School of Nursing

An explorative study into the use of restrictive practices in an adult forensic mental health inpatient setting.

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DECLARATION

To the best of my knowledge and belief, this thesis contains no material previously published by any other person except where due acknowledgement has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received ethics approval from the Western Australian Department of Health Ethics Committee (HREC Reference number RGS00000000156) and Curtin University Human Research Ethics Committee (HRE2019-0153).

Lesley Anne Barr

Date: 17th October 2022

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We acknowledge that Curtin University works across hundreds of traditional lands and custodial groups in Australia, and with First Nations people around the globe. We wish to pay our deepest respects to their ancestors and members of their communities, past, present, and to their emerging leaders. Our passion and commitment to work with all Australians and peoples from across the world, including our First Nations peoples are at the core of the work we do, reflective of our institutions' values and commitment to our role as leaders in the Reconciliation space in Australia.

ABSTRACT

Reducing or eliminating restrictive practices (specifically seclusion, restraint, and Pro Re Nata [PRN] psychotropic medications), is a global health priority due to the risk of patient harm, workforce stress, injury, and human rights issues. In 2013, the United Nations 'Report of the Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment,' declared that the use of restrictive practices was inhumane and tantamount to torture. This declaration added pressure globally on governments and mental health services to reduce or eliminate the use of these practices. While governments and organisations implemented strategies to achieve this goal, data on the use of seclusion and restraint suggested that after a downturn in rates, frequency and duration, the use of these practices increased, particularly in the adult forensic mental health inpatient setting (AFMHIS). Furthermore, international rates of PRN psychotropic medication use in AFMHIS have not been reported by government agencies and therefore, have not received the same level of scrutiny as seclusion and restraint and require investigation.

Understanding what factors can contribute to the use of restrictive practices is critical to being able to influence policy, procedure, and practice changes. Indeed, the very nature of AFMHIS provides unique challenges in reducing and eliminating the use of restrictive practices, however, research is lacking in this setting.

The aim of this research was to explore the use of restrictive practices in the AFMHS. A multiphase mixed method research design (QUAN-qual) was used, with three quantitative and one qualitative research studies conducted in an AFMHIS in Australia. Integration and analysis of the study results occurred during the reporting stage of the thesis. Firstly, a survey compared the attitudes of nurses from acute and AFMHSs towards the use of PRN psychotropic medications. Secondly, an exploration of the experiences of nurses working in

the AFMHIS was completed. Thirdly, retrospective data collection was completed at an AFMHIS to evaluate whether seclusion use was influenced by nurse, clinical or contextual factors. Finally, the influence of patient factors on the use of seclusion was explored by undertaking a retrospective case file audit on all patients admitted to an AFMHIS over a six-month period.

The results of the literature review and each study are presented through a sequence of five peer reviewed journal articles and four standard thesis chapters. The findings of the studies provide insight into the experiences of nurses working in this unique setting and the care they provide. Practice differences in the use of PRN psychotropic medications were identified between forensic and mental health nurses working in acute inpatient settings. The study exploring nurses' experience of working in an AFMHIS identified four critical factors that influenced their practice experiences: (i) working in an interesting but challenging environment, (ii) specialty expertise, (iii) exposure to aggression, and (iv) the importance of effective teamwork and leadership. The analysis of staffing variables and the use of seclusion identified three staffing variables that had an influence on the use of seclusion: the number of registered nurses on duty, the presence of the shift coordinator and having a lead nurse on shift. The study analysing patient factors and the use of seclusion identified two patient characteristics, gender, and diagnosis, that increased the likelihood of a seclusion event occurring.

This research addressed gaps in knowledge by reporting rates of restrictive practices within an AFMHIS. In addition, the results elicited new information in understanding the influence of patient and nurse characteristics on the use of restrictive practices. Recommendations are made regarding practice improvement resulting from the findings of this research as well as areas for future research.

LIST OF PUBLICATIONS

This thesis contains published and in press peer reviewed articles. Each article uses spelling, pertinent terminology, and referencing in accordance with the requirements of the specific journal and the country of publication.

I declare that I have obtained permission from the copyright owners to use my own published journal articles in which the copyright is held by the publisher (See Appendices A, Q, R, S, T).

Publication 1

Barr, L., Wynaden, D., & Heslop, K. (2022). Understanding the influence of nursing staff characteristics on the use of restrictive practices in the adult forensic mental health inpatient setting - a systematic literature review. *British Journal of Mental Health Nursing*, *11*(3), 1-11. DOI:10.1111/inm.12306

Publication 2

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Publication 3

Barr, L., Wynaden, D. & Heslop, K. (2019). Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices. *International journal of mental health nursing*, *28*(4), 888-898. DOI: 10.1111/inm.12588

Publication 4

Barr, L., Heslop, K., Wynaden, D., & Albrecht, M. (2022). Nursing staff composition and its influence on seclusion in an adult forensic mental health inpatient setting: The truth about numbers. *Archives of Psychiatric Nursing*, *41*, 333–340. DOI: 10.1016/j.apnu.2022.09.011

Publication 5

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CONFERENCE AND PEER-REVIEWED PRESENTATIONS

Barr, L., Wynaden, D. & K. Heslop., (2012). Seclusion, restraint, and psychotropic PRN (Pro Re Nata) medication administration – reducing the use of restrictive practice within acute and forensic mental health care. Oral presentation, 8th October 2012 for Candidacy, *Curtin University*.

Barr, L., Wynaden, D. & K. Heslop., (2012). Seclusion, restraint, and psychotropic PRN (Pro Re Nata) medication administration – reducing the use of restrictive practice within acute and forensic mental health care. Oral presentation, 31st October 2012. *North Metropolitan Health Service- Mental Health, Graylands Hospital. Perth, Western Australia.*

Barr, L., Wynaden, D. & K. Heslop., (2013). Seclusion, restraint, and psychotropic PRN (Pro Re Nata) medication administration – reducing the use of restrictive practice within acute and forensic mental health care. Oral presentation, 20th June 2013. *XIIIth International Forensic Mental Health Service Conference, Maastricht, the Netherlands.*

Barr, L., Wynaden, D. & K. Heslop., (2018). Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices. Oral presentation, 27th September, 2018. *The Mark Liveris Research Student Seminar. Curtin University. Perth, Western Australia.*

Barr, L., Wynaden, D. & K. Heslop., (2019). Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices. Oral presentation. 28th November, 2019. *Nursing and Midwifery Leadership Conference. Crown Hotel. Perth, Western Australia.*

Barr, L., Wynaden, D. & K. Heslop., (2021). Nursing staff composition and its influence on the use of restrictive practices. Oral presentation. 24th June, 2021. *Clinical Governance Committee, North Metropolitan Health Service – Mental Health, Public Health, Dental Services. Perth, Western Australia.*

Barr, L., Wynaden, D. & K. Heslop., (2021). Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices and improve staff health and safety. Oral presentation, 25th June, 2021. *Australian College of Mental Health Nurses Western Australia Branch Symposium 2021 'The Ripple Effect of Self Care on Others'. Anzac House, Perth CBD, Western Australia.*

Barr, L., Wynaden, D. & K. Heslop., (2021). Milestone 3 presentation. Reducing the use of restrictive practices in forensic mental health settings. Oral presentation, 19th October, 2021. *Curtin University. Perth, Western Australia.*

Barr, L., Wynaden, D. & K. Heslop., (2021). Nursing staff composition and its influence on seclusion in a forensic mental health inpatient setting: the truth about numbers. Oral presentation, 25th October, 2021. *State Forensic Mental Health Service, Academic Hour. Perth, Western Australia.*

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CHAPTER 1

THE USE OF RESTRICTIVE PRACTICES IN ADULT FORENSIC MENTAL HEALTH INPATIENT SERVICES

1.1 Introduction

This hybrid thesis explored the use of restrictive practices (RPs) (seclusion, restraint, and PRN psychotropic medication use) in an adult forensic mental health inpatient setting (AFMHIS). The research was conducted using a multiphase mixed method research design (QUAN-qual). The American Psychological Association (APA) Sixth Edition format has been used throughout the thesis.

The thesis includes both peer reviewed journal articles and standard thesis chapters. Chapter one provides the definition of terms, research aims, objectives, need for the study and significance along with background information which provides the context for conducting the research. Chapter two presents a review of the literature on empirical studies completed on the use of RPs in the AFMHIS. Chapter three details the methodology used in the research reported on in this thesis. Chapters four to seven detail the findings of four research studies conducted at an AFMHIS in Western Australia. Finally, chapter eight integrates and discusses the research findings, the implications of the findings and makes recommendations for future research.

1.2 Background

The use of RPs (such as seclusion, restraint, and Pro Re Nata [PRN] psychotropic medications) are controversial in acute mental health and AFMHIS as they pose a risk of infringing the human rights of patients and present a health and safety risk to both patients and staff (Haw & Wolstencroft, 2014b; Husum, Bjørngaard, Finset, & Ruud, 2010; Maguire, Daffern, Bowe, & McKenna, 2019; Thomas et al., 2009; Vollm & Nedopil, 2016). As a

result, reducing and eliminating RPs has been a global health priority (Husum et al., 2010; McKenna, McEvedy, Maguire, Ryan, & Furness, 2017; Te Pou, 2017; Vollm & Nedopil, 2016). Despite this, RPs continue to be used by staff to manage patients experiencing acute behavioural disturbances (Haw, Stubbs, Bickle, & Stewart, 2011; Oster, Gerace, Thomson, & Muir-Cochrane, 2016; Reimann & Nussbaum, 2011). The inherent risk of such practices on patient safety and wellbeing, reinforces the importance of practice scrutiny and accountability when using these interventions. However, premature patient deaths continue to occur in mental health settings (Lee et al., 2003; Oster et al., 2016). Therefore, the need to undertake a multi-faceted review of RP use, nursing interventions and patient care in the AFMHIS is important and needs to focus on patient safety, staff safety and culturally sensitive care within a mental health recovery framework.

1.3 What are restrictive practices?

Seclusion, restraint, and the use of PRN psychotropic medications are collectively referred to in the literature as restrictive interventions, RPs, coercion or coercive practices and containment (Deveau & McDonnell, 2009; Hallett & Dickens, 2015; Haw et al., 2011; Muir-Cochrane, O'Kane, & Oster, 2018; National Mental Health Commission, 2015; Reeves, 2017). The terms are used interchangeably throughout the literature. Hui et al. (2017) made the distinction between restrictive interventions and RPs. Specifically, Hui et al. (2017) defined restrictive interventions as referring to measures implemented by staff to control or contain patients and includes the uses of physical restraint, mechanical restraint, chemical restraint (rapid tranquillisation) and seclusion. RPs on the other hand, were referred to as broader restriction on patients through the physical ward environment, ward dynamics, ward atmosphere and ward routines (Hui, 2017). However, for the purpose of consistency with common usage in the literature, seclusion, restraint, and PRN psychotropic medications are referred to as RPs throughout this thesis document. In addition, this research focuses on PRN

psychotropic medication use and does not include PRN medications used to address physical health symptoms such as analgesics, antibiotics or vitamins. While there are several terms used throughout the literature to describe PRN psychotropic medications such as Pro Re Nata, as needed medications, as required medication, sedation, rapid tranquillisation and emergency medication, for the purposes of consistency, the term PRN psychotropic medication will be used throughout this thesis document.

Seclusion is the supervised confinement of a patient alone within a room, which may be locked, where the patient is unable to leave (Griffiths, Roychowdhury, & Girardi, 2018; Van Der Schaaf, Dusseldorp, Keuning, Janssen, & Noorthoorn, 2013; Verlinde, Noorthoorn, Snelleman, van den Berg, Snelleman – van der Plas, Lepping, et al., 2017). Physical restraint refers to the use of physical force to restrict a person's movement (Sequeira & Halstead, 2002; Verlinde et al., 2017). Mechanical restraint is the use of devices on a patient, such as a belt or handcuffs, with the intent of restricting a patient's movement (Gildberg et al., 2015; Verlinde et al., 2017). While medication is not considered a RP by all clinicians, some researchers have identified the administration of PRN psychotropic medications as restrictive (Bowers et al., 2007; Iozzino, Ferrari, Large, Nielssen, & de Girolamo, 2015). This is particularly so when the administration of medication is 'enforced' against the wishes of the patient, which some patients have described as traumatic (Iozzino et al., 2015). As such, enforced medication (sometimes referred to as involuntary medication), is defined as the delivery of oral or intramuscular medication by force against the patient's will (Verlinde et al., 2017). Staff requests for patients to take PRN psychotropic medications can cause patient conflict and aggression (Maguire, Daffern, Bowe, & McKenna, 2019). In addition, the administration of PRN psychotropic medications can also be regarded as restrictive when administered under psychological pressure, that is, when the patients take medication under the threat of, or to avoid, another form of restriction such as seclusion (Thomas et al., 2009;

Verlinde et al., 2017). In 2013, a report by the United Nations Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment, described involuntary treatment as a form of torture and ill-treatment and called for a ban on their use against persons with disabilities (Mendez, 2013).

1.4 Clinical controversy – A 'necessary evil'?

RPs are common clinical interventions used by staff to manage challenging behaviours such as aggression, self-harm, absconding, property damage and medication refusal, in acute and AFMHSs (Bowers & Crowder, 2012; Gudjonsson, Rabe-Hesketh, & Wilson, 2000; Renwick et al., 2016). In many countries, the use of these practices are mandated by legislation (Ching, Daffern, Martin, & Thomas, 2010), while in others they are administered using local guidelines, standards and policies (Gowda et al., 2018; Kalisova et al., 2014; Pawlowski & Baranowski, 2017). Their use is permissible if deemed medically necessary to save lives or prevent serious harm, and if used as a proportionate, least restrictive and last resort intervention (Deveau & McDonnell, 2009; Radisic & Kolla, 2019). However, the concepts of medical necessity and 'last resort,' are increasingly being scrutinised due to the subjectivity of the decision making process (Deveau & McDonnell, 2009; Haw et al., 2011). Indeed, the United Nations Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment, called into question the rhetoric of medical necessity in 2013, after observing 'dubious grounds' for justifying RPs in healthcare provision (Mendez, 2013, p. 8).

The use of RPs has become increasingly controversial and raises ethical dilemmas for staff (Beck et al., 2008; Haw & Wolstencroft, 2014b; Kalisova et al., 2014; Maguire, Young, & Martin, 2012; Steinert et al., 2010; Thomas et al., 2009). The controversy lies in concerns regarding infringement of patient rights (Griffiths et al., 2018), overuse of these practices (Howe & Sethi, 2018) and emerging evidence of significant harm and trauma to both

patients, their families and staff (Griffiths et al., 2018; McKenna, 2016; Oster et al., 2016). RPs can cause short and long term patient injury and on some occasions have resulted in death (Goulet & Larue, 2017; Price, Baker, Bee, Grundy, et al., 2018). Studies have shown that the use of RPs can also have a paradoxical effect in provoking patient violence and aggression which in turn, can result in a cycle of escalation, aggression and containment (Qurashi, Johnson, Shaw, & Johnson, 2010; Reimann & Nussbaum, 2011). In addition, critics have expressed concern that RPs can be used punitively (Ching et al., 2010; Haw et al., 2011; Heilbrun, Golloway, Shoukry, & Gustafson, 1995; Reimann & Nussbaum, 2011), rather than for legitimate purposes, and are more likely to be employed in poorly staffed facilities (McKeown et al., 2019).

While evidence to support the therapeutic value of RPs is lacking (Ashcraft & Anthony, 2008; Muir-Cochrane, 2018a; Steinert et al., 2010), there remains concerns that reducing or eliminating the ability of staff to use RPs will result in increased staff assaults and injuries (Ashcraft & Anthony, 2008). This is particularly pertinent for the few patients who do not respond to less restrictive interventions such as staff providing reassurance, staff engaging patients in distraction activities (i. e. listening to music, playing games), or patient redirection (such as going for a walk) (Goulet & Larue, 2017; Maguire, Daffern, Bowe, & McKenna, 2018; Newman, Paun, & Fogg, 2018). For this reason, some professionals and scholars assert that it may not possible to completely eliminate RPs, until efficacious alternatives are identified that ensure the safety of staff and patients (Ching et al., 2010; Mathias & Hirdes, 2015; Muir-Cochrane, 2018a; Thomas et al., 2009). These sentiments reflect the tension existing in clinical settings where organisations and staff are required to integrate security with therapeutic goals while reducing (and where possible eliminating) the use of RPs when staff face rising levels of violence and aggression (Martin et al., 2013; McKeown & Foley, 2015). This is of particular concern in the AFMHIS where rates of

violence and aggression are reported to occur at significantly higher rates than in other acute mental health inpatient settings (Dickens, Picchioni, & Long, 2013; Renwick et al., 2016). High rates of violence and aggression can result in actual and perceived threats to staff and their safety (Maguire et al., 2012). Recognising factors that impact staff safety is important as they can work against initiatives to reduce RP use in AFMHIS (Maguire et al., 2012). For example, actual and perceived staff safety results from the complex relational/interactional dynamic between staff and patient characteristics and contextual features, such as ward/ environment (Haines, Brown, McCabe, Rogerson, & Whittington, 2017). As a result, AFMHIS must ensure that staff are trained to safely prevent and manage patient aggression, within the confines of the secure environment, through the use of physical, relational and procedural security (Markham, 2022). Services that fail to address threats to staff safety risk facing recruitment and retention difficulties (Oates, Topping, Ezhova, Wadey, & Marie Rafferty, 2020).

1.5 Prevalence of restrictive practice use

Over the last decade there has been increased scrutiny on the frequency and prevalence of seclusion and restraint use in acute and AFMHIS internationally (Muir-Cochrane, 2018a). In some countries, like Australia, this has resulted in national mandatory reporting for seclusion and restraint. However not all countries have a central agency responsible for overseeing standardised data collection, data interpretation and data reporting which hinders the ability to compare and analyse RP use across countries (Lepping, Masood, Flammer, & Noorthoorn, 2016). In addition, less attention has been given to the use of PRN psychotropic medications in this setting and data on rates (locally and internationally), are limited, which impacts the capacity of countries and services to evaluate their prevalence.

Internationally, RPs are measured by frequency, duration and type of RP used (Deveau & McDonnell, 2009). To date, data on the use of RPs indicates significant

variations in use across countries, organisations and clinical settings including adult acute and adult forensic mental health inpatient care (Bowers et al., 2007; Lai et al., 2019; Lay, Nordt, & Rössler, 2011; Te Pou, 2017). Such variations in data may be attributed to different definitions of RPs and the methodological differences in data collection further compounding attempts to compare practice rates (Lau, Brackmann, Mokros, & Habermeyer, 2020; Oster et al., 2016). For example, the interpretation of what is considered 'seclusion' varies. Seclusion may or may not be recorded in instances where the door is open, is requested by the patient, is classified as 'time out', occurs within the patient's own bedroom as opposed to a designated seclusion room, or where night-time confinement is part of the ward routine (Hui, Middleton, & Völlm, 2013; Mathias & Hirdes, 2015; Van Der Schaaf et al., 2013).

In a study conducted across 10 European countries, Raboch et al. (2010) found great variations in the frequency of RP use between countries. They found that Germany, Bulgaria, Czech Republic, Greece, Italy, Lithuania, and Sweden commonly used a single RP measure whereas the United Kingdom, Poland and Spain frequently utilised two or more RP measures per patient (Raboch et al., 2010). Lepping et al. (2016) conducted a study of four European countries' seclusion and restraint datasets: Wales, Ireland, Germany and the Netherlands. They found that the type and length of RPs used across countries varied considerably with the Netherlands accounting for the highest use of seclusion (79 %), the longest restraint durations and low use of enforced medication, while Wales used seclusion the least (2 %), followed by Ireland (29 %) and Germany (49 %) (Lepping et al., 2016).

