nursing administration to be aware of the complex and time consuming nature of caring for terminally ill cancer patients where pain is reported to be a major priority (Breivik *et al.* 2009, Hawksley 2009). This was important as staff shortage could have contributed to heavy workload and resulted in lack of time to perform adequate assessment or management of CRP.

From their viewpoint, doctors believed that clinical issues around CRP management should be highlighted to their consultants as well as their team colleagues. They placed important emphasis on the role of consultants in releasing times and facilitating any required interventions to overcome CRP barriers. Great emphasis was placed on improving handovers between shifts and keeping up with most recent updated WHO CRP management guidelines in view of lack of training and education in the hospital. This study was undertaken in a hospital where, due to a national recession, financial resources were significantly reduced. In this position, healthcare professionals' intention was focused towards simple, feasible and cost neutral but worthwhile and effective interventions that could replace other means of training or education. By doing so, they suggested not only would they be cost effective measures but most importantly they would gain support and encouragement from

stakeholders on the hospital. The following are examples of comments that reflect these suggestions:

D1. C: *"Let us face it, how much do we really talk about this? Considering what we deal with everyday I think our voice has been too low"*

N4. A: *"People up in admin need to know, I don't think they do. The amount of work and time spent with those patients is unbelievable. Sometimes you could nearly do with one to one (*one nurse to one patient*)".*

D3. C: *"I'd be lying to you if I said I ever contacted the hospice because my team never do. In few occasions when we had a 'dying patient' and palliative care team were involved they left a note in the chart for nurses to do but we don't really".*

N3. C: *"The more handy the better I suppose. It needs to be systematic..."*

To conclude, in this section, I have presented healthcare professionals' impressions of CRP and their perspectives of how it was assessed and managed in practice. Weighing up the evidence reviewed in Chapter 2, many of the practice deficiencies identified by the healthcare professionals were similar to those identified in previous studies. For example, pain assessment processes were inconsistent and poorly understood, and practice barriers constituted major challenges for delivery of effective and evidenced based CRP management. As a related issue, healthcare professionals demonstrated limited awareness of the existence of evidence based sources to underpin their practice. One of the most significant issues that emerged from this review of practices was related to analgesics prescribing and administration. According to their views, healthcare professionals placed great emphasis on lack of knowledge and negative beliefs that stand as a major factor behind their inconsistent practices of prescribing and administration of analgesics in

addition to the poor documentation and assessment of CRP. Other challenges identified by healthcare professionals included lack of training and education, lack of awareness of the significance of CRP management from stakeholders perspectives. Therefore, the challenges of identifying potential practice interventions and taking these forward in a collective way were dependent upon the area of practice of healthcare professionals and on overcoming communication barriers between healthcare professionals and relevant stakeholders. It was recognised that possibilities for actions identified would be re-evaluated, and their relevance re-assessed, as the research, and course participation progressed.

7.2.3 Actions Taking

In this section, I provide a description of the action phase of the main action phase of my enquiry and consider the way individual healthcare professionals applied new CRP knowledge to develop actions and change their approach to CRP management. I also discuss how healthcare professionals introduced specific and focused approaches to improve knowledge and correct negative attitudes to CRP with renewed emphasis on the assessment, documentation and patient involvement in the management of CRP. The main actions that emerged from the action learning programme are summarised in Table 7.1.

7.2.3.1 Knowledge; Improving and Sharing

As previously acknowledged, healthcare professionals attributed some of the blame for ineffective CRP practices to their own lack of knowledge. They identified CRP knowledge acquisition as a main objective during the action learning sets meetings. They also identified difficulties with existing behaviours of colleagues' and suggested

that their attitudes and deficits with CRP knowledge, at times, contributed to ineffective CRP management. Knowledge deficit was identified as a barrier both for delivery of effective, evidenced based CRP management and for initiating or progressing developments in CRP assessment and management practices. In this phase, healthcare professionals agreed that improving knowledge and providing an effective understanding of CRP management is a successful approach to overcome the deficits of knowledge in addition to improving misconceptions and correct erroneous attitudes. Before I discuss actions taken to improve knowledge and/or correct attitudes, I will draw on the knowledge production in the action learning sets.

In line with both the action learning and action research cycles, the process of healthcare professionals' learning followed a sequence of steps in order to plan actions and take actions. With reference to Revan's (1982) formula, the learning (L) was based on healthcare professionals' current skills, clinical experience and programmed knowledge (P) plus insightful questioning (Q) of CRP management which in combination with reflection embodies the new learned knowledge (Marquardt 2004) that makes sense of what we had already known. Healthcare professionals provided examples of work-related issues where they faced challenges of managing pain in a cancer patient. In most examples, healthcare professionals described occasions when they took advantage of spontaneous, patient focused learning situations, which arose in the course of their every-day practice.

Clinical experience of healthcare professionals played an integral role in informing the learning process whereby new knowledge was emerged from reflection of each of healthcare professionals on others' identified issues/problems/challenges during

their work-based situations. The knowledge of each of the healthcare professionals varied because of their different level of qualification, clinical experience and whether or not they attended previous training on pain management. For example, while the majority of healthcare professionals did not have specialised training, some of them had done a postgraduate course in pain management. This diversity of academic qualification and clinical experience in addition to the different professional roles of doctors and nurses added a broader perspective to the learning process and to the generated knowledge. With this in mind, adherence to the main ground rules of action learning with great emphasis on active listening and respect of others embodied the fundamental components of generating a new, comprehensive and effective learned knowledge. Likewise, from action research perspectives, issues identified from clinical situations were observed, reflected on and plans were set and action were taken. Similar to action learning, reflection formed an essential part of generating new knowledge based on clinical views and experiences and on interactions and feedback between healthcare professionals where each of them shared his/her views with others and provided positive ideas that suited the clinical situation in order to overcome common challenges in CRP management.

A key strength of the new learned knowledge is its work related origin. This knowledge emerged from clinical situations of healthcare professionals working in the same healthcare settings, sharing the same organisational factors and facing similar clinical and organisational challenges. Therefore, one can conclude that what worked for the participating healthcare professionals, may well work for the entire population of staff on the wards participating in the study. It was evident that most of the healthcare professionals made an effort to pass on their knowledge and

information of CRP to their colleagues inside and most importantly outside the action learning sets. In other words, the transfer of this knowledge took a dual role. At the participants' level, the knowledge was shared and transferred from one participant to another. On the other hand, at a wider range, this knowledge was also shared by and transferred to all healthcare professionals working in the medical and surgical wards. Whilst this has not been identified as a specific objective of the study, the extent to which healthcare professionals attempted to share their knowledge with others in practice made this a key outcome of participation in the action learning programme.

Unplanned teaching was therefore informal, mostly occurring on a one to one basis, where knowledge and experience is shared and taught. Healthcare professionals suggested that passing on CRP knowledge was one strategy they could use to influence and possibly alter colleagues' practice. Furthermore, most of the healthcare professionals implied that their new knowledge gave them a professional obligation to pass on CRP knowledge or challenge misunderstandings about CRP management. Because many of the learning opportunities identified by healthcare professionals occurred within the context of ward reports or patient handovers, great emphasis were placed on sharing knowledge and passing information through effective communications, which is discussed in the following section.

N3. C *"I just think if we managed to pass what we learnt from this meeting alone to our colleagues outside on the floor, a huge change would be seen".*

In order to improve knowledge, healthcare professionals focused on the origins of pain, pain physiology and the extent to which psychosocial experiences influence pain perception. They maintained that knowledge about the origins of pain could

highlight their awareness of phenomena that influence pain perception and they described how this knowledge might subsequently affect different aspects of their practice.

D2. C *"I need to understand what pain is and where and how it comes in order to know how to treat it".*

It was established that enhancing understanding and increasing awareness and sensitivity to the personal nature of pain could also attribute to an appreciation that patients would have varying needs in terms of pain management even when diagnosis and treatments are similar. Healthcare professionals suggested that enhancing awareness of individual differences might affect the way in which they considered management of CRP. For example, there was acknowledgment that if pain perception was different for each patient, healthcare professionals concluded that assessment approaches of CRP would need to reflect these differences, at least in part. Furthermore, healthcare professionals suggested that this would correct a major misconception that compromises the 'subjectivity' of pain where the patient is the most accurate judge of his/her pain (JCAHO 2000, WHO 2005). They also placed importance on considering the multi-dimensional nature of CRP. They highlighted the need for effective understanding of CRP and identified the importance of distinguishing it from other sorts of pain. They maintained that this would inform more consistent approaches of CRP assessment.

N2.C *"when I know how it works, I have to trust what the patients tell me because they feel it, I don't".*

D1.C *"I think it's so important we understand that it is cancer pain and not a post-op pain or so, yes I agree it might be more complicated but once we know"*

Another aspect of knowledge that was identified by healthcare professionals was focused on pharmacological knowledge. Relevant to this sort of knowledge is its external sources requirement. Unless you already have an adequate level of knowledge, an expert source is required to acquire this knowledge. Therefore, priority was given to healthcare professionals with more expertise or others who had completed a special course or training on pain management. For example, a medical registrar who had finished a postgraduate education on pain management agreed to deliver short education sessions during the action learning sets and shared her knowledge with other participants. Additionally, another medical registrar who worked with the gerontology team and had a lengthy clinical experience emphasised the significant role of pharmacological knowledge in the management of CRP and believed it was the most important of all. Furthermore, healthcare professionals expressed their confidence passing on CRP knowledge as their own understanding of the topic developed. They also conveyed a sense of satisfaction as they viewed themselves as more effective mentors of their team colleagues or students. Other healthcare professionals related how the acquired knowledge gave them confidence to organise and deliver teaching sessions for other staff. For example, a nurse manager designed separate teaching sessions for nursing staff on the nature and physiology of CRP.

D3. C *"we could review your patient's pain hourly and assess their pain all day, unless they get the right painkiller, the correct dose and route, I think it is obsolete".*

N1. C *"I feel more confident, with this new knowledge now I can do better with my students and pass it on to the rest in my team".*

N2. C *"I think I'm more prepared to give a morning session after handover... it is good to be confident".*

7.2.3.2 Enhancing CRP Management Practices

Inconsistent documentation and poor assessment practices were identified at an early stage of the previous phase as a major barrier to effective management of CRP. Therefore, it was not surprising that actions were taken in order to improve documentations and enhance the assessment practices of CRP. Healthcare professionals recognised the need to spend more time communicating with their patients in order to perform an adequate assessment. For example, in the case of lack of time due to heavy workload, a nurse manager suggested that CRP was given priority. In order to do so, she proposed that flexible protected time was given to the nurse assigned to look after terminally ill cancer patients whose pain was evident. It was also notable that healthcare professionals paid a great attention to the existing erroneous primacy of objectivity over the subjectivity of pain. It was highlighted that in order to obtain consistent pain assessment and a reliable pain score, active listening to the patient was required as he/she was the most accurate judge of his/her pain.

Healthcare professionals maintained that WHO and JCAHO guidelines on CRP management and assessment were made accessible and most importantly staff are informed of these guidelines existence and why they are kept on the wards. The need for recognising the palliative care team as a pain management team was highlighted. Healthcare professionals emphasised the importance of referring to the palliative care team when issues arose or if CRP management became a challenge and not only when a patient is 'dying'. Healthcare professionals underlined the importance of adhering to the WHO (1986) stepladder guidelines in terms of prescribing, administration of analgesics. They also placed great emphasis on the

JCAHO (1999, 2000) on assessment, documentation and evaluation in order to achieve adequate management of CRP. All healthcare professionals agreed that WHO and JCAHO guidelines must also be used as a benchmark to avoid any discrepancy of decisions made on CRP management between healthcare professionals.

N2. C *"It is the time when we all need to be aware of the availability of the palliative care team, not just when a patient is dying but when we need their advices on other things".*

D1. C *"We always have guidelines we refer to for everything else, it's important we refer to the WHO guidelines, and if they are inaccessible will make them accessible".*

N3. C *"I think these guidelines will save a lot of hassle and time...I think if these guidelines are used the way they should be, no one should argue with anyone who is right or who is wrong"*

7.2.3.3 Improving Communication and Organisational Barriers

From the previous phase, it was notable that healthcare professionals named numerous organisational barriers that resulted in ineffective management of CRP. Among these are lack of education and training in the undertaken hospital, lack of awareness of the significance of CRP management from stakeholders' perspectives, the absence of clear criteria which/when patient was referred to the palliative care and the lack of clear protocol on how and when the hospice could be contacted. Healthcare professionals placed great importance on their own role of this enquiry as an acknowledgement to lack of training or education of CRP management. As they believed education/training was central to maintain an adequate level of knowledge, their main focus was on what could be done to replace training or education. Therefore, the majority of healthcare professionals showed great interest in delivering short education sessions, performing a case-study presentation, providing

recent updates on evidence-based practices of CRP management during ward meetings and so forth. Acknowledging the challenge of CRP management, a clinical nurse manager suggested allocating senior nursing staff with more clinical experience to care for cancer patients especially those who are terminally ill and have co-morbidities.

> N3. C *"...I will be making sure a senior nurse is allocated to those patients. I think it is very challenging and should be considered a priority".*

Evidence that stakeholders were not aware of the existence of CRP management as a significant clinical challenge was also apparent in healthcare professionals' descriptions of organisational barriers. In addition, although there was a decent level of acknowledgment of healthcare professionals at individual level, this was not the case collectively. The majority were surprised about the amount of issues that arose in relation to CRP management and how this was poorly communicated. Healthcare professionals maintained that unless concerns were communicated effectively no one could understand the significance of this issue and therefore, it would be underestimated. As a result, healthcare professionals emphasised the need to improve communication and raise awareness to each other as well as to relevant stakeholders. A nurse manager suggested that names of cancer patients, whose pain was recognised and identified for a care plan, went on the list of administration daily round. A nurse manager suggested that names of acutely ill cancer patients, whose pain was recognised and identified for a care plan, were reported to nursing administration on daily basis to keep them informed of time restraints and heavy workload attributed to demanding clinical conditions of those patients. This would also highlight the significance of the topic and keep stakeholders up to date with what went on in the clinical settings. Accordingly, stakeholders' acknowledgment of

challenging clinical situations in these clinical areas is expected to give a priority to cancer patient's care in case of inadequate resources or insufficient staffing levels. Doctors also agreed that team consultants were informed of any clinical situations whereby CRP management was a challenge. Greater emphasis was placed on the handover sheet with highlighted instructions to terminally ill cancer patients.

N2. C *"It is very important for them up in admin to know what is going on. I would be surprised if they knew without putting names on their list. Once we inform them today, at least we are guaranteed something for tomorrow.*

D1. C *"I think when the consultant is involved things work quicker. In saying that, not sure if we have been keeping them informed though. It is a priority now I think".*

Healthcare professionals established that using the hospice facility was not limited to anyone, and took the initiative to make this clear by formatting a brief document outlining how to contact hospice and whose responsibility it was. Furthermore, healthcare professionals ensured this was highlighted verbally during their ward rounds and handover. Healthcare professionals also highlighted the importance of effective communication with palliative care team and emphasised the need to keep them updated with any clinical situations pertaining to CRP management.

Table 7.1 *Identified issues during the action learning sets with examples of actions taken.*

CRP management related issue	Actions taken
Clinical issues	
Underestimating untreated CRP	• Held collaborative ward meetings utilising examples from the literature reviews to increase healthcare professionals' awareness of implications/complications of untreated pain
Pharmacological knowledge deficit	• Commenced continuous ward-based short educational sessions during hand over time. • Devised and displayed a poster of 'WHO Pain Analgesic Ladder' in the ward clinical room. • Pharmacological education leaflets made available in staff tea room with international and national references.
The primacy given to terminal care over the management of CRP in patients with different stages of the disease.	• Team consultants were invited to participate in correcting this misconception at interdisciplinary level. Ward nurse managers to: • Highlight the fact that pain management is an important core key to palliative care, according to national and international guidelines. • Increased awareness of the high prevalence of pain amongst advanced stages of cancer using recent international references/examples/case studies • Team registrars gave short presentations during hand over times raising awareness that a palliative approach to care should be practised by all healthcare professionals and is not just the remit of the specialist palliative care team (Hasson *et al.* 2006).

Significant fear of opioid addiction among doctors inhibit prescribing leading to fear of prescribing and reluctance to administer strong analgesia. Reluctance to prescribe (doctors) and administer opioids (nurses)	• Education provision for doctors on the safe use and side effects of opioids through a medical registrar volunteer who has completed pain management course. • Ongoing presentations of recent scenarios and case studies with feedback. • Literature review • Devise a laminated poster of international guidelines for safe and effective use of most frequently used opioids for display in staff tea room and seminar room.
Lack of clarity around patients' perception and judgment of pain versus healthcare professionals' judgment Lack of defined roles and responsibilities among healthcare professionals.	• Awareness raising on the issue of CRP management through teamwork • Highlighted the importance of documenting pain subjectively according to the pain assessment tools utilised.
Miscommunications issues	
Ineffective nursing handover	• Highlighting CRP management issues on the daily print out hand over sheet. • Weekly allocation of a staff nurse as a pain management representative. • The representative nurse will liaise with medical team to feed-back related challenges/issues of the week. • The Representative Nurse disseminates findings of any related audit results. • Representative Nurse keeps ward managers and team registrars updated of any latest issues/developments.
Ineffective medical handover with regard to management out of hours.	• Increase awareness of the importance of proper hand over among doctors.

	• Continuous updates and dialogue between teams/consultants with recent issues. • Introducing medical teams' members to the nurse representative on each ward. • Participant Registrars of the action learning sets act as representatives of all other medical and surgical teams on the current issue. • Ensure junior doctors escalate the level of care to senior doctors when dealing with clinical challenges regarding CRP management to ensure safety and mitigate risks.
The gap in multidisciplinary communication.	• Introducing a weekly multidisciplinary round including team consultant/registers and ward manager to discuss feedback and reflect on any positive or negative incidences. • Raise awareness of the critical importance of effective communication and teamwork so as to avoid adverse effects and sentinel events. • Post call handover is performed at registrar level or a senior doctor. • Avoiding peak time of the shift to handover. • Involving team consultants in monthly meetings in order to update them on issues pertaining to CRP management.
Ineffective documentation of pain assessment.	Raise awareness amongst healthcare professionals that inadequate communication and documentation can be a major risk to patient safety • Performing frequent ward level audits on documentation practices with frequent updates on results of audits carried out by ward managers to all staff. • Literature review; international documentation practices standards
Untimely and lack of referral criteria to palliative care team.	• Highlight the importance of early and prompt referrals to palliative care among team consultants and registrars.

	• Ensure referral forms are in accessible locations at ward level. • Holding meetings of teams' registrars with palliative care team in order to discuss any commonly raised issues.
Changing patient's location on the ward in the middle of the shift resulting in care taken over by different medical or nursing team (i.e. transferring the dying patient to a single room).	• Emphasising the importance of proper handover and continuity of care. • Allocating same nurse/s with cancer patient during the week and even when ward level (internal) transfer has been performed during the shift. • Provide reliable references on best practice and pain management as a vital part of palliative care guidelines.
Organisational issues	
Inappropriate place/size for pain assessment tool (NRS) on patient's observations sheet.	• Raise awareness among staff of the inappropriate size of the pain assessment tool on current documentation. • Discussing this issue with practice development and emphasising the need to re design/resize the tool. • Suggesting replacing or moving assessment tool to front page of instead of back page. • A resource folder of the recent WHO guidelines on pain management was developed and made available in the seminar rooms on wards
Issues of competency, lack of experience and misconceptions regarding opioids among junior doctors and nurses in relation to CRP management.	• Frequent registrar-led education sessions for junior doctors on CRP management. • Allocating senior nursing staff with adequate experience to the particular patient • Registrars from each team delivered short, introductory education sessions to other doctors regarding the physiology and theories of pain including the nature, origin,

	transmission of pain, and differences between acute, chronic and breakthrough pain
Staff shortages	• Management appreciating the time consuming procedure of administering opioids requiring 2 registered nurses.
Lack of awareness on behalf of the majority of healthcare professionals of the facility to contact the local hospice during 'out of hours' periods to get expert advice on any CRP managemenet related enquiry.	• Devised a one page laminated poster with guidelines of when and how to contact hospice during 'out of hours' periods. • Emphasised the need for contacting the hospice during out of service hours as a part of effective pain management protocol.

7.3 Evaluation Phase

In the final aspect of the action phase, I provide an evaluation of the action learning sets. In this section, I only examine the process of evaluation of actions taken during the action learning sets and provide some examples on how healthcare professionals described their improved approaches to CRP management. The evaluation in terms of outcomes and how healthcare professionals viewed their participation in the action learning sets after the action learning programme was completed will be discussed in detail in the following chapters.

During the action learning sets, healthcare professionals described how engaging in a discussion about CRP management had improved their knowledge. One nurse manager stated that basic physiological knowledge of CRP from short morning presentation had highlighted her awareness of phenomena that influence CRP perception and she described how this knowledge subsequently affected different aspects of her practice. She maintained that she could feel the same from nurses on the ward.

> N3.A *"I thought the presentation was very useful, although it wasn't very long, it still highlighted fundamental aspects of CRP that we seemed to forget. I can see the change on the nurses' on the ward; the way they talk about it and handle it is not the same as before.*

Another nurse manager described how nurses' assessment practices had changed quickly after a ward-based presentation that highlighted the individual nature 'subjectivity' of pain and identified issues around the ability of cancer patient to identify their pain. She thought this had increased awareness on CRP assessment and placed importance on taking time and giving priority to the patient's experience during the assessment.

N2.C *"doing my patients' rounds during the day now I can see I can hear how nurses are talking to patients, assessing their pain, the way they are asking them how their pain is its all different. I think it's working".*

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One doctor explained how improved communication strategies and a greater inclination to investigate the patients' pain problem and explore the patient to convey information in a way she would not previously have done.

D1.C *"I think I communicate better with my patient now compare to before. I spend more time asking them how they feel and what they need, I'd say I might have been a bit pushy before".*

It was evident that healthcare professionals identified situations where they could notice positive change in CRP management practices. One doctor described how he was surprised by changed attitudes and perceptions about CRP. Another doctor acknowledged the reference to the WHO guidelines and how simple and straightforward this was. He maintained that although this did not talk a lot of time or great effort, it was worthwhile and made a notable change in CRP management.

D1.C *"Instead of giving out about what happened now I think we are proud of talking how well we do and how we are managing. I'd say just the ongoing talk about it made a great difference.*

D2.C *"I think we only needed to be informed about the availability of the WHO guidelines. I understand it's not rocket science because these guidelines are already made, but I don't think we would have ever referred to them.*

Healthcare professionals made a clear acknowledgement to the actions taken in informing some organisational and miscommunication aspects around CRP management. They described how their message about lack of training and education on CRP was delivered successfully to stakeholders and how they could feel the cooperation and support from relevant stakeholders in delivering these actions. A nurse manager indicated that effective communication with nursing

administration and keeping them informed about cancer patients on the ward and most importantly what was being made different for these patients contributed to great acknowledgment and resulted in effective support. Likewise, doctors described their feeling of support from their consultants and expressed positive feeling as their work was acknowledged.

N3.C *"Maybe they didn't say it but i could feel the difference. Whenever, they do rounds now they ask how things are managed in general and ask about cancer patients and how thing are going in relation to CRP management on the ward. I think the message is delivered in a good way".*

D3.C *"My team consultant arrived the other day and we were in the middle of doing a quick presentation after handover. I must say he was actually very impressed and you know? When he was, we all were".*

It was apparent that healthcare professionals also acknowledged the way the WHO guidelines were made accessible and notable. They also recognised the difference made by making clear instructions on hospice facilities and who and when to use this service. In addition, the recognition of the involvement of palliative care team in the management of CRP at an early stage was also acknowledged and identified as an important success.

D2.C *"I like it now, wherever you look you see the guidelines. You don't actually need to dig like before".*

N2.C *"I can see now, any nurse can just pick the phone and ring the hospice once she knows what she is looking for. I also notice now that getting the palliative care team on board at an early stage made it less complex for the nurses"*

Other healthcare professionals recognised the importance of the JCAHO and WHO guidelines in prescribing and administration of analgesics. They explained how referring to these guidelines brought their attention to PRN and 'breakthrough'

analgesics. They maintained that these guidelines improved their knowledge on the correct use of these prescribed analgesics and raised their awareness on the necessity of their use combined with other regular prescribed analgesics. Furthermore, healthcare professionals explained that adhering to the JCAHO guidelines on CRP assessment documentations helped them improve their documentations and developed their care plans.

D1.C *"You kind of focused before on regular drugs and didn't hear a ward about PRN and breakthrough drugs. Now i look at the kardex and see the difference".*

N1.C *"We are getting used to these guidelines in our documentations now. I'm getting positive feed backs from nurses every day... care plans are completed quicker now*

7.4 Conclusion

In this chapter, I have examined the process of the action and evaluation phases in which an action learning programme was implemented and partly evaluated. I also provided a detailed description of each cycle of the action phase and explored the process of action development and generation based on the participants' clinical experience, knowledge, and perception of clinical situations. Lack of knowledge/inadequate training, inadequate assessment and documentation practices and poor communication/lack of awareness were the main topics identified by the participants. The main actions and activities taken during this phase were identified. Healthcare professionals evaluated the actions taken and identified how these actions contributed to bring a change in knowledge, attitudes and/or practice with regard to CRP management. In chapter eight, I examine the outcomes of this enquiry.

Chapter Eight

Outcomes

8.1 Introduction

In this chapter, I consider the outcomes of this action research enquiry which were obtained during the evaluation phase. For the current and following chapter, the evaluation phase will also be referred to as the 'post intervention phase'. In line with the study objectives, the outcomes took a dual aspect. The first reflects the effect of implementing the action learning programme on healthcare professionals' knowledge, attitude and practice with regard to CRP management in the acute medical/surgical settings. The second aspect reflects the outcomes of research participants' involvement in the action learning programme and the impact of it on them. For the first aspect, the results of the post intervention KASRP and audit are examined in detail in the following sections. This includes results of statistical procedures used, demographic characteristics and clinical variables of the study sample. In relation to the second aspect, I critically describe the results obtained from the semi-structured interviews. Additionally, results from the ASLE tool are briefly discussed and presented in addition to interviews results in terms of the second aspect.

8.2 The KASRP

Similar to the pre intervention phase, 170 questionnaires were distributed to healthcare professionals working on the wards, from the end of March to June 2013. Again, similar to the pre intervention phase, the sample comprised 100 nurses, 8

clinical nurse managers, 54 doctors and 8 pharmacists. Out of the total distributed questionnaires, seventy four were returned yielding a response rate of 43.5% divided by varying healthcare professionals as follows: 29.7% doctors (n=22), 8.1% clinical nurse managers (n=6) and 62.2% staff nurses (n=46). These percentages are derived from the number of respondents (n=74) not the total population. As with the pre intervention survey, no pharmacists responded to this survey. Figure 8.1 illustrates percentages of respondents according to their title.

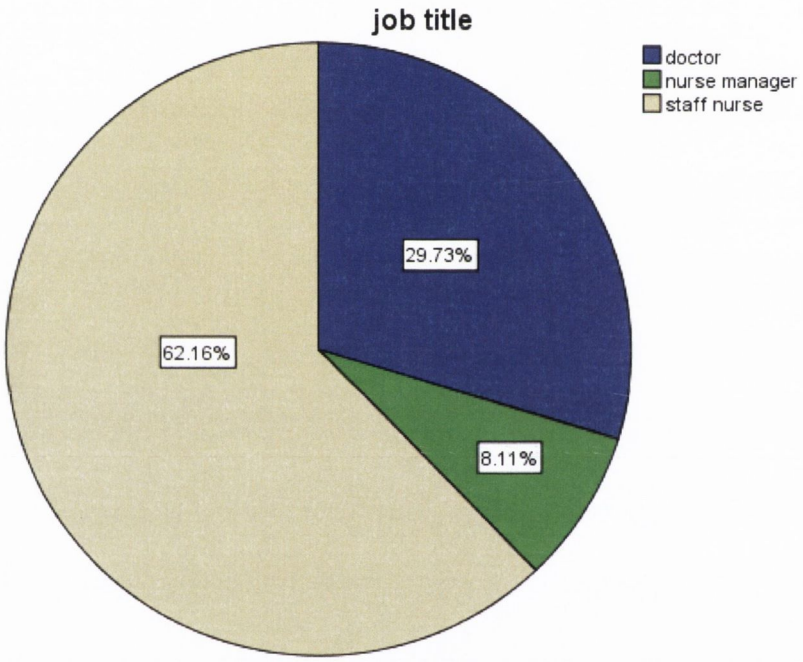

Figure 8.1 *Percentage of respondents in the post intervention phase according to job title*

8.2.1 Demographics

The results of demographic data for the post intervention survey revealed that almost 60% of respondents were male. Consistent with the pre intervention phase, over 89% of respondents did not attend any education course or programme on pain management over the preceding three years. Therefore a minority of respondents (11%) from each of the pre and post intervention phases had participated in either a

one day course, an education session or had undertaken a post graduate course on pain management. The majority of respondents (63.5%) worked in medical wards. Almost 68% of respondents had a degree and only one had a master degree. Distributions of frequencies and percentages of demographic variables from both pre and intervention phases are illustrated separately in Table 8.1.

8.2.2 Knowledge and Attitudes Outcomes

Knowledge and attitudes were analysed separately according to the following three subsections as with the pre intervention phase; 20 true or false items, 13 multiple choice questions and the 2 case vignettes. Independent-samples t-test analysis was used in order to elicit the difference in healthcare professionals' mean scores on the KASRP before and after the action learning programme. The effect size for independent-samples t-test, which provides an indication of the magnitude of the difference between the groups (eta squared), was calculated using the following formula (Pallant 2010):

$$\text{Eta squared} = \frac{t^2}{t^2 + (N1+N2-2)}$$

In order to interpret the effect size, Pallant (2010) proposes using Cohen's (1988) guidelines as follows:

.01	**Small effect**
.06	**Moderate effect**
.14	**Large effect**

Cohen J.W. (1988) Guidelines for Interpretation of Effect Size

Variables	Pre	Post
	Percentage and Frequency ('n' out of 90)	Percentage and Frequency ('n' out of 74)
Gender:		
Female	64.4% (n=58)	40.5% (n=30)
Male	35.6% (n=32)	59.5% (n=44)
Age:		
20-29	24.4% (n=22)	33.8% (n=25)
30-39	47.8% (n=43)	47.3% (n=35)
40-49	23.3% (n=21)	14.9% (n=11)
50-59	4.4% (n=4)	4.1% (n=3)
Level of Education:		
Certificate	4.4% (n=4)	5.4% (n=4)
Diploma	12.2% (n=11)	10.8% (n=8)
Degree	63.3% (n=57)	67.6% (n=50)
Postgraduate Diploma	18.9% (n=17)	14.9% (n=11)
Masters Degree	1.1% (n=1)	1.4% (n=1)
Years of Clinical Experience:		
<3 years	10.0% (n=9)	10.8% (n=8)
3-7 years	22.2% (n=20)	29.7% (n=22)
8-12 years	32.2% (n=29)	29.7% (n=22)
>12 years	35.6% (n=32)	29.7% (n=22)
Area of Practice:		
Medical	58.9% (n=53)	63.5% (n=47)
Surgical	41.1% (n=37)	36.5% (n=27)
Title/Grade:		
Doctor	28.9% (n=26)	29.7% (n=22)
Nurse Manager	6.7% (n=6)	8.1% (n=6)
Staff Nurse	64.4% (n=58)	62.2% (n=46)
Course Attendance		
Attended course	11.1% (n=10)	10.8% (n=8)
Did not attend course	88.9% (n=80)	89.2% (n=66)

Table 8.1 *Demographic characteristics of respondents of pre and post intervention phases*

As shown in Tables 8.2.A and 8.2.B, according to the independent-samples t-test, there was a significant difference in scores for the pre intervention phase *(M= 22.37, SD= 5.06*) and post intervention phase *(M= 26.01, SD= 3.88; t (161.2) = 5.22, p<0.001,* two-tailed*).* The magnitude of the difference in the means (mean difference=*3.65, 95% CI: 2.27 to 5.03*) demonstrated a large effect (eta squared=

.14). For the following sections in this chapter, I present findings from the independent-samples t-test combined with relevant values and results in the same table.

Table. 8.2. A. T-test group statistics, the KASRP scores of pre and post phases.

	group	N	Mean	Std. Deviation	Std. Error Mean
Total Score	PRE-TEST	90	22.37	5.10	.53
	POST-TEST	74	26.01	3.88	.45

Table 8.2.B. T-test independent samples test, the KASRP scores of pre and post phases.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total Score	Equal variances assumed	8.493	.004	5.083	162	.000	3.64685	.71740	2.23018	5.06351
	Equal variances not assumed			5.215	161.223	.000	3.64685	.69925	2.26598	5.02771

In relation to section one of the KASRP, descriptive statistics frequencies analysis was conducted for each of the 'T' or 'F' 20 items similar to pre phase analysis of section one of the KASRP. The percentage of correct answers for each of the section's question was put in one Table (8.3). In order to make a clear comparison, the results of the pre stage were also inputted to the same table. In total, the correct answer rate was higher in the post intervention group compared with the pre intervention group for the majority of the questions. For example, in question number 3, 77% answered correctly in the post intervention phase compared with 41% in the pre intervention phase. The lowest score of correct answers in this section was 62.2

% in the post phase compared with 34.4% in the pre intervention phase. Of the 20 items in this section of the KASRP, scores were higher on 14 items post intervention, while there was a decline in scores in 6 items. Only 6 items (items 6, 12, 13, 15, 18, 19) were answered correctly, that is, with a score of ≥80% in the pre intervention phase and 4 items in the post (items 1, 12, 13, 15). The areas of highest and lowest correct scores are discussed separately in the following sections.

For section two, descriptive statistics frequencies analysis was conducted on each of the thirteen multiple choice items of this section. The total score of correct answers from the thirteen items are presented in Table 8.4 for both the pre and post intervention phases. Consistent with the pre intervention phase, only 3 items (items 25, 29, 30) were answered correctly, that is, with a score of ≥80% in the post intervention phase. The correct answer scores increased in the post intervention phase for the majority of respondents with variability in improvements. The lowest correct answer rate in this section was in relation to item 21 where respondents scored 48.6% in the post compared with 30% in the pre intervention phase. The highest correct score was in relation to item 29 where almost 92% of respondents in the post intervention phase answered correctly, compared with 84.4% in the pre intervention phase.

Table 8.3 *Percentages of correctly answered items on section one of the KASRP of both phases*

KASRP Item Number	Question Content For True/False Statements	Correct Answer Rate % and 'n'		T/F
		Pre 'n' out of 90	post 'n' out of 74	
1.	Vital signs are always reliable indicators of the intensity of a patient's pain.	62.2% (n=56)	81.1% (n=60)	F
2.	Patients who can be distracted from pain usually do not have severe pain	50.0% (n=45)	70.3% (n=52)	F
3.	Patients may sleep in spite of severe pain.	41.1% (n=37)	77.0% (n=57)	T
4.	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	45.6% (n=41)	63.5% (n=47)	F
5.	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.	63.3% (n=57)	60.8% (n=45)	T
6.	Cancer pain is usually best managed with a single analgesic rather than with a combination of drugs.	82.2% (n=74)	77.0% (n=57)	F
7.	The usual duration of analgesia of 1-2mg of morphine intravenous (IV) is 4-5 hourly.	63.3% (n=57)	71.6% (n=53)	F
8.	Beyond a certain dose of non-opioid analgesics (e.g., ibuprofen, paracetamol) increases in dose will **not** increase pain relief.	53.3% (n=48)	63.5% (n=47)	T
9.	Opioids should not be used in patients with a history of substance abuse.	47.8% (n=43)	71.6% (n=53)	F
10.	Morphine has a dose ceiling.	47.8% (n=43)	64.9% (n=48)	F

Table 8.3-continued-*Percentages of correctly answered items on section one of the KASRP in both phases*

KASRP Item Number	Question Content For True/False Statements	Correct Answer Rate % and 'n'		T/F
		Pre 'n' out of 90	post 'n' out of 74	
11.	Opioid analgesics are best ordered on a "prn" (as required) basis to encourage minimal dosing and reduce the risk of addiction.	46.7% (n=42)	78.4% (n=58)	F
12.	Elderly patients cannot tolerate opioids for pain relief.	87.8% (n=79)	83.8% (n=62)	F
13.	Patients should be encouraged to endure as much pain as possible before using an opioid.	82.2% (n=74)	83.8% (n=62)	F
14.	Patient's spiritual beliefs may lead them to think pain and suffering are necessary.	66.7% (n=60)	78.4% (n=58)	T
15.	After an initial dose of an opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.	86.7% (n=78)	83.8% (n=62)	T
16.	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	68.9% (n=62)	79.7% (n=59)	F
17.	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to diagnose the cause of pain.	34.4% (n=31)	62.2% (n=46)	F
18.	Anticonvulsant drugs such as gabapentin (neurontin) produce optimal pain relief after a single dose.	83.3% (n=75)	79.7% (n=59)	F
19.	Narcotic/Opioid addiction is defined as chronic neurobiologic disease, characterised by behaviours that include one or more of the following: impaired control over drug use, continued use despite harm and craving.	84.4% (n=76)	79.7% (n=59)	T
20.	Adjuvant analgesics such as the tricyclic antidepressants and anticonvulsants should **not** be used in combination with opioid analgesics or NSAIDS.	62.2% (n=56)	67.6% (n=50)	F
Total mean score (%)		12.6 (63%)	14.8 (74%)	

Table 8.4 *KASRP-section two; score of the two phases*

KASRP Question Number	Content for Multiple Choice Items	Correct Answer Rate % and 'n'	
		Pre	Post
21.	The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is?	30.0% (n=27)	48.6% (n=36)
22.	The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is?	52.2% (n=47)	71.6% (n=53)
23.	The drug of choice for the treatment of prolonged moderate to severe pain for cancer patients is?	76.7% (n=69)	79.7% (n=59)
24.	Which of the following intravenous doses (IV) of morphine administered over a four hour period would be equivalent to 30mg of oral morphine every 4 hours?	50.0% (n=45)	58.1% (n=43)
25.	When should analgesics for post-operative pain be given?	81.1% (n=73)	85.1% (n=63)
26.	The likelihood of developing clinically significant respiratory depression in a patient with persistent cancer pain who has been receiving stable doses of opioid analgesics for 2 months is?	25.6% (n=23)	51.4% (n=38)
27.	The most likely reason a patient would request increased dose of pain medication?	78.9% (n=71)	77.0% (n=57)
28.	Which of the following medications are useful in the treatment of cancer pain?	51.1% (n=46)	60.8% (n=45)
29.	The most accurate judge of the intensity of the patient's pain is?	84.4% (n=76)	91.9% (n=68)
30.	Which approach describes the best approach for cultural considerations in caring for patients in pain?	82.2% (n=74)	83.8% (n=62)
31.	The time to peak effect for morphine given subcutaneously (SC)?	66.7% (n=60)	77.0% (n=57)
32.	The time to peak effect for morphine given orally (PO) is?	38.9% (n=35)	58.1% (n=43)
33.	Following abrupt discontinuation of an opioid, physical dependence is manifested by which of the following?	54.4% (n=49)	67.6% (n=50)
Total mean score (%)		**7.7 (59%)**	**9.1 (70%)**

With regard to section three, the descriptive analysis of frequencies of the first case vignettes showed variable findings among healthcare professionals' scores on pain assessment in the post intervention phase compared with the pre intervention phase (Table 8.5). While, there was no improvement in healthcare professionals' scores in case vignette 1 pertaining to the assessment of pain, there was an improvement in scores in the second case vignette post intervention compared with the pre intervention phase. However, the total mean score of item A in both of the case scenarios at the post intervention phase was higher than the pre intervention phase.

KASRP Question Number		Correct answer Rate % and 'n'	
		Pre	Post
34	Case Study 1. A	66.7% (n=60)	64.9% (n=48)
36	Case study 2. A	72.2 % (n=65)	79.7 % (n=59)
	Mean score of item A of the two case vignettes	1.38 (69%)	1.4 (72%)

Table 8.5 *Distribution of healthcare professionals' correct assessment scores of item A on each of the two case vignettes*

The analysis of item 'B' pertaining to the prescribing or administering analgesia showed significant change in the healthcare professionals' responses to the patient's intensity score. These responses were measured by either prescribing or administering the analgesia. In each of the two cases there was a significant increase in the score resulting in a significant increase of the average score between the two case studies (Table 8.6).

KASRP Question Number		Correct answer Rate % and 'n'	
		Pre	Post
35	Case Study 1. B	34.4% (n=31)	40.5% (n=30)
37	Case study 2. B	31.1 % (n=28)	39.2 % (n=29)
	Mean score of item B of the two case vignettes	0.66 (33%)	0.8 (40%)

Table 8.6 *Distribution of healthcare professionals' responses in relation to administering analgesia*

8.2.2.1 Areas of Low Correctly Answered Items

The descriptive analysis of frequencies post intervention of the twelve items on the KASRP that were identified as the areas of lowest correct scores in the pre intervention phase, showed an increase in the correct score for all 12 items. For example, the percentage of correct answers on the first ranked question of the pre intervention phase almost doubled in the post intervention phase. Also in the fourth ranked item the percentage score increased significantly from 34.4% to 62.2% (Table 8.7).

8.2.2.2 Scores on Morphine and Addiction Related Items

One of the more commonly reported findings from the KARSP literature was related to issues around morphine and addiction. In this study, five items (7, 10, 24, 31, 32) of the KASRP were directly related to morphine and its use and items 9, 19, 26 and 33 were related to addiction. With regard to morphine, the independent-samples t-test, showed that there was a difference in scores in the pre intervention phase.

Likewise, in relation to addiction, there was a significant difference in scores in the pre intervention phase (Tables 8.8.A and 8.8.B).

KASRP Q. Number	Ranked Number	Rank Order of Top 9 Items Most Frequently Answered Incorrectly	Correct Answer Rate %	
			Pre	Post
26.	1.	The likelihood of developing clinically significant respiratory depression in a patient with persistent cancer pain who has been receiving stable doses of opioid analgesics for 2 months is?	25.6% (n=23)	51.4% (n=38)
21.	2.	The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is?	30.0% (n=27)	48.6% (n=36)
37.	3.	Case study 1: How much morphine do you need to give (if you think you need to give)?	31.1% (n=28)	39.2% (n=29)
17.	4.	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to diagnose the cause of pain.	34.4% (n=31)	62.2% (n=46)
35.	5.	Case study 2: How much morphine do you need to give (if you think you need to give)?	34.4% (n=31)	40.5% (n=30)
32.	6.	The time to peak effect for morphine given orally (PO) is?	38.9% (n=35)	58.1% (n=43)
3.	7.	Patients may sleep in spite of severe pain.	41.1% (n=37)	77.0% (n=57)
4.	8.	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	45.6% (n=41)	63.5% (n=47)
11.	9.	Opioid analgesics are best ordered on a "prn" (as required) basis to encourage minimal dosing and reduce the risk of addiction.	46.7% (n=42)	78.4% (n=58)
9.	10.	Opioids should not be used in patients with a history of substance abuse.	47.8% (n=43)	71.6% (n=53)
10.	11.	Morphine has a dose ceiling.	47.8% (n=43)	64.9% (n=48)
2.	12.	Patients who can be distracted from pain usually do not have severe pain	50.0% (n=45)	70.3% (n=52)
Total mean score (%)			4.7 (39%)	7.3 (60%)

Table 8.7 *Distribution of areas of low correct answer rate of the KASRP items of the two phases*

Table 8.8.A. Group statistics, morphine and addiction related items

KASRP item	Group	N	Mean	Std. Deviation	Std. Error Mean
Morphine	PRE-TEST	90	6.82	1.77	.21
	POST-TEST	74	7.33	1.29	.14
Addiction	PRE-TEST	90	6.51	1.16	.14
	POST-TEST	74	7.41	1.11	.12

Table 8.8.B. Independent samples T test, morphine and addiction related items

KASRP item	T value	*P.* (2-tailed)	mean difference	95% Confidence Interval of the difference	eta squared	magnitude of the difference in the means (eta squared)
Morphine	2.1	*.035*	*0.51*	*.04 to 0.98*	*0.03*	Small
Addiction	*5.05*	*<0.001*	*0.90*	*.55 to 1.25*	*0.14*	Large

8.2.3 KASRP Scores in Relation to Demographic Variables

The overall KASRP score of healthcare professionals was compared with five main demographic variables using both independent samples t-test and ANOVA to ascertain if there was any significant difference in the KASRP scores in relation to these variables. The five variables analysed were job title, area of work, level of experience, level of education and any relevant previous education course. The analysis of the scores from each of the phases showed varying levels of difference in terms of job title. Interestingly, inconsistent with the pre intervention phase, doctors scored more correct responses compared with nurses on the post intervention survey. Whilst nurses/nurse managers' mean score only slightly increased from 23.01 prior to the action learning programme to 25.20 post action learning

programme, doctors' mean score increased significantly from 20.77 pre action learning programme to almost 28 post (Table 8.9).

Table 8.9. Compare means analysis of total scores according to job title of the two phases.

	Pre-intervention			Post-intervention		
Job title	**N**	**Mean**	**Std. Deviation**	**N**	**Mean**	**Std. Deviation**
Doctor	26	20.77	3.48	22	27.95	2.10
Nurse/nurse manager	64	23.01	5.48	52	25.20	4.17

The overall total scores from the two phases of the KASRP analysis did not show any significant difference between the groups of healthcare professionals in terms of job title. Likewise, in relation to area of work, the results of independent-samples t-test showed that there was no significant difference in scores for the medical and the surgical wards. There was, however, a significant difference in the KASRP scores in relation to education programme attendance, with those who had attended a course yielding higher scores (Tables 8.10.A and 8.10.B).

Table 8.10. A. Group statistics, KASRP scores of the two phases according to demographic variables

Demographic variable		**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
JOB TITLE:	nurse/nurse manager	116	23.99	5.04	.47
	doctor	48	24.10	4.63	.67
PLACE OF WORK:	medical	100	24.27	4.93	.49
	surgical	64	23.61	4.88	.61
COURSE ATTENDANCE:	attended	18	26.39	4.16	.98
	did not attend	146	23.72	4.93	.41

Table 8.10. B. Independent samples T test, KASRP scores of the two phases according to demographic variables

KASRP items against demographic variables	T value	*P.* (2-tailed)	mean difference	95% Confidence Interval of the difference	eta squared	magnitude of the difference in the means (eta squared)
JOB TITLE	*.08*	*0.93*	*0.071*	*-1.74 to 1.60*	*0.00004*	Small
PLACE OF WORK	*.84*	*0.40*	*0*.661	-.89 *to* 2.2	*0.004*	Small
COURSE ATTENDANCE	*2.2*	*.03*	*2.67*	.28 *to* 5.1	*.03*	Small

ANOVA was used for analysis of levels of experience and education. Comparative means analysis was also used with ANOVA for these two variables in order to compute the mean scores of each of the groups for each of the two variables. With regard to the level of experience, the results of comparative means analysis showed that healthcare professionals with 3-7 years of experience scored higher than those with less than 3 years experience. In relation to the level of education, healthcare professionals with a master's degree or certificate qualification scored higher than those with a degree or diploma qualification. There was minimal difference in mean scores between healthcare professionals with a diploma or degree qualification (Table 8.11). As shown in Table 8.12, the results of ANOVA revealed a significant difference between the groups with regards to the level of experience and education *($p<.001$)*, *($p= .003$)* respectively.

Table 8.11. Compare means analysis of KASRP scores according to levels of experience and education

Years of experience	Mean	N	Std. Deviation
Less than three years	23.9	17	3.9
3-7 years	26.2	42	4.2
8-12 years	22.0	51	4.6
Over 12 years	24.3	54	5.3
Total	24.0	164	4.9
Level of education	**Mean**	**N**	**Std. Deviation**
Certificate	28.3	8	4.5
Diploma	23.4	19	3.8
Degree	23.2	107	4.9
Post graduate diploma	26.0	28	4.6
Master's degree	29.0	2	1.4
Total	24.0	164	4.9

Table 8.12 KASRP total scores (ANOVA) according to level of experience and education

Years of experience	Sum of Squares	df	Mean Square	F	Sig. (p value)
Between groups	414.81	3	138.3	6.3	*p<.001*
Within groups	3511.2	160	22.0		
Total	3926.0	163			
Level of education	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig. (p value)**
Between groups	378.0	4	94.5	4.2	.003
Within groups	3548.0	159	22.3		
Total	3926.0	163			

8.3 Audit

8.3.1 Audit Demographics

The results of the demographic data showed that of the 15 cancer patients; 6 had lung cancer, 5 had bowel cancer, 3 had prostate cancer and one had another type of cancer. Percentages are illustrated in Figure 8.2. Descriptive frequencies analysis showed that 33.3% of cancer patient were admitted for radiotherapy or other reasons, 20% for chemotherapy, and 13.3% for surgery. Similar to the pre intervention phase, the palliative care team were only involved in 6 patients' pain management (40%). Eight patients (53.3%) were in phase III and seven in stage IV (46.7%).

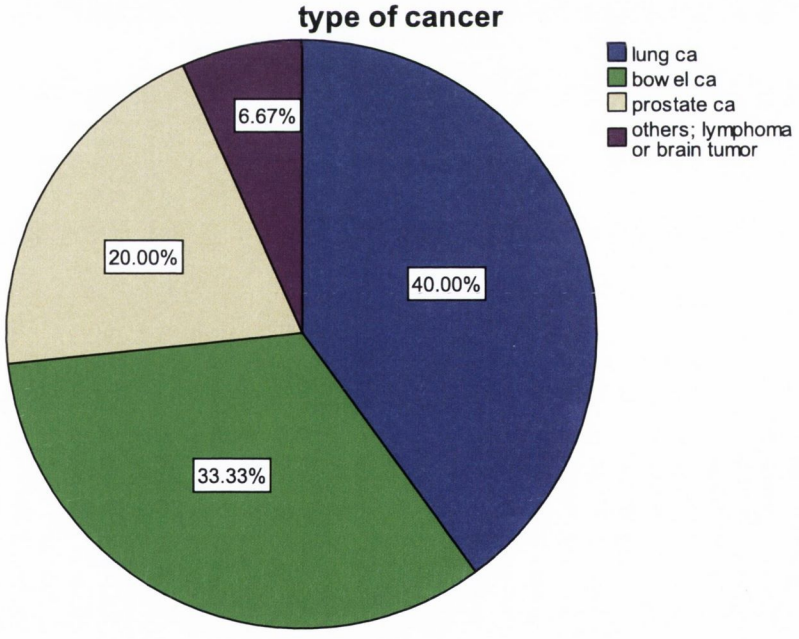

Figure 8.2 *Percentages of demographic data in the post intervention phase in terms of cancer type*

8.3.2 Practice Outcomes

In this section, I provide a comprehensive analysis of the audits in relation to healthcare professionals' assessment and documentation practices regarding CRP management are presented. The total mean score on the audit increased from 7.27 (33%) in the pre intervention phase to 16.1 (73%) in the post intervention phase. There were varied levels of improvement in scores between the two phases. For example, while the score only increased from 9 (60%) to 11 (73%) in some items, the score in other items significantly increased from 2 (13.3%) to 14 (93.3%) (Table 8.13). Differences between healthcare professionals' documentation practices pertaining to CRP management before and after the action learning programme were analysed using an independent-samples t-test. The results showed that there was a significant difference in scores for the pre intervention phase audit and post intervention phase audit ($p<0.001$). The magnitude of the difference in the means showed a very large effect (eta squared= .70) (Tables 8.14.A and 8.14.B).