Variations in clinical practice may be ascribed to a number of factors: differing legislation in countries; societal and cultural factors; organisational factors (including policies and procedures); clinical setting type and case mix (adult, child, forensic, older adult); differing treatment cultures including the presence of seclusion rooms; and staff factors (Bowers, 2014; Lau et al., 2020; Oster et al., 2016). Furthermore, the use of RPs may be

influenced by staff's perception of how acceptable such practices are regarded in their country and organisation, and what is determined as the 'least restrictive' intervention (Lepping et al., 2016; Steinert & Lepping, 2009). For example, mechanical restraint is commonly employed in Finland and involves tying patients to furniture, whereas in the United Kingdom (UK) this is not permitted (Raboch et al., 2010). In addition, the presence of seclusion rooms is inconsistent across UK settings, while in the Netherlands seclusion and mechanical restraint are both used (Bowers et al., 2007). Bowers et al. (2007) examined the attitude of staff toward the use of RPs in four countries. They found that the attitudes of staff reflected the pattern of RP use in their country (Bowers et al., 2007). Specifically, staff from the UK and Australia reported the least approval for using RPs while the Netherlands reported the highest approval (Bowers et al., 2007). The results from these studies support the assertion by Raboch et al. (2010) that a country's sociocultural traditions and treatment customs influence the frequency and type of RP used. However, results from these studies do not conclusively settle the debate on what factors influence the use of RPs. Data from an international study in Europe (EUNOMIA), reported that while different practices concerning the use of RPs were identified across 10 European countries, RPs were used in a consistent way across a group of patients with similar characteristics (Kalisova et al., 2014). Specifically, patients experiencing RPs presented with high levels of psychiatric positive symptoms (including delusions, hallucinations and paranoia), hostility, poor global functioning and had high levels of perceived coercion at admission (Kalisova et al., 2014; Podubinski, Lee, Hollander, & Daffern, 2017).

In Australia, national data on the use of seclusion, physical restraint and mechanical restraint have been published by the Australian Institute of Health and Welfare [AIHW] since 2008 (AIHW, 2021). Data reported include the number, rate and duration of seclusion, restraint, and mechanical restraint events (AIHW, 2021). Data is also reported for specific

patient populations including general mental health services, child and adolescent services, older person services and forensic mental health services (AIHW, 2021). In addition, the AIHW also report annual national data on RP use by service remoteness including major city, inner regional and outer regional and remote areas (AIHW 2021).

Published data suggests that while acute inpatient mental health services in Australia have maintained a steady reduction in their seclusion rates since 2008, forensic mental health services have experienced a rise in the rate of seclusion use (AIHW, 2021). In addition, the average number of seclusion events in forensic mental health services have almost doubled since 2013 (AIHW, 2021). While forensic mental health services have reported a significant drop in average seclusion duration, and the rate of physical and mechanical restraint since 2013, the rates remain higher than acute general mental health services (AIHW, 2021). The publication of the AIHW data clearly demonstrates the variations in seclusion and restraint rates across Australia and across service populations (AIHW, 2021). The 2021 data suggest that patients admitted to forensic mental health settings in Australia are now being secluded more often but for shorter periods of time.

No countries currently report national data on the use of PRN psychotropic medications in acute and AFMHIS. The prevalence rates on PRN psychotropic medication use can only be gleaned from local studies published at the service level and in data reported in peer reviewed journals.

The publication of data increases the visibility of the prevalence of seclusion and restraint use and provides opportunities for organisations to monitor and benchmark their performance with other services and set targets to achieve a reduction in practices (Muir-Cochrane, 2018a). Indeed, Germany have utilised benchmarking processes to reduce seclusion and restraint, albeit marginally (Lepping et al., 2016). Systemic oversight through

benchmarking can lead to a shift in service culture and help detect and remedy suboptimal clinical outcomes (Lepping et al., 2016). As such, an absence of data collection and benchmarking for PRN psychotropic medication use hinders opportunities to scrutinise the prevalence of this practice (Haw & Wolstencroft, 2014b).

1.6 The influence of legislation, policies, guidelines, and reports

In response to increasing clinical, ethical and legal challenges regarding high rates of RPs, internationally governments and organisations over the last two decades have implemented initiatives to reduce and eliminate their use through changes to legislation, policy and guidelines (Maguire et al., 2012). Some countries have demonstrated that changes in legislation can have a profound effect on what type of RP is used. For example, in the Netherlands, changes in the Mental Health Act which resulted in enforced medications requiring extensive approval procedures, led to a decrease in enforced medication use but a simultaneous increase in seclusion use (Lepping et al., 2016). Similarly, in Germany the use of enforced medications became unlawful in some federal states which resulted in a sharp rise of incidents of aggression and an increase in seclusion and mechanical restraint use (Lepping et al., 2016). In New Zealand, despite introducing a seclusion and restraint reduction strategy in 2008, and introducing seclusion monitoring as a key performance indicator in 2014/2015, changes in practices have proved difficult to achieve with seclusion rates remaining steady (Te Pou, 2017).

While governments and organisations have called for the reduction and elimination of RPs, specifically seclusion and restraint, none so far have taken the bold step of banning such practices. In Australia a plethora of strategies, policies, guidelines and reports have been released by the Australian government to reduce the use of RPs including, the 1992 ‘Australian Mental Health Strategy’ (Grace et al., 2017), the 2005, ‘Australian National Safety Priorities in Mental Health: A national plan for reducing harm’(Australian National

Mental Health Working Group, 2005), the 2010 Australian National Standards for Mental Health Services (Australian Government., 2010), the 2016 ‘Australian National Principles to Support the Goal of Eliminating Mechanical and Physical Restraint in Mental Health Services’ (Australian Restrictive Practice Working Group, 2016) and most recently the 2017 Australian National Safety and Quality Health Service Standards (NSQHS) (2nd Edition) (Australian Commission on Safety and Quality in Health Care, 2017). These documents provide principles, guidance and recommendations to mental health services on recovery and trauma-informed practices, RP prevention strategies, training, managing escalating behaviours and partnerships with clinicians, carers and consumers (Australian Restrictive Practice Working Group, 2016). Importantly, some recognise that while medications are a 'critical element' in the treatment of mental illness, medication administration can also be deemed to be a RP and therefore, must be monitored closely and prescribed in line with evidence based guidelines (Australian National Mental Health Working Group, 2005).

Continued pressure from consumer and carer groups in Australia to reduce unacceptably high levels of seclusion and restraint prompted the release of position papers by the Australian National Mental Health Commission in 2015 (National mental health consumer & carer forum, 2009). The paper provided an overview of the evidence supporting best practice and options for reform which included a focus on improving changes to the environment, consumer involvement and family/carer/support person support, workforce development, leadership and improvements to organisational culture (Australian National Mental Health Commission, 2015).

In 2017, it became mandatory for public and private health services in Australia to be assessed to the Australian National Safety Quality Health Service Standards, to meet the standards under the Australian Health Service Safety and Quality Accreditation Scheme (ACSQHC, 2017). The updated standards incorporated mental health specific actions to

address minimising seclusion and restraint through strategies that predict, prevent, and manage aggression and violence (ACSQHC, 2017). Also in 2017, the Australian Fifth National Mental Health and Suicide Prevention Plan was released, which articulated a national commitment to an agreed set of eight priority areas and actions including reducing the use of restrictive practices such as seclusion (Australian Department of Health, 2017).

Although legislation and standards have had an impact on the use of RPs, many scholars have concluded that the wide variation in seclusion and restraint use across countries and organisation cannot be attributed to the sociocultural and clinical characteristics of the patients within services, rather, variations are more likely due to unit culture and variations in clinical practices (Muir-Cochrane, 2018b; Te Pou, 2017). Therefore, it is imperative that services who use high rates of RPs, such as AFMHIS, are scrutinised to identify opportunities for practice improvement.

1.7 The adult forensic mental health inpatient setting (AFMHIS)

Situated within criminal justice, health and social systems, forensic mental health care is a subspecialty within psychiatry which provides care, assessment and treatment to patients who interact with the criminal justice system (Askola et al., 2018; Durey, Wynaden, Barr, & Ali, 2014; Harris, Happell, & Manias, 2015; Martin et al., 2013; McKenna, 2020). Forensic mental health services are delivered in prisons, courts, police stations, AFMHIS (also referred to in some countries as secure units) and the community (Martin et al., 2013; McKenna et al., 2003).

Most patients admitted to AFMHIS are remanded or detained under relevant legislation (such as a Mental Health Act), due to the risk posed to themselves or to others, including public safety (Dickens et al., 2013; Young, 2011). Patients present with significant mental illness and challenging behaviours such as hostility and violence, as well as complex

physical health needs (Hammarström, Häggström, Devik, & Hellzen, 2019; Mathias & Hirdes, 2015). Aggression, and the threat of aggression is a daily occurrence in these settings (Laiho, Hottinen, Lindberg, & Sailas, 2016). Research to date demonstrates that staff injuries occur at a much higher rate in the AFMHIS than acute mental health inpatient settings, with the risk of staff injury increasing when RPs are used (Dickens et al., 2013; Renwick et al., 2016).

The very nature of the AFMHIS epitomises restrictiveness by ward design, ward routine and physical, procedural and relational security procedures, which can contribute to an increased risk of aggression and violence (Hammarström et al., 2019; Maguire, Ryan, Fullam, & McKenna, 2022; Tomlin, Egan, Bartlett, & Völlm, 2020; Urheim et al., 2020). AFMHISs are designed and operated to prevent incidents or violence to self and others (Kennedy et al., 2020). Such features of this unique clinical environment provide challenges for health professionals to reduce the use of RPs (Maguire et al., 2012).

1.8 Forensic mental health nursing

Forensic mental health nursing has evolved over the last 20 years and is now recognised as a sub-specialty of mental health nursing in many countries (Martin et al., 2013). This evolution however, has been marred at times by negative media or political attention relating to reports of abuse by staff towards patients (Hinsby & Baker, 2004; Martin et al., 2013). In addition, old stereotypes portray forensic mental health nurses as macho, "glorified custodians" wielding power and authority through lock and key (Gillespie & Flowers, 2009). This negative portrayal of forensic mental health nurses touches on the biggest challenge faced by nurses who work in the AFMHIS; navigating two contrasting cultures- traditional mental health care and the custodial environment (Durey, Wynaden, & O'Kane, 2014b; Gillespie & Flowers, 2009). Health and custodial cultures have contradictory needs and expectations (Durey et al., 2014b) which leads to a tension between

paternalistic and therapeutic care delivery (Gildberg, Elverdam, & Hounsgaard, 2010). Forensic mental health nurses must therefore integrate providing optimum treatment and care within the confines of the locked environment with high fences, security access and egress and camera surveillance systems (Durey et al., 2014b). Stringent security policies and procedures govern the daily routine of ward life including counting in and counting out cutlery, and patient room and property searches (Bowring-Lossock, 2006; Tomlin, et al., 2020). Legal restrictions impact on forensic mental health patient's freedom including access to the community, internet and mobile phones (Askola et al., 2018). Moreover, legal restrictions can result in 'imposed recovery' (Young, 2011), where attempts to implement recovery-oriented care, such as patient hope, autonomy, and choice are compromised (McKenna, Furness, Dhital, Park, & Connally, 2014a). In addition, the disproportionately high rates of Indigenous people imprisoned in colonized countries present additional care giving challenges, such as providing culturally safe care (Durey et al., 2014; McKenna, 2020).

Over the last 20 years, increased research in the area of forensic mental health nursing has cast a light on the role and challenges of working in this unique environment (Exworthy, Mohan, Hindley, & Basson, 2001; Gildberg et al., 2015; Gustafsson & Salzmann-Erikson, 2016; Hallett & Dickens, 2015; McKenna et al., 2017). Importantly, the publication of the Australian Standards of Practice for Forensic Mental Health Nurses in 2013, went some way to advance the professional identity of forensic mental health nursing (Martin et al., 2013). The standards articulated the core knowledge, skills, and attitudes required for the role including, minimising stigma and discrimination, integrating security within the ward structure and when developing therapeutic goals, knowledge of the legislation and its impact on nursing care, forming therapeutic relationships and practicing ethically, interdisciplinary teamwork, understanding offending behaviour, trauma, risk, transition between

environments, physical health, substance use, working with families, advocacy, long-term care and challenging behaviours (Martin et al., 2013). The standards encapsulated the nuances of this specialist role and reinforced that working in this specialty area is much more than being a mental health nurse in a forensic environment, but a role requiring specialist skills and abilities (Martin et al., 2013). Despite this, no specialist qualifications in forensic mental health nursing are required to secure employment in forensic mental health services (Martin, 2009), and no undergraduate program in forensic mental health nursing exists in Australia (Hungerford & Hodgson, 2013).

While the formation of therapeutic relationships with patients remains the cornerstone of forensic mental health nursing as is in any area of nursing (Gillespie & Flowers, 2009; Martin & Street, 2003), forensic mental health nurses are required to care for patients who have often committed heinous offences including murder, sex offences and crimes against children, which can leave them feeling repulsed and fearful (Harris et al., 2015; Repo-Tiihonen, Vuorio, Koivisto, Paavola, & Hakola, 2004). Fear, in turn, can lead to avoidance resulting in patients receiving sub-standard care (Dickens, Piccirillo, & Alderman, 2013). For this reason, the forensic mental health nurse must demonstrate a non-judgemental attitude that demonstrates respect, equity, fairness and confidentiality for all patients regardless of their offending or diagnosis (Bowen & Mason, 2012; Bowring-Lossock, 2006). In addition, the very nature of security procedures and practices in these settings can thwart the development of a therapeutic relationship between staff and patients through the presence of an imbalance of power which can lead to a dynamic of 'them and us', and compromise cultural safety (Knowles, Hearne, & Smith, 2015; McKenna, 2020). For this reason, the forensic mental health nurse must possess well developed communication and engagement skills, and have an ability to be reflective (Bowen & Mason, 2012). Non-provocative communication and an ability to monitor and regulate their own emotions and reactions are

crucial for forensic mental health nurses in preventing patient aggression and maintaining a safe and secure ward atmosphere (Fluttert, van Meijel, Nijman, Bjørkly, & Grypdonck, 2010). An absence of these skills can lead to forensic mental health nurses delivering care in a custodial manner, rather than therapeutically. Custodial focused care is characterised by an impersonal and task orientated approach that focuses on maintaining security procedures and observing and reporting patients behaviours (Durey et al., 2014b; Martin & Street, 2003).

1.9 Models and frameworks to reduce the use of restrictive practices

Low rates of RPs have been described as an indicator of high quality mental health treatment (Jalil, Huber, Sixsmith, & Dickens, 2020; Laiho et al., 2016; Lau et al., 2020). In response to calls to reduce and eliminate the use of RPs, frameworks and models have been developed internationally to assist organisations reduce the use of RPs including Safewards, No Force First, ResTRAIN YOURSELF and Six Core Strategies (Haines et al., 2017; McKeown et al., 2019; Power, Baker, & Jackson, 2020). These models and frameworks focus on various elements of mental healthcare delivery including managing conflict and containment (Bowers et al., 2015), leadership, using data to influence practice improvement, developing the workforce, using tools to reduce the use of seclusion and restraint, implementing consumer roles in hospital settings, ensuring patients and staff are debriefed after incidents (Goodman, Papastavrou Brooks, Price, & Barley, 2020; Huckshorn, 2004; Urheim et al., 2020), and employing recovery principles (Ashcraft, Bloss, & Anthony, 2012; Long, West, Afford, Collins, & Dolley, 2015).

Although studies to date have demonstrated reductions in RPs in acute mental health settings that have implemented these models or frameworks (Bowers et al., 2015), their effectiveness has not been well established in AFMHIS (Goulet, Larue, & Dumais, 2017; Lawrence, Bagshaw, Stubbings, & Watt, 2021). Maguire et al. (2018), evaluated the introduction of Safewards into a AFMHIS and found that although Safewards did not

influence a reduction in RPs, it did have a positive impact on the therapeutic ward environment. Additionally, in their scoping review of RPs and reduction programmes in AFMHIS, Lawrence et al. (2021) found that where services implemented Safewards, no services reduced the rates of RPs.

In Australia, a national mental health seclusion and restraint project (known as the Beacon project) was implemented between 2007 and 2009, which recruited eleven mental health services (including AFMHIS) across the country to develop key principles, guidelines and implement reduction strategies (Melbourne Social Equity institute, 2014). Between 2008 and 2018 national mental health seclusion and restraint reduction forums were held across Australia to showcase innovations in practice and share performance results and research. While the successful reduction in the use of seclusion achieved at some sites during the Beacon project was maintained at many services, there has emerged debate in the literature that chemical restraint, through an over-reliance on PRN psychotropic medications, may have replaced seclusion as a frontline management strategy for violence and aggression. In some international studies for example, reports of higher rates of medication use, including PRN psychotropic medications, have been reported where a reduction in restraint and seclusion has occurred (Georgieva, Mulder, & Whittington, 2012; Noorthoorn et al., 2016; Steinert, Noorthoorn, & Mulder, 2014). For this reason, it is essential that services evaluate the use of seclusion, restraint, and PRN psychotropic medication use to identify and explain any practice variations that may be present.

1.10 The need for the research

The idea for the research presented in this thesis emerged because of a publication of an audit report in 2013 on the use of regular and PRN anti-psychotic medication prescribing and administration at the study site (an AFMHS in Australia). The audit results reported that patients at the site were routinely exposed to ‘antipsychotic polypharmacy’ (Luft, 2013).

Antipsychotic polypharmacy was described as the concurrent use of two or more different antipsychotic drugs prescribed to one patient (Luft, 2013). Antipsychotic polypharmacy was recognised as a significant contributor to high-dose prescribing, higher side-effect incidence, and increased mortality (Luft, 2013). The audit results indicated that the occurrence of antipsychotic polypharmacy had increased from 37% in 2002 to 55% in 2007, and 89.8% in 2013 (Luft, 2013). The audit authors suggested that PRN psychotropic medication prescribing and administration practices within the site were the most common reasons for antipsychotic polypharmacy and these practices were embedded within the service (Luft, 2013). The authors of the audit noted a lack of clarity regarding the prescribing and administering processes of PRN psychotropic medications, including role responsibility for initiating, reviewing and monitoring the response and side effects of the medications (Luft, 2013).

The publication of the antipsychotic medication prescribing and administration audit report (Luft, 2013), prompted the site to question whether the reduction in seclusion and restraint practices at the site, as a result of the Beacon project, had been replaced with the use of antipsychotic polypharmacy. As a result, the nursing leadership team considered means of exploring the attitudes and practices of nurses on the use of seclusion, restraint, and PRN psychotropic medications. Thereafter, the nursing leadership team wanted to explore the experiences of nurses working in the AFMHIS and understand what skills they believed were important in managing challenging behaviours to enable them to reduce the use of RPs such as seclusion, restraint, and PRN psychotropic medications.

The research included in this thesis commenced in 2012 and continued through to 2019. The extended period of time between data collection, data interpretation and publication occurred as a result of a number of factors including the researcher undertaking a period of one year leave of absence during the research journey, protracted governance and

ethics approval procedures at the study site and, prolonged publication processes with journals. Most recently, the occurrence of the Covid-19 pandemic resulted in the researcher and the study site having to prioritise clinical service delivery above the research study. However, the results of this study remain very valid and important. This study provides a 'picture in time' of the prevalence of RPs, patient and staff factors influencing their use which does not lose validity over time. The results provide an invaluable contribution towards health research and highlights the evolution of nursing practices.

1.11 Purpose of the research

The purpose of this research was to better understand the prevalence of, and reasons for, RP use in an AFMHIS. In addition, the research was to add to the international knowledge base and develop practical recommendations for practice improvement that would have patient, organisational and professional impact.

1.12 Aims and objectives of the research

Undertaking research on rates of, and reasons for, clinical interventions is an effective way of understanding clinical practices, therefore the research aimed to examine the use of RPs in this specialty setting. The objectives were to:

1. Complete a review of international peer reviewed literature to determine factors influencing the use of RPs in the AFMHIS.
2. Compare and evaluate nurses' attitudes towards the use of PRN psychotropic medications in acute and AFMHIS to determine differences that may affect clinical practice.
3. Study the rates of RP use at one AFMHIS and identify nurse or patient characteristics that may influence their use.

4. Explore nurse attitudes, experiences, and practices of RP use in this specialty area.
5. Engage with nurses to identify challenges and opportunities to reduce the use of RPs in the AFMHIS.
6. Discuss the findings within the context of current literature in the area.
7. Integrate and evaluate the results from the research undertaken in this thesis to identify service improvements that promote staff and patient safety and reduce the need to use RPs.

The aims and objectives were addressed through four studies using a multiphase mixed method research design (QUAN-qual).

1.13 Significance of the research

Failing to critically examine and challenge the rising rates of RP use in the AFMHIS increases the risk that services will continue to increase their use, leading to infringements of patient rights and exposing patients and staff to injury and trauma. However, a lack of research on the use of RPs in this setting has been highlighted in the literature.

The research results are particularly important as they focused on issues impacting the delivery of patient care to a vulnerable patient population – forensic mental health patients. The research provided an important opportunity to not only provide an Australian perspective on the subject, but to also add to the international body of evidence on RP prevalence in this specialty setting. Understanding the use of RPs can assist services, health professionals and training organisations to consider opportunities for practice improvement. In addition, the results may assist services in augmenting care pathways and models of care, to provide early interventions for patients at risk of experiencing RPs.

1.14 Assumptions underlying the research

As the researcher had prior experience working in the AFMHIS, it was important that any assumptions held by the researcher were identified before the research commenced to reduce research bias. The researcher's assumptions were:

1. RPs are over-used in AFMHIS;
2. RPs are used in lieu of least restrictive alternatives;
3. There are insufficient education and training programs available to adequately prepare nurses to work in the AFMHIS;
4. Nurses working within the AFMHIS are pessimistic about being able to reduce or eliminate the use of RPs;
5. Alternatives to RPs are not well known in nurses working in the AFMHIS;
6. Staffing levels within AFMHIS adversely impact the ability of nurses to reduce the use of RPs.

1.15 Definition of terms used in this thesis

Term	Definition
Restrictive practices	A collective term (also referred to in the literature as restrictive interventions, coercive practices, coercive interventions and coercive measures) used to describe clinical interventions used in acute and AFMHSs to safely manage patient related incidents and behaviours such as verbal and physical aggression, medication non-compliance, attempts to abscond, self-harm and property damage (Bowers & Crowder, 2012; Janssen, Noorthoorn, Linge, & Lendemeijer, 2007; Lawrence et al., 2021). They are often actions carried out against the will of the patient, that restricts freedom, and include seclusion, physical restraint, bodily restraint, mechanical restraint, forced medication, chemical restraint and involuntary medication (Hui, Middleton, & Vollm, 2016; Lau et al., 2020; Steinert et al., 2010).
Seclusion	The confinement of a person in a room or area (at any time of the day or night), in an authorised hospital where the person has no control or ability to leave (Government of Western Australia, 2014a).

Bodily restraint	The use of physical or mechanical restraint on a person who is being provided with care at an authorised hospital (Government of Western Australia, 2014a).
Authorised Hospital	An authorised hospital is a designated public or private hospital within Western Australia, endorsed under the mental health act to receive and admit involuntary patients (Government of Western Australia, 2014a).
Physical restraint	The application of force to a person's body in order to limit movement and mobility (Government of Western Australia, 2014a). However, a person is not considered physically restrained when physical support or assistance is offered that is reasonably recognised as required for the person to carry out daily living tasks or to redirect the person because the person is confused (Government of Western Australia, 2014a).
Mechanical restraint	The restriction of a person's movement using devices such as a belt, harness, manacle, sheet, or strap (Lau et al., 2020). Mechanical restraint does not include the appropriate use of medical or surgical appliances when delivering treatment for physical illness or injury, or the appropriate use of furniture to limit a person's ability to get off furniture such as cot sides

	on beds or chairs with a table across the arms (Government of Western Australia, 1996).
Chemical restraint	The use of medication, often intramuscular, against a patient's will, to restrict a patient's behaviour and freedom of movement when they are deemed a risk to themselves or others (Lau et al., 2020). Chemical restraint is also referred to as rapid tranquilisation, and results in impaired ability of the patient to interact with their surroundings (Hui et al., 2013).
Pro Re Nata (PRN) medication	Medication administered 'as required' by nurses in response to a patient's symptoms or behaviour including insomnia, agitation or anxiety (Jimu & Doyle, 2019).
Forced medication	Also referred to in the literature as 'enforced medication' or 'involuntary medication', is the administration of medication against the will of the patient either intramuscularly or orally (Iozzino et al., 2015; Verlinde et al., 2017).

1.16 Chapter precis

This hybrid thesis comprises eight chapters including this introduction, a methodology chapter and six supporting chapters. Chapter one has provided an outline of the thesis document, definition of terms and important background information related to the research subject. The background information provides a context for the use of RPs in, AFMHIS and how political influences internationally have shaped the use of these practices over the last 20 years. In addition, the rates and frequency of RP use were explored from a global and Australian perspective to provide context to the extent of the issue. The introduction chapter has also established the aims, purpose, objectives, and significance of this research.

Chapter two will now present a literature review on empirical studies completed on the use of RPs in the AFMHIS.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Chapter two provides an overview of the literature on the use of RPs in the AFMHIS. The literature review is presented in three stages to incorporate additional articles published after the initial systematic literature review was completed. Firstly, the findings from a systematic literature review examining the use of RPs in the AFMHIS, are presented. This review was completed in December 2012 and reports (i) the prevalence rates of RP use, (ii) staff and patient attitudes and experiences of RP use, and (iii) interventions designed to reduce the use of RPs in the AFMHIS. Secondly, a systematic literature review was conducted in June 2020 to explore the influence of nurse characteristics on the use of RPs in the AFMHIS. This review was conducted as preparatory work before commencing the study into nurses' characteristics and their influence on RPs (chapter 6). Finally, an updated review of the literature since the initial review in 2012 is presented. A summary of recommended areas of further research identified in the literature is provided.

2.2 Stage 1 - Systematic literature review

Restrictive practices in the adult forensic mental health inpatient setting.

In December 2012, a systematic literature review was completed to examine the use of RPs (seclusion, restraint, and PRN psychotropic medication use), in the AFMHIS. A systematic literature review is defined as a rigorous procedure for examining, reviewing, summarising and synthesising knowledge of a subject from prior research (Carver, Hassler, Hernandes, & Kraft, 2013; Okoli, 2015; Xiao & Watson, 2019). Undertaking a systematic literature review is regarded as an essential element in academic research, and serves an important purpose in assisting researchers to understand the breadth and depth of the existing

body of work, and identify gaps for further exploration (Xiao & Watson, 2019). Systematic literature reviews can be defined into four categories based on the review's purpose: to describe the literature related to a particular subject; to test a hypothesis or answer a question; to extend the development of theories based on the literature available; and to critique the literature against a standard or criteria (Xiao & Watson, 2019). The purpose of this systematic literature review was to provide a descriptive account of what is currently known about the research subject, identify key themes and guide the focus of this research by identifying gaps in knowledge and areas requiring further investigation. To achieve this, seven steps were completed to achieve a rigorous and repeatable systematic literature review: 1) identify the research problem and the purpose for undertaking the systematic literature review; 2) develop a systematic literature review protocol; 3) search the literature; 4) extract the data; 5) assess the quality of the articles retrieved; 6) analyse and synthesise the data; and 7) report the findings (Okoli, 2015; Xiao & Watson, 2019). For rigour, the systematic literature review was conducted in accordance with the JBI Reviewer's Manual (2014).

Methodology.

The Joanna Briggs Institute (JBI) Systematic Review Database was reviewed to determine if a systematic review of similar title/content had been undertaken, however, none were registered.

To conduct the literature search, an initial search of CINAHL was undertaken using the mnemonic PICo (population, the phenomena of interest and the context) to define the key search terms required for the next stage of the review (Table 2.1.).

Table 2-1. Use of PICo to define keywords

PICo	Key search terms
Population	Forensic mental health nursing, mentally ill offenders
Phenomena of interest	Restrictive intervention, seclusion, restraint, PRN medication
Context	Forensic mental health care (primary), managing challenging behaviours (secondary)

A further search was conducted using CINAHL, Scopus and PsycINFO. Articles were searched using the terms, seclusion, OR restraint,
OR physical restraint, OR mechanical restraint, OR, restrictive practices, OR coercive practices, OR coercion, OR coercive treatment, OR containment,
AND rapid tranquillisation, OR forced medication, OR 'as required', OR PRN, OR refusal of treatment, OR psychotropic, OR polypharmacy, OR PRN medication, OR emergency medication, OR Pro Re Nata medication, OR involuntary medication, AND mentally ill offenders, OR secure mental health, OR high secur*,OR inpatient, OR mental health nursing, OR medium secure units, OR secure units, OR forensic mental health, OR forensic nursing, OR forensic psychiatry. The search was restricted to articles published from January 2001 to December 2011. Finally, the reference list of all identified reports and articles was searched for additional studies.

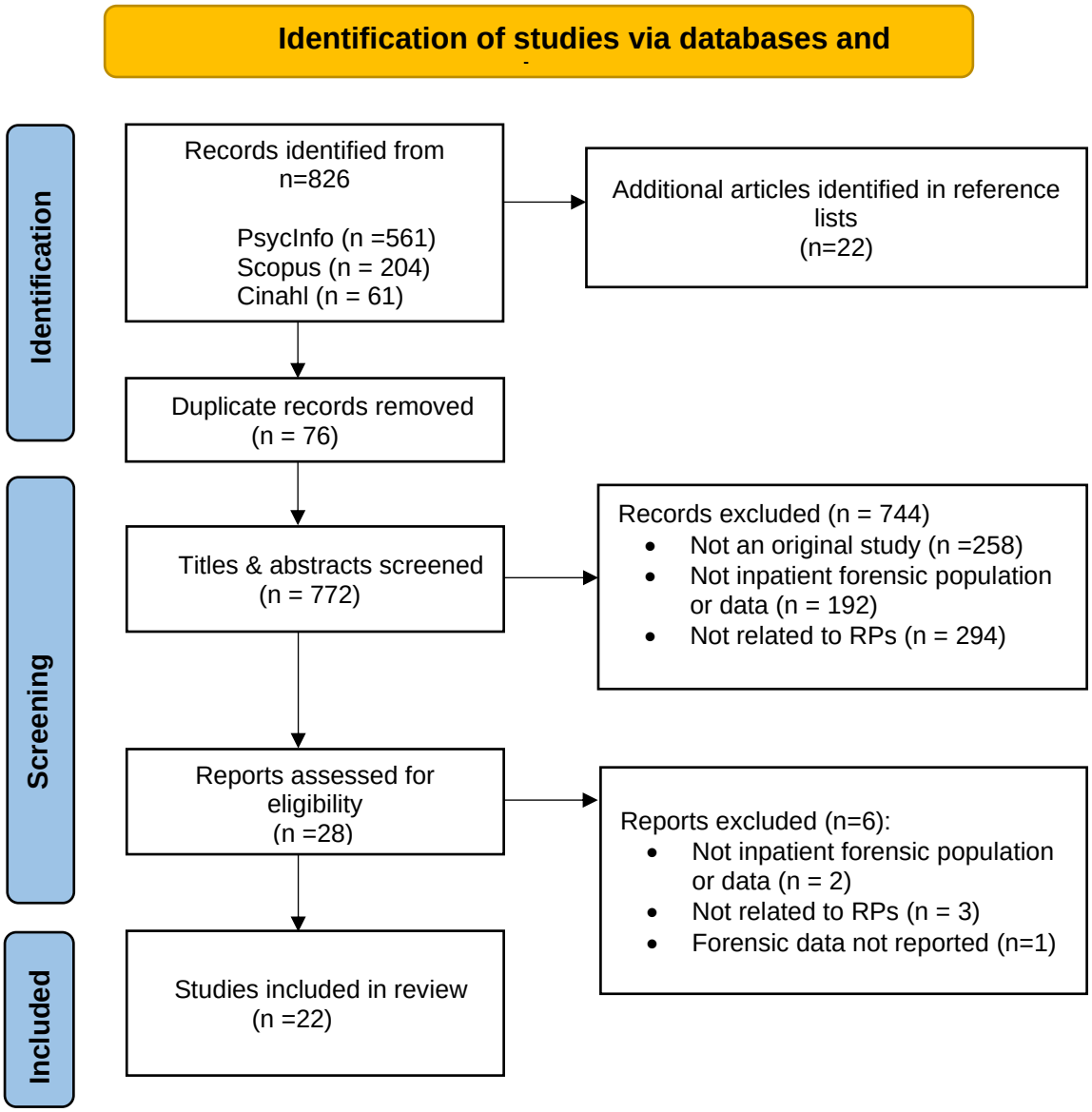
To be included in this systematic literature review the articles were required to be empirical studies using qualitative, quantitative or mixed methods that explored the use of seclusion, restraint, or psychotropic PRN medications. They also were required to be published in English and be studies that occurred in the AFMHIS. Articles were excluded if they were grey literature and where the study settings were prisons or the community, or the population studied were children, adolescents, or the elderly.

Search results.

A total of 826 articles were identified using the search method outlined above. Seventy-six duplicate articles were identified and removed, resulting in 750 articles requiring title and abstract screening. As a result of the title and abstract screen, 744 articles were excluded as they were assessed as not being an original study (n =258), studies not conducted in the inpatient forensic population or data (n = 192) or studies not related to RPs (n = 294). Twenty-four articles were retrieved for full text review, of which only six articles met the inclusion criteria for this review. The reference lists from these 24 articles were reviewed using the same screening process outlined above resulting in an additional 22 articles being retrieved for full text review. Of these, 17 articles met the inclusion criteria for this review. At the conclusion of the screening process, 22 articles were assessed as eligible to be included in this literature review (Figure 2.1 - PRISMA flow diagram).

Of the 22 articles, 10 were conducted in the UK, four in Finland, three in Canada, three in Australia, one in the United States of America (USA), and one in the Netherlands. Ten studies reported results related to seclusion, one reported on the use of restraint, seven reported results on the use of both seclusion and restraint, three reported on the use of seclusion and medication use, two reported on the use of seclusion, restraint, and medication use and one reported data on the use of PRN medications.

Figure 2-1. PRISMA flow diagram.



The studies were grouped into four themes: patterns of RP use and the characteristics of patients who experience them (n=12), patient attitudes and experiences (n=5), staff attitudes and experiences (n=4), and interventions designed to reduce the use of RPs (n=3). One study reported results that fitted with more than one theme, therefore, their results were included in all appropriate group themes and symbolized with an asterisk (*).

Patterns of RP use and the characteristics of patients who experience them.

Twelve studies reported patterns of RP use (the rate, frequency, and reason for RP use), and the characteristics of the patients who experience them (Table 2.2).

Patterns of restrictive practice use

Varying rates of seclusion use were reported across and within countries. Finland reported the largest percentage of patients in the study sample to experience seclusion (41% - 48%) (Paavola & Tiihonen, 2010; Repo-Tiihonen, Paavola, Halonen, & Tiihonen, 2002). Australia reported the second highest rate of seclusion use (44%) (Thomas et al., 2009), followed by America (42.8%) (Price et al., 2004). . Two studies in Canada reported the range of seclusion use as 27.7% (Ahmed & Lepnurm, 2001) to 42% (Reimann & Nussbaum, 2011), while the UK reported the lowest rate of seclusion use (29.6%) (Pannu & Milne, 2008).

Variability in the type of RP used was evident across countries, with both America and Finland reporting that seclusion was used more often (42.8% in America and 88.3% in Finland) than restraint (36% in America and 11.7% in Finland) (Paavola & Tiihonen, 2010; Price et al., 2004). To the contrary, Parkes (2003), in the UK, reported that restraint was used more often (11%) than seclusion (9%).

Pannu and Milne (2008) found that 10.00 hrs and 17.00 hrs were peak times for the initiation of seclusion, while Paavola and Tiihonen (2010), identified a statistically significant seasonal variation in seclusion use, with seclusion use lowest in January and highest between July and November.

Table 2-2. Patterns of restrictive practice use and patient characteristics

Author(s)	Country	Restrictive practice type	Aims	Sample	Findings reported
Reimann, & Nussbaum, (2011)	Canada	Seclusion	Explored the ability of assessment tools to predict seclusion use.	130 patients	The capacity for assessment instruments to predict seclusion frequency and duration. Proportion of the study sample who required seclusion. Patient characteristics (gender and age) and seclusion use.
Paavola & Tiihonen (2010)	Finland	Seclusion & restraint	To examine whether there is a seasonal pattern to seclusion.	385 patients	Rates of seclusion by patient age, gender, and diagnosis. Frequency and type of RP used and why. An evaluation of seasonal variation of seclusion use.
Cormac et al. (2010)	United Kingdom	Seclusion and medication	To assess the impact of a total smoking ban in a forensic hospital.	298 patients	Rates of seclusion, violent incidents, and medication usage
Thomas et al. (2009)	Australia	Seclusion	To determine the frequency of seclusion use, the characteristics of the secluded patient, and whether a tool could predict seclusion.	193 patients	Rates of seclusion Seclusion use by patient age, gender, and diagnosis Reason for aggression
Nicholls et al. (2009)	Canada	Seclusion and PRN medication	To compare the risk of inpatient aggression of female and male forensic psychiatric patients.	527 patients	Use of seclusion and PRN in the management of aggression.
Pannu & Milne (2008)	United Kingdom	Seclusion	To establish if any significant trends exist in the use of seclusion	443 patients	Rate, frequency, and duration of seclusion use. Patient characteristics and seclusion use. Reason for seclusion use. Seclusion by time of day.
Price et al. (2004)	USA	Seclusion & restraint	To determine if physical restraint and/or seclusion was used differently in different racial groups.	806 patients	Rates and frequency of seclusion and restraints by racial group
Hales & Gudjonsson (2004)	United Kingdom	PRN medication	Evaluate any ethnic differences on the use of prn (as required) medication	42 patients	Rates of PRN prescriptions and administration by ethnic group

Parkes (2003)	United Kingdom	Seclusion, restraint, and medication use	Describes and analyse incident reports over a three-year period.	1473 inpatient incidents	Rates of seclusion, restraint, and medication use
Repo-Tiihonen et al. (2002)	Finland	Seclusion	To investigate associations between total serum cholesterol concentrations (TC) levels and the frequencies of seclusion.	409 patients	Rates of seclusion Reason for seclusion use Association between TC levels and seclusion
Ahmed, &. Lepnurm, (2001)	Canada	Seclusion	Seclusion practices examined and reported	183 patients	Rate, frequency, and duration of seclusion use reported. Reason for seclusion use. Patient characteristics and seclusion use.
Dolan & Lawson (2001)	United Kingdom	Seclusion and restraint	Compared the characteristics of patients who required care in the intensive care unit and those who didn't.	146 patients	No significant group differences were found in the use of restraint or seclusion.