In relation to job title, the analysis of each audit using an independent samples t-test showed that both doctors and nurses scored significantly better after the action learning programme compared with beforehand. The doctors' mean score increased from 1.67 before to 4.10 after the action learning programme ($p<0.001$). Likewise, the nurses' mean score increased from 5.6 before to 12 after the action learning programme ($p<0.001$). The magnitude of the difference in the means demonstrated a large effect for both doctors and nurses (Tables 8.14.A and 8.14.B). The overall results from descriptive analysis of frequencies of the pre and post audits (combined)

revealed that doctors scored relatively better than the nurses (58%, 52%) respectively (Table 8.15).

Audit Item		pre	Post
	Item is related to a doctor or a nurse	**Percentage % and (n)**	**Percentage % and (n)**
1. Patient screened for pain using appropriate tool on:			
• Admission	Nurse	60.0% (9)	73.3% (11)
• During nursing notes –last 24 hrs	Nurse	53.3% (8)	73.3% (11)
• Nursing care plan	Nurse	66.7% (10)	60.0% (9)
• Medical team progress notes	Doctors	20% (3)	60.0% (9)
2. There is a care plan related to pain management	Nurse	73.3% (11)	100% (15)
3. If pain indicated in screening process, comprehensive pain assessment that includes evaluation of:			
• Pain intensity	Nurses	66.7% (10)	100% (15)
• Type of onset	Nurses	13.3% (2)	93.3% (14)
• Location	Nurses	33.3% (5)	93.3% (14)
• Radiation	Nurses	6.7% (1)	86.7% (13)
• Duration	Nurses	6.7% (1)	66.7% (10)
• Quality	Nurses	6.7% (1)	13.3% (2)
• Frequency	Nurses	6.7% (1)	20.0% (3)
• Aggravating and relieving factors	Nurses	6.7% (1)	53.3% (8)
• Emotional response	Nurses	6.7% (1)	60.0% (9)
4. **Documented descriptions of pain other than objective ratings for the previous 24 hrs. If present specify in both:**			
• Physicians' progress notes	Doctors	46.7% (7)	73.3% (11)
• Nursing notes	Nurses	46.7% (7)	80.0% (12)
5. If pain present, patient received pain treatment appropriate for cause, type and intensity based on WHO Three-step analgesia ladder.	Nurses	40.0% (6)	86.7% (13)

Table 8.13 *Distribution of audit items with frequencies and percentages of the two phases*

Audit Item		pre	Post
	Item is related to a doctor or a nurse	Percentage % and (n)	Percentage % and (n)
6. If pain present, orders for pain medication were received within 24 hrs of identification of the pain	Doctors	40.0% (6)	93.3% (14)
7. If pain present, care plan includes pharmacological interventions	Nurses	60.0% (9)	73.3% (11)
8. When analgesia administered, effectiveness of intervention and patient comfort level evaluated at appropriate intervals	Nurses	6.7% (1)	66.7% (10)
9. A follow-up evaluation has been charted for medication including increasing dose or changing routes of analgesia or addition of adjuvant medication.	Doctors	33.3% (5)	93.3% (14)
10. When there was/were number of days during which patient utilised >3 doses of breakthrough analgesia, documented actions included increase dose and/or change route of analgesia or addition of adjuvant medication.	Doctors	26.7% (4)	86.7% (13)
Overall mean score (%)		**7.27 (33%)**	**16.1 (73%)**

Table 8.13-continued- *Distribution of audit items with frequencies and percentages of the two phases*

Table 8.14.A. Audit group statistics; nurses and doctors scores.

Audit scores	Group	Mean	Std. Deviation	Std. Error Mean
Doctors	PRE-TEST	1.67	1.59	.41
	POST-TEST	4.10	.96	.25
Nurses/nurse managers	PRE-TEST	5.6	2.53	.65
	POST-TEST	12.0	1.51	.39
Total	PRE-TEST	7.27	3.71	.96
	POST-TEST	16.1	2.1	.53

Table 8.14.B. Audit independent samples T test; nurses and doctors scores.

audit scores	T value	*P.* (2-tailed)	mean difference	95% Confidence Interval of the difference	eta squared	magnitude of the difference in the means (eta squared)
Total	8.04	*<0.001*	8.80	6.56 to 11.04	0.70	Large
Doctors	-5.01	*<0.001*	*-2.40*	*-3.39 to -1.41*	*0.47*	Large
Nurses	*-8.4*	*<0.001*	-6.40	*-7.96 to -4.84*	*0.72*	Large

Table 8. 15. Mean scores of both pre and post audits in terms of job title.

Audit scores	Mean (%)	Std. Deviation
Doctors	2.9 (58%)	1.8
Nurses/ nurse managers	8.8 (52%)	3.8

8.3.3 Involvement of the Palliative Care Team

According to the results from both audits, 12 of 30 patients (40%) had the palliative care team involved in their pain management. The involvement of the palliative care team was compared with the overall scores of healthcare professionals from both audits. As shown in Tables 8.16.A and 8.16.B, the independent-samples t-test results of the pre and post audits showed that the mean score was significantly better (*M*=13.8) when there was an involvement of the palliative care team in the patient's pain management compared with when there was no involvement of the palliative care team (*M*=10.2, *p=0.049*). The magnitude of the difference in the means showed a large effect (eta squared= *.14*). There was significant difference in relation to the pre intervention phase when the palliative care team were involved

(M= 10.8) or they were not *(M= 4.9, p<0.001).* The magnitude of the difference in the means showed a large effect (eta squared= *.47*). Conversely, there was no significant difference in relation to the post intervention phase whether palliative care team were involved *(M= 16.8*) or they were not *(M= 15.6, p=.25,* two-tailed*).* The magnitude of the difference in the means showed a small effect (eta squared= *.05*).

Table 8.16.A. Audit group statistics; nurses and doctors scores against involvement of the palliative care team

Audit scores	Palliative care	N	Mean	Std. Deviation	Std. Error Mean
pre-test	Involved	6	10.8	2.32	.95
	Not involved	9	4.9	2.20	.73
post-test	Involved	6	16.8	2.04	.83
	Not involved	9	15.6	2.01	.67
Total of pre	Involved	12	13.8	3.76	1.10
and post tests	Not involved	18	10.2	5.86	1.38

Table 8.16.B. Audit independent samples T test; nurses and doctors scores against involvement of the palliative care team

audit scores	T value	*P.* (2-tailed)	mean difference	95% Confidence Interval of the difference	eta squared	magnitude of the difference in the means (eta squared)
Pre-test	5.01	*<0.001*	*5.94*	*3.38 to -8.50*	*0.47*	Large
Post-test	*1.2*	*0.25*	*1.28*	*-1.02 to 3.58*	*0.05*	Small
Total of pre and post tests	2.10	*0.049*	3.61	*.01 to 7.21*	0.14	Large

8.4 Participants' Involvement Outcomes

While the outcomes from the KASRP and audit reflected the first aspect of outcomes, this section is concerned with the second aspect where outcomes are related to participants' involvement in the action learning programme. After the completion the action learning programme, it was necessary to evaluate participants' feedback, experience and views of the programme in terms of their clinical and professional perspectives. The main tool used in order to address this objective was semi-structured interviews. As discussed in the previous chapter, in addition to the interviews, the ALSE tool developed by Lamont et al. (2010) was used. This tool has been used previously in a national action learning leadership project (Joyce 2012). The ALSE tool was only used to support the data obtained from the interviews and therefore is discussed briefly.

8.4.1 Semi-Structured Interviews

Although all participants were asked the same questions, the flow of the conversations during each interview led to some minor changes in the sequence of these questions. The main themes that emerged after analysing the interviews included *feasibility, empowerment, problem solving, communication improvement, trust and teamwork*. Extracts from the transcripts of the interviews are presented below and are discussed separately in the following chapter.

8.4.1.1 Feasibility

The theme of 'feasibility' occurred most frequently during the course of the interviews. The healthcare professionals reported that the action learning sets were an appropriate approach to an education endeavour. They appeared to believe that the ward environment was the most relevant location for meetings and for actions and interventions to take place.

> *"It is very feasible to do it at work level, it is not time consuming and there is no financial cost, I think it helps to give the weakest person a voice who can contribute to really beneficial ideas"* **Interview III.**

> *"Is something really feasible and approachable and it's also achievable"* **Interview IV.**

Healthcare professionals also reported that action learning sets did not require additional resources in terms of money, time preparing the meetings or indeed conducting the meetings themselves.

> *"It doesn't drain resources, you don't need to spend lots of money paying someone to come up with ideas for you, when you have the brains and the knowledge within you, it's just a matter of getting it out"* **Interview I.**

> *"It was feasible, cost effective and convenient to all the staff on the ward during working time"* **Interview II.**

The preceding comments of healthcare professionals reflect the hectic situation in healthcare settings where the time is a precious element in terms of achieving tasks. In contrast to this, the feasibility and flexibility of action learning sets, provided healthcare professionals with the opportunity to attend and engage in a new form of patient care; that is improving CRP management delivered to their patients, despite numerous tasks and demanding jobs. They reported that they believed implementing

meetings during the course of the working day made attendance more accessible and feasible. The fact that the action learning sets did not require specific preparation in terms of equipment, rooms or specialist lecturers was also welcomed by the healthcare professionals.

8.4.1.2 Empowerment

Participants reported that they felt that the action learning sets generated a sense of empowerment. This sense of empowerment instilled confidence in the participants and facilitated the members to work as a cohesive multidisciplinary team. It was important to them that everyone had a voice, and in particular that the least powerful members of the sets were heard.

> *"It has empowered me to be able to be confident in handing over to someone so that they can manage the same situation if they are faced with it,...empowering people to make their own decisions based on informed processes* **Interview I.**

> *"It is about sharing and listening which makes it a positive and empowering environment for all staff"* **Interview II.**

Healthcare professionals perceived it to be important that their different forms of knowledge and beliefs were respected and valued. They also reported that the environment in which the meetings were convened encouraged them to take the initiative, express their views and motivate themselves towards action.

> *"It has empowered and improved me, I thought it was an open discussion that everyone had a chance, not only to listen but also to talk...It is a nice feeling and it's encouraging when you know your voice is making a change especially when it comes to the core of your job; the patient...."* **Interview IV.**

> *"It's good to feel that you are listened to by somebody, and by somebody listening to you, you feel then that they trust you and they empower you to go forward... that gives you a great sense of achievement and being part of a team to carry on with various different things"* **Interview V.**

From the previous comments, participants reported that they felt the action learning sets contributed to an enhancement of their confidence and self-esteem in terms of clinical decision making and problem solving. Having a voice appears to have had a positive impact on individual's self-esteem and in turn their confidence. It is notable from the comments that the participation of the action learning sets formed a new experience and unique opportunity for healthcare professionals to speak up and to be voiced. The feeling of having others listening to you and willing to help, appeared to enhance their confidence and made them feel empowered and supported.

8.4.1.3 Problem Solving

The participants reported that they felt the action learning sets lend themselves well to solving clinical problems in their area of work. The attributes of action learning sets as a problem solving approach was reported by participants to be developed through three main techniques/strategies during the meetings. These were a *real-issue focused approach*, a *multidisciplinary approach* and a *one task focused approach*.

- *Real-issue focused approach.* Healthcare professionals generally felt that the action learning sets were particularly relevant to solving clinical problems as real time and real life issues could be identified.

  "It identified problems that wouldn't have been identified.... it makes it a positive and empowering environment for all staff when it comes to problem solving issues.... it was a convenient tool for problem solving" **Interview II.**

Some of the participants reported that they felt that action learning sets were a more relevant method of education in clinical areas as they favour a practical approach as opposed to an academic one. They highlighted the importance of experience in managing patients' care in the clinical practicum. In addition, participants viewed the experience of being part of the action learning sets as more valuable than formal academic experience.

"This clinical experience was a good experience in a positive way. I might have come across this action learning set during my degree which I don't really remember, but it is only for me when I participated ...and being a member of the team now that I know exactly what it is and what the benefits are" **Interview II.**

"Not having a qualification in the area would be a certain amount of a challenge but qualifications aren't everything, I think experience and insight, and being able to manage people yourself has a lot to do with it too" **Interview V.**

- *Multidisciplinary Approach.* The multidisciplinary approach involved drawing appropriately from multiple disciplines to redefine the problem and reach solutions based on a new understanding derived from various perspectives. Healthcare professionals appeared to believe that engaging in a problem solving approach was beneficial in terms of achieving outcomes and coming to positive ideas and solutions to CRP management issues. According to them, this was attributed to the collective nature of action learning sets where every member shares their knowledge and experience with each other in order to solve any existing problems.

  "it is a way of tracking difficult clinical problems or even several clinical problems that aren't currently being tackled very well... for me it is something that I would take with me to apply it to other situations, the importance of having different backgrounds in terms of experience on the ground"
  Interview I.

"I would be more open to investigating and listening to other disciplines and coming at a solution together. We would then be able to share ideas and the end result would be reflected in the improved care of the patient" **Interview III.**

- *One task focused strategy.* Participants felt that having a focused task allowed complex issues to be highlighted and broken down. They reported an advantage of action learning sets as a problem solving approach is that its main focus on targeting one identified task at a time, which they appeared to agree with.

"We highlighted the issues then we had to work on what the problems were that we had discovered... We would really use them with ward related problems that they may want to involve people, opinions and improve things... I think it leads to less problems to be solved" **Interview V.**

8.4.1.4 Communication

Participants felt that the action learning sets provided an ideal forum for communication between disciplines. A gap in communication regarding CRP management information and reports among the multidisciplinary healthcare professionals was highlighted during the meetings as a major cause of concern. Many participants reported that they felt that they had underestimated the issues surrounding CRP management.

"I didn't really realise the issue of pain management was not only a doctor related issue, until I heard from the nurse managers... I was actually very surprised. I think this programme has really highlighted the issue of the communication deficit amongst health care professionals" **Interview IV.**

The importance of open and effective communication between disciplines was highlighted during the meetings not only in terms of CRP management but also on the action learning sets as an effective tool to improve the existing deficit of

communication between their disciplines, which they came to discover from their participation in the action learning programme.

> *"I think it highlighted the importance of improving the way we communicate between ourselves in the day to day activities and especially with one specific problem.... for me I think improving communication is number one* (as an outcome) **Interview I.**

The members of the action learning sets appeared to believe that the meetings provided an ideal communicative space. They were conveniently located and had a friendly atmosphere, where equality was respected irrespective of the differing backgrounds.

> *"The open communication between the multi-disciplines was informative. It wasn't a top down approach, it was a shared gathering where we discussed things as equals and hopefully the central person was the patient"* **Interview III.**

> *"Meetings were good because you could see that we had started communicating amongst each other, it was arranged in an organised manner"* **Interview II.**

Participants reported that *listening rather than talking* was essential in creating a good communicative space. They believed that good communication is the key to effective management not only for the patient care but also for organising other clinical issues in the healthcare settings.

> *"We all need to listen to each other and we all need to sit back and take in what is communicated to us. I think communication is key to good running of a ward. It is the most important thing...I think it leads to less problems to be solved and if you do come up against problems, communication is the way to solve them"* **Interview V.**

8.4.1.5 Trust and Teamwork

It was evident from the interviews that a sense of trust and teamwork had developed among the set members who often alluded to 'we' rather than 'I'. All set members appeared to endeavoured to adhere to confidentiality, safety, privacy and other ground rules of the action learning sets. Set members reported that they believed that a trusting environment must be guaranteed in order to expose their values and beliefs in front of others with comfort and ease.

"It is reassuring to know that other people were on the same page and after the same way of managing and I think that each person who is involved in managing the patient walked out more confident in what they are doing. They can improve me and I can improve them..... you felt safe...everyone felt comfortable to say what they needed to say and know that it would go nowhere else outside of the room. It was good to have people... side by side, equals," **Interview I.**

Healthcare professionals reported that teamwork was the key for successful management and that actions and solutions can only derive from sharing ideas and opinions, appreciating each voice, listening to others and respecting individual viewpoints. They appeared to emphasise the value of the every member of the set in order for tasks to be achieved rather than on individual efforts. They appear to believe that by demonstrating active listening, equality, sharing of experience and ideas and trust of one another creates a collaborative community and trustful environment in which everyone can benefit from this fruitful resource of problem solving approach.

"It also showed there was teamwork and cooperation and we reflected on issues and situations that occurred on the ward.... it encourages them to highlight problems and we can try to achieve a positive impact.... sharing ideas, trust in others and listening to them which makes it a positive and empowering environment for all" **Interview II.**

"It is a good learning tool in the nursing and the medical world, alongside other interests whether it is to do with hobbies or outside pursuits you may have...it acknowledges the ideas of everybody at the meeting, from the weakest person to the most vocal person" **Interview III.**

According to the previous comments, as well as clinical areas, healthcare professionals appeared to show an interest in carrying on the use of action learning sets to outside as a collective means of solving different conflicts. They also seem to believe that the power of this approach derives from the ultimate use of available resources in a collaborative way; that is participants' knowledge, experience combined by respect and equality of each other inside the group.

"It was a gathering of ideas from all members...It was an opportunity for the junior staff to give their opinions and for their opinions to be listened to.... you feel then that they trust you" **Interview V.**

"Everyone had a chance, not only to listen but also to talk. It is encouraging when you know your voice is making a change especially" **Interview IV.**

8.4.2 The ALSE Tool

After the interviews, each interviewee was given a copy of the ALSE tool to complete. As stated in the chapter five, a VAS was used to plot the importance of each of the 7 statements from 1 to 10 with 1 representing 'not at all important' to 'very important' (10). In addition to the 7 statements, 3 open questions were asked for general comments. It was expected that the findings from the ALSE tool would support the qualitative findings from the semi-structured interviews and add to the significance of the findings. The analysis of the ALSE tool data revealed that the majority (4) of the healthcare professionals rated 6 statements at 9 on the scale. The open comments revealed what participants liked or did not like about the programme

in addition to any other comments. The majority liked the feasibility of the programme in terms of time and cost. None of the participants stated that they did not like the programme. However, one participant suggested that preparatory training prior to participation in action learning sets might be beneficial. Interestingly, it was also suggested that planned action learning could serve as a credited learning tool at both professional and clinical levels. Four participants commented that they would be happy and confident to facilitate action learning sets.

8.5 Conclusion

In this chapter, I have provided a comprehensive overview of the outcomes of this action research study. Based on the current levels of knowledge/attitudes and practice of the pre intervention phase discussed in chapter six, this study revealed numerous deficits among healthcare professionals' knowledge/attitudes and practice in the area of CRP management. In total, healthcare professionals scored better in the post intervention phase on both the knowledge and attitude survey and the audit ($p<0.001$). Additionally, it emerged from the interviews that participants of the action learning sets reported positive feedback from their experience of participating in the action learning programme. Findings from this study suggest that action learning may provide a more practical approach in clinical areas in acute healthcare settings as a feasible and effective method for conducting research related to practice and service development. Therefore, it can be deduced that the null-hypothesis of this research that *the use of an action learning programme on CRP management has no effect on healthcare professionals' knowledge, attitudes and practice* can be rejected. In the following chapter, I discuss outcomes from this study with reference to relevant literature.

Chapter Nine

Discussion of Outcomes

9.1 Introduction

In this chapter, I provide a discussion of the outcomes of this action research study and reflect on their implications to the study aims and objectives where appropriate and with reference to previous studies reviewed from the literature. To pursue this, I examine three main elements. First, the overall outcomes from the KASRP and audit are interpreted and discussed in detail in terms of knowledge, attitudes and practice of healthcare professionals. These outcomes and their significance are explored with existing studies to elicit their clinical and theoretical utility and where possible to explain, compare and contrast findings. Second, I provide an explanation of the outcomes of the participation in the action learning programme and consider the efficacy of action learning in individual and organisational development drawing on its exclusive advantages as opposed to other approaches. Finally, I explore the outcomes from action research perspectives and examine the exclusivity of action research in contributing to bring about practice change in the organisation drawing on the key characteristics of action research discussed in the preceding chapters of the thesis.

The principle aim of this study was to test the null hypothesis that implementing an action learning programme on CRP management has no effect on healthcare professionals' knowledge, attitudes and practice. The second aim was to evaluate

the effectiveness of implementing an action learning programme on healthcare professionals' knowledge, attitudes and practice regarding CRP assessment and management within medical and surgical wards in a major academic teaching hospital in Dublin. The five main objectives of the study are as follows:

1. To identify changes in healthcare professionals' knowledge and attitudes in relation to cancer-related pain management between before and after implementing the action learning programme.
2. To evaluate if the use of action learning sets, as a means of education, results in a change in healthcare professionals' practice in cancer-related pain management.
3. To compare the effect of the action learning sets between healthcare professionals.
4. To compare healthcare professionals' views in relation to the action learning sets as a tool of developing practice.
5. To evaluate the effect of multidisciplinary action learning sets on the participants within their clinical areas.

9.2 The KASRP; Exploring Outcomes

The key outcomes demonstrated significant effectiveness of the action learning programme on the healthcare professionals' knowledge and attitudes in the acute healthcare settings. In line with the objectives of this study, these outcomes are discussed in detail in the following sections.

9.2.1 Participant Characteristics

One hundred and seventy questionnaires were distributed in this study. Ninety were returned in the pre action phase and 74 in the post action phase yielding response rates of approximately 53% and 43.5% respectively. While it is difficult to determine an acceptable response rate, it is possible for the researcher to examine the response rates achieved with comparable studies to determine whether the response rate yielded were similar for that particular research question (Parahoo 2014). In terms of the literature reviewed, response rate varied from low to high. For example, studies (Kourbani *et al.* 2004, Tse and Chan 2004, Ponte and Johnson-Tribinos 2005, Messeri *et al.* 2008) yielded relatively low response rates of 45.7%, 43%, 34.6% and 18%, respectively. Interestingly, it seems that the studies that utilised more hospitals and larger populations had a very low response rate. For example, Messeri *et al.* (2008) distributed the survey to 27000 healthcare professionals throughout 16 hospitals in Tuscany yielding the lowest response rate (18%) found in the current literature. The response rate was also low in a study by Tse and Chan (2004) where three different hospitals were utilised in Hong Kong in order to assess the nurses' knowledge and attitudes towards pain management. In Ponte and Johnson-Tribinos (2005), response rate was also low which might be due the distribution of questionnaires via the postal service.

Many other studies yielded relatively high response rates, such as, Yildirim *et al.* (2008), Bernardi *et al.* (2007), Yu and Petrini (2007) and Broekmans *et al.* (2004) that yielded response rates of 85%, 66.6%, 92.7% and 89.1% respectively. In the two former studies samples were drawn from oncology and hospice units (Yildirim *et*

al. 2008, Bernardi *et al.* 2007). One could imply that participants working in specialist cancer care were more likely to respond to the questionnaire as the subject was relevant to their area of practice. In Broekmans *et al.* (2004), the questionnaire was structured to assess the hospital nurses' attitudes only. The fact that knowledge was not being assessed may have contributed to a higher response rate as unlike knowledge, attitudes are not assessed as being right or wrong. Overall and within the context of relevant research studies a comparable response rate was achieved in this study. However, non-responses could be attributable to several reasons including loss of interest in CRP management, pressure with time due to busy work schedules and the length of the KASRP survey. Additionally, non-respondents may have been reluctant to participate if they felt that they had inadequate knowledge of the subject.

It is noteworthy that none of the pharmacists in this study chose to respond to the survey at any of the phases owing to severe staff shortages, maternity and sick leave. According to Parahoo (2014), it is essential that researchers endeavour to explore the reasons why non-respondents did not consent to participate. While participation by healthcare professionals is voluntary and research is not a primary role of staff in the healthcare settings, given the study hospital is a teaching institute, the failure of the hospital to replace staff absenteeism can be seen as an organisational deficit in terms of addressing the need for practice and service development. Although I conducted two meetings; one with the chief pharmacist and the second was with a pharmacist technician on the ward to highlight their essential role in the chain of CRP management and invited them to participate, they declined. However, from meeting with the pharmacists, I came to discover more organisational

barriers. It emerged from the meetings that individual pharmacists are not allocated to the medical, surgical or indeed any ward within the study site. This service is only available to the intensive care unit and emergency departments. The general wards are allocated a pharmacist technician for the purpose of ordering medication and replenishing supplies. While these findings highlight organisational constraints, they also place importance on the need of doctors and nurses to be equipped with even more adequate knowledge and positive attitudes to CRP in order to overcome the absence of pharmacists' service in CRP management.

Consistent with this study, Wells *et al.* (2001) revealed that the majority of respondents had not attended any course or education day in relation to pain management. Results from this study also exposed that there was no education held in the study site pertaining to CRP management or even pain management in general for the preceding three years. According to the AHCPR (1992), for pain management to be effective, each hospital must designate who or which departments are responsible for all of the activities needed. Also, it has been emphasised that pain management must be based on a well-organised health care system that provides regular nursing training regarding pain management techniques (Twycross 2002, Stomberg and Haljamae 2003). According to Beuwens *et al.* (2001) and Gordon *et al.* (2005), education to support healthcare professionals' knowledge requirements must be contained in the hospitals' quality improvement programmes. This highlights the need to work closely with policy makers, such as Nursing Practice Development Quality Department at local levels to drive education initiatives regarding CRP management.

Consistent with this study *(p=.029)*, Yanjun *et al.* (2010) established that physicians who reported having received training in CRP management and drug use demonstrated a significantly higher mean score of basic knowledge compared to the physicians who did not. This is congruent with findings from other researchers who revealed that educating healthcare professionals about pain management improves their knowledge and attitudes (Dalton *et al.* 1999, Patiraki *et al.* 2006) and plays a vital role in improving CRP management (Karlsten *et al.* 2005, Goldberg and Morrison 2007). I refer to this point in a subsequent section relating to the effect of palliative care team involvement on healthcare professionals' practice.

It has been suggested that many nurses when compared with physicians, were more knowledgeable on the subject of pain assessment and management of pain, but they understand less about other aspects of pain, namely pharmacology (Furstenberg *et al.* 1998, Coyne *et al.* 1999, Visentin *et al.* 2001, Manias and Bullock 2002, Chiu *et al.* 2003, Zanolin *et al.* 2007). For example, Visentin *et al.* (2001) revealed that doctors' mean score related to pharmacological knowledge was 65% compared with 59% by the nurses (*p<0.001*). More significant results were revealed by Zanolin *et al.* (2007) where doctors' mean score was 57.3% compared with nurses who had a mean score of 47.6% (*p<0.001*). Furthermore, congruent with Visentin *et al.* (2001) and Zanolin *et al.* (2007), Messeri *et al.* (2008) also found that there was a statistically significant difference between the mean number of correct answers from doctors (9.57/13) and nurses (8.87/13). In contrast, Xue *et al.* (2007) reported significant difference among groups of healthcare professionals *(p=0.00007)* with medical oncology nurses and pharmacists scoring better than physicians. In this study, no significant difference was found in the total mean score at the two phases

between doctors and nurses/nurse managers *(p=.93)*. However, analysis of each of the phases separately showed that, nurses/nurse managers scored better in the pre intervention phase (*M*=23) compared with doctors (*M*=20.77). Conversely, nurses/nurse managers scored lower in the post intervention phase (*M*=25.2) compared to doctors (*M*=28). These results may suggest that both doctors and nurses share the same challenges and barriers regarding CRP management such as lack of education, hospital policy and lack of resources.

In terms of area of work, Messeri *et al.* (2008) reported interesting findings when they found that nurses working in surgical and critical care areas showed a statistically significant difference in correct knowledge scores compared with the nurses in general practice and other areas. Inconsistent with Messeri *et al.* (2008), in this study there was no statistically significant difference between medical and surgical wards *(p=.4)*. In contrast to this, this study revealed a statistically significant difference between the groups in relation to level of experience, findings that are in consistent with others that established that healthcare professionals' knowledge was not related to their years of experience (Wilson 2007). Findings from this study also revealed a statistically significant difference in the mean score between the groups in terms of level of education *(p=.003)*. Although healthcare professionals with diploma and degree status had similar mean scores (23.4 and 23.2), healthcare professionals who held a post graduate diploma scored higher than the other two groups (*M*=26). It is not possible to say whether the higher level of education had a positive impact on the mean score as the group of healthcare professionals who held a certificate in nursing scored higher (*M*=28.3) than the group with a post graduate nursing diploma (*M*=26). Although the group of healthcare professionals with a master's degree had

the highest mean score overall, these results are not generalisable owing to the small number in the group (n=2).

9.2.2 Knowledge and Attitudes

The overall analysis of the KASRP in this study revealed widespread deficits in healthcare professionals' knowledge in relation to CRP management, particularly in pharmacological knowledge and assessment of the pain, which are discussed separately in the following sections. For example, although morphine is considered to be one of the most commonly used drugs to treat CRP, in this study a serious gap in healthcare professionals' related knowledge persists. Additionally, the two case vignettes did not only reveal a gap in the pharmacological knowledge (suitable morphine dosage) but also in the process of pain assessment using a very common pain assessment tool. Misconception and negative attitudes have also been identified especially in areas of prescribing or administering opioids due to exaggerated fear of addiction and respiratory depression.

The overall results of the pre intervention phase of the current study are consistent with several previous studies that revealed varied levels of deficits in the healthcare professionals' knowledge and attitudes to CRP management (Brown *et al.* 1999, Lai *et al.* 2003, Tse and Chan 2004, Bernardi *et al.* 2007, Matthews and Malcolm 2007, Wilson 2007, Messeri *et al.* 2008, Yildirim *et al.* 2008). Considering the results of these studies, healthcare professionals in this study either scored better or worse in the pre intervention phase. For example, healthcare professionals in the current study scored better when compared to some previous studies (Lai *et al.* 2003, Tse

and Chan 2004, Yildirim *et al.* 2008) with a mean score of 50.5%, 44% and 35.4% respectively. However, they scored lower when compared to many other previous studies with more favourable findings (Brown *et al.* 1999, Bernardi *et al.* 2007, Matthews and Malcolm 2007, Wilson 2007, Messeri *et al.* 2008). These previous studies' mean scores were 64.6%, 62.7%, 73.8%, 71.9%, 70.2% respectively and were considered relatively low (below 80%) in addition to revealing varying deficiencies in knowledge and attitudes. Furthermore, the samples in some studies comprised oncology nurses (Bernardi *et al.* 2007) or nurse specialists (Wilson 2007) and yielded higher scores. This may be attributable to prior training for specialist roles and the relevance of the study to their area of practice. It has been previously documented that knowledge scores are higher among pain management specialists (Wells *et al.* 2001). Likewise, findings by Hollen *et al.* (2000) revealed that hospice nurses, who reported more pain education and a higher frequency of pain guideline review requirements, were significantly more knowledgeable about CRP management compared with hospital oncology nurses.

9.2.2.1 Pharmacological Knowledge and Attitudes

Consistent with numerous studies (Lai *et al.* 2003, Rushton *et al.* 2003, Broekmans *et al.* 2004, Matthews and Malcolm 2007, Messeri *et al.* 2008, Yildirim *et al.* 2008, Nimmaanrat *et al.* 2010, Wolfert *et al.* 2010), this study revealed a significant gap in healthcare professionals' knowledge and attitudes in the area of pharmacology and opioids. Nimmaanrat *et al.* (2010) report that more than 32% of doctors preferred not to prescribe morphine versus pethidine as they believed it had more harmful side effects and 40% did not know about when to give morphine orally. These recent

findings are in agreement with the results of this study where none of the morphine-related items' mean scores reached 80% and three out of the four items scored 50% or less. The majority of healthcare professionals also failed to recognise that the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients was morphine. Additionally, healthcare professionals in this present study could not identify the right time of peak effect for morphine given orally. This is consistent with previous results revealed by Messeri *et al.* (2008) where a substantial gap was identified in opiate-related knowledge (51.4%). Remarkably, Lai *et al.* (2003) reported that only 7% of the respondents in their study correctly answered the morphine dosage. In a different study, Yildirim *et al.* (2008) reported that over 35% of respondents in their study did not know that morphine does not have a dose ceiling (a specific dosage of a drug beyond which no further analgesic effect can be achieved). Similar findings pertaining to the morphine ceiling effect were described by other researchers (Lui *et al.* 2008). Likewise, only less than half of the healthcare professionals in this study knew that morphine does not have a dose ceiling. Given that morphine is one of the most frequently used opioid in CRP, the current results may suggest that inconsistencies in the management of CRP are inevitable.

It is noteworthy that the majority of healthcare professionals in this study were not able to identify that the recommended route of administration of opioid analgesics for patients with persistent CRP was '*orally*'. Matthews and Malcom (2007) found that less than 40% of nurses in their study answered this item correctly. Furthermore, Yildirim *et al.* (2008) report a very low mean score regarding analgesia dosage (less than 30%). According to the AHCPR (1992), '*orally*' is the most universally preferred route for administration of analgesia for CRP due to it being least invasive to the

patient and a cost effective route of medication administration. Additionally, according to the WHO step ladder guidelines on CRP management (1986, 2005), *'orally'* is the most preferable route for drug administration including opioids.

Misconceptions and erroneous beliefs pertaining to the use of opioid analgesics and their administration have been reported in previous research studies. Broekmans *et al.* (2004) established that almost 36% of nurses revealed negative attitudes towards the use of opioids. Furthermore, Rushton *et al.* (2003) reported that 43% of all nurses did not understand that NSAIDs including aspirin were effective for bone pain related to cancer, with 54% of healthcare professionals in this study reporting a similar lack of knowledge related to this item. Similar misconceptions and exaggerated fears in relation to opioid side effects including respiratory depression were reported by many others (Lai *et al.* 2003, Tse and Chan 2004, Yu and Petrini 2007).This study revealed prevalent misconceptions pertaining to the untoward effects of opioid administration. In addition, erroneous beliefs and gaps in the healthcare professionals' knowledge were identified regarding the likelihood of respiratory depression and opioid addiction. For example, receiving the lowest score of the 37 KASRP items, the vast majority of healthcare professionals answered correctly to the item related to likelihood of developing respiratory depression in cancer patients.

According to Jackson and Lipman (2002), physical dependence as a result of the sudden discontinuation of opioid therapy is a more common occurrence but does not indicate addiction. This study revealed disparities in knowledge pertaining to the

understanding of the concepts of dependence, addiction and tolerance. Several studies indicate that knowledge deficits and flawed beliefs regarding opioids and their untoward effects are one of the most important barriers for healthcare professionals in implementing effective pain management (Visentin *et al.* 2001, Wang *et al.* 2003, Eftekhar *et al.* 2007, Xue *et al.* 2007). Other studies emphasised that healthcare professionals had inflated concerns about the possibility of opioid addiction occurring in patients receiving opioid therapy (Brown *et al.* 1999). Therefore, the current deficit in the healthcare professionals' knowledge in relation to opioid addiction and other side effects, in particular, respiratory depression, may result in augmenting reluctance amongst healthcare professionals in the area of CRP management. Doctors may be discouraged from prescribing analgesia when the patient with cancer pain requires it and likewise nurses may be reluctant to administer prescribed analgesia leading to under treating the pain and increasing patient's suffering.

According to the WHO step ladder guidelines (1986, 2005) on the management of CRP, analgesics must be provided at regular intervals over the 24 hour period, rather than as required (prn) for persistent pain. Over 53% of respondents in the present study incorrectly believed that opioid analgesics are best ordered on a 'prn' basis to encourage minimal dosing and reduce the risk of addiction. Additionally, almost 38% did not know that adjuvant analgesics such as the tricyclic antidepressants and anticonvulsants should be used in combination with opioid analgesics or NSAIDS. This finding also contradicts the WHO guidelines where, if indicated, an adjuvant such as an anti-depressant or anticonvulsant must be used in stage one or added in stage two of the step ladder to manage the pain.

To conclude, this study highlights knowledge deficits and negative attitudes amongst healthcare professionals in several areas pertaining to the use of opioids and analgesics in patients with cancer. According to Gordon *et al.* (1999), it is essential that healthcare professionals are equipped with an adequate level of pharmacological knowledge in order to maintain an effective level of pain management, in particular opioid preparation. It is essential that doctors have sufficient knowledge of opioids in order to be competent in prescribing them. Likewise, it is pertinent that nurses maintain an adequate level of pharmacological knowledge in order to be competent in the administration of prescribed analgesics. It has been well documented that a knowledge deficit is a major barrier to effective pain management (Xue *et al.* 2007, Gordon *et al.* 2008, Messeri *et al.* 2008, Song *et al.* 2008, Yildirim *et al.* 2008). Therefore, the deficits revealed in this study are of particular concern if we are to effectively manage the pain experienced by cancer patients.

9.2.2.2 The Assessment of Pain Knowledge and Attitudes

Numerous studies have been found in the literature to report gaps in the healthcare professionals' knowledge and attitude with regards to the assessment or evaluation of CRP (Dalton *et al.* 1999, Young *et al.* 2006, Bernardi *et al.* 2007, Xue *et al.* 2007, Zanolin *et al.* 2007). In this study, several knowledge deficits and erroneous beliefs pertaining to pain assessment and evaluation emerged. Just over 41% of healthcare professionals correctly believed that patients may sleep in spite of severe pain while 31% erroneously believed that giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real. The findings from the current study are encouraging when compared with previous studies where almost 76% of respondents

erroneously reported that it may often be useful to give a placebo to a patient in pain to assess if the pain was genuine (Zanolin *et al.* 2007). Additionally, half of the healthcare professionals incorrectly agreed that patients who can be distracted from pain usually do not have severe pain and almost 38% wrongly reported that vital signs are always reliable indicators of the intensity of a patient's pain.

Other researchers have reported erroneous beliefs and negative attitudes in relation to physiological changes in vital signs (Bernardi *et al.* 2007, Yildirim *et al.* 2008). This is surprising given the current guidelines on the standards of pain management which emphasise that the single and most reliable indicator of the existence and intensity of pain is the patient's self-report of pain (McCaffrey and Ferrell 1997, JCAHO 2000, WHO 2005, Bernardi *et al.* 2007, Matthews and Malcolm 2007, Macintyre *et al.* 2010). This emphasises the need to ensure that recent guidelines on pain management including WHO principles are easily accessible to all healthcare professionals on the wards. However, given the plethora of guidelines in nursing and medicine in general it may be unrealistic to expect healthcare professionals to find the time to read through often lengthy reports, particularly with staffing issues and limited resources.

Acceptance of a patient's interpretation of pain is paramount in effective pain management. Although the majority of healthcare professionals in this study correctly identified the 'patient' as the most accurate judge of the intensity of their pain, over 15% of healthcare professionals did not do so. Additionally, over 21% of healthcare professionals did not believe that the most likely reason a patient would request an increased dose of pain medication is that "The patient is experiencing increased pain".

Furthermore, analysis of the first question of each of the two case vignettes related to the pain score on the NRS showed that over 33% and almost 28% gave an incorrect value revealing misconceptions relating to pain assessment knowledge and attitude. The current findings are consistent with those previously reported by Matthews and Malcom (2007) where 23% and 48.7% of the nurses incorrectly rated each of the two patients' pain score in the two case vignettes. According to McCaffery *et al.* (2007), healthcare professionals continue to underestimate the pain and prescribe non-therapeutic doses of analgesics for patients with severe pain resulting in undertreating the pain. In the two case vignettes in this study the majority of healthcare professionals rated the two patients' pain intensity level incorrectly and this is of particular concern. Additionally, as mentioned in the pharmacological knowledge section, the majority also chose to administer/prescribe the wrong dose of morphine which results in inaccurate assessment of the pain and consequent ineffective pain management for the patient.

These findings suggest that healthcare professionals in the present study lacked adequate knowledge pertaining to both analgesics and pain assessment. According to McCaffery *et al.* 2000) and Wang *et al.* (2003), erroneous beliefs, fear of addiction and personal beliefs pertaining to the patients' pain score may result in underestimating the pain leading to prescribing a non-therapeutic dose of analgesia. As stated earlier, several researchers have stressed that pain is subjective and that the patient, not the health care provider, has the authority on the pain and that his or her self-report is the most reliable indicator of pain (McCaffrey and Ferrell 1997, JCAHO 2000, Bernardi *et al.* 2007, Matthews and Malcolm 2007, Macintyre *et al.* 2010). It is evident in the current study that healthcare professionals are holding misconceptions and erroneous beliefs regarding pain management and it could be

deduced with caution that some healthcare professionals do not subscribe to the 'subjective' nature of pain. However, the majority of respondents identified patients as the most accurate judge of the intensity of their pain. Some authors purport that cognitive interventions such as imagery, distraction and relaxation methods may assist in alleviating pain as they can subdue how pain is transmitted (Melzack 1996, Macintyre *et al.* 2010). Some patients adopt coping strategies to divert their attention from pain such as distraction techniques and sleeping. However, these strategies were misinterpreted as showing no expression of pain on patients with severe pain and as such were reported to be invalid predictors of pain intensity (Coulling 2005). Congruent with previous findings (Lai *et al.* 2003, Bernardi *et al.* 2007, Yildirim *et al.* 2008), the current study reports that majority of healthcare professionals incorrectly believed that patients may not sleep in spite of severe pain. Therefore, the current findings suggest that the assessment of pain by healthcare professionals may be based on behavioural indicators, non-verbal manifestations or physiological changes in vital signs.

Many researchers have emphasised that knowledge deficits and inadequate pain assessment are the most important barriers for healthcare professionals in implementing effective pain management (Larue *et al.* 1995, Visentin *et al.* 2001, Wang *et al.* 2003, Eftekhar *et al.* 2007, Xue *et al.* 2007). Larue *et al.* (1995) indicate that poor assessment of pain and incongruity between the patient's and physician's assessment were the main reasons behind the undertreatment of pain as the majority of the patients in their study were found to have had inadequate pain relief. Likewise, this study revealed widespread deficits in healthcare professionals' assessment of CRP. Respondents in the current study were not successful in giving the correct pain score on the pain assessment scale according to the subjective and objective

indicators in the case vignettes. This may be attributable to the erroneous beliefs and misconceptions held by the healthcare professionals. Of particular relevance was their belief in the reliability of vital signs as a valid predictor of pain intensity as opposed to what is felt or said by the patient. This may result in undertreating the pain leading to increasing patients' suffering.

Despite the numerous deficits previously identified, this study revealed significant improvement in healthcare professionals' knowledge and attitudes after the action learning programme ($p<0.001$). As acknowledged in chapter two, although some studies that implemented lectures/sessions as a means of education resulted in positive outcomes in relation to pain management knowledge/attitudes (De Rond *et al.* 2000b), the majority of these studies did not (Dalton *et al.* 1996, Francke *et al.* 1997, Bauwens *et al.* 2001). Furthermore, although some of these studies showed an improvement in participants' knowledge after attending the lectures, this improvement was not sustained after three months (Howell *et al.* 2000). The results of this study are in agreement with those reported by De Rond *et al.* (2000b) where the mean score on the pain knowledge questionnaire increased from 69.1% at pre-test to 75.8% at post-test. On the other hand, Bauwens *et al.* (2001) found mixed results in their study and reported that although the post-test results showed improvement in the areas of opioid therapy *($p<0.01$),* there was no significant improvement reported in terms of the CRP management knowledge (Bauwens *et al.* 2001). Despite the knowledge deficit in the area of the use of morphine in the pre-test stage, Bauwens *et al.* (2001) reported positive outcomes after the programme in the same area *($p<0.001$).* This is congruent with the current study that also showed improvement in the knowledge and attitude in the area of morphine use. Contrary to Bauwens *et al.* (2001), the current study reports

an overall improvement in the healthcare professionals' knowledge and attitude about CRP management.

Using videotapes and case scenarios by Patiraki *et al.* (2006) was found to report significant improvement in pain management knowledge with post-test scores of 26.49 compared to pre-test scores of 18.75 ($p<0.0001$); results that are consistent with the results from the current study. Although videotapes and case scenarios were not found to be used in any other studies, their positive outcomes are noteworthy as opposed to lectures/sessions. Moderate and significant improvements were also reported from other studies that conducted seminars as a means of education to improve pain management knowledge/attitudes (Weissman and Dahl 1995, Weissman *et al.* 1997, Brockopp *et al.* 1998). These results also suggest considering the use of seminars over lectures/sessions.

9.3 Audit; Exploring Outcomes

Findings from this study establish prevalent deficits in healthcare professionals' documentation practices of the assessment and monitoring of CRP in the medical and surgical wards in the study hospital. The findings from the pre and post action learning programme audits revealed that doctors scored relatively better than the nurses. In total, findings from this study revealed that there was a significant improvement of healthcare professionals' documentation scores of CRP after the action learning programme compared with the pre intervention phase.

9.3.1 Practice Outcomes

This study revealed a significant increase of the overall mean scores of healthcare professionals' documentation from 33% before to 73% after the action learning programme yielding a correlation factor of significant difference *($p<.001$)*. In some items, there was a significant change in the score after the programme, whereas, in other items there was no significant change. For example, during the process of pain assessment, type and onset of the pain was present (documented) in over 93% of the charts in the post intervention audit compared with just 13% in the pre intervention audit. Similarly, in relation to other pain assessment related items such as intensity, location, radiation and others, all were found to be documented more frequently after the action learning programme audit at different levels. In a separate section, the audit showed that after administering analgesia, effectiveness of intervention and patient comfort level was evaluated at appropriate intervals in almost 67% of the charts after the action learning programme compared with less than 7% beforehand. Additionally, the audit revealed that patient screening for pain using an appropriate tool was documented in medical notes in 60% of the charts after the action learning programme compared with only 20% prior to the action learning programme.

Gaps in healthcare professionals' documentation and assessments of pain have been reported in many studies (Clarke *et al.* 1996, Mac Lellan 1997, Briggs 1998, Dalton *et al.* 2001, Cohen 2003, Chanvej *et al.* 2004, Ger *et al.* 2004, Jeba *et al.* 2009). A study by Cohen (2003) used a similar audit tool, comparable with this study in relation to a few items. However, some inconsistencies were noted in relation to few items when compared. Similar to this study, Cohen (2003) reports that pain assessment and

management were not documented for most patients. The results of that study showed that pain intensity was noted for 57% of outpatients and 53% of inpatients. In two different studies, Chanvej *et al.* (2004) and Ger *et al.* (2004) reported that just over 45% and 20% of patients respectively, had pain intensity recorded by nurses. More favourable results were found in this study as pain intensity was documented in almost 67% of the charts before the action learning programme and in all the charts (100%) after the action learning programme. Cohen (2003) also reported that pain location was documented in just 51% of inpatients' charts while pain character; frequency and duration were documented less frequently (19% to 40% of the charts). In the current study, the pain location was documented in over 33% of charts, while pain frequency and duration was only documented in 7% of patients' charts. Cohen (2003) also reported that reassessment after treatment was reported in just 34% of the outpatient charts and 44% of the inpatient charts. This study revealed more significant results as reassessment after treatment was reported in less than 7% of patients' charts before the action learning programme and in almost 67% after the action learning programme. Therefore, it may be concluded that the action learning programme implemented in this study was an effective approach for developing documentation practices among the participants.

A pre and post intervention design study by Jeba *et al.* (2009) reports that pain was documented in 89.7% and 82.4% of charts, in the retrospective and prospective audits, respectively. However, the study revealed that pain intensity was only documented in 2.8% and 8.8%. Results in the current study revealed that pain intensity was documented in almost 67% of the charts before the action learning programme, and 100% after the programme. Jeba *et al.* (2009) revealed that pain

relief response was only documented in 12.8% and 11.8% in the retrospective and prospective audits, respectively. These findings are consistent with the current study prior to the action learning programme where pain response was only documented in 7% of charts. However, more encouraging findings were established after the action learning programme (67%). Jeba *et al.* (2009) reported that the WHO principles were correctly followed in 74.3% and 88.2% of cases, and breakthrough analgesics prescribed in 38.4% and 61.8%, respectively. According to the APS (2005), pain must be monitored at appropriate intervals after each pharmacologic intervention, such as 15 to 30 minutes post parenteral drug therapy and one hour after oral administration.

When analgesia was administered in the current study, effectiveness of the intervention and patient comfort level was only evaluated at appropriate intervals in fewer than 7% of the patients (prior to the action learning programme). The WHO step ladder principles on treating the CRP were correctly followed in 40% of cases prior to the action learning programme and almost 87% after it. For example, analgesics were not stepped up according to the WHO recommendations despite no improvement in pain scores reported. In addition, analgesics were not given at regular intervals; rather they were given only when requested by the patient. Moreover, when pain was not controlled at step one, a repeated dose of non-opioid analgesia (step one) was administered as opposed to stepping up to a combination therapy with opioids and basic analgesics as recommended (step two). Larue *et al.* (1995) also reported on the undertreatment of pain in their research study where 30% of patients in pain did not receive any analgesics and 51% had inadequate pain relief.

Despite the variety of education programmes used, there was a plethora of evidence from the literature reviewed in chapter two to report insufficient outcomes in terms of healthcare professionals' practices of CRP management (Camp-Sorrell and O'Sullivian 1991, Clarke *et al.* 1996, Francke *et al.* 1997, Zernikow *et al.* 2008). For example, using printed materials and lectures during their education programme, Zernikow *et al.* (2008) reported that there was no significant improvement on participants after attending the programme. Similarly, utilising weekly sessions in their continuing education programme, Francke *et al. (*1997) found no difference between the control and experimental groups of nurses. Furthermore, Wallace *et al.* (1995) reported that attendance at classes on pain management was not of reported benefit. In addition, the numerous studies that used lectures/sessions and revealed positive changes in relation to CRP practices, also reported that these changes were not sustained when subsequently evaluated (Dalton *et al.* 1996 , De Rond *et al.* 2001, Ger *et al.* 2004, Hansson *et al.* 2006).