The reasons for using seclusion were examined in five studies. The most frequent reason for seclusion use was threatening violence and posing a risk towards others (Keski-Valkama, Koivisto, Eronen, & Kaltiala-Heino, 2010; Paavola & Tiihonen, 2010; Repo-Tiihonen et al., 2002). Thomas et al. (2009), reported that where seclusion was initiated due to aggression towards others, it was directed to other patients more often (61%) than to staff (39%). In contrast, Cormac et al. (2010), found that patient aggression was most often directed at staff rather than patients. Seclusion was also used in response to suicidal threats and self-harm gestures (Ahmed & Lepnurm, 2001; Paavola & Tiihonen, 2010; Repo-Tiihonen et al., 2002).

While some studies measured seclusion duration in hours and minutes, some measured seclusion in days. The mean duration of seclusion in Canada was 90.3 hours (minimum 1 hour; maximum 908 hours) (Ahmed & Lepnurm, 2001), and 10 hours 32 minutes in the UK, (minimum 5 minutes and maximum of 259 hours) (Parkes, 2003). The longest mean duration of seclusion was reported by Paavola and Tiihonen (2010) in Finland at 82.8 days. The recurrent use of seclusion on patients across countries was also evident with Paavola and Tiihonen (2010) reporting the mean number of seclusions per patient in Finland as 5.0. In Canada, 65% of patients were secluded once, 29.5% two to four times, and 5.5% more than four times (Ahmed & Lepnurm, 2001), while in another Canadian study, Reimann and Nussbaum (2011), identified that 42% of their study sample required seclusion, with 11% of the patients being secluded twice and 13% of the patients being secluded once.

Patient gender and restrictive practice use

Studies examining the influence of patient gender and seclusion use report conflicting results. Both Reimann and Nussbaum (2011) and Paavola and Tiihonen (2002), did not find any correlation between gender and seclusion use. Other studies reported rates of seclusion

for female patients at 45- 60%, compared to 25-27% for male patients (Ahmed & Lepnurm, 2001; Pannu & Milne, 2008). Pannu and Milne (2008) also found that females experienced seclusion on average 11.4 times, whereas males were secluded on average 4.3 times. To the contrary, Thomas et al. (2009) reported male patients experienced more seclusions than females (47% and 35% respectively), and Paavola and Tiihonen (2010) found 84% of male patients were secluded compared to 16% of females, while restraint was experienced more often by female patients (30.8%) than male patients (5.8%).

Paavola and Tiihonen (2010), found a significant difference in reason for seclusion between male and female patients, with 46% of male patients being secluded due to risk to others (i.e. violent behaviour), whereas 50% of female patients were secluded due to risk to themselves (i.e. suicidal behaviours). Nicholls et al. (2009) identified that while female patients were not more likely to be placed in seclusion as a result of aggression than males, they did find that females were significantly more likely to become aggressive while being escorted to the seclusion room than males. Significant differences in duration of seclusion by gender and length of time was reported. Pannu and Milne (2008) found the mean duration of seclusion as 39.1 hours for females and 52.6 hours for males, whereas Paavola and Tiihonen (2010) reported the total duration of seclusion for females as 174.4 days and 65.5 days for males. Nicholls et al. (2009), identified that staff administered PRN medications twice as often to male patients as female patients.

Patient age and restrictive practice use

Several studies examined age and the use of RPs and identified that younger patients were more likely to experience seclusion (Pannu & Milne, 2008; Thomas et al., 2009), and spent longer in seclusion (Pannu & Milne, 2008). Reimann and Nussbaum (2011) reported that patient age had a negative but mild association with average seclusion duration. Paavola

and Tiihonen (2010), found the mean age of secluded patients as 34.6 years (34.8 for males and 33.3 for females). Hales and Gudjonsson (2004) identified a significant association was identified between the prescription of PRN medication and younger age, but not the administration of PRN medication and younger age.

Patient ethnicity and seclusion use

Studies examining ethnicity and RP use reported conflicting results. Price et al. (2004, p. 164) defined the racial categories within their study as 'Asian/ Pacific Islander, black, Hispanic, and white'. They identified a statistically significant association with ethnicity and seclusion use, with black patients being involved in 65% of seclusion events, followed by Hispanic patients (16.8%), white patients (10.8%) and Asian patients (7.5%) (Price et al., 2004). Of the seclusion events, white patients spent the longest average time in seclusion (137 minutes), followed by Hispanic patients (121 minutes), then black patients (98 minutes) and Asian patients (85 minutes), but the results were not statistically significant (Price et al., 2004). Price et al. (2004), also found differences in rates of restraint use by ethnicity with black patients experiencing the most events (52%), followed by Hispanic patients (29.8%), white patients (14.2%) and Asian patients (4%), though the results were not statistically significant. Of the restraint events, white patients spent the longest mean amount of time spent in restraints (92 minutes), followed by black patients (85 minutes), Hispanic patients (78 minutes) and Asian patients (60 minutes) (Price et al., 2004). Thomas et al. (2009), identified that 'non-Caucasian' patients were more likely to be secluded, while Pannu and Milne (2008), reported no statistically significant differences between seclusion use and ethnicity. Hales and Gudjonsson (2004), found no association between PRN medication prescribing and ethnicity.

Patient diagnosis and seclusion use

Some differences in study results were noted regarding patient diagnosis and seclusion use with Ahmed and Lepnum (2001) reporting that seclusion events occurred mostly with patients with diagnosed substance-related disorders (40.8%), followed by schizophrenia and related psychoses (28.1%). Paavola and Tiihonen (2010) found that the main diagnoses for secluded patients were schizophrenia (36.6%), paranoid schizophrenia (28.3%), schizoaffective disorder (11.7%), other personality disorder (9.1%), other primary diagnosis (8.1%), and dissocial personality disorder (6.2%). Differences in diagnoses by gender were identified by Paavola and Tiihonen (2010) with most male patients experiencing seclusion having schizophrenia (36.4%) or paranoid schizophrenia (30.6%) as their diagnosis, while the secluded female patients mostly had a diagnosis of schizophrenia (37.7%) or schizoaffective disorder.

Other patient characteristics

Dolan and Lawson (2001), compared the characteristics of patients who required care in an intensive care unit and those who did not and found no significant group differences in the number of incidents requiring the use of restraint or seclusion. In addition, Thomas et al. (2009), identified that secluded patients had a more established psychiatric history and patients with two or more convictions were two and a half times more likely to be secluded.

Patient attitudes and experiences of restrictive practices.

Five studies examined patients' experiences and perceptions of RPs (Table 2.3).

Table 2-3. Patient attitudes and experiences of restrictive practice use

Author(s) & Country	Country	Restrictive Practice Type	Aim	Sample	Main findings
Keski-Valkama et al. (2010)	Finland	Seclusion	Compared the views of secluded patients in a forensic setting and a general psychiatric setting	106 secluded patients	Group differences identified in the reason for seclusion and in the patient's perception of seclusion.
Repo-Tiihonen et al. (2004)	Finland	Medication and seclusion	Examined patient opinions about treatment interventions	260 patients	Differences in opinions between patients reported. Helpful interventions reported.
Hinsby & Baker (2004)	United Kingdom	Seclusion and restraint	Explore patients' accounts of violent incidents	4 patients	Patient perception of seclusion. Alternatives to restraint explored and reported
Haw et al. (2011)	United Kingdom	Seclusion, restraint, and emergency intra-muscular medication administration	Reported patient's preferences for physical restraint, seclusion and emergency intra-muscular medication	57 patients	Patient reports of experiences with seclusion, restraint, and emergency IM medication. Reason for seclusion, restraint, and IMI medication administration. Patient perception of the necessity for the use of RPs. Patient reports of the RP experience as positive or negative. Patient preference of RPs.
Sequiera & Halstead (2002)	United Kingdom	Restraint	Examined the experiences of physical restraint procedures.	14 patients	Thematic analysis yielded six major themes relevant: anger, anxiety, mental upset, containment, release of feelings.

Keski-Valkama et al. (2010) compared the views of patients from forensic and general mental health settings in Finland on the use of seclusion. They identified that the forensic patient group perceived seclusion as a form of punishment more frequently than the patients in the general mental health setting (Keski-Valkama et al., 2010). Similarity, in a study by Hinsby and Baker (2004), patients also associated seclusion with punishment, while patients in the study by Repo-Tiihonen et al. (2004), considered seclusion as significantly harmful.

In a study by Haw (2011), 96% of patients reported experiencing seclusion, 98% restraint and 77% emergency intra-muscular medications. The patients stated violence towards property was the main reason for seclusion (40%), violence towards others was the main reason for restraint (41%) and violence towards others resulted in intramuscular medication administration (52%) (Haw et al., 2011). Fifty-six percent of the patients considered that seclusion should have been used, 54% for restraint and 52% for intra-muscular medications (Haw et al., 2011). In addition, 16% of the patients described seclusion as a positive experience and 36% described intra-muscular medication administration as a positive experience. Fifty-three percent of the patients indicated a preference for intra-muscular medication over seclusion and 37% preferred seclusion over intra-muscular medication (Haw et al., 2011). Finally, Sequeira and Halstead (2002) explored the experiences of forensic patients and identified five themes through thematic analysis related to restraint procedures; anger, anxiety, mental upset, containment and the release of feelings.

Staff views and decision making on restrictive practice use

Four studies examined staff views and decision making on RP use (Table 2.4).

Table 2-4. Staff attitudes and experiences of restrictive practices

Author(s)	Country	Restrictive Practice Type	Aims	Sample	Main findings
Martin & Daffern (2006)	Australia	Seclusion and restraint	Explore clinician perceptions of personal safety and confidence to manage inpatient aggression	69 staff	Staff confidence to work with aggressive patients. Factors impacting staff confidence to manage aggression.
Sequeira & Halstead (2004)	United Kingdom	Seclusion and restraint	Explored nurses experience of seclusion and restraint	17 staff (Eight qualified and nine unqualified)	The emotional reaction of nurses to the use of seclusion and restraint. Thematic content analysis identified themes associated the use of seclusion and restraint; anxiety, anger, abuse of interventions, boredom, frustration, low morale, and conflict with role as nurse.
Hinsby & Baker *(2004)	United Kingdom	Seclusion and restraint	To explore staffs' accounts of violent incidents	4r staff	Staff confidence in managing incidents. The context for restraint and seclusion use. Alternatives to restraint were explored.
Exworthy et al. (2001)	United Kingdom	Seclusion	Elicit staff experience of the use of seclusion	117 staff	Response rate regarding staff opinion on: • Seclusion as a form of treatment or a punishment • Seclusion use with an acutely disturbed patient. • Seclusion as a method to avoid the use of excessive medication. • Seclusion use if the patient is threatening physical violence to others. • Seclusion use only after the patient has exhibited overt violence. • Whether seclusion should be defined in law. • Whether seclusion should be time limited. • Whether seclusion should be considered as a treatment strategy in patients who are at risk of harm to self, to prevent harm to others or harm to self and others.

In a study by Martin and Daffern (2006), nurses reported greater levels of confidence than allied health staff in contributing to the restraint of an aggressive patient, with male staff most confident. In addition, female staff reported greater confidence than male staff in maintaining their own safety (Martin & Daffern, 2006).

Confidence in applying restraint techniques were impacted by three factors; small physical size of staff and their physical ability to restrain, whether other staff (i.e., agency staff) were adequately trained and the perception that restraint techniques were complex and difficult to apply in practice (Martin & Daffern, 2006). Sequeira and Halstead (2004), explored nurses' experience of seclusion and restraint, with nurses reporting discomfort and dislike with using seclusion and restraint. Seventy-six percent of nurses reported a negative experience with restraint, while 47% reported an automatic, non-emotional, response to restraint and 24% reported no emotional reaction during the experience (Sequeira & Halstead, 2004). Through thematic analysis, Sequeira and Halstead (2004) identified five themes associated with the emotional responses of nurses to the use of restraint procedures; anxiety, anger, abuse of interventions, boredom, frustration, low morale and conflict with the role as nurse. The prominent theme was anxiety which related to their fear of injuring themselves or others (staff or patients) (Sequeira & Halstead, 2004). Nurses identified that anxiety decreased over time as nurses became familiar with the restraint procedure (Sequeira & Halstead, 2004). Anger was associated with concerns around the risk of injury to themselves and their colleagues (Sequeira & Halstead, 2004). Anger was also expressed in relation to patients not responding to less restrictive interventions (Sequeira & Halstead, 2004). Abuse of interventions was identified by nurses who disclosed fears of losing control and feelings of guilt regarding thoughts of intentionally hurting patients (Sequeira & Halstead, 2004). Boredom, frustration and low morale were expressed by nurses regarding secluding and restraining the same patients frequently, particularly when nurses believed the

patients were in control of their behaviours (Sequeira & Halstead, 2004). Conflict between the use of restraints and the role of the nurse were expressed by nurses who reported using a variety of emotions, including laughter, to cope with the experience (Sequeira & Halstead, 2004). The study concluded that intense feelings experienced by nurses following seclusion and restraint events can contribute to an untherapeutic environment, therefore, support systems must be in place to assist nurses to process these intense emotions (Sequeira & Halstead, 2004).

Hinsby and Baker (2004), identified that RPs were often used to enhance ward safety and were used more often when nurses felt less 'equipped' with skills and strategies to manage violence. Alternatives to restraint use were underdeveloped (Hinsby & Baker, 2004). For example, the merits of negotiating with patients' individualised plans on how to prevent and respond to their violent behaviour were not developed (Hinsby & Baker, 2004). Such patient-centred interventions provide opportunities to maintain safety, minimise the negative impact of RPs and maximise the opportunity for patients to reflect on incidents (Hinsby & Baker, 2004). While some nurses identified the merit in being flexible in their approach to managing violence, by using their accumulated experience and sense of autonomy, the risk of deviation from policy was deemed too great (Hinsby & Baker, 2004). Therefore, secluding or restraining patients was seen as a justified and attractive option for minimising blame (Hinsby & Baker, 2004).

Exworthy et al. (2001), surveyed staff regarding their perception of seclusion and identified that the majority of their survey participants (86.3%), supported the ongoing use of seclusion, with 81.9% reporting that seclusion was not a form of punishment. Participants reported that seclusion should only be considered for patients presenting as a risk of harm towards others (57.8%), and not as a strategy to manage risk to self (70%) (Exworthy et al., 2001). Over half (56.4%) of the participants in the Exworthy et al. (2001) study agreed or

strongly agreed that seclusion was a form of treatment, while 33.3% did not agree that seclusion was therapeutic (Exworthy et al., 2001). Psychiatrists who authorised seclusion were significantly more likely to view seclusion as therapeutic than those who did not (Exworthy et al., 2001).

Interventions designed to reduce restrictive practice use

Three studies examined and reported on interventions designed to reduce the use of RPs (Table 2.5).

In a UK study, a 60% reduction in seclusion events (and no increase in assault incidents), was achieved over a five year period when enhanced clinical governance systems were implemented (Qurashi et al., 2010). These systems included analysing performance data, audit, peer review, positive risk management, improved patient involvement, enhanced leadership and education and training (Qurashi et al., 2010).

In Australia, a significant reduction in the use and duration of seclusion was achieved following a review of seclusion practices, implementation of enhanced staff training in aggression, and evidence-based alternatives to seclusion (including the use of safety plans for patients, post seclusion debriefing for patients, seclusion reviews, use of sensory techniques and safe rooms) (Ching et al., 2010). These reductions occurred despite there being no significant difference in the number of aggressive incidents occurring, which suggests staff were able to manage aggression without the need for seclusion (Ching et al., 2010). Counter-intuitively, the reduction in seclusion use did not increase staff's confidence to manage aggressive patients, with staff perceiving seclusion as being more therapeutic following the implementation of the new initiatives (Ching et al., 2010).

Table 2-5. Interventions designed to reduce the use of restrictive practices

Author(s)	Country	Restrictive Practice Type	Aim	Sample	Main findings
Qurashi et al. (2010)	United Kingdom	Seclusion	Analysed all seclusion events and incidents over a five-year period.	Seclusion and incident data.	60% reduction in the number of seclusion events. No increase in adverse incidents or staff assaults
Ching et al. (2010)	Australia	Seclusion	Examined the impact of interventions designed to reduce the use of seclusion.	141 staff and patients	Impact of interventions reported on: • Use and duration of seclusion events. • Staff perceptions of personal safety. • Staff confidence to manage aggressive patients. • Therapeutic climate. • Staff attitudes towards seclusion
Fluttert et al. (2010)	Netherlands	Seclusion	Evaluated the implementation of the Early Recognition Method to prevent aggression.	189 patients	Rates of incidents and seclusion events reported pre and post implementation. Impact of interventions reported on

In the Netherlands, a decrease in frequency and intensity of patient aggression and a significant reduction in seclusion events occurred after the implementation of a risk management strategy which focused on the interaction between staff and patients aimed at preventing inpatient violence (Fluttert et al., 2010).

Discussion

The findings from this systematic literature review indicate that RPs are a common feature in AFMHIS across the world. However, variability in the type, rate and frequency of intervention used across countries suggest that there are geographical, cultural and/or political influences on RP use. The significant differences in duration of seclusion (reported by some in days and in others hours and minutes), warrant further investigation because of patient safety implications, potential human right violations and the adverse impact reported by patients (Hinsby & Baker, 2004; Keski-Valkama et al., 2010; Repo-Tiihonen et al., 2004).

Conflicting results regarding the influence of patient characteristics on RP use, including gender, ethnicity, and age, also indicate that further investigation is required. While rates of patients subjected to RP use in AFMHIS are reported around 29.6% to 48% (Pannu & Milne, 2008; Repo-Tiihonen et al., 2002), patients report experiencing RP at much higher rates (77% to 96%) (Haw et al., 2011). This suggests that the perception and definition of what RPs are may differ between staff and patients which warrants further enquiry. Although most studies report patients experience of RPs as harmful and viewed as a form of punishment, half of the patients in the study by Haw et al. (2011), believed that they should have been subjected to RPs, and some reported it as a positive experience. This suggests it may not be the intervention that is anti-therapeutic, but the method by which it is administered. The studies by Ching et al. (2010), Fluttert, et al. (2010), and Qurashi et al.

(2010), provide evidence that a reduction in use of RPs is achievable without compromising staff safety.

With only six studies examining the use of PRN psychotropic medication use further studies are required. In addition, the low numbers of studies conducted in Australia (three) in this literature review identified a significant gap in research knowledge which is particularly important when considering cultural and geographical nuances unique to the Australian context. Areas of further research identified in the studies provide a useful compass to influence future research.

Conclusion

As global efforts continue to try to reduce and eliminate the use of RPs, reasons for their continued use have not been identified within the current literature and require further investigation. This systematic review revealed a paucity of research on the use of RPs in the AFMHIS, as well as conflicting results.

2.3 Stage 2 - Systematic literature review

Understanding the influence of nurses' characteristics on the use of seclusion and restraint in the adult forensic inpatient setting.