This study used action learning sets as a means of educating healthcare professionals on CRP management working in acute medical and surgical areas. Although the literature highlights that numerous researchers have used different methods for educating healthcare professionals in the field of pain management, it is noteworthy that no researcher utilised action learning sets. As acknowledged in chapter three, action learning approved its utility for numerous different purposes including problem solving, management and leadership and organisational development approaches. Likewise, despite the identified gaps in healthcare professionals' practices of CRP management and assessment, this study reports a significant improvement after the action learning programme ($p<0.001$). This study

concludes that the use of action learning sets for practice-related issues, such as CRP management experienced on the wards, proved a success in relation to clinical knowledge, attitudes and practices of healthcare professionals. In section 9.4, I examine the efficacy of action learning and its advantages as opposed to identified limitations of other means of education used in the literature.

9.3.2 Practice Outcomes in Relation to Job Title and Palliative Care Involvement

The findings of the current study revealed that doctors scored relatively better than the nurses in the pre and post action learning programme audits. Conversely, Chanvej *et al.* (2004) found that nurses documented pain assessment more often than doctors (98.8% versus 29.4%). Similarly, Eder *et al.* (2003) found that nurses document pain assessments twice as often as physicians, that is, 30% and 16% of the time *($p<.001$)*. The findings from this study also revealed that both doctors and nurses scored significantly better after the action learning programme compared with beforehand *($p<0.001$)*.

With regard to the palliative care involvement, there was a significant difference in relation to the pre intervention phase *($p<0.001$)* with a higher mean score when the the palliative care team were involved. Conversely, in the post intervention phase, there was no significant difference between the groups regardless of whether the palliative care team was involved or not (*$p=0.25$*). Wells *et al.* (2001) revealed significant gains in knowledge and attitudes of doctors due to the influence of the palliative care team. Previous researchers have proposed that healthcare professionals, such as oncology

nurses, who have received post-graduation training or courses in the field of pain management, were found to uphold attitudes that were in concordance with the recommended WHO principles of CRP management as opposed to those who had no specialist training (Rushton *et al.* 2003, Houle 2011). Interestingly, findings by Hollen *et al.* (2000) revealed that hospice nurses, who reported more pain management education and a higher frequency of pain management guideline review requirements, were significantly more knowledgeable about CRP management compared with hospital oncology nurses. Although the authors did not comment as to why this was the case, it may be suggested that hospice nurses have more exposure to pain management as opposed to oncology nurses who may use several active treatments with cancer patients other than analgesia. Given the positive outcomes from the action learning programme discussed in the previous section, the findings from this study suggest that practice change in CRP management may be attributed to the healthcare professionals themselves. The gained knowledge, actions taken, improved communication between healthcare professionals and the palliative care team, all formed rich professional and interdisciplinary resources that seemed to replace the passive dependence on the palliative care team. This point is supported by outcomes from participants' involvement in the action learning programme, which I discuss in a following section. Therefore, by managing CRP effectively and adhering to the WHO guidelines based on action and activities taken by them helped them to bring a positive change to their CRP practices whether the palliative care team needed to be involved or not.

As previously discussed, the findings from the present study revealed that the majority of healthcare professionals had not attended an education programme in relation to CRP management in the preceding three years. There appears to be some correlation between attendance at pain education programmes and continuous review of the WHO guidelines on pain management and healthcare professionals' knowledge and attitude. Therefore in order to obtain a reasonable level of knowledge and to dispel the common misconceptions related to CRP management including, opioids prescribing and administrating, healthcare professionals must be facilitated to attend education programmes in order to remain current and updated in WHO guidelines on pain management.

9.4 Efficacy of Action Learning; Individual, Team and Organisation

Numerous studies reviewed in chapter three reported benefits of using action learning at individual, team, and organisational levels (Bell *et al.* 2007, Lamont *et al.* 2010, Rivas and Murray 2010, Young *et al.* 2010, Abbot 2011, Hewison *et al.* 2011, Haith and Whittingham 2012). For example, action learning sets led to the development of a service management strategy (Oliver 2006) and resulted in enhancing changes in practice and procedures within relevant spheres of participants (Spurell 2000). Furthermore, action learning sets were reported to improve organisational restructuring that enabled changes to strategic roles for newly appointed nurse consultants (Young *et al.* 2010) and feelings of empowerment, with increased understanding and confidence in issues such as accountability and clinical competence (Bennett *et al.* 2010). In contrast to this, the extensive variety of education programmes reviewed in chapter two were criticised for being insufficient in bringing

about a change in healthcare professionals' practice. In addition, inability to transfer the learned knowledge into actions was a common critique of using traditional education programmes (Weissman *et al.* 1997, Young *et al.* 2006, Bennett *et al.* 2011). Furthermore, many studies reported issues around sustainability of the change on a following evaluation. I discuss sustainability in a following section.

While the findings from the KASRP and audits in this study reflect successful outcomes in terms of the organisation, analysis of the interviews and ALSE tool also revealed positive outcomes in terms of the participants. Marquardt (2000, 2004) asserts that individuals benefit from a new capacity to learn and develop the skills needed to be successful in their jobs, along with a boost of confidence, comfort level, and leadership responsibility. In this section, I examine efficacy of action learning and its effective approaches concerning participants' outcomes and explain how these outcomes contribute in organisational development.

9.4.1 Feasibility

According to Raelin and Coghlan (2006), action learning reduces the cost of training by using internal resources and minimal commercial products because the process also promotes critical reflection as learners create their own knowledge, perform their own research and share ideas. Action learning was also found to be a feasible means for readily imparting knowledge to other colleagues and transferring back the positive changes to the work setting (Dilworth 1998, Raelin and Coghlan 2006).This study revealed that many advantages were given by participants of the action learning sets

in terms of their feasibility. These included its practical nature, cost effectiveness, the requirement of minimal resources and time, and a convenient and achievable approach. It was evident from the feedback in the interviews that the participants regarded the meetings favourably and in a positive light. Participants reported that the convenient nature of these learning sets made attendance possible despite being on duty on acute medical and surgical wards. They valued the action learning sets as a successful means of improving knowledge and practice in the field of CRP management. Participants in this study appeared to believe that conducting such meetings on the wards did not cost much in terms of time or money. The fact that the meetings were held on the wards was appealing as participants did not need to leave their area of work where they were required to be. Participants concluded that action learning sets could be used in healthcare arenas in order to improve clinical and professional practice and that the action learning sets serve as a feasible method for overcoming clinical, professional and workforce challenges that arise in everyday practice. These outcomes suggest the feasibility and the convenience of implementing action learning sets as an educational tool in the acute healthcare settings.

9.4.2 Management and Leadership Skills

Action learning is seen as one of the most effective means to develop management and leadership skills (Dilworth 1998, Weinstein 1999, Marquardt 2004). Haith and Whittingham (2012) place great emphasis on using action learning sets as a supportive tool to empower healthcare professionals in today's challenging healthcare arena, as well as in an educational environment (Haith and Whittingham 2012). In this study, participants in the action learning sets reported feeling empowered, more

confident and had increased self-awareness by listening to each other's opinions and sharing ideas equally. Participants also highlighted that these meetings empowered them not only to talk about their own work issues but to participate in solving these issues. This in turn can assist the development of the participant's leadership skills for the future and contribute in improving teamwork skills and establishing a collaborative workplace. This action learning experience supports Fulmer and Wagner (1999) findings in that action learning programs deliver a learning experience concerned with the organisation's and learners' development with the participants solving actual problems, and the feedback the participants receive fosters this development.

According to Mumford (1991), the process of action learning empowers participants by encouraging them to take charge of their own problems. In this study, healthcare professionals were the actors who took ownership not only in identifying their own concerns surrounding CRP management but also addressing these issues and finding solutions for it through their participation in the action learning programme. From the interviews, healthcare professionals established that they were empowered to identify issues related to CRP management which were perceived as clinically important to them. This was achieved by ensuring a convenient environment with particular levels of trust and confidence among participants as well as the respect of the facilitator, which allowed overcoming any professional or organisational boundaries. McGill and Beaty (2001) maintain that individuals are empowered as they have ownership of the project, they are supported by other members and there is a direct link between their thoughts and actions, from theory to practice through a reflective learning process. Participants in this study seemed to believe that they were central to the learning

process, that their views and perceptions had value and meaning and this positive reception lends well to empowerment.

9.4.3 Problem Solving

Action learning builds a community of learners that allows group members to transfer what they learn in the process of solving an urgent problem now, with a view to solving more complex workplace problems in the future (Dilworth 1998). The action learning process, particularly the questioning portion, builds problem-solving tools that carry over into other work groups (Dilworth 1998, Marquardt 2000). According to the participants in this study, the action learning sets represented a problem solving approach for clinical issues due to numerous successful strategies pertaining to action learning including trust and teamwork, real issue, and multidimensional view.

9.4.3.1 Teamwork

Action learning has the ability to generate ideal teams that have exceptional capacities to solve problems and work in an effective and harmonious manner. An action learning set will develop strong teams and build skills for individuals to work effectively in future teams (Marquardt 2000, 2004). Action learning provides time for interaction, network building and sharing (Raelin and Coghlan 2006) and not only builds trust but helps professional team development (Haith and Whittingham 2012). Critical to a well-built team and healthy teamwork skills are respect, trust, equality and confidentiality. Commenting on the advantages of action learning sets, De Haan (2004) emphasises that safety, confidentiality and mutual support all enable more comprehensive

knowledge to be created. In this study, it was necessary to maintain confidentiality in order to ensure a safe environment that would contribute to feelings of trust and confidence. Participants in the current study reported that they felt that their shared concerns and gathered solutions lead to increasing self-awareness and willingness to support each other. This subsequently led to well managed teamwork, which is a key element of a problem solving strategy. Action learning places equal emphasis on the learning and development of individuals and the team as it does on the solving of problems, for the smarter the group becomes, the quicker and better will be the quality of its decision-making and action-taking (Marquardt 2000, 2004).

9.4.3.2 Real Issue Focused

Action learning is based on the notion that people learn most effectively when working on real-time problems occurring within their own work setting (Raelin 1997, Revans 1998). Real-time, work-focused approach has been highlighted in the literature as one of the main advantages of action learning (Raelin 1997, Dilworth 1998, Weinstein 1999, Marquardt 2004, Raelin and Coghlan 2006). This is consistent with the situation in this study where CRP management was the main focus of each of the participants as this issue was each participant's own work-related concern. Because the project is situated within the participants' own area of work, the ownership of change is a priority and the goal is to improve professional practice. According to Dilworth (1998) and Revans (1998) the real problems are addressed and resolved in the workplace with action learning, which avoids organisations and individuals having to transfer knowledge since the learning occurs in the workplace where the real problems and actions will take place. Furthermore, Raelin and Coghlan (2006) suggest that using an

action learning approach has advantages in that education is relevant to the learner's situation and is derived from the participants own setting, focusing on real issues.

In this study, the process of engaging healthcare professionals in solving real, work related issues in their workplace resulted in building trust, collaborative skills and teamwork strategies. Participants reported that the action learning sets were more focused on clinical and real life practice issues as opposed to theoretical ones. They highlighted the importance of experience in each healthcare professional's portfolio and reported that dealing with every day clinical challenges that require redressing builds managerial skills and helps develop personal and professional practice. They appeared to believe that action learning sets serve as a more relevant educational method than other theoretical ones particularly in the healthcare arena. Participants appeared to perceive action learning sets as a practical approach to clinical issues as they have the potential to effect changes that have a current impact on practice and as such are favoured for their clinical utility. The way in which participants took action on their problems was influenced by their experience, and therefore, different approaches of solving a problem were utilised and are expected to be used by them in the future. These findings are supported in the literature where participants were found to be open and cooperative in their participation and were more capable of completing tasks in their workplace themselves (Rivas and Murray 2010).

Participants in this study highlighted the importance of using action learning sets in their workplace as opposed to theoretical or academic training. They reported that experience was a necessary prerequisite to maintaining a well organised workplace in the healthcare setting. Action learning sets provided a key link between

healthcare professionals' academic qualifications and their professional practice given that sharing experience is an essential part in the process of learning where each set member reflects on each other's experience. A previous study by Heidari and Galvin (2003) also revealed that participants viewed action learning sets as a vital part of their course, and the sets were seen as the common factor throughout the course and as the mechanism that linked theory to practice.

9.4.3.3 Multidimensional View

It is essential to form a group based on the greatest diversity (Yorks *et al.* 1999). Raelin (1997) emphasises that action learning sets are used by people working within complex organisations, addressing multi-layered situations with no obvious, easily applied solutions. Despite the different disciplines among healthcare professionals in this study, the issue of CRP management was viewed as a professional issue with a multidisciplinary clinical focus. The fact that the action learning sets involved participants from different disciplines resulted in breaking down any complicated issue that was related to CRP management or assessment.

Davenport and Prusak (1998), assert that knowledge within workplaces is usually found in documentation and repositories but is also inherent in organisational daily practices, procedures and norms. It is proposed that such knowledge is created through our practice experiences and is referred to as tacit knowing-in-action (Ghaye and Ghaye 1998). Therefore, it may be deduced that the improvement in knowledge acquired through the action learning programme in this study was largely derived from the diverse clinical experiences of the multidisciplinary participants. Issues related to

CRP management were discussed and addressed in the healthcare professionals' workplace using action learning sets which afforded them an opportunity for personal development as the education was derived from their own setting. Dilworth (1998) and Revans (1998) support this and maintain that because learning occurs in the workplace where the real problems and actions take place, neither the organisation nor the individuals are required to transfer the knowledge attained. Accordingly, the fact that CRP management was a central issue to the workplace of all healthcare professionals from different disciplines created a collaborative space where all members had the same task but with different ways of finding a solution depending on each of the members' backgrounds.

9.4.4 Communication

One of the main benefits of action learning is that it allows individuals to develop their own skills in resolving workplace issues, by using enhanced communication skills during the set meetings (Haith and Whittingham 2012). As acknowledged in chapter three, the power of action learning comes from the many ways it develops the skills and habits of questioning, listening and reflection. According to Dilworth (1998), reflection is an important part of an action learning experience for individuals, when they are encouraged to reflect on their learning, it can represent a positive executive development and individual growth experience. It was evident from the participants of this study that active listening and reflection formed key strategies for successful learning and communication throughout the programme. The literature supports this finding since the power and applicability of action learning are most attributed to the elements of listening and reflection (Marquardt 2000, 2004).

Marquardt (2004) believes that the expectation of members of the action learning group to ask questions and carefully listen to the responses develops this balance and the habit of reflective enquiry within the group as well as in the individual. The participants in this study acknowledged that listening to others allowed them to reflect on others' perspectives, which in turn provided a level of respect among the participants, allowing them to appreciate group members' questions and feedbacks. Revans (1982) and Marquardt (2000, 2004) assert by focusing on the right questions rather than the right answers, action learning focuses on what one does not know as well as on what one does know. Participants of the action learning sets in this study reported that these meetings created an ideal environment for both improving and practising communication. They established that the principles of effective listening rather than talking in the action learning sets provided an equal opportunity for both junior and senior members to share thoughts and knowledge with each other based on their individual experiences. This contributed to a shared gathering as opposed to a top down strategy as a means of learning. By sharing this generated knowledge and reflecting on each others' thoughts, opinions and experience communication skills were improved not only inside but also at the outside the meetings including other disciplines and relevant stakeholders. Participants maintained that action learning sets promoted new ways of visualising issues and developed different approaches to viewing workplace situations. Action learning sets have previously proved their ability to transform an organisation into a learning organisation leading to increased competitiveness (Marquardt 2004). Participants in this study emphasised the important role of good communication in clinical areas as a key to multidisciplinary cooperation and success in the workplace. This is consistent with Hewison *et al.* (2011) who established that the action learning sets were a very useful tool in organising and

developing care within end-of-life workplace teams, enabling staff to gain necessary new knowledge and improve communication skills.

To conclude, the outcomes of this study are consistent with many others that reported positive outcomes from using action learning at individual, team and organisational levels. These outcomes are also consistent with others from other studies carried out in the country (Ireland). For example, the participants in Joyce (2012) believed that action learning sets formed a successful approach for supporting and engaging them in organisational change initiatives. Additionally, in a different national study, despite their limited experience of action learning sets, participants positively felt that trust, growth and self-development during the group meetings increased their problem solving skills (Bell *et al.* 2007).

The positive outcomes from this study extended beyond the individuals and the team to the entire organisation. Collaborative approaches, problem solving strategies, confidence and empowerment gained through the action learning sets can contribute in team building and multidisciplinary approaches. This combined by effective communication skills achieved during the programme not only between healthcare professionals but also stakeholders can also lead to a cooperative community and trustful working environment. Furthermore, its feasibility and cost effective tenet can also suggest considering adopting this approach in the healthcare settings. As evident in this study, action learning can be an important vehicle for transforming an organisation's culture by helping to break down silos, create synergy, and encourage collaboration (Dilworth 1998, Weinstein 1999). Learning organisations have significant

competitive advantages because they learn more quickly how to capture knowledge and convert it into products, services, and profits (Weinstein 1999, Marquardt 2004).

9.5 Action Research; Beating the Challenges

From the outcomes of the research it was evident that healthcare professionals' knowledge, attitudes and practices of CRP management were improved after the action learning programme. In this section, I discuss how healthcare professionals' knowledge and attitudes improved and how this contributed in practice change. I also draw on changes in assessment and documentation practices of CRP and describe how healthcare professionals overcame organisational barriers in their clinical settings. My discussion of this section is based on the outcomes and most importantly, the process of this action research enquiry discussed in chapters six and seven.

9.5.1 The Gained Knowledge

There is plethora of evidence from the literature review in chapter two that healthcare professionals lack adequate knowledge and hold negative attitudes to CRP management. The literature review also suggested that many of the studies that conducted education programme in order to improve pain knowledge and/or practices did not reveal considerable outcomes. If a change was achieved, it was not sustainable and practice change, in particular, was limited. Accounts of individual and collaborative actions taken through the action learning programme in my study resulted in enhancing healthcare professionals' knowledge, revising their negative attitudes and improving their practices of CRP assessment and management.

The knowledge generated from the action learning sets was shared collectively inside and outside the action learning set with all other colleagues working on the medical and surgical wards. The findings confirm that when healthcare professionals gained an informed understanding of CRP or any other related issues, they willingly and collaboratively revised their approaches to CRP assessment and management practices. It was evident from the findings that revised attitudes and perceptions to CRP also reflected positively on healthcare professionals' views and relationships with the palliative care team. For example, healthcare professionals appeared eager to involve the palliative care team and gain advices of CRP at an earlier stage, which was not the case before the action learning programme. Furthermore, the findings from this study confirm how reflection on practice can be used to bring about changes in CRP management. According to Rolfe (1998), it does not matter how much knowledge a nurse had, if they did not reflect on their practice and learn from it, practice would not improve. Furthermore, Carr and Mann (2000) and Twycross (2002) place great emphasis on encouraging clinical educators to consider using reflection in order for healthcare professionals to manage CRP effectively. In my study reflection acted as an impetus for reviewing possibilities for CRP practice development and increased the potential for the healthcare professionals collectively to change CRP practices Thus, recommendations to use reflection are supported by evidence of positive impact from this enquiry.

Post-intervention healthcare professionals demonstrated an increased awareness of patient-centred approaches to CRP management. They described how they suspended personal judgments, were more likely to believe patients' CRP reports and encouraged greater patient participation in CRP management. Post-intervention

healthcare professionals described how they were more influenced by the patients' self-report rather than their own estimations of what the pain level may be. As a related issue, healthcare professionals were more inclined to engage with their patients to gain an understanding of the patients' pain perspective. Findings from the research confirmed that healthcare professionals used a variety of strategies to initiate and improve collaborative working practices. In turn, these strategies helped to lessen the impact of some barriers, to which pre-intervention ineffective CRP management practices had been attributed. The study findings also show how healthcare professionals were able to respond to some of the challenges created by organisational change. They did so by using opportunities these changes created to develop their own professional practice and to initiate practice interventions. A further barrier healthcare professionals identified pre-intervention was the practice, attitudes and beliefs of other colleagues towards CRP management. Drawing from evidence in chapters six and seven, I concluded that healthcare professionals in my study described limited evidence of collaboration to resolve CRP problems due to poor communication and lack of awareness about CRP management. From the outcomes of the research, it was evident that post-intervention healthcare professionals overcame or reduced the effect of some of these barriers by developing more collaborative approaches to CRP practice.

The majority of healthcare professionals described opportunities post-intervention where they had shared some of the information they had gained on the action learning programme. They achieved this in a range of ways. Mostly, informal opportunities that arose in practice were used to pass on CRP knowledge and information sources. Healthcare professionals took advantage of circumstances

presented during their every-day practice to inform colleagues and about CRP management. Additionally, some of the healthcare professionals described situations where they consciously acted as role models for good CRP management practices and hoped that colleagues would become aware of the practice examples they were setting. The healthcare professionals did indicate that on some occasions their colleagues responded positively to these examples. For instance, some participants suggested that their colleagues had themselves elected to perform a short morning presentation on CRP assessment.

It was evident that actions taken throughout the action learning programme were work-related and drawn from healthcare professionals own clinical experience such as informal teaching or ward presentation. These informal teaching examples provided opportunities for healthcare professionals to pass on CRP knowledge to help explain or solve existing CRP problems. It has been asserted that informal contact with colleagues was one of the most important sources for learning about pain management (Clarke *et al.*1996, Nash *et al.*1999). With reference to this body of evidence and the findings from my study, it seems that the impact of CRP knowledge extended beyond the immediate action learning programme participants and was used by their practice colleagues in the clinical care settings.

The progression of informal knowledge dissemination has been described by Brown and Duguid (2001) as knowledge that travels along networks and built by practice. Importantly, they concluded that knowledge dissemination is dependent upon the degree to which members of different practice communities communicate and understand each other. I would contend further, that the impact of knowledge

dissemination was dependant on the healthcare professionals' sense of obligation to pass on information and their ability to do so. An example on this is a nurse manager confidently organising teaching sessions for her staff. This sense of obligation to pass on their CRP knowledge to colleagues emerged from healthcare professionals trust and great belief in the ability of knowledge to improve CRP interventions for the patient. Therefore, communities of practice were enhanced and extended as healthcare professionals involved colleagues in CRP practice initiatives. Thus, communities of practice were supported by healthcare professionals' action research involvement and became a platform for more collaborative learning and the instigation of pain related interventions.

Drawing on the actions taken during the action learning programme, I suggest that the ultimate success of these initiatives were dependant on a range of factors, but importantly on the agreement and involvement of practice colleagues. Andrew *et al.* (2008) suggest that sharing of practice and promoting professional collaboration define a professional community. These are both important factors as delivery of effective CRP management is dependent upon collaboration of all those involved in the care of the patient. Enhanced collaboration helped to diminish some of the communication-related barriers the healthcare professionals had identified pre-intervention.

Other significant barriers to CRP practice that healthcare professionals identified pre-intervention included organisational factors and lack of awareness of stakeholders of the existing challenge of CRP management, lack of adequate availability of pain management team and lack of education/training on CRP management. The

outcomes of this research demonstrate how healthcare professionals responded to some of these challenges in a variety of ways using opportunities to develop their own professional practice and to initiate practice interventions. Importantly, this was achieved with no additional resources and a cost-effective way of utilising the available resources. For example barriers related to lack of time and heavy workload was overcome at ward level by re allocating senior staff to look after cancer patients whose pain management. Furthermore gaining nursing administration support and cooperation was a result of effective communication with them and by raising awareness to them. Although healthcare professionals could not alter care delivery systems, I found that they were able to respond to some of the problems they had identified pre-intervention by participating in initiatives, which helped to improve aspects of CRP management provision.

I suggest that two main conditions helped the healthcare professionals to respond to practice developments and encouraged them to extend their practice collaboration, thereby reducing the effect of some practice barriers. First, healthcare professionals' improved knowledge base gave them the confidence to become more involved in practice initiatives. An underpinning knowledge base and the confidence to access evidence based sources provided them with greater assurance in their ability to support practice change. This appeared to apply to both individual and collective actions. This gained knowledge is more likely to be congruent with the viewpoints of both Reason and Bradbury (2008) and Shani and Pasmore (2010) who place great importance on practical knowledge. While Reason and Bradbury believe that the practicality of gained knowledge is rooted in participants' views and clinical experiences, Shani and Pasmore maintain that the power of this practical knowledge

is embodied in overcoming contextual and organisational barriers. From both perspectives, this study report crucial part played by this knowledge in revising healthcare professionals' perceptions and most importantly changes in practice.

The second condition relates to the participatory nature of action research. I found that the collective impact on practice was greatest when healthcare professionals from this study were able to work together and support each other with practice initiatives. Typically, there will always be external pressures and changes within healthcare. For example, despite the timeframe of the action learning programme in this study, it was still possible to change the date, time or the venue for the meetings in order to suit healthcare professionals and current situations. Because action research is concerned with an understanding of the conditions in which practice occurs, the flexibility of this approach to enquiry is, I suggest, relevant to the healthcare context. This conviction is shared by Waterman *et al.* (2001) who commend action research's ability to be responsive and flexible and provide feedback in complex social situations. Reflecting this flexibility, the healthcare professionals were able to act on unexpected opportunities to improve aspects of CRP management. Furthermore, findings from this study are consistent with Waterman *et al.'s* (2001) are mainly concerned with gained knowledge in terms of the organisation and the utility of using it as propositional knowledge to drive practice change and contextual barriers improvement. Insight gained from the action learning sets about CRP management informed their attitudes and practices not only of why to use the WHO guidelines of CRP but also of the best way these guidelines are accessed and used.

9.5.2 Practice Change

In this section, I examine the process underpinning outcomes of this enquiry. I also discuss how healthcare professionals' participation in action research enhanced their capacity to transfer CRP knowledge into practice and increased their opportunity to influence CRP management in practice. To pursue this, I will refer to the key characteristics of action research examined in chapter four.

9.5.2.1 Participatory Nature of Action Research

In chapter four, I identified three potential approaches to participation that had application to this study. The first of these was participation between myself as researcher and the participants. I suggest that this formed a central aspect of the enquiry. My argument is that without my input, the enquiry would not have been initiated and sustained. As a facilitator of the action learning sets, I was able to help clarify issues that emerged from practice and supported healthcare professionals as they moved through the stages of the enquiry. However, I emphasise that my relationship with the healthcare professionals was not directive, as I encouraged them to reflect critically on their own practice, to identify their own possibilities for action and evaluate their own interventions. I am confident that this approach helped to facilitate healthcare professionals' sense of ownership of the research. Evidence reported in chapter seven substantiates this finding where some healthcare professionals considered this research as part of their own enquiry into practice.

The second aspect of participation relates to the relationships that developed between healthcare professionals in the action learning programme. I found that these relationships were beneficial both on professional and personal levels and were important for the progress and outcomes of the research. From the outset of

the research, each of the healthcare professionals participated in practice enquiry; reviewing CRP management practices, identifying problems in their practice and the possibilities for action. The interactions between healthcare professionals encouraged critical reflection of CRP assessment and management practices. I would suggest that the healthcare professionals' critical examination of CRP practice complemented their acquisition of CRP knowledge, fulfilling an essential aim of action research by improving their understanding of practice (Carr and Kemmis 1986). Furthermore, healthcare professionals formed supportive networks with each other that were sustained throughout the research by regular meetings and effective communication, which resulted in a supportive social network.

The third level of participation relates to collaboration that extended into the healthcare professionals' practice areas. It was evident from interventions and actions taken during the action learning programme that healthcare professionals extended their communities of practice and included both nursing and medical colleagues at varying levels throughout the enquiry, for example, nurse managers and senior doctors delegating tasks and actions to other colleagues. I found that this level of involvement reflected Carr and Kemmis's (1986) and Reason and Bradbury's (2008) expectations that as the research progressed it would include a widening circle of those affected by practice.

9.5.2.2 People's Own Enquiry

As previously acknowledged, action research has proved its ability to help practitioners to identify problems in their own workplaces and subsequently develop strategies to improve their practice (Hart and Bond 1995, Vallenga *et al.* 2009). This

study facilitated critical enquiry by the healthcare professionals into CRP management practices in the clinical care settings. The engagement of healthcare professionals in this project provided a worthy opportunity to acquire their experiences, views and insights of CRP management and issues surrounding it. There is a plethora of evidence from previous studies reviewed in chapters two and four that participants who investigate their own practice are more likely to identify and implement suitable interventions to change practice. Exploration of knowledge, attitudes and most importantly practice of CRP management by the healthcare professionals reflected this tenet and was facilitated by the focused and deliberate actions healthcare professionals engaged in. For example, it was evident that actions taken were based on identified clinical issues and therefore entirely focused on addressing these specific issues.

The generated knowledge underpinning taken actions was rooted in the participants' clinical experiences and new knowledge/understanding of CRP from a multidisciplinary perspective. In addition, this knowledge was based on the participants' acknowledgement of organisational factors (Shani and Pasmore 2010, Coghlan and Brannick 2014), and limited financial resources. It also enhanced the participants' belief in this project as an approach to overcome lack of education/training and other existing challenges surrounding CRP management. Furthermore, reflection played an integral part in transferring the new knowledge (Waterman *et al.* 2001) to the entire healthcare professionals working on the wards and helped in applying new specific and focused actions and activities into clinical practice for CRP management. Therefore, it's evident that this produced knowledge

can be considered useful and practical, which is a well-recognised and essential outcome of action research (Reason and Bradbury 2008, Vallenga *et al.* 2009).

9.5.2.3 Practice Change Focused

Based on the quantitative and qualitative findings, this study revealed positive outcomes at both individual and collective levels. For example, while participants acknowledged changes in their own practices during and after the action learning programme, it was also evident that CRP assessment and documentation practices in the study wards improved remarkably. This reflects the notion of action research of bringing about change in practice at individual and collective or organisational levels (Carr and Kemmis 1986, Brydon-Miller *et al.* 2003, Reason 2006, Coghlan and Brannick 2014). It is notable form the findings that healthcare professionals were more willing to address problems that they themselves identified, and which had direct relevance for their CRP practice. Reflecting the political view of participation in action research identified by Reason (2006), actions taken were more successful because they were perceived as being important training and education. From chapter seven and the interviews, participants placed great emphasis on this project as a self- directed approach to education as opposed to lack of organisational education and training. This reflects great motivation and commitment to their engagement in this enquiry.

Change in CRP management and practice in this study was rooted in the healthcare professionals' insights into their own work-related problems and also the organisational culture, structure and environment. From Shani and Pasmore's (2010) perspectives, this change of practice is transferred into a form of organisational

protocols and guidelines that can be used at a wider range in the organisation. Therefore, I would contend that improvement of clinical situations in the study wards can be transferred to other clinical areas in the hospital, and likewise, to other hospitals. In addition, this change can be sustained, which I will discuss in detail in the following section.

9.5.2.4 Quality and Context of Healthcare Settings

This study was concerned with addressing challenges around the management of CRP, which is a multidisciplinary endeavour where healthcare professional conduct their duties and deliver their tasks collectively. Findings from this study revealed recognised improvements in healthcare professionals' knowledge, attitudes and practice in relation to CRP. Healthcare settings are known for their system complexity, its hierarchical structure and existing workload and organisational factors. Accordingly, in order for healthcare professionals to bring about change in this enquiry, it was necessary to overcome individual and clinical barriers as well as organisational barriers.

In chapter four, it was concluded that many action researchers had an agreement on that there was no one way to judge action research nor should there be a specific criteria to do so (Waterman *et al.* 2001, Reason 2006, Shani and Pismore 2010, Coghlan and Brannick 2014). However, the majority of these researchers also placed great emphasis on the process of enquiry and the progress of its development. Waterman *et al.* (2001) went further to acknowledge the importance of managing the change and reflecting on it within a range of contextual factors and organisational aspects. A useful way to make a fair judgement of the quality of this

project is it to refer to the three levels of quality of an action research enquiry; first-person sense, second-person sense and third person sense.

Participants' commitment, obligation and motivation have approved clear understanding of what and why they have been engaged in this project. It was evident from each of the participants had great belief in his/her ability of identifying clinical issues around CRP based on their own experiences and also finding solutions for these issues. Participants also appeared to have great sense of accountability in carrying out this project in order to solve their own as well as their colleagues' problems. Based on the findings, participants of this study felt they were empowered and stated that their confidence was increased after this project. Therefore, this study reveals positive outcomes at first-person sense. Findings from this study established that participants developed a successful and effective level of collaboration and teamwork skills where they demonstrated their respective roles and duties collectively for the benefit of the patient. It was not surprising that during the semi-structured interviews healthcare professionals valued their participation in the action learning programme as an effective approach for improving communication and enhancing collaborative skills. Hence, it was evident that this project had recognised outcomes at second-person sense. Furthermore, findings from this study also concluded significant improvement in the healthcare professionals' knowledge, attitudes and practices with regards to CRP management in the study wards. The gained knowledge and practice change was widened to the entire population outside the circle of participation. Although healthcare professionals outside the participation cycle did not engage directly in the process of this project, it can still be concluded that they showed positive acceptance to the interventions and

activities during this project. This project was also extended to stakeholders of the hospital and indirect involvement was obtained. Stakeholders' support, acknowledgement and advices throughout this enquiry give an evidence of effective outcomes at third-person sense.

A great achievement of this study was bringing doctors and nurses together despite diversity, disparities and rigid hierarchy that might place one profession ahead of another. Although healthcare professionals did not appear very eager to comment in this, with my role as an insider researcher and facilitator of the action learning sets, I could observe that interpersonal and professionals' relationships between doctors and nurses/nurse managers improved and changed positively. By engaging in this action research enquiry, doctors and nurses/nurse managers were drawn into a situation in which they were required to solve their own problems. Therefore their solution-focused approach of solving problems and addressing clinical issues around CRP was prioritised over a tendency for judging one another. This seemed to have provided an opportunity and time for participants to know and understand each other's issues and perspectives on CRP and recognise the effective management of CRP as their common goal. In addition, based on Reason's (2006) feature of action research, action research is political in the sense that people have the right and ability to contribute to decisions that affect them. With this in mind, the management of CRP is a teamwork task where every healthcare professional's effort and contribution is acknowledged. Furthermore, accepting the ownership of leading this project and acting as key champions to solve their own problems as well as their colleagues' appeared to empower participants and provide them with a wider vision towards their colleagues as well as the workplace.

Description of the progress and the developmental process of this project also provide great success in sustaining these positive outcomes. As concluded by several action researchers, this sustainability is maintained in action research projects due to gained feeling of ownership and belief in the process as well as the change. For example, commenting on the sustainability of practice change, Waterman *et al.* (2001) maintained that this sustainability is reflection of sustained collaboration and engagement throughout all the stages of the research. Holter and Schwartz-Barcott (1993) place great importance on positive interactions between participants and the social system in ensuring that change is sustained. Engagement by healthcare professionals in solving their own problems in their workplace provided great insight into the process of making an effective change in a collaborative, positive and sustainable way. They gained understanding of addressing organisational barriers and how to use available resources effectively. Healthcare professionals had a great understanding that this enquiry is entirely underpinned by collaborative teamwork based on effective professional and interpersonal relationships. Furthermore, based on the action research feature discussed in the previous section, practice change surpasses individual to collective levels. Accordingly, gained knowledge and evidence based-practice obtained from this project is shared, absorbed and applied by all healthcare professionals in the acute care settings.

It was also necessary to keep all stakeholders, in the study hospital informed of any updates during the project. This contributed to building a great level of confidence and co-operation between healthcare professionals. In addition, nurse managers of the clinical areas participated in the action learning programmes whose changeover

is expected to be longer than duration of this project are expected to carry on the legacy of this project into future practice development initiatives. It was evident that healthcare professionals used their immediate available resources in this project including their own professional knowledge, views, and clinical experiences. This, combined with stakeholders' involvement, can be considered a great success as experienced similarly by Abma (2000). Therefore, it can be deduced that if this success is transferred from practice into management in the organisation, financial benefits can be achieved. In turn, engaging stakeholders in a project that approved its utility in the healthcare settings with successful outcomes not only suggests ensuring the sustainability of outcomes but most importantly the use of action learning for other clinical and nonclinical purposes.

In chapter four, it was concluded that the suitability of using action research in the healthcare settings has been widely recognised (Waterman *et al.* 200, Whitehead *et al.* 2003, Koshy *et al.* 2010). Evidence from these studies indicates that the feasibility of action research qualifies it to be used in the healthcare settings with complex hierarchical structure, intense time demands and minimal resources. Findings from this study reveal success of this project in overcoming lack of resources and organisational challenges. It was evident that participants gained support and acknowledgement from stakeholders in the hospital. Miscommunication and lack of awareness about CRP management was addressed successfully and effectively. It can therefore be deduced that this project proved its quality not only in terms of outcomes but also relationships and process, reflecting the aspects of action research identified by Shani and Pasmore (2010).

9.6 Conclusion

Consistent with the majority of studies reviewed, this study revealed widespread deficits in knowledge and attitudes related to CRP management. The main areas pertained to pain assessment, opioid use with particular reference to understandings of morphine, addiction and other side effects of opioids. Congruent with several studies, this study also reports significant gaps in healthcare professionals' assessment and documentation practices related to CRP. It was evident that neither healthcare professionals' knowledge nor documentation practices met with the current WHO guidelines on CRP management.

Although the findings of the current study reveal knowledge deficits and report negative attitudes pertaining to CRP management, the study nonetheless revealed notable positive outcomes from the action learning sets utilised with healthcare professionals working on medical and surgical wards in relation to CRP management. The literature offers a plethora of studies using numerous different types of traditional education interventions regarding the issue of pain management, however, it was deduced that the majority of these programmes did not result in any significant change, particularly in relation to practice and behaviour change. Conversely, the action learning sets in this study proved to be a successful means of education when one considers the outcomes and participants' feedback. The outcomes from this action research study are seen at the individual, team and organisational levels. Although participants had very limited experience of action learning sets, their feedback was generally positive and their learning experience from participation was valued; findings consistent with the majority of previous studies where action learning sets yielded

largely positive outcomes. Action learning sets were recommended by participants to be used in the healthcare arena for addressing a wider spectrum of clinical issues other than CRP management. Therefore, it can be concluded that the use of action learning sets for work related issues such as CRP management experienced on the wards proved a success during the implementation of the current study. Likewise, this action research project proved its quality and gained success in bringing about sustained practice change in the organisation. In the following chapter, I will discuss the conclusion and recommendations in detail.

Chapter Ten

Conclusion and Recommendations

10.1 Introduction

In this chapter, I summarise the outcomes, strengths and limitations of the study. I also provide an exploration of my reflexivity as an action researcher and identify learning remarks from my experience in this enquiry. Finally, I propose implications for policy and present recommendations for professional practice and research.

10.2 Conclusions of Research Outcomes

This study has provided insights into the knowledge, attitudes and practice of healthcare professionals regarding CRP management in the acute medical and surgical wards in a central academic teaching hospital in Dublin. It is the first of its kind in the Republic of Ireland. This study has revealed substantial deficits in healthcare professionals' knowledge, attitudes and practices in relation to CRP management. However, the study revealed positive outcomes in relation to these knowledge/attitudes and practices after the action learning programme. There was also positive outcomes in terms of the participants who valued the use of action learning sets in the healthcare arenas in order to improve clinical and professional practice. Participants recognised action learning sets as a feasible method for overcoming clinical challenges that arise in every day practice. It was evident that outcomes from this study contributed to enhancing leadership and management skills of healthcare professionals by empowering them, increasing confidence,

improving self-awareness, engaging them in teamwork approaches and encouraging them to adopt their own problem solving strategies. Therefore, the positive outcomes of this action research study extended beyond the individual to the entire organisation. Accordingly, this study suggests that action learning sets may be useful not only within clinical arenas but have potential to be applicable to clinical and non-clinical areas including nursing practice development, multidisciplinary teams, human resources and stores management.

10.3 Researcher's Reflexivity

Conducting action research has been a unique and fulfilling experience for me. It required me to work alongside others for a significant period of time in order to complete this endeavour. Being an insider researcher in the organisation and assuming the role of facilitator for the action learning sets added a meaningful dimension to this journey. Overall, it was a very positive experience. I found working with other colleagues made clinical issues easier to address and encouraged me at each step. Being familiar with colleagues, the environment and the entire organisation gave me confidence in facilitating this project and establishing teamwork and trust. Familiarity with politics and regulations also assisted me in setting up the action learning sets' ground rules in clinical care settings. My unfailing interest in the topic of CRP provided a positive driver for me to pursue the study. As a clinical nurse manager, working with colleagues saved a lot of time that would usually be spent by an external researcher on ensuring a communicative space, introducing oneself and rationalising the research. Colleagues were overall receptive to me as an insider researcher. Their support was demonstrable through their

participation in the action learning sets, their open communication and their commitment to finding solutions to the clinical issue raised.

As discussed in chapter four, although I believe that being an insider was very empowering, I was still required to balance my dual role as insider researcher and being a facilitator of the action learning sets. Being an insider made me feel unsure as to whether or not participants only participated because of their familiarity with me as a colleague for many years. Hence, over the period of this enquiry, it was important that I needed to retain my professional position while also working as a researcher on a clinical related issue in order to fulfil both obligations equally and successfully, and therefore, I ensured a professional distance was maintained without compromising my role as a researcher. Furthermore, as an insider researcher as well as the facilitator of the action learning sets it was not possible to leave the study site for the duration of the research and therefore I was not in a position to apply for a scholarship causing considerable financial implications.

I concluded in chapter four that one of the main challenges for me as a researcher was the lack of participants' experience with regard to action learning and action research. Being an insider required being an educator of the participants within the organisation. As an insider, I was always accessible to participants and this meant that I was approached frequently and asked questions about action learning and action research. This may have been considered a positive from the participants' perspective but it involved substantial time and effort from me ensuring I was

teaching and instructing them appropriately. This may not arise for an outsider researcher with whom the participants are not familiar.

The fact that the issue of CRP was chosen and agreed by participants as well as the researcher, generated feelings of personal empowerment and allowed me to feel supported throughout the experience. Feeding back my initial results to the stakeholders, that is, staff at management level and practice development in the hospital was valued in a positive way. It was very supportive being encouraged to present my final results with recommendations to the Director of Nursing and other stakeholders for further discussion and suggestions on the issue of CRP management. The medical consultants, whom I see and work with on daily basis, were approachable and afforded me the time to sit and discuss my results. This had a positive impact on me and empowered me through this journey.

In chapter four, I identified 'closing up' as a phase of action research that required recognition. This phase formed a challenge for me in terms of my role as a researcher as well as the participants. Although it was inevitable to come to the point of participants' withdrawal from the study, it took me sometime to figure out the best way to thank participants and inform them of the completion of this project. I had mixed feelings during this phase. While I was excited this was the final phase of my project, I felt the engagement with the group and working as a team for almost a year was going to be missed. However, a key nature of action research with its cyclic phases and continuing potential for action may result in interventions being continued beyond the timeframe of the study. Furthermore, critical to action research

is its power in ensuring sustained outcomes. Therefore, this was a little bit assuring for me during that time. The fact that the majority of participants and stakeholders were still there as well as the positive outcomes of this project reassured me in that another teamwork mission could be coming up on the way. Likewise, participants' outcomes of improving self-esteem, enhancing confidence and empowerment could was sensed to enhance their willingness to engage in further problem solving approaches, which formed another reassuring factor for me.

10.4 Learning Remarks for the Researcher

Throughout this action research there have many 'hiccups' where I needed to pause and take a deep breath before resuming. Reflecting on these situations afterwards, has empowered me and enhanced my self-confidence. One of my biggest challenges at the outset of this study was obtaining ethical approval from the hospital. The ethics committee had concerns regarding the financial implications and releasing of staff or repaying time. At that stage, I really took a long break and felt like I was not going to proceed as the health institution stakeholders were under a massive amount of financial pressure with major cutbacks in place and they were reluctant to support or fund the time that was required for the action learning sets. In order to overcome this challenge I decided to utilise the systematic method of action research through implementing the action learning sets during the staffs' unpaid lunch time where lunch was provided after the meetings. The other learning experience was when I was prevented from using an outsider facilitator for the action learning sets due to ethical restraints and therefore was required to facilitate the sets myself. Initially this was very challenging as I wasn't prepared but after the

commencement of the programme all went well. From these two situations I learned to utilise the resources available to me in the most effective manner.

Another aspect of learning throughout this journey is related to teamwork. I learned that teams are more effective than individuals. The participatory characteristic of action research was a driving force throughout this study. The participation of doctors, nurse managers and nurses working alongside each other as well as with me assisted in overcoming any challenges encountered and made this research go nicely and smoothly. The diversity of participants and their variety of experiences added more substance to the programme.

10.5 Strengths of the Study

Central to both action research and action learning are their feasibility, bringing about practice change, ability in solving real issues and ensuring sustainability of outcomes. This research study utilised action research as a methodology and action learning sets as an intervention, which enabled capitalising on the strength of both. In addition, mixed methods were used in order to collect data, which also enabled exploiting the advantages of both quantitative and qualitative methods in order to address the five objectives of the study. This provided a more complete depiction of knowledge, attitude and practice on CRP management phenomenon, than either method could provide alone (Creswell and Plano Clark 2007). The dual outcomes established from this study; individual and organisational, can also be considered a strength of this study.

Typically, survey research designs tend to yield low response rates, therefore the 53% and 43.5% response rates attained in the pre and post intervention phases respectively are considered a strength of this study. Hand delivering the surveys may have enhanced response rates. The use of the KASRP instrument for this study is also considered a strength. The tool has international credibility and is considered to be a valid and reliable instrument (Ferrell and McCaffery 2008).

Despite the many uses of action learning sets found in the literature, the present study appears to be the first to use internet services (email) as a method of engaging participants directly and indirectly in the learning sets during the course of the action learning programme. In addition to their feedback during the meetings, participants who agreed to take part in the programme, that is, directly involved participants, were emailing feedback to other members on a regular basis between meetings. Additionally, healthcare professionals who were involved indirectly in the programme, that is, those healthcare professionals who only attended the first and concluding meetings, were still engaged in the process of the action learning programme by receiving updates on actions and feedback via the internet service. The use of email as means of communication between the participants was beneficial because it was cost effective and ensured a record of all communications was saved. Email is also considered to be the fastest form of written communication. It is easily accessible, particularly with smart phones, and allows one send the same message to any number of people. Within the HSE, all healthcare professionals have access to an email account which can often be a more efficient means of communication than alternative methods.

The vast majority of respondents of this study this study never attended any education programme in relation to CRP management in the preceding three years. Despite this, it appears that healthcare professionals are unaware of their knowledge deficit and incorrect beliefs about CRP management. This may indicate that healthcare professionals are satisfied with their current level of knowledge and attitude. Bernardi *et al.* (2007) reported incorrect self-evaluation of pain management knowledge which may prevent healthcare professionals attending relevant education programmes. However, organisational constrains such as staff shortage, heavy workloads and financial implications may also prohibit healthcare professionals from attending education sessions. From the outcomes of this study, action learning sets proved its utility as a feasible and cost-effective approach in the healthcare settings. Despite today's climate of fiscal difficulty, staffing embargos and time constraints within health services, action learning sets allowed a relatively small number of staff to come together without any cost being incurred to identify and offer resolutions to an area of mutual clinical concern. Thus, this was considered to be a strength of the study

Conducting the current study in both medical and surgical wards in addition to a good response rate enabled this study to overcome a prevalent outstanding limitation of many research studies, that is, the "un obtained generalisability". This study utilised doctors and nurses/nurse managers adding multidisciplinary views to the current findings. Therefore, findings from this study extend to both medical and surgical areas; the most common wards for cancer patients to be admitted to. Also, the current findings can be generalised to both doctors and nurses. Therefore, this

method of using a multidisciplinary approach across diverse sites may have helped to bridge relationships between disciplines in an often hierarchical environment.

10.6 Limitations of the Study

Three main limitations prompt cautious interpretation of study findings. Firstly, as there was no oncology facility on the study site, only a limited number of patients with cancer were admitted to the medical and surgical wards during the one week period for each audit. During that period, all charts of patients with a cancer diagnosis were sampled for each of the two audits yielding a sample size of only 15. This precluded the researcher from making inferences about the whole population of cancer patients.

The second limitation in this study was that none of the pharmacists chose to respond to the survey at any of the phases owing to severe staff shortages, maternity and sick leave. In order to keep pharmacists updated as part of the multidisciplinary team, I ensured that the chief pharmacist was informed of feedbacks, activities and outcomes from this study. Medical/surgical consultants, the palliative care team and the ward nurse managers were aware of the absence of pharmacists' participation and most importantly their limited service in the medical and surgical wards during that time. In addition, the allocated ward pharmacist technician was updated about issues arisen in relation to evaluation of analgesics prescribing so she would feedback to pharmacy department.

Finally, this study was limited to healthcare professionals' judgment and evaluation of pain during the audit in this study. Medical and nursing documentations of pain were used to examine whether or not pain was assessed and evaluated before and after their management. According to McCaffery and Beebe (1994), the patient has the authority on the pain and that his or her self-report is the most reliable indicator of pain. Furthermore, Raftopoulos (2005) and Hansson *et al.* (2006) emphasise the eminent validity of patient's satisfaction in evaluating the effectiveness of the management of pain. Therefore, the use of a patient pain management satisfaction tool or a self-assessment survey could be used in further research to elicit the disparities between healthcare professionals' perception of pain and patients' subjective reports of pain.

10.7 Implications for Policy

- Action research provides an alternate approach to overcome the challenges that arise when implementing evidenced-based practice. It is particularly useful for identifying issues in the clinical environment and assisting with the development of appropriate and feasible solutions to these issues. Action research is an approach whereby professionals can collaborate in order to identify issues of concern, why they prevail and how to address them. Action research can help to initiate changes in practice in addition to generating knowledge that is useable and that can be transferred to other clinical settings. The opportunities for both healthcare professionals and patients to engage in pain research agendas are enhanced through the participatory nature of action research.

- Organisational success is dependent on developing, improving, establishing and increasing the knowledge of people to be the best. One of the major roles that should be performed by organisations is employee development. Solving problems and learning need to go hand and hand in the organisation along with allowing time to reflect on what works. Action learning encompasses all of these characteristics, learning, reflecting and problem solving. The findings of this study suggest that action learning can be an effective means to enhance practices in the field of CRP management and also develop personal confidence, decision making and problem solving skills which are significant to various fields of organisational learning.