Introduction

The results of the 2018 study examining nurses' attitude towards the use of PRN psychotropic medications in acute and AFMHIS, identified practice differences between the two groups of nurses. The results piqued the interest in the researcher in identifying whether the differences in practices were rooted in the characteristics of the nurses. Nurse characteristics and composition, such as age, gender, experience and training, have been identified as a factor that may influence the use of RPs (de Looff, Nijman, Didden, & Embregts, 2018; Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, & Tiihonen, 2017a; Van Der Schaaf et al., 2013). However, the extent to which nurse characteristics affect the likelihood, type and frequency of RP use has received less attention (Daffern, Mayer, & Martin, 2006), particularly in the area of AFMHIS. As a systematic literature review of this research subject in AFMHIS had not occurred, an updated search of the literature was required. This systematic literature review was conducted in preparation for the study into nurses' characteristics and their influence on RPs (chapter 6).

2.4 Publication 1 reference

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Author's contribution

All co-authors have consented to their work being included in this thesis and they have accepted the candidate's contribution as indicated below:

Mrs Lesley Barr	96%	Signature	
Associate Professor Karen Heslop	2%	Signature	
Emeritus Professor Dianne Wynaden	2%	Signature	

Higher Degree Research Thesis by Publication

Curtin University

STATEMENT OF ORIGINALITY

We, the PhD candidate, and the candidate's principal supervisor, certify that the following text, figures, and diagrams are the candidate's original work.

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Understanding the influence of nursing staff characteristics on the use of seclusion and restraint in the adult forensic inpatient setting: a systematic literature review

Abstract

Background/Aims Seclusion and restraint use in health care is controversial. Such practices occur more frequently in forensic mental health settings than in acute mental health settings. There is growing interest in staff factors and their influence on such practices. The aim of this review was to identify and appraise studies that explore whether nursing staff characteristics, including age, gender, ethnicity and physical stature, influenced the use of these practices in forensic mental health settings.

Methods Eight electronic databases were searched to identify research studies published between 2010–2020. The search yielded 1085 articles, three of which fulfilled the inclusion criteria.

Results There was no significant correlation between age, gender and experience and the tendency to use seclusion and restraint. No studies examined ethnicity, physical stature, seniority or role.

Conclusions The results demonstrate a paucity of research on nursing staff characteristics and their influence on seclusion and restraint in this setting. Such research may inform violence prevention strategies.

Key words: Forensic mental health nursing; Restrictive practices; Staff characteristics

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This article has been included in this thesis in its original format with permission obtained from the publisher (Appendix A).

Abstract

Background/Aims Seclusion and restraint use in healthcare is controversial. Such practices occur more frequently in forensic mental health settings than in acute mental health settings. There is growing interest in staff factors and their influence on such practices. The aim of this review was to identify and appraise studies that explore whether nursing staff characteristics, including age, gender, ethnicity and physical stature, influenced the use of these practices in forensic mental health settings.

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Conclusions The results demonstrate a paucity of research on nursing staff characteristics and their influence on seclusion and restraint in this setting. Such research may inform violence prevention strategies.

Keywords
Forensic mental health nursing, Restrictive practices, Staff characteristics

Introduction

Despite the existence of international regulatory mandates, practice standards, guidelines and legislation to limit the use of seclusion, physical, chemical and mechanical restraint (often referred to as restrictive practices or coercive practices), these remain a common strategy used in acute inpatient mental health settings and adult forensic mental health settings (Maguire et al., 2012). Over the last decade, Australia has maintained a national priority to reduce and, where possible, eliminate the use of seclusion and restraint (Barr, Wynaden, & Heslop, 2019). The national seclusion and restraint data shows that, while significant gains were made in reducing seclusion rates in public sector acute mental health hospital services (17.1 per 1000 bed days in 2008/9, compared to 7.5 in 2018/19), the rate of seclusion in public sector forensic mental health services has almost doubled (21.2 per 1000 bed days in 2018/19 compared to 10.8 in 2008/9) (Australian Institute of Health and Welfare [AIHW], 2020). While public sector forensic mental health services have reduced the average seclusion duration (64.7 hours in 2013/14 compared to 48.1 hours in 2018/19) there has been an increase in the proportion of mental health-related admitted care with a seclusion event (19.9 in 2013/14 compared to 32.4 in 2018/19) (AIHW, 2020). In addition, the average number of seclusion events per episode went up from 3.1 events in 2013/14 to 5.6 events in 2018/19 (AIHW, 2020). Such increases in the public sector forensic mental health services are a cause of concern and warrant further enquiry, particularly because national strategies to reduce restrictive practices targeted all Australian public health sectors across the same time period.

Restrictive practices are used to manage violence and aggression and to control the behaviour of patients who are considered a danger to themselves or others (Barr et al., 2019; Harris et al., 2015; Laiho et al., 2014). Clinicians report using these practices as a 'last resort' when de-escalation and other preventive strategies, including the appropriate use of *pro re nata* (PRN) medications, have been exhausted and deemed ineffective (McKeown et al., 2019; Muir-Cochrane, 2018b). However, the use of restrictive practices is highly controversial (De Benedictis et al., 2011; Doedens et al., 2017; Hui et al., 2013; Husum et al., 2010; Long et al., 2015), because of a lack of evidence behind their rationale and therapeutic effectiveness (Fukasawa, Miyake, Suzuki, Fukuda, & Yamanouchi, 2018; Jalil, Huber, Sixsmith, & Dickens, 2017; Mann-Poll, Smit, de Vries, Boumans, & Hutschemaekers, 2011; Molewijk, Kok, Husum, Pedersen, & Aasland, 2017). Criticism of these practices are rooted in the negative impact they have on patient outcomes. They can result in the loss of patients' dignity (Bregar, Skela-Savič, & Kores Plesničar, 2018; Laiho et al., 2014; Molewijk et al., 2017), and generate feelings of dehumanisation and being unheard, as well as instilling feelings of fear, anger, shame, abandonment, worthlessness, punishment and trauma (Mann-Poll et al., 2011; Muir-Cochrane, 2018b). More recently, the reliance on the principle of last resort as justification for the use of restrictive practices has been called into question, because of the subjective nature of staff's decisions to seclude (Boumans, Egger, Souren, Mann-Poll, & Hutschemaekers, 2012).

Studies have also identified a wide variation of thresholds for use of restrictive practices between staff (Price et al., 2018), which may suggest variations in the perception of violence among staff (Happell and Koehn, 2010) and their tolerance of agitation and disturbed behaviours, rather than patient factors (Jalil et al., 2017). In addition, it has been suggested that the line between necessity, convenience and the point of last resort can often get blurred when these practices are used routinely and outside of the principle of necessity to uphold safety (Slemon et al., 2017). This was identified by Happell et al. (2012), whose study demonstrated that some staff quickly reached the point of last resort. This can lead to inconsistency among clinicians in their use of restrictive practices, which may result in an underestimation or exaggeration of risk; this, in turn, may result in unnecessary or prolonged seclusion or restraint (Looi et al., 2014).

Studies have shown that the duration and frequency of restrictive practice varies across countries, organisations and individuals (Husum et al., 2011; Boumans et al., 2012; Hui et al., 2013; Laiho et al., 2014). While differences in use between countries may be explained by variation in legislation, this cannot account for differences within countries and clinical settings (Husum et al., 2011). Such variations in use provides compelling evidence that the use of strategies for containing disturbed behaviours is influenced by a complex interplay of other factors. These include:

- Patient characteristics
- Staff characteristics and attitudes
- Environment, ward or organisational culture
- Organisational custom and practice (Boumans et al., 2012; Hui et al., 2013; Looi et al., 2014; Doedens et al., 2017; Haines et al., 2017; Muir-Cochrane, 2018; Barr et al., 2019).

Increasingly, researchers are asserting that the attitude of staff (particularly nurses) have a direct impact on the prevalence and continued use of restrictive practices, despite ongoing strategies to reduce its employment (Husum et al., 2010; Bregar et al., 2018). This suggestion may be true, as nurses work on the frontline and play a pivotal role in decision-making on the use of seclusion and restraint (including intervention type and duration) (Bregar et al., 2018; Barr et al., 2019).

While the characteristics of nursing staff (including age, gender, ethnicity, physical stature, experience, seniority and role) and their influence on seclusion and restraint have been a focus of research in other acute inpatient mental health services (Hamrin et al., 2009; Lindsey, 2009; Husum et al., 2010), the same focus on forensic mental health settings is required, as continued high use of such practices continues to be reported. While there are many benefits to looking more broadly across mental health literature and research, the uniqueness of the forensic setting and its patients warrants further exploration and evaluation. For example, forensic mental health nurses face increased aggressive incidents during their daily practice (Jonker et al., 2008). Aggression and violence impact on the wellbeing and safety of patients and staff (Livingston et al., 2010) and jeopardises the therapeutic relationship (Hamrin et al., 2009; Harris et al., 2015). Research in forensic mental health settings highlight that feelings of fear, disgust and repulsion among staff toward forensic mental health patients, who have committed serious crimes, may impact the development of therapeutic relationships and encourage the use of restrictive interventions (Jacob et al., 2009; Livingston et al., 2012; Barr et al., 2019). Such perceptions are perpetuated by legal, societal and institutional forces that impose negative identities on forensic mental health patients,

such as ‘mad’, ‘bad’, ‘deviant’ and ‘risky’, which are difficult for patients to transcend (Coffey, 2011).

The development of positive therapeutic relationships with patients is regarded in the literature as the essence of forensic mental health nursing, as it is in all areas of nursing (McAllister and McCrae, 2017). It is one of the most important treatment factors, as it affects the quality of care and is fundamental to patient recovery (Marshall and Adams, 2018). However, it has been identified that developing and maintaining a therapeutic relationship with patients in forensic mental health settings is particularly challenging. This is because forensic mental health settings, by definition, tend to be occupied by acutely unwell and high-risk offenders with a history of violent offences and complex needs, which include substance abuse, established trauma and challenging behaviours (Durey et al., 2014; Haines et al., 2017; Barr et al., 2019).

Offending behaviours of forensic patients can range from the most severe crimes, including murder, rape and child abuse, to minor misdemeanors, such as theft (Rose et al., 2011). Staff and patient interactions are often governed by an emphasis on custodial care, control, and security (Gildberg et al., 2016). Care is often provided to patients who have not sought treatment by their own volition but are instead detained and treated on an involuntary and unspecified timeframe (Livingston et al., 2012).

Some patients may resist engagement with staff and participation in their rehabilitation because they do not want to be held in hospital, or believe they do not need to be, and consequently may consider nurses to be ‘captors’ (Kaliski & de Clercq, 2012). There is evidence that there are higher rates of aggression and violence in forensic mental health settings compared to acute mental health inpatient settings, with aggression, or the threat of aggression, occurring daily (Dickens et al., 2013; Barr et al., 2019). In addition, staff perceptions of patients as dangerous, manipulative, and violent can impact staff–patient relations and lead to mutual feelings of suspicion and mistrust (Rose et al., 2011).

Aims

The aim of this study was to identify, appraise and synthesise research conducted in adult forensic mental health settings that focuses on nursing staff characteristics, (including age, gender, ethnicity, physical stature, experience, seniority, and role) and their influence on the use of restrictive practices in this setting. A secondary objective was to identify areas for further research.

Methods

This systematic literature review was conducted in accordance with the Joanna Briggs Institute (JBI) Reviewer’s Manual methodology (JBI, 2014).

Inclusion criteria for the systematic review were developed to optimise the search results. These included:

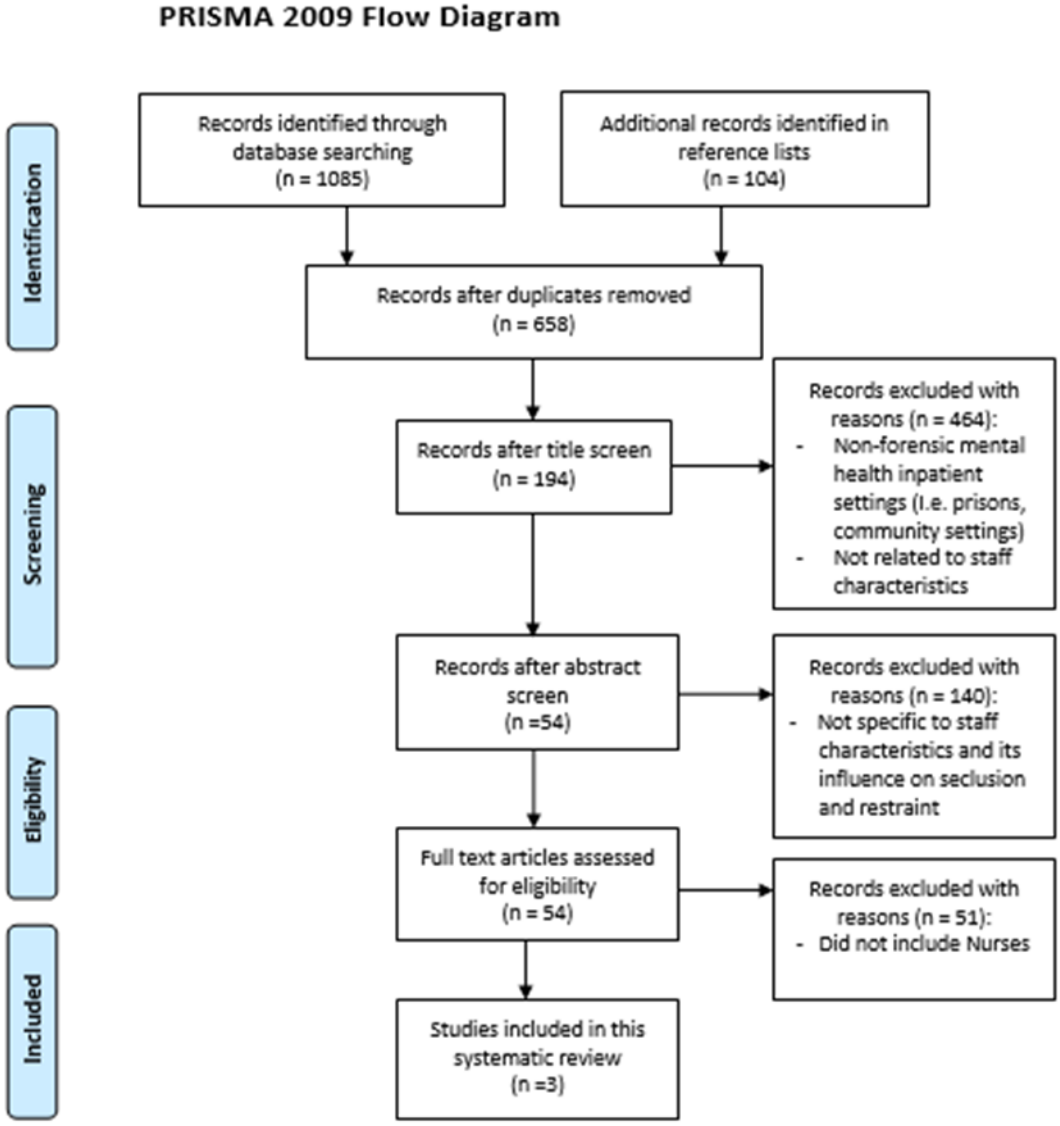
- English language research papers published in peer-reviewed journals
- Papers published between 2010–2020
- Research conducted in forensic mental health inpatient settings
- Studies conducted on adult populations (18–65 years)
- Quantitative and qualitative methodologies that contain discussion concerning aims, methods, results and conclusions.

A five-step search strategy was used for this systematic literature review (*Figure 1*):

1. An initial limited search of MEDLINE and CINAHL was undertaken, using the mnemonic PIPOH (population, interventions, professionals, outcomes and health care settings) the keywords 'forensic mental health nursing', 'forensic mental health nurses', 'staff characteristics', 'restrictive practices', 'coercive practices', 'interpersonal style', 'nurse-patient relations', 'nurse-patient interactions', 'seclusion' and 'restraint'
2. The search was then conducted across a further six databases (Scopus, PsycINFO, PubMed, Embase, Ovid and Psychiatry Online). The search yielded a total of 1085 articles. Excluded articles included literature not published and studies completed in non-forensic mental health inpatient settings
3. A title screen of each article was conducted, which yielded 194 articles
4. An abstract screen was conducted, which yielded 54 articles. Where the title and abstract screen were inconclusive (for example, whether studies were conducted in forensic inpatients settings, mental health inpatients settings or both), full texts were retrieved and assessed for applicability
5. A full-text screen was conducted, yielding three articles that met the inclusion criteria. The relatively large number of full-text reviews was required, as the sample type of the research (specifically, forensic mental health settings) could not be elicited from the abstract review alone. The reference list of these articles was searched for additional articles that met the inclusion criteria.

All stages of the search and appraisal of articles were conducted using the JBI Critical Appraisal Tools (Joanna Briggs Institute, 2017) to assess for design, conduct and analysis bias, and assessed by two independent reviewers. Disagreements arising during the process were resolved through discussion or with the help of a third reviewer.

Figure 1. PRISMA flow diagram



Results

Of the three studies identified, two (de Benedictis et al., 2011; Boumans et al., 2012) were conducted using a mix of ward types, including other acute mental health inpatient units, 'long stay', crisis intervention and forensic. The studies did not delineate which data related to which ward; therefore, there are limitations in the ability to determine the influence of the 'forensic' sample.

Seclusion and restraint

Both Mann-Poll et al. (2011) and Boumans et al. (2012) only focused on seclusion (not restraint), while de Benedictis et al. (2011) focused on seclusion and restraint. de Benedictis et al's (2011) study was conducted using a questionnaire that examined sociodemographical variables, team climate, perception of aggression and frequency of incidents in a sample of 309 staff members. Questions were also developed on organisational factors—specifically, the availability of aggression protocols, an assessment of the type of mental health unit (e.g., intensive care, emergency department) and the hospital setting (e.g., teaching vs non-

teaching). The aim of this study was to examine staff and organisational factors as predictors for the use of seclusion and restraint on the mental health wards.

Research methodology used

Mann-Poll et al. (2011) conducted their research using two methods. The first method involved a modified Delphi procedure to rate the most important variables influencing practioners' decisions to seclude a patient. This procedure resulted in the identification of 18 variables. The second method of the study involved the development of 64 vignettes comprising four parts to describe: patient characteristics; the patient's problem behaviour; the characteristics of the context (i.e., ward or room); the professional team, including the culture (open or closed); work shift (day, evening, night or weekend, and staff-patient ratios for the shift); and the perceived trust of staff in their colleagues. The aim of the vignettes was to develop an explanatory model of factors that contribute to the decision of mental health professionals to use seclusion. Some 82 of 128 invited raters responded to the vignettes (64%) and provided the required sociodemographic and background information.

Boumans et al. (2012) employed two web-based questionnaires. One questionnaire consisted of 16 vignettes of theoretical patients in imaginary situations on the wards. The vignettes were adapted from the aforementioned Mann-Poll et al. (2011) study. Two contextual variables were included: perceived confidence in colleagues and staffing levels at the time. The second questionnaire measured team reflexivity (defined by the author as the way the team manage the use of coercion through reflection and communication). The aim of this study was to quantify the relative importance of several factors influencing the nurses' decision-making regarding seclusion (Boumans et al., 2012). It was hypothesised that the nurses' decision to seclude would be influenced, to a lesser extent, by patient variables, rather than contextual and interpersonal variables. Of the 75 employees invited to participate in the study, 60 completed the survey (80%).