- Involvement in action learning sets in this study has increased healthcare professionals' awareness of a novel multidisciplinary approach for introducing a change that aims at improving the quality of care for patients. This study concludes that identified gaps in healthcare professionals' knowledge and practices were attributed to the system's failure of understanding of the impact of ineffective interdisciplinary strategies on healthcare professionals such as inadequate communication skills and ineffective teamwork approaches. The benefits of teamwork within the healthcare settings have been emphasised at both national and international levels. For example, multidisciplinary teamwork has been found to prove its contribution to effective and successful practice (Moroney and Knowles 2006, Government of Ireland 2008). Furthermore, McCabe (2010) highlights the importance of skilful and positive interpersonal communication in addition to efficient organisational communication systems in order for healthcare managers to develop, implement, and evaluate

strategies for the efficient and economical success of organisational goals. Therefore, organisations must assist healthcare professionals in creating a culture for identifying and adapting local interdisciplinary collaborative strategies in their workplace. If action learning is one example of these strategies, which it has approved to be, stakeholders' need to adopt action learning approaches and encourage the facilitation of action learning sets in the organisation as a key strategy in improving services for all services users and also for improving the working/learning environment for employees. Although this would be a new organisational initiative, and would require staff support and training, the results of this study suggest that it would be very beneficial for staff and service development.

- The lack of an evidence-based guidance pertaining to pain management was a concern for healthcare professionals in this study. There were no fora for healthcare professionals to discuss issues pertaining to pain management. Structured meetings between multidisciplinary teams and the palliative care team are recommended as a resource for all healthcare professionals managing cancer patients with pain.

- Although there is an increasing potential for policy to direct the utilisation of evidenced-based pain management, the impact of policy developments within pain curricula requires examination. Policy changes must be driven by pain education and research in order to influence pain management. Organisational systems must collaborate with policy makers to ensure that research findings with a robust evidence base are incorporated into local policies and guidelines.

- An important key outcome from this healthcare setting enquiry is based on the power of reflection as a crucial element of both action research and action learning combined by healthcare professional's own clinical knowledge that formed an immediate resource to develop their clinical practices. This study provided an evidence of the efficacy of healthcare professionals using their own professional knowledge and clinical experience as an alternative means of education as opposed to external resource of education or training. Therefore, in order for a suitable clinical learning environment to be created, healthcare professionals need to be provided with opportunities to share their knowledge with colleagues in the organisation. This can result in empowering healthcare professionals by enhancing their confidence, benefit the juniors and form a cost-effective means of training/education.

10.8 Recommendations for Professional Practice and Research

- This study, the first of its kind in Ireland, has generated several implications for professional practice and research. To elicit a more comprehensive overview of the use of action learning sets as a means for education in the Irish clinical care settings, it is recommended that the study is replicated across multiple sites with larger samples. Using action learning sets in other fields apart from pain management such as infection control, delayed discharge related issues and stores management may increase the credibility of action learning sets use in the clinical care.

- If the use of action research is to be encouraged, colleges and academic institutions are deeply required to introduce students to action research as a systematic approach for bringing practice change and most importantly as a research methodology at an early stage of their undergraduate curricula. Although Brydon-Miller (2003) acknowledges that action research can still be learned through editorial board contributors, or students' reading on classes or colloquiums, she places great emphasis on the academic institutions/colleges in developing action research and enhancing its utility by teaching action research in their academic curricula. Brydon-Miller (2003) give herself as an example that she was only introduced to action research by Peter Park (an editorial board contributor), and she believes that if this did not happen, she would not have been "*rescued from life of positivism*" as she calls it. It was noteworthy referring to Brydon-Miller's experience because I had a similar experience. In chapter five, one challenge I identified was based on the lack of experience and knowledge of action research. One part of this challenge was related to me as a researcher and the other was concerned with other colleagues and stakeholders in the study hospital. I suggest that academic institutions take the ownership of implementing university-based action research programmes. Because the majority of editorial board contributors are engaged in with these academic institutions, directly or indirectly, this should not be an issue. Interestingly, from a recent meeting with Professor Brydon-Miller during participating in an action research colloquium (2015), I was informed that this issue is currently being tackled universally and suggestions are put in place to assist novice action researchers to proceed in their first projects. Because this might be a unique

experience at the national level, outcomes of this study support others of novice action researchers in the country to call up for relevant solutions.

- From the literature reviewed, it can be concluded that there is poor utility of action learning in the Irish healthcare settings. Based on my experience in this study, I suggest this may be attributed to the substantial gap in healthcare professionals' experience and training about action learning. It is difficult to expect action learning to gain popularity in the healthcare settings without equipping healthcare professionals with effective training about action learning and encouraging them to adopt this approach by highlighting its efficacy from individual and organisational perspectives.

- Continuous and comprehensive appraisal of healthcare professionals' curricula ensuring the module content delivers the essential guidelines and principles of pain management that meet with the standard guidelines, such as the WHO and the APS. Adapting inclusive and intensive educational initiatives to meet healthcare professionals' requirements on CRP management (e.g. using intranet or email delivery) at both under-graduate and post-graduate levels. In addition, in-service mandatory educational initiatives and training must be available and implemented to all healthcare professionals to ensure adequate and effective management of pain in cancer patients. Furthermore, it is vital that CRP management principles and guidelines are given due consideration in education programmes and seminars on a regular basis.

- As no previous study was found in Ireland about multi-disciplinary approaches to CRP education or pain management in general or the impact of a pain management facility on patient outcomes, further intervention studies are needed to explore the effectiveness of pain education on patient outcomes in other contexts.

- The use of action learning as a cost-effective method of education should be given more consideration in clinical settings for both intervention researchers and organisational development. Action learning uses internal resources and minimal commercial products which makes this a feasible approach within the public health sector in the context of the current fiscal challenges (Rigg 2006).

- The present action research study utilised mid-level management, where nurse managers and senior doctors were involved. Future action research studies are still needed to involve pharmacists as key drivers in pain management for cancer patients.

- There still remains a need for further research to investigate appropriate methods to achieve effective CRP management. De Rond *et al.* (1999) and Seers *et al.* (2006) indicate that education alone is in itself insufficient to change behaviour or impact on practice. This emphasises the need for investigating other organisational factors to verify how they sustain practice change. Many studies have investigated the effectiveness of using various education programmes on the knowledge, attitude and practice. However, there is limited evidence on how organisations have succeeded in supporting

CRP knowledge application. Therefore, it is essential to develop further intervention studies that examine the effectiveness of CRP education on patient outcomes.

10.9 Conclusion

This study reports widespread deficits in healthcare professionals' knowledge/attitudes and practices regarding CRP management, which may compromise the effectiveness of care given to cancer patients experiencing pain. The findings from this study reflect those of previous international studies that emphasise a universal concern regarding the substantial gaps in healthcare professionals' knowledge, attitudes and practices related to CRP management. These findings raise serious concerns for all stakeholders to develop more educational programmes in order to overcome the current knowledge/attitudes and practice deficit among healthcare professionals.

Action research provides an alternative method of helping develop appropriate and feasible solutions to clinical issues in the healthcare practicum utilising evidenced-based practice. Action research is an approach whereby healthcare professionals can come together to identify areas of concern, examine why they subsist, and how they might be resolved. This approach can help initiate changes in practice as well as generating practical knowledge that can be transferred to other practice situations. Importantly, the participatory nature of action research affords the opportunities both for healthcare professionals and patients to engage in pain research agenda. One of the most important implications of the current study for

researchers is the feasibility of action research and action learning sets. The main role of action research is to assist practitioners to study aspects of practice (Koshy 2005). Despite financial implications and time management issues incurred in acute health care settings, the convenience and feasibility of the action research design enabled the researcher to undertake this study in the participant's own area of practice at times suitable to them.

Action research has proved to be an effective and responsive methodology for implementing change from both individual and organisational perspectives. Likewise, action learning has proved its success at individual, team and organisational levels as an effective means of education and most importantly a problem solving approach for healthcare professionals within the clinical practicum. As clinical management is becoming increasingly complex with managers being frequently asked to implement and manage organisational change projects, it is becoming essential for managers to learn holistic and responsive processes like action research and action learning to enhance their effectiveness as project managers and deliver optimum healthcare outcomes. In addition, acquiring a reasonable level of knowledge about action research and action learning can help them improve their interpersonal effectiveness as leaders in a clinical project environment. This study is the first of its kind in Ireland that has provided practical evidence on the successful feasibility of utilising action learning sets as an interdisciplinary educational tool in the clinical care settings.

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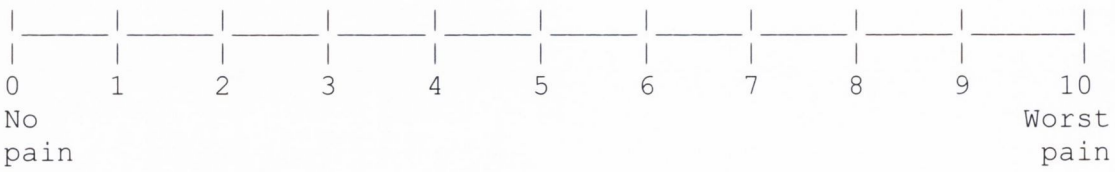
Appendix I

Pain Assessment Tools

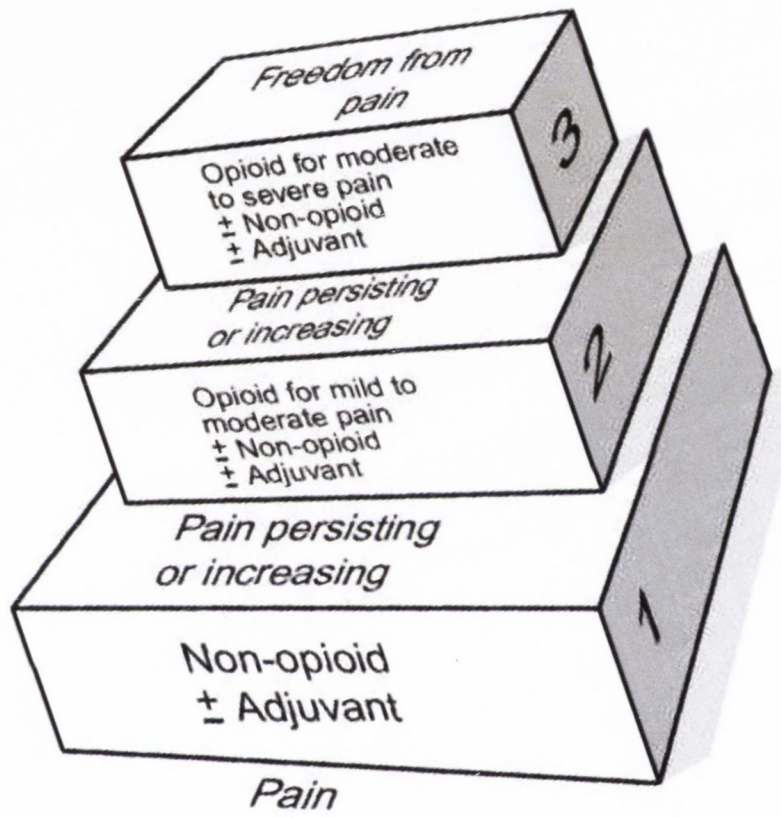
Numeric Rating Scale.



Visual Analogue Scale



Appendix II **WHO Ladder 1986 (adapted).**



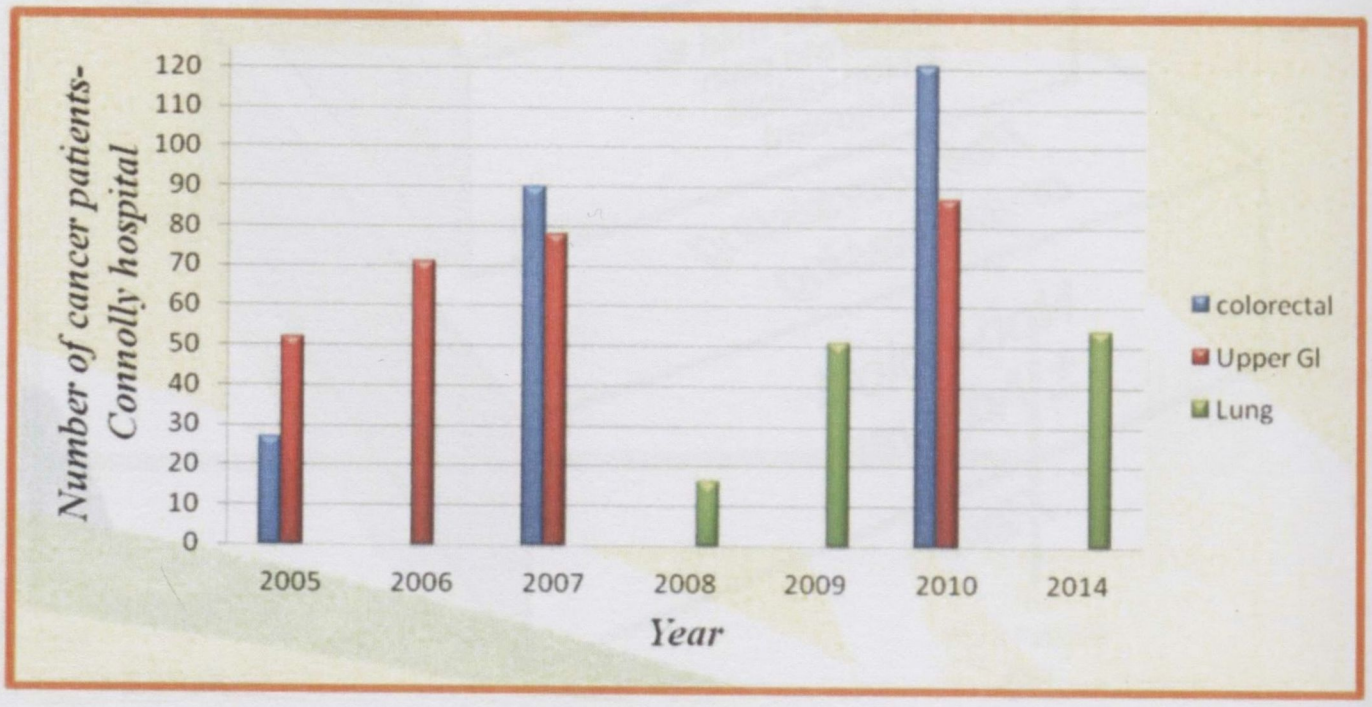
Appendix III

The Rate of Cancer Patients Admitted to the Study Hospital

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Connolly Hospita
Blanchardstow
Dublin 1

Tel: (01) 821 384
Fax: (01) 646 513



Colett Schmidt
Oncology Dept

Appendix IV

The Main JCAHO Pain Management Standards (adapted from Berry and Dahl 2000)

• Recognise the right of patients to appropriate assessment and management of their pain
• Identify patients with pain in an initial screening assessment
• Perform a more comprehensive pain assessment when pain is identified
• Record the results of the assessment in a way that facilitates regular reassessment and follow-up
• Educate relevant providers in pain assessment and management
• Determine and assure staff competency in pain assessment and management
• Address pain assessment and management in the orientation of all new staff
• Establish policies and procedures that support appropriate prescription or ordering of effective pain medications
• Ensure that pain does not interfere with participation in rehabilitation
• Educate patients and their families about the importance of effective pain management
• Address patient needs for symptom management in the discharge planning process
• Collect data to monitor the appropriateness and effectiveness of pain management.

Appendix V

Hospital Ethics Committee Approval

CONNOLLY HOSPITAL BLANCHARDSTOWN

Certificate of Research Ethics Committee Approval

Date: 2nd September, 2011

To: Mr Mohammed Kasabeh, Registered General Nurse

From: Mr Joe McKeever, Consultant in Emergency Medicine
(Chairman, Research Ethics Committee)

Protocol title: **The effect of action learning programme on health care professionals' knowledge, attitudes and practice with regard to cancer related pain assessment and management.**

The Research Ethics Committee approved human subject involvement in your research project on 2nd September, 2011.

There is no expiration date for this approval, but the protocol must be reviewed by the Ethics Committee before December 31st 2014. If this project is to continue beyond that date, please submit an updated proposal one month prior to the expiration date. If this proposal is used in conjunction with any other human experimentation or if it is modified in any way, it must be re-approved for these special circumstances.

Note that the following should be reported to the Ethics Committee: 1) all serious adverse events, occurring at this institution, regardless of whether or not they are thought to be study related should be reported within 2 business days to one of the members of the Research Ethics Committee, 2) any unanticipated problems, and/or 3) and injuries to subjects enrolled.

Please remember that all data including all consent form documents must be returned for a minimum of three years past the completion of the research. Additional requirements may be imposed by your funding source, your department, or other entities. This institution protects personal health information of human subjects.

Mr Joe McKeever, Consultant in Emergency Medicine,
Chairman Research Ethics Committee
Approval Period: 2nd September, 2011 - 31st December 2014

Appendix VI

Trinity College Dublin Ethics Committee Approval

THE UNIVERSITY OF DUBLIN

TRINITY COLLEGE **FACULTY OF HEALTH SCIENCES**

Trinity College, Dublin 2, Ireland

Chair Faculty Research Ethics Committee
Professor Orla Sheils MA (Dub)
MA Med Law and Ethics (Lond)
PhD FAMLS FRCPath FTCD

Tel: +353 1 896 2893
Fax: +353 1 671 3956
Email: doylej12@tcd.ie

Secretary to Faculty Research Ethics Committee
Ms Elizabeth Derwin

Mohammed Kasasbeh
67 Bantry Square
Waterville
Blanchestown
Dublin 15

12th October 2011

Study: Cancer related pain assessment & management; the effect of action learning programme on health care professionals knowledge, attitudes and practice

Dear Applicant (s),

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in June 2011, we are pleased to inform you that the above project has been approved without further audit.

Yours sincerely

Prof. Orla Sheils
Chairperson
Faculty Research Ethics Committee

Supervisor:
Dr. Catherine McCabe

Appendix VII

Copy of Letter Sent to the Director of Nursing

Dear

I am seeking your support and permission to access and include nursing staff in a research project that I hope to conduct for my PhD study that I am currently *undertaking* in the School of Nursing & Midwifery, Trinity College Dublin. The aim of this proposed project is to evaluate the use of an action learning programme to develop the knowledge and practice of health care professionals' (doctors, nurses, pharmacists) with regards to cancer-related pain assessment, treatment and evaluation in the medical and surgical wards in the Connolly Hospital Blanchardstown (please find attached copies of summerised proposal and questionnaire that will be used). A second aim of the study is to assess if action learning can be used as an innovative and economical approach to practice development not only in relation to cancer related pain management but perhaps for many areas of practice.

Letters will be sent to medical and surgical consultants, chief pharmacist and clinical division managers of the potential participating wards seeking their permission and support to conduct this study. Subsequently, letters will also be sent to Clinical Nurse Managers of the medical and surgical wards. This study will be conducted with support from the palliative care team of the hospital.

This research project is self funded and on completion the findings will be published nationally and internationally at conferences and journals. If you require any further information in relation to the proposed study please do not hesitate to contact me.

Mohammed Kasasbeh. Tel:0863072390 OR by Email: kasasbem@tcd.ie

Yours sincerely

_____

Mohammed Kasasbeh

Appendix VIII

Copy of Letter Sent to Medical/Surgical Consultants

Dear

I am seeking your support and permission to access and include medical/surgical doctors under your team in a research project that I hope to conduct for my PhD study that I am currently undertaking in the School of Nursing & Midwifery, Trinity College Dublin. The aim of this proposed project is to evaluate the use of an action learning programme to develop the knowledge and practice of health care professionals' (doctors, nurses, pharmacists) with regards to cancer-related pain assessment, treatment and evaluation in the medical and surgical wards in the Connolly Hospital Blanchardstown (please find attached copies of summerised proposal and questionnaire that will be used). A second aim of the study is to assess if action learning can be used as an innovative and economical approach to practice development not only in relation to cancer related pain management but perhaps for many areas of practice.

Letters will be sent to director of nursing, chief pharmacist and clinical division managers of the potential participating wards seeking their permission and support to conduct this study. Subsequently, letters will also be sent to Clinical Nurse Managers of the medical and surgical wards. This study will be conducted with support from the palliative care team of the hospital.

This research project is self funded and on completion the findings will be published nationally and internationally at conferences and journals. If you require any further information in relation to the proposed study please do not hesitate to contact me.

Mohammed Kasasbeh. Tel:0863072390 OR by email: kasasbem@tcd.ie .

Yours sincerely

Mohammed Kasasbeh

Appendix IX

Copy of Letter Sent to Chief Pharmacist

Dear

I am seeking your support and permission to access and include pharmacist staff in a research project that I hope to conduct for my PhD study that I am currently undertaking in the School of Nursing & Midwifery, Trinity College Dublin. The aim of this proposed project is to evaluate the use of an action learning programme to develop the knowledge and practice of health care professionals' (doctors, nurses, pharmacists) with regards to cancer-related pain assessment, treatment and evaluation in the medical and surgical wards in the Connolly Hospital Blanchardstown (please find attached copies of summerised proposal and questionnaire that will be used). A second aim of the study is to assess if action learning can be used as an innovative and economical approach to practice development not only in relation to cancer related pain management but perhaps for many areas of practice.

Letters will be sent to director of nursing, medical and surgical consultants and clinical division managers of the potential participating wards seeking their permission and support to conduct this study. Subsequently, letters will also be sent to Clinical Nurse Managers of the medical and surgical wards. This study will be conducted with support from the palliative care team of the hospital.

This research project is self funded and on completion the findings will be published nationally and internationally at conferences and journals. If you require any further information in relation to the proposed study please do not hesitate to contact me.

Mohammed Kasasbeh. Tel:0863072390 OR by email: kasasbem@tcd.ie

Yours Sincerely

Mohammed Kasasbeh

Appendix X

Copy of Letter Sent to Clinical Division Managers

Dear

I am seeking your support and permission to access and include nursing staff in a research project that I hope to conduct for my PhD study that I am currently undertaking in the School of Nursing & Midwifery, Trinity College Dublin. The aim of this proposed project is to evaluate the use of an action learning programme to develop the knowledge and practice of health care professionals' (doctors, nurses, pharmacists) with regards to cancer-related pain assessment, treatment and evaluation in the medical and surgical wards in the Connolly Hospital Blanchardstown (please find attached copies of summerised proposal and questionnaire that will be used). A second aim of the study is to assess if action learning can be used as an innovative and economical approach to practice development not only in relation to cancer related pain management but perhaps for many areas of practice.

Letters will be sent to director of nursing, medical and surgical consultants and chief pharmacist seeking their permission and support to conduct this study. Subsequently, letters will also be sent to Clinical Nurse Managers of the medical and surgical wards. This study will be conducted with support from the palliative care team of the hospital.

This research project is self funded and on completion the findings will be published nationally and internationally at conferences and journals. If you require any further information in relation to the proposed study please do not hesitate to contact me.

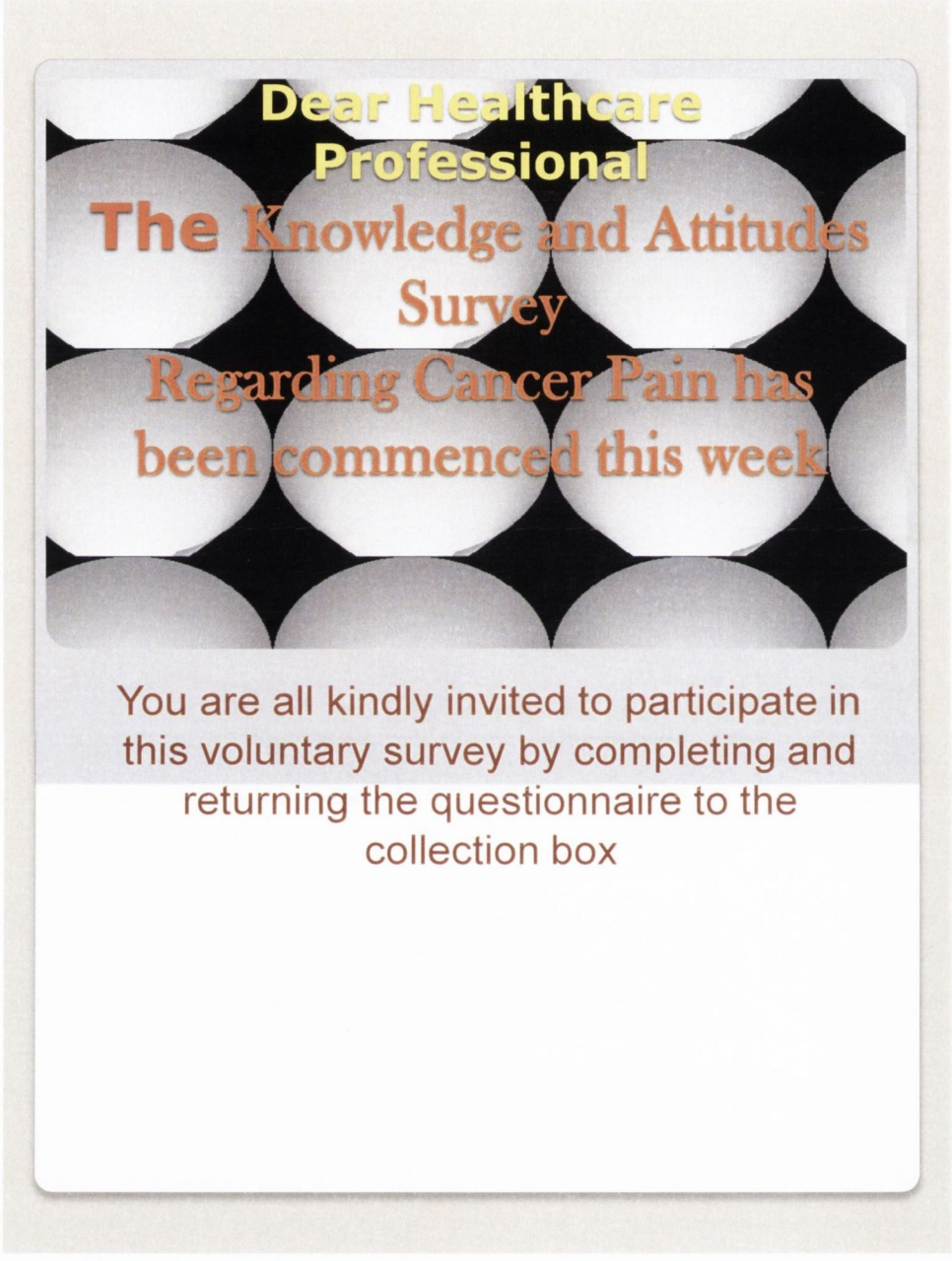
Mohammed Kasasbeh. Tel:0863072390 OR by email: kasasbem@tcd.ie

Yours Sincerely

Mohammed Kasasbeh

Appendix XI

Survey Advertising Poster



Appendix XII

Participants' Information Leaflet

Date:

Dear

My name is Mohammed Kasasbeh, a Ph.D. student in the Faculty of Nursing & Midwifery, Trinity College Dublin (TCD). You are invited to participate in a research study, entitled the effect of action learning programme on health care professionals' (doctors, nurses, pharmacists) knowledge, attitude & practice with regards to cancer-related pain assessment & management in the medical and surgical wards of Connolly Hospital Blanchardstown.

Description of the proposed study

The overall aim of this research will be to evaluate the effectiveness of implementing an action learning programme in improving healthcare professionals' knowledge, attitudes and practice regarding cancer-related pain assessment & management practices in the medical and surgical wards. You were selected as a possible participant in this study because you are involved in the assessment, prescribing, administration and evaluation of pain in patients with cancer admitted to the hospital. There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study.

This research study has two parts. The first part is a survey in which you will be asked to complete a questionnaire twice at the beginning and end of a six month period. The questionnaire will take about 20 minutes to complete. This survey is confidential and no identifying features will be on study documentation. The second part is the establishment of informal interdisciplinary groups (doctors, nurses, pharmacists) which will work together in addressing issues that emerge from the audit process. There will be a meeting every 4 weeks lasting an hour approximately held on the ward during lunch time. You are invited to participate in these meetings where a delicious lunch will be provided. There will also be a draw for all who participate in this study to win a voucher to the amount of 30 euro. After the fourth meeting is complete, you will be asked to participate in a semi structured interview to ascertain your views on the experience of working with the group.

Only the researcher may inspect these records. Should the data be published, no individual information will be disclosed. Data will be retained for 5 years as required by Data Protection Act (2003), and will only be used for the purpose of research, and statistical and audit purposes before they will all be destroyed safely and confidentially by the researcher. The findings will be used to gain insight into how to improve cancer-related pain assessment &

management on the medical and surgical wards in the Connolly Hospital. You cannot participate in this study if you are a medical, nursing or pharmacy student. If you choose to participate in the action learning programme, the interviews may be recorded using a voice recorder to ensure accuracy. You may review a transcript of the interview on request.

This study is covered by standard institutional indemnity insurance. Nothing in this document restricts or curtails your rights. Your participation in this study is ***voluntary***. You are free to participate in the entire study or only the surveys. By completing the survey and/or participating in the action learning progamme you are voluntarily agreeing to participate. You are free to decline to answer any particular question you do not wish to answer for any reason. You understand that the investigators may withdraw your participation in the study at any time without your consent. Ethical approval has been granted from the hospital ethics committee to conduct this study. You will be updated of any feedback regarding the results of the study. If you are interested in participating in this valuable study, please contact me at 0863072390 OR by email at kasasbem@tcd.ie. Thank you in advance for your help.

Yours Sincerely

Mohammed Kasasbeh

Appendix XIII

Audit Spreadsheet- The Kansas Foundation for Medical Care (adapted)

Date Reviewed: _____/_____/20___

1. Type of cancer:

2. Disease Stage:
a. stage I
b. stage II
c. stage III
d. stage IV (metastatic cancer)

3. Current Treatments
a. Radiation
b. Chemo
c. Surgery
d. Other (List)

4- Has palliative care been involved in patient pain management?
a. YES
b. NO

	Clinical Record (chart)																		Tally		%
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Patient's Clinical Record ID # (Coded)																			**# YES**	TOTAL #	
1.There is a care plan related to pain management																					
2. Patient screened for pain using appropriate validated tool (i.e., numerical rating scale): on RN admission, during RN notes-last 24 hrs, RN care plan and medical team progress notes																					
3. If pain indicated in screening process, comprehensive pain assessment that includes evaluation of pain intensity, type of onset, location, radiation, duration, quality, frequency, aggravating and relieving factors, and emotional response.																					
4. Documented descriptions of pain other than objective ratings for the previous 24-hour period. If present, specify rater and description. (i.e., **physician's** progress report says "pain better").																					
5. If pain present, patient received pain treatment appropriate for cause, type, and intensity of pain based on clinically accepted guidelines (i.e., WHO Three-Step Analgesia Ladder)																					

6. If pain present, orders for pain medication were received within 24 hours of identification of patient's pain.																					
7. If pain present, care plan includes pharmacological interventions.																					
8. When analgesia administered, effectiveness of intervention and patient comfort level evaluated at appropriate intervals.																					
9. A follow-up evaluation has been charted for medication including increasing dose of analgesia, changing route of analgesia or addition of adjuvant medication.																					
10. When there was/were number of days during which patient utilized > 3 doses of breakthrough analgesia, documented action included; increase dose and/or change route of analgesia or addition of adjuvant medication.																					

DIRECTIONS:

A. Enter the patient's clinical record number or initials.
B. Review the clinical record for evidence of each practice.
C. Enter a "Y" if it is identified and an "N" if it is not identified. (Reviewers may have N/A for some records.)
D. Tally the Number of "Y" s identified for each Best Practice, divide by the total number of applicable records reviewed to determine the percent.

There are 10 sections of this spreadsheet (excluding demographics). Sections 1, 3, 5, 7 and 8 are nurses related. Sections 6, 9 and 10 are doctors related. Sections 2 and 4 are related to both; Doctors and nurses.

Appendix XIV

Audit Criteria (The Kansas Foundation for Medical Care)

• Patient with cancer who has been screened for pain within 24 hours of admission.
• When the pain is present, a full assessment was maintained.
• Pain medication is ordered within 24 hours of pain identification.
• A care plan for pain management is commenced within 48 hours of admission.
• Pain is monitored, assessed and scored using appropriate validated tool. This is expected to be done at least once daily, before and after "prn" analgesia and once it is needed.
• Patient's pain is reassessed fully and the care plan is revised if needed
• Considering changing/adjusting regular analgesia in accordance with "prn" medications.
• Documentation reflected that management and care plan interventions are implemented as indicated.

Appendix XV

Knowledge and Attitudes Survey Regarding Pain (KASRP Ferrell and McCaffrey 1987)

Section one. Demographic Data

Please complete the questions below by placing an 'X' in the appropriate box and by specifying additional information if required.

1. Gender

Male □ Female □

3. What is your age?

20–29 □ 30–39 □ 40–49 □ 50–59 □ 60–69 □

2. Where do you work?

Medical □ Surgical □

4. What position do you currently hold?

Doctor □ Pharmacist □ Nurse Manager □ Staff Nurse □

5. How long have you worked as a health care professional?

Less than 3 Years □ 3-7 Years□ 8-12 Years□ Over 12 Years □

6. What is your level of education?

Certificate □ Diploma □ Degree □

Post Graduate Diploma □ MSc □ PhD □

7. Have you attended any courses or study days in relation to cancer pain management during the last three years?

Yes □ No □

8. If yes, please state duration and location of course/study day (if this information is available to you)

Section Two. Knowledge and Attitudes Survey Regarding Pain.

Please Circle *T for True* or *F for False*

True/False – Please circle the correct answer.

T F 1.Vital signs are always reliable indicators of the intensity of a patient's pain.

T F 2.Patients who can be distracted from pain usually do not have severe pain.

T F 3.Patients may sleep in spite of severe pain.

T F 4.Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDS) are NOT effective analgesics for painful bone metastases.

T F 5.Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.

T F 6.Cancer pain is usually best managed with a single analgesic rather than with a combination of drugs.

T F 7.The usual duration of analgesia of 1-2 mg morphine intravenous (IV) is 4-5 hours.

T F 8. Beyond a certain dose of non-opioid analgesics (e.g., ibuprofen, paracetamol) increases in dose will **not** increase pain relief.

T F 9.Opioids should not be used in patients with a history of substance abuse.

T F 10.Morphine has a dose ceiling (i.e. a dose above which no greater pain relief can be obtained).

T F 11.Opioid analgesics are best ordered on a "prn" (as required) basis to encourage minimal dosing and reduce the risk of addiction.

T F 12.Elderly patients cannot tolerate opioids for pain relief.

T F 13.Patients should be encouraged to endure as much pain as possible before using an opioid.

T F 14.Patients' spiritual beliefs may lead them to think pain and suffering are necessary

T F 15.After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.

T F 16.Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.

T F 17.If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.

T F 18.Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.

T F 19.Narcotic/opioid addiction is defined as a chronic neurobiological disease, characterized by behaviours that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

T F 20.Adjuvant analgesics such as the tricyclic antidepressants and anticonvulsants should **not** be used in combination with opioid analgesics or NSAIDS.

Multiple Choice – Please choose the best answer to the following questions by circling the letter of the most appropriate answer for each question.

21. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is
a. intravenous
b. intramuscular
c. subcutaneous
d. oral
e. rectal

22. The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is
a. intravenous
b. intramuscular
c. subcutaneous
d. oral
e. rectal

23. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?
a. codeine
b. morphine
c. pethidine
d. tramadol

24. Which of the following SC doses of morphine administered over a 4 hour period would be equivalent to 30 mg of oral morphine given q 4 hours?
a. Morphine 5 mg SC
b. Morphine 10 mg SC
c. Morphine 30 mg SC
d. Morphine 60 mg SC

25. Analgesics for post-operative pain should initially be given
a. around the clock on a fixed schedule
b. only when the patient asks for the medication
c. only when the nurse determines that the patient has moderate or greater discomfort

26. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 0.2 mg/hour subcutaneously. Today he has been receiving 0.25 mg/hour subcutaneously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is:

a. less than 1%
b. 1-10%
c. 11-20%
d. 21-40%
e. > 41%

27. The most likely reason a patient with pain would request increased doses of pain medication is:
a. The patient is experiencing increased pain.
b. The patient is experiencing increased anxiety or depression.
c. The patient is requesting more staff attention.
d. The patient's requests are related to addiction.

28. Which of the following is useful for treatment of cancer pain?
a. Ibuprofen (Nurofen)
b. Hydromorphone (Palladone)
c. Gabapentin (Neurontin)
d. All of the above

29. The most accurate judge of the intensity of the patient's pain is
a. the treating physician
b. the patient's primary nurse
c. the patient
d. the pharmacist
e. the patient's spouse or family

30. Which of the following describes the best approach for cultural considerations in caring for patients in pain:

a. There are no longer cultural influences in Ireland due to the diversity of the population.
b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic).
c. Patients should be individually assessed to determine cultural influences.
d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue collar workers report more pain than white collar workers).

31. The time to peak effect for morphine given SC is
a. 15 min.
b. 30 min.
c. 45-90 min
d. 2-3 hours

32. The time to peak effect for morphine given orally is
a. 5 min.
b. 30 min.
c. 1 – 2 hours
d. 3 hours

33. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:
a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued
b. Impaired control over drug use, compulsive use, and craving
c. The need for higher doses to achieve the same effect.
d. a and b

Case Studies

Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication.

Directions: Please select one answer for each question.

34. Patient A: Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain.

0 1 2 3 4 5 6 7 8 9 10

No pain/discomfort Worst Pain/discomfort

B. Your assessment, above, is made two hours after he received morphine 2 mg SC. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine SC 1-3 mg q1h PRN pain relief." Check the action you will take at this time.

1. Administer no morphine at this time.
2. Administer morphine 1 mg SC now.
3. Administer morphine 2 mg SC now.
4. Administer morphine 3 mg SC now.

36. Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Robert's pain:

0 1 2 3 4 5 6 7 8 9 10

No pain/discomfort Worst Pain/discomfort

B. Your assessment, above, is made two hours after he received morphine 2 mg SC. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine SC 1-3 mg q1h PRN pain relief." Check the action you will take at this time:

1. Administer no morphine at this time.
2. Administer morphine 1 mg SC now.
3. Administer morphine 2 mg SC now.
4. Administer morphine 3 mg SC now.

Appendix XVI

Survey Cover Letter

Date:

Dear colleague

You are invited to participate in a research study, entitled the effect of action learning programme on health care professionals' (doctors, nurses, pharmacists) knowledge, attitude & practice with regards to cancer-related pain assessment & management in the medical and surgical wards of Connolly Hospital.

The overall aim of this research will be to evaluate the effectiveness of implementing an action learning programme in improving healthcare professionals' knowledge, attitudes and practice regarding cancer-related pain assessment & management practices in the medical and surgical wards. You were selected as a possible participant in this study because you are involved in the assessment, prescribing, administration and evaluation of pain in patients with cancer admitted to the hospital. There are no known risks if you decide to participate in this research study.

This survey is confidential and no identifying features will be on study documentation. Only the researcher may inspect these records. Should the data be published, no individual information will be disclosed. Data will be retained for 5 years as required by Data Protection Act (2003), and will only be used for the purpose of research, and statistical and audit purposes before they will all be destroyed safely and confidentially by the researcher. The findings will be used to gain insight into how to improve cancer-related pain assessment & management on the medical and surgical wards in the Connolly Hospital. You cannot participate in this survey if you are a medical, nursing or pharmacy student.

This study is covered by standard institutional indemnity insurance. Nothing in this document restricts or curtails your rights. Your participation in this study is ***voluntary***. You are free to participate in the entire study or only the surveys. By completing the survey and/or participating in the action learning progamme you are voluntarily agreeing to participate. You are free to decline to answer any particular question you do not wish to answer for any reason. You understand that the investigators may withdraw your participation in the study at any time without your consent. Ethical approval has been granted from the hospital ethics committee to conduct this study. You will be updated of any feedback regarding the results of the study. If you are interested in participating in this valuable study, please contact me at 0863072390 or by email at kasasbem@tcd.ie. Thank you in advance for your help.

If you voluntarily agree to participate in this survey, please complete the questionnaire and return it to the collection box.

Yours Sincerely

Mohammed Kasasbeh

Appendix XVII

Action Learning Set Key Components (Mumford 1991, Pedler 1997, Dixon 1998, McGill and Beaty 2001)

• Each set comprised 5-6 individuals.
• The members meet at least once for a minimum of one to three hours every two to four weeks or accordingly to present their problems.
• During the groups, the participants are required to solve problems that were given to them or selected by them in their areas. The action learning sets deals with one common problem.
• The change is directed towards practice, the organisation or working methods.
• The participants sincerely believed the change would directly or indirectly improve the services for patients.
• The ALSs are facilitated by a set advisor/facilitator.
• AL ground rules are agreed and adhered to. These included *commitment* and *attendance, confidentiality, punctuality, listening, being objective and non-judgmental.*
• The timing of the processes during the set is managed to help ensure a focused discussion and also ensure that no one person dominated the set.

Appendix XVIII

Timetable of the Action Learning Programme

September 20012 to March 2013					
September /date/time	Monday 24th	Tuesday 25th	**Wednesday 26th Lunch time**	Thursday 27th	Friday 28th **Lunch time**
Group	---	---	**(A)**	---	(B)
October /date/time	Monday 15th	Tuesday 16th	**Wednesday** 17th **Lunch time**	**Thursday** 18th **Lunch time**	**Friday 19th**
Group	---	---	**(B)**	**(A)**	---
November /date/time	Monday 5th	**Tuesday** 6th **Lunch time**	Wednesday 7th	**Thursday** 8th **Lunch time**	**Friday 9th**
Group	---	**(B)**	---	**(A)**	---
November /date/time	Monday 19th	Tuesday 20th	**Wednesday** 21st **Lunch time**	**Thursday** 22nd **Lunch time**	**Friday 23rd**
Group	---	**(A)**	---	**(B)**	---
December /date/time	Monday 17th	**Tuesday** 18th	Wednesday 19th	Thursday 20th	Friday **21st after working hours**
Group	---	**---**	---	---	**(C)**
January /date/time	Monday 14th	Tuesday 15th	Wednesday 16th	Thursday 17th	**Friday** 18th **after working hours**
Group	---	---	---	**---**	**(C)**
February /date/time	Monday 11th	Tuesday 12th	Wednesday 13th	Thursday 14th	Friday 15th **after working hours**
Group	---	---	---	---	**(C)**
March /date/time	Monday 4th	**Tuesday** 5th **lunch time**	Wednesday 6th	Thursday 7th	**Friday 8th**
Group	---	**(A,B, C)**	---	---	---

Appendix XIX

Action Learning Sets Evaluation Tool (Questionnaire)

Please rate the importance of action leaning sets to your current practice.
(a 10 point likert scale 1 = not important to 10 = very important).

1- How important were the action learning sets in relation to your current practice?

1 ——————————————— 10
Not Important Very Important

2- How important was the opportunity to present your problem within the set?

1 ——————————————— 10
Not Important Very Important

3- How important was the opportunity to facilitate the group?

1 ——————————————— 10
Not Important Very Important

4- How important was the use of the challenge/support plot within the sets?

1 ——————————————— 10

Not Important Very Important

5- How important was engaging in reflective enquiry within the sets?

1 ——————————————— 10

Not Important Very Important

6- How important have the action learning sets been with respect to your ability to problem solve?

1 ——————————————— 10

Not Important Very Important

7- Please rate the importance of the experience of interdisciplinary collaboration in developing practice

1 ——————————————————— 10
Not Important Very Important

8- What did you like most about the action learning sets?

9- What did you like least about the action learning sets?

10- Have you any other comments regarding action learning sets?

Appendix XX

Outline of the Interviews Guide

1 Tell me about your experience of the action learning sets?

2 What were the main benefits to you professionally and to your practice from these meetings?

3 What did you think of the action learning sets themselves?

4 Did you think you achieved what you needed to from these meetings?

5 In what situation would you consider using such meetings?

6 Do you think the meetings have changed something about you in terms of clinical managerial skills, decision making or problem solving?

7 In summary what kind of feedback would you give to others, colleagues or even friends outside your profession?

Appendix XXI

The KASRP Content Validity Score

	Evaluators Panel Validity Score Evaluation score Clear =1, Not clear=0, Comments=0					
Survey questions	Evaluator 1	Evaluator 2	Evaluator 3	Evaluator 4	Evaluator 5	**Question score**
Q1	1	1	1	1	1	**5**
Q2	1	1	1	1	1	**5**
Q3	1	1	1	1	1	**5**
Q4	1	1	1	1	1	**5**
Q5	1	1	1	1	1	**5**
Q6	1	1	1	1	1	**5**
Q7	1	1	1	1	1	**5**
Q8	1	1	1	1	1	**5**
Q9	1	1	1	1	1	**5**
Q10	1	1	1	1	1	**5**
Q11	1	1	1	1	1	**5**
Q12	1	1	1	1	1	**5**
Q13	1	1	1	1	1	**5**
Q14	1	1	1	1	1	**5**
Q15	1	1	1	1	1	**5**
Q16	1	1	0	1	1	**4**
Q17	1	1	1	1	1	**5**
Q18	1	1	1	1	1	**5**
Q19	1	1	1	1	1	**5**
Q20	1	1	1	1	1	**5**
Q21	1	1	1	1	1	**5**
Q22	1	1	1	1	1	**5**
Q23	1	1	0	1	1	**4**
Q24	1	1	1	1	1	**5**
Q25	1	1	1	1	1	**5**
Q26	1	1	1	1	1	**5**
Q27	1	1	1	1	1	**5**
Q28	1	1	1	1	1	**5**
Q29	0	1	1	1	1	**4**
Q30	1	1	1	1	1	**5**
Q31	1	1	1	1	1	**5**
Q32	1	1	1	1	1	**5**
Q33	1	1	1	1	1	**5**
Q34	1	1	1	1	0	**4**
Q35	1	1	1	1	1	**5**
Q36	1	0	1	1	1	**4**
Q37	1	1	1	1	1	**5**
Score of each evaluator out of 37 (%)	36 (97.3%)	36 (97.3%)	35 (94.6%)	37 (100%)	36 (97.3%)	**Panel score 97.3%**

Appendix XXX

Participant's Consent Form

Title of Project: The effect of Action Learning Progrmme on Healthcare professionals' Knowledge, attitude & practice with regards to cancer-related pain management.

Name of Principal Investigator: Mohammed Kasasbeh

Study Institution: Trinity College Dublin

BACKGROUND

This research study has two parts. The first part is a survey in which you will be asked to complete a questionnaire twice at the beginning and end of a six month period. The second part is the establishment of informal interdisciplinary groups (doctors, nurses, pharmacists) which will work together in addressing issues that emerge from the audit process. There will be a meeting every 4 weeks lasting approximately 40 minutes held on the ward during your working hours. After the fourth meeting is complete, you will be asked to participate in a focus group interview to ascertain your views on the experience of working with the group. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. Only the researcher may inspect these records. You will have access to a transcript of the interview if you wish.

DECLARATION: I have read, or had read to me, the information leaflet for this project and I understand the contents. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I understand that I may withdraw from the study at any time and I have received a copy of this agreement.

PARTICIPANT'S NAME: .....

CONTACT DETAILS: .....

PARTICIPANT'S SIGNATURE: .....

Date:.....

Statement of investigator's responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

INVESTIGATOR'S SIGNATURE:..... **Date:**.....

Abstract

An action research study evaluating the effect of an action learning programme on healthcare professionals' knowledge, attitudes and practice.

By

Mohammed Kasasbeh.

Background: Cancer-related pain (CRP) is a widespread clinical problem in hospitalised patients having a negative impact on the patient as well as the organisation. Despite the remarkable advances in the management of pain, the literature remains replete with numerous studies indicating that many healthcare professionals still lack adequate knowledge and hold negative attitudes to CRP management. Deficits in the documentation and assessment practices of CRP among healthcare professionals remain prevalent despite the availability of universal standard guidelines on pain management. Healthcare professionals are integral to ensuring effective, safe and acceptable pain management and need to be equipped with adequate levels of knowledge in order to provide quality care to the cancer patient with pain. Numerous studies have used various types of programmes as means of education in the field of pain management. The majority of these studies used traditional didactic methods of education. Overall, no substantial positive outcomes were reported from using traditional educational programmes on knowledge, attitudes or practice. None of the studies reviewed used action learning sets as a means of education relating to CRP management.

Aim: The principle aim of this study was to test the null hypothesis that implementing an action learning programme on CRP management has no effect on healthcare professionals' knowledge, attitudes and practice. The second aim was to evaluate the effectiveness of implementing an action learning programme on healthcare professionals' knowledge, attitudes and practice regarding CRP assessment and management within medical and surgical wards in a major academic teaching hospital in Dublin.

Methods: An action research design was adopted utilising action learning sets as the intervention. The 'Knowledge and Attitudes Survey Regarding Pain' (KASRP) questionnaire, audit, semi-structured interviews and the Action Learning Set Evaluation (ALSE) tool were used for data collection. The entire population of healthcare professionals (N=170) were invited to participate in the survey before and after the action learning programme yielding a sample of 90 and 74 (response rate of 52.9% and 43.5% respectively).

Results: The study revealed widespread deficits in healthcare professionals' knowledge, attitudes and practices in relation to CRP management and assessment. However, significant improvement was reported after the action learning programme in healthcare professionals' knowledge, attitudes and practices ($p<0.001$). Results from the KASRP reported that the mean score of knowledge and attitudes increased from 22.4 (60%) before to 26 (70%) the action learning programme. Likewise, the audit results reported that the mean score of CRP management practices increased from 4.95 (33%) to 10.95 (73%). From the interviews, participants valued the action learning sets and recommended action learning as a successful and feasible approach to education and practice development in the clinical care settings.

Conclusion: Despite numerous existing organisational challenges to practice development and collaborative working in healthcare settings, this study has provided evidence of the efficacy of action learning in achieving positive outcomes at individual, team and organisational levels. The study also provided evidence of the utility of using action research methodology in the healthcare settings with hierarchical organisational structure and recommends that action research and action learning need to be considered as methods of education in the clinical practicum. Frequent education and training remain the most effective method to overcome barriers related to knowledge, attitudes and practice.