Demographics

None of the studies examined ethnicity, physical stature, seniority or role. Two studies (de Benedictis et al. (2011) and Boumans et al. (2012)), investigated the influence of age and gender on the tendency to use restrictive practices. Boumans et al. (2012) found no significant correlation between age and tendency to seclude. de Benedictis et al. (2011), in their study of sociodemographic characteristics as predictors for seclusion and restraint use, also found no significant correlation. de Benedictis et al. (2011) found no difference in use of seclusion and restraint by gender, and Boumans et al. (2012) found no significant correlation between gender and tendency to seclude.

While Boumans et al. (2012) examined experience and found no significant correlation between years of experience and the tendency to seclude, Mann-Poll et al. (2011) found professionals' experience with seclusion, and frequency of use, were important variables in the decision to use seclusion.

Table 1. Literature review

Reference	Sample	Methods	Results	Nursing implications	Limitations
de Benedictis et al. (2011)	*n*=309 nurses, rehabilitation instructors, nurse's aides	Questionnaires	The study found that there were no significant differences in sociodemographic characteristics (age and gender) and work-related variables (job title, employment status, years of experience is psychiatry between the high and low users of seclusion and restraint	These findings highlight the importance of evaluating multiple factors, such as violence and safety perception, when examining reasons underlying use of seclusion and restraint	This was a cross-sectional study with a relatively small sample Risk of recall bias in reporting of frequency of seclusion and restraint use was present Possible underreporting of seclusion and restraint incidents, because of social desirability bias
Boumans et al. (2012)	*n*=60 nurses	Vignettes	The tendency to seclude a patient was not influenced by nursing staff's gender, age, years of experience with and frequency of participation in seclusion	Communicating with the patient, as well as the availability and cooperation of the staff, proved to be at least as important as patient characteristics	The sample was derived from only one institute The degree of accuracy in using vignettes to represent staff decisions in daily life on the ward can be questioned
Mann-poll et al. (2011)	*n*=82 nurses physicians psychiatrists social workers	Vignettes	Mental health professionals' characteristics were at least as important as patient variables in the decision to seclude vignette patients	Experience using seclusion increased the likelihood that it was deemed necessary, which emphasises the importance of regularly rotating professionals	The degree of accuracy in using vignettes to represent staff decisions in daily life on the ward can be questioned The study was conducted before seclusion reduction programmes were implemented

Discussion

Researching nursing staff characteristics and their impact on patient care delivery and use of restrictive practices is very important in adult forensic mental health settings, as frontline staff working in this often hostile and unpredictable environment (Barr et al., 2019) interact intensively with patients and manage emergency situations on a daily basis (Mann-Poll et al., 2011; Jalil et al., 2017). While an ideological shift from custodial care to recovery practices and cultures is occurring in forensic mental health settings (Gillespie and Flowers, 2009) existing literature in forensic mental health care indicates a unique, clinically complex and challenging specialty area (Harris et al., 2015; Barr et al., 2019) because of the patient characteristics, physical environment, relational nuances and legal restrictions involved (Barr et al., 2019).

The complex positioning of forensic mental health services within health and judicial systems adds a layer of clinical complexity that is not seen in other acute mental health services (Barr et al., 2019). Developing and maintaining therapeutic relationships with forensic mental health patients is a significant challenge in an environment that is heavily regulated and controlled (Wiechula et al., 2016). The very nature of forensic mental health care forces clinicians into the dual role of being both 'agents of care and agents of social control' (Jacob, 2012) that are bound by the requirements of the judicial system (Kaliski and de Clercq, 2012). The provision of healthcare is often overshadowed by legal and security limitations, and treatment is mandated by the courts of law (Rose et al., 2011; Livingston et al., 2012).

The characteristics of staff, including interpersonal behaviours, emotional reactions, experience, training and communication skills, can have a significant impact on the ward dynamics and the development of therapeutic relationships with patients in the forensic mental health settings (Hamrin et al., 2009; Cabral and Carthy, 2017). Individual attributes, such as tolerance, attitude, flexibility, sense of humour and personality, can influence how staff respond to patient aggression (Boumans et al., 2012). The manner in which staff communicate with patients, contradictions within team, strict regimes and patients feeling that staff are not listening or understanding their concerns can negatively affect patient behaviours (Dickens et al., 2013). Staff immaturity, inexperience, poor communication and short tempers can leave patients feeling discontented (Clarkson et al., 2009).

Negative staff behaviours can also be counterproductive, lead to conflict and even encourage aggression and challenging behaviours (Cabral and Carthy, 2017). These traits, coupled with overly structured routines in forensic mental health settings, including restricted access to outdoor space, scheduled medication and mealtimes, can perpetuate institutionalisation and a 'them vs us' culture (Knowles et al., 2015). Power struggles between patients and staff can ensue and cause violence (Hamrin et al., 2009), leading to fraught interpersonal relationships between staff and patients (Dickens et al., 2013). Conversely, teams working with complex and challenging patients that arouse emotional reactions can also lead to conflict and disagreement among team members (de Vogel and Louppen, 2016).

In addition, nurses can often struggle morally with respecting patients who have committed heinous offences (Rose et al., 2011). Knowing the details of the patient's offences can evoke images of the crimes committed and leave staff feeling disgusted, repulsed and fearful for their own safety (Jacob et al., 2009; Harris et al., 2015; de Vogel and Louppen, 2016), which can hinder treatment and lead to the patient being depersonalised and dehumanised (Rose et al., 2011; de Vogel and Louppen, 2016). For this reason, it is critical that forensic mental health nurses have the ability to see past the patient's offences and instead view them as a human being (Volstad, 2008).

While there is a general consensus by governments, scholars, patients and staff on the importance of person-centered care and reducing or eliminating the use of restrictive practices (Muir-Cochrane, 2018), there is divided opinion on the capacity of acute and forensic mental health to become seclusion- and restraint-free in the absence of alternative strategies (Looi et al., 2014; Muir-Cochrane, 2018). Widespread reporting of escalating violence in healthcare settings (Lindsey, 2009) has resulted in nurses having to work in volatile and unpredictable settings and fearing for their safety (Barr et al., 2019), which has directed nursing practice towards a more restrictive and defensive approach to care (Ward, 2013). There remains a fear from staff that eliminating restrictive practices will lead to more patient or staff injuries (Ashcraft and Anthony, 2008) and leave clinicians with no mechanism to keep themselves and the people in their care safe (Muir-Cochrane, 2018).

Thus far, interventions to manage challenging behaviours have proved limited and failed to eradicate such behaviours, further reinforcing the necessity for seclusion, restraint, and coerced medications (Long et al., 2015). Efforts to reduce restrictive practices have resulted in nurses relying on alternative interventions, such as medications, which are equally controversial (Lindsey, 2009). Alternative interventions that can successfully eliminate seclusion and restraint are urgently needed (Ashcraft and Anthony, 2008). In the current climate of funding cuts, an ageing workforce, a lack of attention to workforce planning (McKeown et al., 2019), hospital austerity measures, the casualisation of the nursing workforce (Muir-Cochrane, 2018; McKeown et al., 2019), high patient acuity and complexity (Barr et al., 2019), inadequate staffing levels (Fukasawa et al., 2018; McKeown et al., 2019), high staff turnover (Chang et al., 2014), inadequate skill mix and a shortage of trained and experienced nurses in the area of mental health nursing (McAllister and McCrae, 2017; Muir-Cochrane, 2018; McKeown et al., 2019), the vision of restriction-free mental health care seems like a distant utopia.

To achieve sustainable reductions in restrictive practices, we must develop insight into the factors that influence staffs' decisions to use such practices (Happell and Koehn, 2010; Barr et al., 2019). In addition, the use of coercion on vulnerable and traumatised patient populations (Durey et al., 2014; Barr et al., 2019) in acute and forensic mental health care is controversial, and is an important safety issue that requires further research (Husum et al., 2011). Further research on staff characteristics and its impact on patient care delivery in this unique setting is important in understanding how forensic mental health services can tailor working conditions, staff training and staff support to reduce these practices. Despite this, limited research has been conducted on the influence of nursing staff characteristics and the use of restrictive practices in adult forensic mental health settings.

Limitations

There are a number of limitations associated with this systematic review. Firstly, whilst the review was conducted systematically, only three articles were identified as meeting the eligibility criteria, therefore the results should be interpreted with caution. Secondly, the systematic review was limited to articles published between 2010 and 2020, therefore relevant studies published outside this time period would have been omitted. Thirdly, of the three studies identified, two were conducted in the Netherlands and one was conducted in Canada, which limits broader generalisations to other countries. Nevertheless, these limitations justify the need for more studies examining the influence of nursing staff characteristics on the use of seclusion and restraint in the adult forensic inpatient setting.

Conclusion

Owing to the methodology of the identified studies, it is difficult to draw clear conclusions. While it is now widely acknowledged that the use of restrictive practice cannot be solely apportioned to patient factors, this systematic literature review highlights that research into the influence of staff characteristics on restrictive practice use in adult forensic mental health settings is sparse. There remain opportunities to explore and unravel the drivers and contributors that lead to the use of restrictive practices in these complex clinical environments. Future research must include patients, who could provide invaluable insights into opportunities for change. Improving the interaction between staff and patients, and enhancing safety for staff and patients in forensic mental health settings, can lead to a reduction in incidents of aggression and violence that, in turn, often result in seclusion and restraint.

Fundamental principles of staff safety cannot be underestimated. While the likelihood of eradicating aggression and violence in the workplace is unlikely, opportunities remain to enhance the way in which clinicians manage violence and aggression, through training, self-awareness, emotional regulation, enhancing resilience and reinforcing the value of the therapeutic alliance. As forensic mental health nursing continues to grow as a nursing specialty, workforce planning will be critical in ensuring that it becomes a desirable environment, with adequate opportunities for staff to develop on both a personal and professional level.

Key points

- International studies have identified that variations in the use of seclusion and restraint are influenced by patient, staff and environmental factors. However, the degree of influence of each factor, and under what circumstance, is unclear.
- Nursing staff characteristics and their influence on seclusion and restraint use in forensic mental health inpatient settings is under-researched. While there are opportunities to apply research insights from other acute mental health nursing studies, further research is required to examine the contribution of forensic mental health nursing characteristics on the use of seclusion and restraint in this complex setting.
- Opportunities remain to enhance the way in which forensic mental health nurses prevent and manage violence and aggression, through training, self-awareness, emotional regulation, enhancing resilience and reinforcing the value of the therapeutic relationship.

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Summary

Forensic mental health nurses provide frontline care in a complex, often hostile and unpredictable environment. The characteristics of nurses, including their level of training and experience, can affect the ward dynamics, as well as help or hinder nurse-patient relationships. While the importance of forming therapeutic relationships in nursing is well established, forming therapeutic relationships with forensic mental health patients presents unique challenges. Nurses face moral and ethical conflicts when caring for patients who have committed heinous acts, yet are expected to provide unwavering professional care, even when faced with aggression and violence. Evidence in the literature suggests that negative staff behaviors and attitudes, can lead to an increase in the use of RPs, yet the findings from this systematic literature review highlight that research into the influence of nurse characteristics on RP use in AFMHIS is sparse, which further reiterated the importance of conducting this PhD research in this area (Chapter 6).

Finally, to ensure a comprehensive evaluation of the literature on the use of RPs in the AFMHIS were included in this thesis, an updated review of the literature was conducted to identify any additional studies or reviews published since the first, 2011, systematic literature review. The following section presents the results of this review of the literature.

2.5 Stage 3 - Updated review of the literature

Introduction

Since this research project began, a systematic literature review (Hui et al., 2013), an integrative review (Hansen, Hazelton, Rosina, & Inder, 2020), and a scoping review (Lawrence et al., 2021), have been completed which collectively, have yielded 45 additional empirical studies on the use of seclusion, restraint, and PRN psychotropic medications. Forty-four of the studies were not captured in either systematic literature review detailed in this thesis as they were published outside of the date range of the search (see Appendix B). Only one article, Beck et al. (2008), was not captured in the 2011 systematic literature review. A review of this USA study indicates that the study included forensic patients as study participants, however, the study site was described/named as a 'state psychiatric hospital', rather than a 'forensic' or 'secure' hospital and therefore, would not have been captured in the search.

The systematic literature review conducted by Hui et al. (2013), searched electronic databases between 1980 and 2012 (32 years) and identified 15 empirical studies examining the use of seclusion, restraint, and involuntary medication in AFMHISs. The research studies mainly focused on the nature and prevalence of RP use and only five studies reported staff perception (Hui et al., 2013). In addition, the majority of the research studies focused on seclusion and restraint with little attention given to the use of medication as a RP (Hui et al., 2013). Of these studies, most occurred in Europe and only one was conducted in Australia (in the state of Victoria) (Hui et al., 2013). This literature review findings regarding the influence of gender, ethnicity and patient diagnoses on the use of seclusion, restraint, and 'involuntary medication' were inconclusive (Hui et al., 2013). However, the results suggested that younger, newly admitted patients tended to be secluded more often (Hui et al., 2013). It also identified that while most patients recognised the need for seclusion, they

reported having a negative experiences of seclusion, restraint, and 'involuntary medication' (Hui et al., 2013). The studies also identified that clinicians who authorised the use of seclusion, restraint, and 'involuntary medication' (medical professionals) viewed their use more therapeutically than those who were expected to implement their use (nurses) (Hui et al., 2013). The literature review identified a distinct lack of empirical research on the use of RPs in AFMHIS (Hui et al., 2013).

An integrative review by Hansen et al. (2020) (no date range specified in the search), identified nine studies in the use of seclusion, of which, only one was conducted in Australia (McKenna et al., 2017). The review identified common factors associated with the use of seclusion in AFMHISs including patient age, diagnosis and previous seclusion (Hansen et al., 2020). Specifically, the use of seclusion was associated with younger patients, a diagnosis of psychotic disorder or personality disorder, and patients with a previous history of seclusion (Hansen et al., 2020). Inconsistent findings were reported on patient gender (Hansen et al., 2020). The reason for initiating seclusion was commonly reported as relating to threats of, and actual violence (Hansen et al., 2020).

A scoping review on seclusion and restraint by Lawrence et al. (2021), identified 36 studies in AFMHIS between June 2015 and May 2020. Of these studies, only three were undertaken in Australia. Results conflicted with the findings of Hui et al. (2013) in relation to assessments to assist staff decision-making, patient and staff involvement and interventions that aim to reduce RPs (Lawrence et al., 2021). However, similarities were found regarding the detrimental effect RPs have on both staff and patients (Hui et al., 2013; Lawrence et al., 2021). One study by Kuivalainen et al. (2017b), reported a seasonal trend in the use of RPs, with practices occurring less in winter. This variation was attributed more to staff behaviours than patient behaviours (Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, & Tiihonen, 2017b). Conflicting study results were reported with Turner and

Mooney's (2016), finding that for males, seclusions were twice as long as those for females, whereas Griffiths et al. (2018) did not find differences in gender and the use of seclusion.

2.6 Limitations of the results and recommendations for future research

Findings from the first literature review (stage 1), on the use of RPs in the AFMHIS, identified gaps in research and areas requiring further research. Reimann and Nussbaum (2011) proposed exploring age as a potential predictor of average seclusion frequency and duration. Thomas et al. (2009) recommended exploring seclusion from the perspective of a patient requesting to go in to calm down or for time out. Specifically, seclusion being considered from a positive perspective, whereby a patient initiates seclusion as a means of respite from overstimulation and environmental stress (Thomas et al., 2009). Pannu and Milne (2008), suggested research in the area of seclusion use with female patients due to the significantly higher episodes of seclusion compared to male patients. Price et al. (2004) recommended studies in understanding treatment factors in different racially groups. Sequeira and Halstead (2004), proposed examining the dynamic nature of interactions between patient and nurses and the experiences of staff with differing levels of training and experience. Martin and Daffern (2006), suggested exploring staff responses to aggression. Hinsby and Baker (2004), proposed researching staffs' experiences of violent incidents and the use of seclusion and restraint. Ching et al. (2010) suggested incorporating interviews with staff to provide insight into practice changes, culture and attitudes that may be helpful in reducing seclusion use.

Of the three studies identified in the second literature review (stage 2), on the influence of nurses' characteristics on the use of seclusion and restraint in the AFMHIS, only one study identified opportunities for further research. Boumans et al. (2012), recommended further investigation of interpersonal and subjective nurse factors and their influence on the

nurse-patient relationship, and, the influence of team culture and reflexivity on nurses' decisions to seclude patients.

In the final (3rd stage) of the literature review, Hui et al. (2013) identified several areas requiring further research. For example, vast variations in reported rates of RP use in acute and AFMHIS made it difficult to discern if RPs were used more in AFMHIS than acute mental health settings (Hui et al., 2013). In addition, Hui et al. (2013), recommended further research regarding patient age, gender and length of admission and the use of RPs, as well as staff perspective on the indicators for RP use and the influence of the multi-disciplinary team on RPs.

Hansen et al. (2020) recommended further research to determine how patient gender may affect seclusion use. In addition, recommendations were made for further research that identify gender specific risk factors and identify timely and appropriate interventions that may reduce the use of seclusion in the AFMHIS (Hansen et al., 2020).

Lawrence et al. (2021) identified that 67% of the studies in their review focused on seclusion and restraint, therefore, they recommended that more research be carried out on other RPs used in the AFMHIS that also have a detrimental impact on patients. Lawrence et al. (2021) also recommended further research into the impact of post-restrictive practice debriefing and the emotional experiences of staff during and after RP use.

Recommended areas of future research identified in the literature are summarised in Table 2.6. The identified areas of future research were grouped into patient factors, staff factors and practice factors, to assist prioritisation when addressing the research aims and objectives.

Table 2-6. Recommendations for future research

Area of focus	Recommended future research
Patient factors	Investigate age as a potential predictor of average seclusion frequency and duration (Hui et al., 2013; Reimann & Nussbaum, 2011).
	Explore the gender of secluded patients (Hui et al., 2013), with a specific focus on female patients (Pannu & Milne, 2008), and identify gender specific risk factors (Hansen et al., 2020).
	Evaluate any correlation between patient length of admission and the use of RPs (Hui et al., 2013).
	Examine treatment factors in different racial groups (Price et al., 2004).
	Explore other aspects of RPs that have a detrimental impact on patients (Lawrence et al., 2021).
Staff factors	Explore staff characteristics and factors that influence staff's decision to use RPs (Boumans et al., 2012)
	Explore the interactions between patient and nurses (Boumans et al., 2012; Sequeira & Halstead, 2004).
	Investigate the experiences of staff with differing levels of training and experience (Sequeira & Halstead, 2004).
	Explore staff perspective on the indicators for use and influence of the multi-disciplinary team (Hui et al., 2013).
	Examine staff responses to aggression (Hinsby & Baker, 2004; Martin & Daffern, 2006).
	Explore the influence of team culture and reflexivity on nurses decision to seclude patients (Boumans et al., 2012).
	Interview staff to provide insight into practice changes, culture and attitudes that may be helpful in reducing seclusion use (Ching et al., 2010).
	Explore the emotional experiences of staff during and after RP use (Lawrence et al., 2021).
Practice factors	Determine if RPs are used more in AFMHIS than acute mental health settings (Hui et al., 2013).
	Identify interventions that may reduce the use of seclusion in the AFMHIS (Hansen et al., 2020).
	Explore post-RP debriefing (Lawrence et al., 2021).

2.7 Chapter precis

The literature review for this thesis commenced with an evaluation and synthesis of international studies into the use of RPs in the AFMHIS conducted between January 2001 and December 2011. A further literature review was conducted in 2020 to identify studies conducted into nurses' characteristics and their influence on the use of RPs. Finally, an

update on the literature uncovered additional studies published since the commencement of this research. The literature review provided an important international context for this research and identified research gaps for this research project to address. The literature review results demonstrated that studies in RP use in the AFMHIS were scant, particularly in Australia. It provided evidence that more research was needed examining practice issues, patient and staff factors in order to adequately understand factors that contribute to the ongoing use of RPs in this specialty setting. Chapter three will now describe the methodology used in this research to address these research gaps.

CHAPTER 3

METHODOLOGY

3.1 Introduction

Chapter one and two provided important background information regarding the use of RPs in the AFMHIS, presented a review of the literature, summarised the research gaps and established the need for this research. This chapter describes the importance of nursing research within the context of evidence-based practice and justifies the philosophical positioning of the researcher within the pragmatist paradigm. The research methodology for this multiphase mixed method research design (QUAN-qual), is outlined and ethical considerations, data management and data storage procedures are defined. The research setting is described along with the positioning of the researcher within the study.

3.2 Nursing research and evidence-based practice

Since nurse education moved into universities, there has been an increased emphasis on nurses applying a scientific approach to critical thinking and evidenced-based practice (EBP) (Lundgren & Robertsson, 2013). EBP is defined as making clinical decisions which are based on the most current, valid, and available scientific research evidence and clinical expertise (Nordsteien, Horntvedt, & Syse, 2017; Nursing and Midwifery Board of Australia, 2016). In Australia, the expectation that nurses be familiar with EBP is embedded within Standard 1 of the Registered Nurse (RN) Standards of Practice, which states that RNs must think critically, analyse nursing practice and provide safe, quality nursing practice within person-centred and evidence-based frameworks (Nursing and Midwifery Board of Australia, 2016). In addition, Standard 1 also states that RNs will contribute towards quality improvement and relevant research for safe quality practice (Nursing and Midwifery Board of Australia, 2016, pp. 3–4). This can be achieved by nurses identifying problems in the clinical

setting and using them ‘as a spark to ignite research, evidence-based practice (EBP) projects, and quality improvement (QI) programs’ (Christian, 2012, p. 280). Other opportunities to participate in nursing research include completing research as part of a post graduate thesis, were knowledge and skill development can be transferred and utilised in nursing practice to provide high quality evidence-based nursing care (Lundgren & Robertsson, 2013). However, prior to undertaking research, it is important that researchers consider the philosophical paradigm, or worldview, that they bring to the research (Saunders, Lewis, & Thornhill, 2019; Shannon-Baker, 2016).

3.3 Philosophical paradigms

Philosophical paradigms in research, also referred to in the literature as ‘world views’, are defined as a system of beliefs, assumptions, practices and approaches that influence how researchers view the world (Halcomb & Hickman, 2015; Saunders et al., 2019; Tshabangu, Ba’, & Madondo, 2021). The philosophical paradigm of researchers are shaped and influenced by past life experiences, the faculty discipline of the researcher, faculty advisors and peers (Creswell, 2009).

While many philosophical paradigms have been developed over the years, there are four main philosophical paradigms frequently used in research; post-positivism, constructivism, transformative and pragmatism, (Corry, Porter, & McKenna, 2019; Grover, 2015; Shannon-Baker, 2016). The evolution and development of these paradigms, also referred to as ‘paradigm shifts’, reflects the changing ways society and scientists view their worlds and realities (Kelly, Dowling, & Millar, 2018). These philosophical paradigms are characterised by differences in research assumptions; ontology (what is reality and how it can be understood), epistemology (the nature of knowledge within that reality), axiology (the nature of value and ethics) and methodology (the method used to carry out the research) (Corry et al., 2019; Grover, 2015; Houghton, Hunter, & Meskell, 2012) (see Table 3.1). In

addition, each philosophical paradigm has a particular research aim, research approach, research methodology and data collection tools.

Table 3-1. Research paradigm overview

Research paradigm	Post-positivist	Constructivist	Transformative	Pragmatist
Founder / Contributors	Sir Karl Popper & Thomas Khun	Jean Piaget	Donna Mertens	Charles S. Peirce, William James, Johns Dewey and Rorty.
Ontology	There is a single reality which can only be understood imperfectly	There are multiple socially constructed realities between individuals	There are multiple realities that are socially constructed and defined by group values (e.g., political, cultural and economic values)	Reality is constructed through experience and interactions
Epistemology	Scientific method; observable and measurable facts.	Subjective; knowledge is constructed between groups and individuals	Interactive; issues of trust, communication and power. Close collaboration between the researcher and participants.	Knowledge is a focus of problem solving and contributing to future practices.
Axiology	Objective/unbiased; value-free, neutral; distant. The relationship between the researcher and research subject is independent.	Biased; research is value-sensitive	Value-driven research; respecting cultural histories and norms.	Goal-orientated. Change occurs in response to situations and values change over time.
Aim	To describe, explain and predict the laws of the universe	To describe and understand human nature and social phenomena	To assist in creating a more just and democratic society	To gain knowledge to problem solve
Research Approach	Deductive	Inductive	Deductive & Inductive	Deductive & Inductive

Research Methodology	Primarily Quantitative	Primarily Qualitative	Qualitative with quantitative (mixed methods)	Mixed methods
Data Collection Methods	Experiments Quasi-experiments Tests Scales	Interviews Focus groups Open-ended questionnaires Observations Reference to documentation	May include tools from post-positivist or constructivist paradigms	May include tools from post-positivist or constructivist paradigms

Brown & Dueñas (2020), Mertens & Tarsilla (2015) and Saunders (2019).

3.3.1 Post-positivist paradigm

The post-positivist paradigm emerged in the mid-20th century, through the contribution of Sir Karl Popper and Thomas Khun, in response to criticism of the positivist paradigm (Corry et al., 2019; Mackenzie, & Knipe, 2006). Specifically, while positivists posited that knowledge could be observed and measured through objective and unbiased quantitative measurements to establish generalisable laws, post-positivists rejected this narrow view (Brown & Dueñas, 2020; Kelly et al., 2018). Post-positivists questioned the ability of researchers to establish laws from human behaviour and experience, suggesting instead that researchers seek an understanding of reality based on probability rather than certainty (Brown & Dueñas, 2020; Kelly et al., 2018). The post-positivist paradigm is most suitable for fact finding research were the researcher uses scientific methodologies to produce observable and measurable facts (Saunders et al., 2019). While this paradigm can incorporate qualitative methods, this paradigm is mainly associated with quantitative research that uses a deductive approach, whereby the research process commences with the development of a theory which is tested by data (Creswell, 2009; Kelly et al., 2018; Saunders et al., 2019; Shan, 2022; Tshabangu et al., 2021). Data is collected to measure and analyse numerical data using statistical procedures to assess the causality, generalizability, magnitude and frequency of a phenomenon (Fetters, Curry, & Creswell, 2013; Halcomb & Hickman, 2015). Data collection methods include experiments, tests and scales (Brown & Dueñas, 2020; Saunders et al., 2019). The relationship between the researcher and the research subject is independent and therefore this approach is objective and value-free (Houghton et al., 2012; Shan, 2022). The key assumption of post-positivism is the notion that truth can never be found, therefore, researchers in this paradigm never seek to prove a hypothesis, rather, they indicate ‘a failure to reject a hypothesis’ (Creswell, 2009; Grover, 2015).

3.3.2 Constructivist paradigm

The constructivist paradigm emerged in the mid-20th century and was pioneered by Jean Piaget (Kumatongo & Muzata, 2021; Shan, 2022). This paradigm addresses the unique experience of individuals by focusing on individual cognition, specifically, 'how we know' and 'what meaning we place on this knowledge' (Kelly et al., 2018). Constructivism is the belief that there are many realities constructed socially between individuals (Shan, 2022). It suggests that understanding the world is achieved through conceptual frameworks that vary between individuals and cultures (Bishop, 2015; Grover, 2015). This paradigm provides an opportunity to acknowledge the social context in which an individual exists while also exploring the subjective perceptions and experiences (Grover, 2015; Kelly et al., 2018). It assumes that knowledge is embedded in values and cultures and the relationship between the researcher and the research subject are interactive (Bishop, 2015; Houghton et al., 2012; Shan, 2022), therefore, the research is value sensitive (Houghton et al., 2012; Shan, 2022). Qualitative methods of data collection such as interviews, focus groups and open-ended questionnaires, are associated with the constructivist paradigm (Kelly et al., 2018; Shan, 2022).

3.3.3 Transformative paradigm

The transformative paradigm emerged in the 21st century and was proposed by Mertens (2007, 2010). This paradigm supports the use of mixed methods research on marginalized groups such as women, ethnic/racial minorities, members of the lesbian, gay, bisexual, transgender, intersex, queer/questioning and asexual (LGBTIQA) communities, people with disabilities, and those who are poor (Grover, 2015; Hall, 2013). The transformative paradigm has an element of advocacy in its research approach by highlighting the needs, aspiration, and experiences of marginalised groups with an aim to bring about social justice and change (Grover, 2015; Mertens, 2010). The influence of privilege, social,

political, cultural, economic, ethnic, gender, disability and other values in shaping multiple realities are recognized (Mertens, 2010). The development of a trusting relationship is critical within this paradigm, with issues surrounding power and privilege being explicitly addressed (Mertens, 2010). The ethical implications of conducting research on marginalised populations are acknowledged and include respect for cultural norms of interaction, acknowledgement of power imbalances, the promotion of human rights and increase in social justice (Mertens, 2010). Qualitative methods are critical to transformative paradigms, though quantitative and mixed methods can enhance the research outputs. However, critics of the transformative paradigm suggest that the focus on marginalised groups and emancipatory issues limits its application to a small portion of social scientific research (Hall, 2013).

3.3.4 Pragmatist paradigm

Pragmatism emerged from the USA in the 19th and early 20th centuries from the works of Charles S. Pierce, William James and John Dewey, and in the late 20th century, Rorty (Hall, 2013). The pragmatist approach emerged as a result of the 'paradigm wars' where the use of a single method for research was criticised, resulting in the movement to use approaches that included qualitative and quantitative methods (Kelly et al., 2018). Pragmatists do not favour any single belief or set of beliefs about reality (Houghton et al., 2012), asserting that reality can be one and many (Shan, 2022). A pragmatist approach involves the researcher using 'what works' to pursue answers to research questions (Halcomb & Hickman, 2015; Shan, 2022), and advocates for a shared research aim which is to 'produce positive changes in the world' (Bishop, 2015). In pragmatism, the research question is regarded as the most important issue with both subjective and objective observations seen as valuable in the pursuit of new knowledge (Halcomb & Hickman, 2015). Over the past twenty years pragmatism has gained popularity as a research paradigm for

mixed methods researchers (Hall, 2013). However, it has also attracted criticism with some scholars suggesting it is vague and methodologically unsatisfactory (Hall, 2013).

3.4 Justification for using a pragmatic approach for this research

All four paradigms were considered for the positioning of this research. Had the aim and objective of the research been to only report the 'absolute truth' or an 'estimation of truth,' through the measurement of observable phenomena using quantitative methods, post-positivism would have been the appropriate paradigms to use (Kelly et al., 2018). However, the inclusion of qualitative research methodologies within this research design were regarded as an essential element in facilitating insights into nurses' attitudes and experiences of RP use and what prompts them to use them. For mixed methods research, only the transformative and pragmatist paradigms were seen to be compatible (Hall, 2013). As AFMHIS patients are considered a marginalised and vulnerable population, the transformative paradigm could be considered well suited for this research. (Durey et al., 2014a; McKenna et al., 2003; Rabab, Tomlin, Huband, & Völlm, 2020; Vollm & Nedopil, 2016). These patients are often dually stigmatised for being prisoners as well as mental health patients (Bowring-Lossock, 2006; Martin et al., 2013; McKenna, Furness, Dhital, Park, & Connally, 2014a). However, the focus of this research also included exploring the experiences and practices of nurses who provide care to this patient group. In addition, while gaining an understanding of the broader political factors influencing the use of RPs in this clinical setting was important, this was not the dominant aim of carrying out this research. Therefore, pragmatism was identified as being the most suitable paradigm for this research, as it would support the use of both qualitative and quantitative research designs together (mixed methods) (Bishop, 2015; Halcomb & Hickman, 2015).

Historically, qualitative and quantitative research approaches were traditionally regarded as mutually exclusive and incompatible by some philosophical theorists (Hall, 2013;

Houghton et al., 2012; Shan, 2022). However, the emergence and establishment of mixed method research over the last twenty years (Hall, 2013), has provided the opportunity for researchers to integrate the use of qualitative and quantitative approaches in a single research project (Halcomb & Hickman, 2015). The strength in using a pragmatist approach in this research is that it endorses using the most suitable and practical approach to respond to the complex research aims and objectives, to produce positive, practical changes in real life (O'Reilly, Peters, Wilson, & Kwok, 2018). In addition, exploring the multiple realities and perspectives of nurses working within the AFMHIS sits well within pragmatism, which accepts that one person's experience of a situation will differ significantly to another's (O'Reilly et al., 2018; Shan, 2022).

3.5 The use of a mixed methods approach in this research

Researchers need to consider whether their research aims and objectives can be addressed using quantitative, qualitative or mixed methods. For example, the use of quantitative research methodology is appropriate when a researcher is seeking to describe the characteristics of a study population in numerical terms and evaluate interventions which can be generalised to larger groups (Halcomb, 2018; O'Reilly et al., 2018). Such data are regarded as objective, generalisable and provides context to the research subject matter (Halcomb, 2018). On the other hand, qualitative research studies enable researchers to investigate the meaning of human experience (Halcomb, 2018; O'Reilly et al., 2018), through the use of data collection methods such as interviews, focus groups, open-ended questionnaires and observations (Liamputtong, 2013; Saunders et al., 2019). Qualitative research uses an inductive approach, meaning conclusions and theories are developed from data (Tshabangu et al., 2021). Quantitative research data can reveal valuable information that can be useful in developing policy and allocating resources, while qualitative research data can assist key stakeholders to understand people's experiences (O'Reilly et al., 2018).

Mixed-methods research has grown in use in healthcare due to increased healthcare complexities caused by a rise in chronic, complex and co-occurring disease (Doran, Burden, & Shryane, 2021; Driessnack, Sousa, & Mendes, 2007; Halcomb & Hickman, 2015; Shorten & Smith, 2017). Such complexities have prompted health researchers to employ multidimensional methods to investigate health care issues and answer important clinical practice questions (Halcomb & Hickman, 2015; Shorten & Smith, 2017). The gaps in research identified in the literature review (Chapter 2), indicated that due to the broad and complex subject of RPs in AFMHIS, both quantitative and qualitative research methods (mixed methods), were required. The strength of using a mixed-method approach in this research was the ability to gain a deeper understanding of the research subject from multiple perspectives, than what could be achieved by using a qualitative or quantitative approach alone (Halcomb & Hickman, 2015; Shorten & Smith, 2017). Specifically, the research aims and objectives sought to not only report rates and frequencies of RP use (quantitative findings), but to also explore the attitudes and experiences of nurses working in the AFMHIS (qualitative findings), and identify nurse and patient characteristics that may influence RP use (quantitative). The researcher wanted to engage with nurses to explore their attitudes and experiences and provide an opportunity for them to identify practice improvements which may contribute to improving the quality of life of patients living with serious mental illness. Allowing the voices of the study participants (nurses) to be heard was considered significant in illuminating practice challenges in this unique practice setting. As noted by Kelly, et al. (2018), every individual's perception of the world is unique and shaped by experiences and their interpretation of these experiences. However, the adoption of qualitative methods alone would limit the capacity of the researcher to expand on the quantifiable facets of RP use such as how often they are used, when and why. As noted by Thomas et al. (2009) studies that use

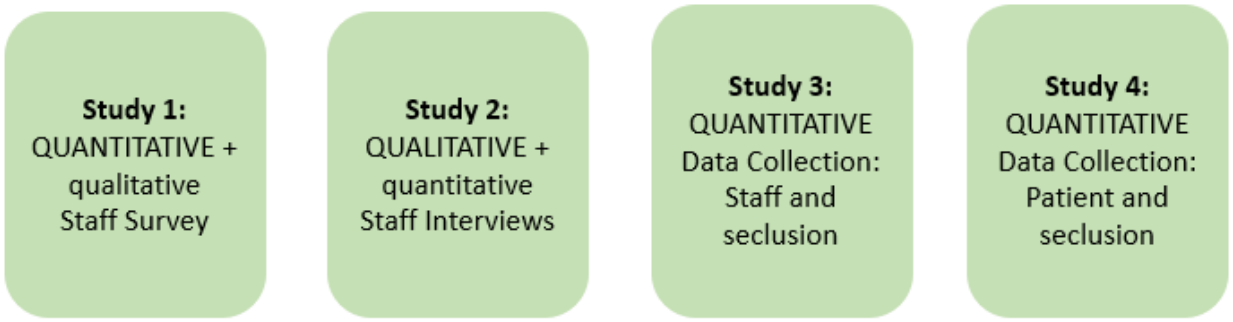
quantitative methodologies alone tend to lack the in-depth quality information required to understand the context of a phenomenon, while qualitative approaches lack statistical power.

Mixed-method research designs, however, can pose challenges to researchers. Firstly, researchers must be familiar with both qualitative and quantitative research methods (Bishop, 2015; Bressan et al., 2017; Creswell, 2009). Secondly, the need for extensive data collection and analysis can be time-intensive (Bishop, 2015; Creswell, 2009). Thirdly, researchers must be able to integrate and link the two methods together and report the research results effectively (Bressan et al., 2017).

3.6 The research methodology

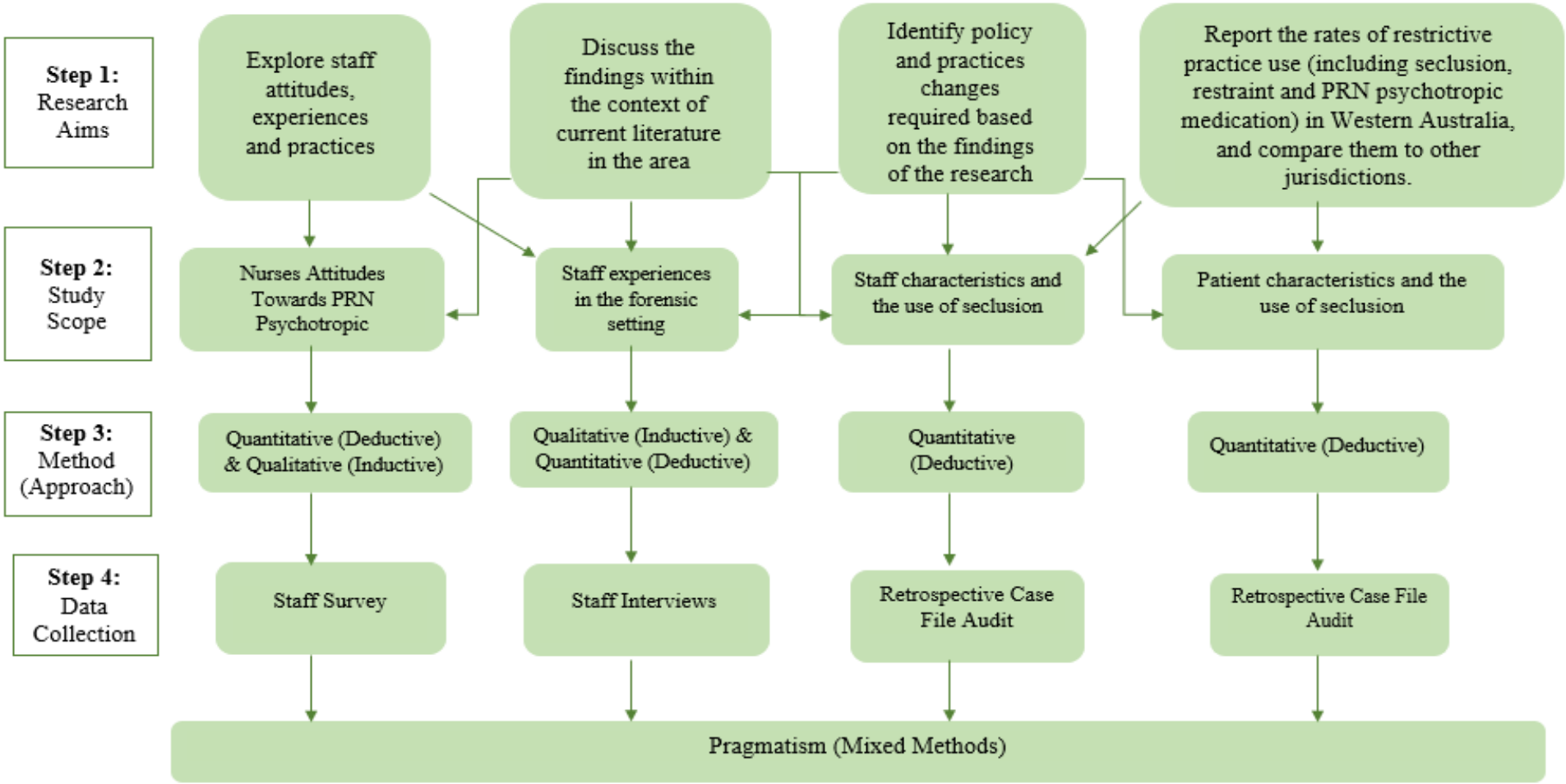
To address research aims and objectives, and to produce credible research results, it is important that the researcher choose the appropriate research methodology (Liamputtong, 2013). To achieve this, they must consider all aspects of the research strategy in terms of the research paradigm, aim, scope, method and data collection tools (Saunders et al., 2019; Shannon-Baker, 2016; Tshabangu et al., 2021). This is particularly useful when a research project is complex, multi-faceted and requires a range of research tools to collect data (Halcomb, 2018). For this research, the aims and objectives were to explore the use of RPs in AFMHIS. To address the research aims effectively, it was determined that a combination of three quantitative designs (one staff survey and two retrospective data collection audits), and one qualitative design (staff interviews) were required (see Figure 3.1).

Figure 3-1. Visual depiction of the multiphase mixed method research design



To assist in the design, a four-step research framework was developed as a useful tool in formulating an appropriate research design from a top-down approach (Figure 3.2). At each level, consideration was made for selecting the most appropriate option starting with the research aims and objectives (step 1), then defining the scope of each study (step 2), choosing the best research method (qualitative or quantitative) and research approach (inductive/deductive) to achieve the research aims and objectives (step 3). Finally, the most appropriate data collection tools needed to collect data (staff survey, audit, data collection) was identified (step 4).

Figure 3-2. Research Framework



Once it was identified that a mixed method approach was required, the researcher considered five important aspects of the research design: type, purpose, weighting, mixing and research dissemination (Creswell, 2009; Driessnack et al., 2007). Firstly, a number of design types were considered; convergent parallel (merging of concurrent quantitative and qualitative data together), sequential exploratory (quantitative data provide more depth to the qualitative data), sequential explanatory (qualitative data provide more depth to the quantitative data), multiphase (multiple projects conducted over time linked together by a common purpose) and embedded or nested (embedding quantitative and qualitative approaches in tandem to generate new insights) (Bishop, 2015; Meissner, Creswell, Klassen, Plano, & Smith, 2011). For this research, it was determined that the mixed method design would be multiphase, whereby multiple studies would each contribute valuable data to the overall research, with each study being integrated during the interpretative stage in chapter 8 (Meissner et al., 2011). This was an important research design due to the differing types of data needing to be collected (quantitative and qualitative) and the different focus of data collection (i.e., use of seclusion or use of PRN medication, staff, or patient factors). The intent of this approach was for the quantitative data to provide of snapshot of RP use at a point in time, with the qualitative data collection expanding the researchers understanding of RP use in the service through staff interviews. One advantage of this methodological approach was to identify any differences between what was being said by the nurses and what was happening in clinical practice.

Secondly, it was important for the researcher to identify the purpose of using more than one research method. Five purposes for using more than one research method were identified in the literature; data triangulation (merging of data), investigator triangulation (collaboration of more than one investigator to collect and interpret data), theoretical triangulation (using more than one theoretical framework to guide the study design and data

interpretation), and methodological triangulation (using more than one method to collect data) (Driessnack et al., 2007; Houghton et al., 2012). Other purposes include complementarity (converging data and exploring different facets of a phenomenon), development (using one study findings to develop another method), initiation (initiating a new analysis of a phenomenon) and expansion (widening of the scope and breadth of the study) (Driessnack et al., 2007). A complimentary design was considered the best fit for this research by using quantitative and qualitative data to report prevalence rates of RP use and explore nurse and patient factors that may influence their use. Using both quantitative and qualitative data would enable the researcher to gain a deeper understanding of the different facets of the research subject (Bishop, 2015).

Thirdly, in designing this research project, consideration was given to the weighting, or priority, given to the quantitative (deductive) and qualitative (inductive) components of the research (Creswell, 2009). This was done by determining the primary research and the secondary research (Driessnack et al., 2007). The secondary research component supplements the primary research findings by providing a perspective that cannot be achieved using the primary research approach (Driessnack et al., 2007). It was determined that the quantitative components of the research (numerical data rates/frequencies derived from the medical record audit and survey data on the rates of, and attitudes towards the use of RPs) would be the primary data, with the qualitative data providing a supplementary, or supportive, contribution through an inductive approach (by providing themes).

Consideration was also given to when and how the different components of the research data would be integrated, also referred to in the literature as mixed, or 'point of interface' (Åkerblad, Seppänen-Järvelä, & Haapakoski, 2021; Meissner et al., 2011). As noted by Meissner et al. (2011) integration of research data can occur at any or several stages of a research project and occur in a number of ways. To ensure a clear communication of

each facet of research findings, whether it be qualitative or quantitative, it was determined that the mixing of primary and secondary data would occur during the integration and discussion stage of this thesis (chapter 8).

Finally, the dissemination of mixed method research findings is an important stage of the research process. Two research dissemination models were considered; segregated and integrated models (Halcomb & Hickman, 2015). The segregated model involved keeping the quantitative and qualitative study components separate (Halcomb & Hickman, 2015). This is achieved by publishing each study separately, for example, as separate chapters or articles (Halcomb & Hickman, 2015). The integrated model involved integrating the qualitative and quantitative findings through the publication of a series of chapters or articles that focused on a particular theme or research question (Halcomb & Hickman, 2015). The researcher determined that the most appropriate method of communicating the qualitative and quantitative research findings would be using the segregated model. The publication of each study separately was deemed important, as each part of the study was inherently complex, a real-world problem and held significant clinical importance to merit full consideration as a separate entity. The results, when integrated in the final chapter of the thesis, provide a more complete understanding of the research subject by exploring different facets of the complex phenomena of the use of RPs in the AFMHIP'. Such an approach provided an opportunity for a greater range of perspectives and insights.

In the following section, each study's aim, study participants, data collection and data analysis, are described. Thereafter, data storage and management, and ethical issues common to all studies are presented as well as the research setting and background on the researcher.

3.7 Study 1

Nurses' attitudes towards the use of PRN psychotropic medications in acute and forensic mental health settings

3.7.1 Aim

The first study aimed to explore nurses' attitudes towards the use of PRN psychotropic medications in acute and AFMHISs. The study examined nurses' perceived causes of aggression and evaluated the use of PRN psychotropic medications as a management strategy in acute mental health and AFMHIS to identify group differences.

3.7.2 Study participants

In this study, non-probability sampling was used, meaning, participants were recruited from a specific population (acute and forensic mental health nurses), to participate in a survey on a specific subject (PRN medication in acute and AFMHIS) (Schneider, 2013). Of the four main types of non-probability sampling (convenience, purposive, snowball and theoretical), a convenience sample was chosen as the most suitable sample design for this study (Schneider, 2013). A convenience sample method enabled the researcher to recruit participants (acute and forensic mental health nurses), who were available and consented to participate in the study (Schneider, 2013). Three acute and one AFMHIS were identified as appropriate sample sites. Study participants were placed into two groups according to workplace: AFMHIS or acute mental health service

The survey was an approved quality improvement project as it was deemed low risk and approval was received from the site Nurse Directors for the survey to be distributed via email to nurses within their service (Appendix C). The 'Attitudes towards PRN medication use survey' (ATPMUS) and information sheet (including a link to the online survey)

(Appendix D), were distributed to the survey sites via email. Participant consent was implied if the survey was completed, and no names of participants were collected.

3.7.3 Data collection

Quantitative data was deemed most suitable for collecting data regarding nurses practice and decision making. This data were collected via a 19-question survey titled, 'Attitudes towards PRN medication use survey' (ATPMUS), which was adapted from the 'Attitudes towards PRN medication' survey by Heyman (1987). Numerical data were collected through responses to three and four point Likert-type questions. Qualitative data were collected to enable nurses to document their experiences, thoughts, feelings and recommendations for practice improvements. Qualitative data supplemented the quantitative data and was collected using free text entries. Data collection of the survey responses occurred using a secure 'Survey Monkey' website. Data collection ceased when no further survey responses were received for a one-week period. When the survey closed, the data was securely transferred into Statistical Package for Social Science (SPSS), version 22.0 and saved on a password protected university network.

3.7.4 Data analysis

Both quantitative and qualitative data were analysed in this study. Quantitative data were analysed using means, standard deviations and percentages. Chi Square analyses were used to determine between group differences. Qualitative data analysis occurred by conducting content analysis, with participant responses coded and grouped into themes. Data analyses were carried out using IBM SPSS Statistics (version 22.0), predictive analytics software and Nvivo qualitative data analysis software (QSR International, 2012). The quantitative results from this research provided an opportunity to identify attitude and practice differences between the two groups of nurses who worked in diverse clinical settings. The qualitative results provided insights into the experiences of nurses who were

able to submit recommended practice changes which they believed would improve clinical practice. Permission to publish the findings of the quality improvement project was obtained from the North Metropolitan Mental Health Human Research Committee in line with service policy.

3.8 Study 2

Evaluating critical factors that assist nurses to reduce the use of restrictive practices

3.8.1 Aim

The second study explored nurses' attitudes, experiences, and practices of RP use in the AFMHIS. The aim of the study was to identify the perceived skill set required by nurses to manage challenging behaviours in this specialty area. Challenges and opportunities in providing safe care were also explored.

3.8.2 Study participants

In this qualitative study, non-probability sampling was used, meaning, participants were recruited from a specific population to explore a specific subject (Schneider, 2013). Of the four main types of non-probability sampling (convenience, purposive, snowball, and theoretical), purposive sampling was chosen as the most suitable sample design (Schneider, 2013). This sampling method was used to explore the experiences of mental health nurses working in a specific facility (one AFMHIS in Western Australia), who had the required experience and knowledge, by virtue of their employment within the service, regarding challenging behaviours and the use of RPs in that specialty service. Invitations to participate in this research study were extended to all nurses working in the AFMHIS in Western Australia over a three-week period. An information sheet describing the study's objectives and what their involvement included was created (Appendix E). Demographic data of the

study participants were collected using a data collection sheet (Appendix F) sheet. Written informed consent was provided by the study participants prior to being interviewed (Appendix G).

3.8.3 Data collection

A qualitative approach was deemed the appropriate research method in this study. Direct data were collected via person to person interactions in the form of semi-structured interviews (Schneider, 2013). An interview guide was developed for the interviewer which consisted of open-ended questions to guide the topic of discussion to meet the research objectives (Appendix H). All interviews were digitally recorded and transcribed verbatim. To optimise good quality narrative data, the interviews were conducted in an area away from wards and other forms of disruption or distraction.

3.8.4 Data analysis

Inductive content analysis, as described by Elo and Kyngas (2008), was used to analyse the data and explore the experiences of nurses working in the AFMHIS. A systematic and objective approach to data analysis and interpretation occurred using a three-stage process of preparation, organizing, and reporting are described in detail in section 5.10 of this thesis (Elo & Kyngäs, 2008). This inductive approach enabled the researcher to delve into the private world of participants (Tshabangu et al., 2021). The qualitative approach was utilised to elicit from the study participants strategies that could be developed or enhanced to improve staff safety and patient outcomes.

3.9 Study 3

Nurses' characteristics and their influence on the use of seclusion in an adult forensic mental health setting

3.9.1 Aim

A quantitative research study was conducted to determine if rostering practices and nurse characteristics influenced the use of seclusion in an AFMHIS. The study was conducted by means of a retrospective case file audit using hospital records.

3.9.2 Study participants

All nurses who were rostered to work shifts across a six-month period (January to June 2016) at the AFMHIS were recruited to the study. As this study was a retrospective audit, consent from nurses was not required.

3.9.3 Data collection

Data were collected from site seclusion data, daily ward reports and staff rosters from 546 shifts during a six-month period (1st January to 30th June 2016). Data were recorded on a data collection template (Appendix I). To ensure that no missing data occurred during the data collection period, the data collection tool required all cells to be completed. Seclusion event data collected included time, shift, day, date and month. Daily ward reports provided data on staff to patient ratios, the bed occupancy of the ward and unit, the number of admissions, the number of specials and the number of security officers present on the ward each shift. A review of staff rosters enabled the collection of data including: number and ratio of male and female nurses rostered to the ward and unit each shift; number and ratio of registered nurses and enrolled nurses rostered to the ward and unit each shift, number and ratio of permanent and temporary staff (casual and agency nurses) rostered to the ward and

unit each shift; the number of nurses working overtime and the presence of the lead nurse and the shift coordinator each shift.

3.9.4 Data analysis

A deductive approach, whereby hypotheses were developed based on readings in the literature, and data collection were used to test these hypotheses (Saunders et al., 2019). Data were grouped into three sets of variables: group 1 -month, day of the week and shift type (day, late or night shift); group 2 – operational factors including bed occupancy, number of admissions and number of specials each shift; group 3 – counts of staff per shift and ratios of staff per shift. A modelling approach using multiple Poisson regression plus model comparison (Austin, Stryhn, Leckie, & Merlo, 2018), was undertaken in the study exploring nurses' composition (staff profiles, sick leave and overtime), and its influence on seclusion in the AFMHIS. Descriptive statistics were used to report frequencies and overtime rates. Analyses were carried out using IBM SPSS Statistics (version 26), software.

3.10 Study 4

Patient characteristics and the use of seclusion in an adult forensic mental health inpatient service in Australia: A descriptive analysis and examination of clinical interventions

3.10.1 Aim

A quantitative study was conducted to identify patient characteristics that may influence the use of seclusion in an AFMHIS. The study also sought to compare and examine the characteristics of patients who experienced seclusion and those who did not.

3.10.2 Study participants

All patients admitted to the AFMHIS between 1st January and 30th June 2016 (6 months), were recruited to the study. As this study was retrospective in nature, patient consent was not required.

3.10.3 Data collection

A retrospective case file audit using hospital records was completed to collect the data. Data were collected using a data collection template (Appendix I). To ensure that no missing data occurred during the data collection period, the data collection tool required all cells to be completed for each patient's episode of care. Data were collected on patient demographic and clinical information including: age, age range, gender, ethnicity, admission date, referral source, number of prior admissions to acute and forensic mental health services, and, primary and secondary diagnosis on discharge. Data were also collected on seclusion event details (including day, date, time, month), reason for seclusion, patient's condition when secluded, seclusion duration, risk assessment score on the day of seclusion, PRN medication administration (before, during and after seclusion), the presence of a 'Coping and awareness tool' in the patient's medical file, and changes to the patients care plan after

seclusion. The 'coping and awareness tool was a site-specific tool which was completed on admission with the patient to identify triggers for aggression or self-harm, and strategies that the patient would like to employ to manage their experiences, as well as supportive staff interventions that they have found beneficial before. To maintain patient confidentiality, all study participating were allocated a unique identification number (Appendix J). The unique identification numbers were stored separately to other study data.

3.10.4 Data analysis

Based on readings in the literature, hypotheses' were developed and data collection was used to test these hypotheses (a deductive approach) (Saunders et al., 2019). Descriptive statistics included means, standard deviations and percentages were used to report frequencies, duration of seclusion, PRN type, dose and frequency and non-pharmacological interventions. Chi Square analyses were used to determine between group differences. Simple descriptive statistics provided a profile of the study sample, specifically, those who experienced seclusion and those who did not. Chi-square analysis was used to compare the samples and binary-logistic regression were used to identify any relationships between variables such as gender, ethnicity, and age. Analyses were carried out using IBM SPSS Statistics (version 26), software.

3.11 Data storage and management

During the process of conducting the research, the researcher adhered to the policies and procedures of Curtin University and North Metropolitan Health Services in Perth Western Australia. Adherence with the Management of Data and Information in Research: A guide supporting the Australian Code for the Responsible Conduct of Research. (2019), was maintained throughout the research process. A data management plan was developed and included several strategies to maintain the security and integrity of all research data. All raw data was stored and maintained at the hospital site. Only the principal researcher was able to

access the raw data. A hard copy of the consent forms, transcripts, interview guides, were kept in a locked cupboard in the researcher's hospital site. Digital files of the interview guides, data collection sheets were retained on a password protected hard drive located in the researcher's hospital site. De-identified research data (i.e., group findings) were stored on a secure 'R' drive in the university network. All data were de-identified before any reports or articles were submitted for publication. Findings were reported as group findings and no individual identification of patients/nurses would be possible from findings.

All digital and hard copy research data will be destroyed seven years after completion of the research as per university, health department and state government policy at that time.

3.12 Ethical issues

Human research involves research conducted with, or about people, using their data or tissue (National Health and Medical Research Council (Australia) & Universities Australia, 2018). Conducting such research carries inherent risks, particularly towards research participants. Historically, the Nuremburg trials into the murder and torture of war prisoners in the Nazi concentration camps during the second world war, led to the development of the Nuremberg Code which consisted of ten principles for medical experiments (National Health and Medical Research Council (Australia), 2018). By 1964, the Nuremberg principles were adopted and revised and became known as the Helsinki Declaration (National Health and Medical Research Council (Australia), 2018). In Australia, 'The Australian Code for the Responsible Conduct of Research' (2018), (the 2018 Code), is the research code adhered to which establishes a framework for responsible research conduct that provides a foundation for high-quality research, credibility, and community trust in the research endeavour.

All studies completed as part of this thesis underwent rigorous ethics review and approval at both hospital and university sites. The study 'Nurses' attitude towards the use of

PRN psychotropic medications in acute and forensic mental health settings', was registered and approved as a quality improvement activity at North Metropolitan Health Service (QI Number- 2012-01) (Appendix K), and ethics approval was obtained from Curtin University (Appendix L). The study 'Promoting Positive and safe care', received ethical approval from North Metropolitan Health Service (Appendix M – approval number 08-2015). Both studies examining staff and patient characteristics and their influence on the use of RPs also received ethics approval from North Metropolitan Health Service – Mental Health Service (RGS0000000156) (Appendix N) and Curtin University, Human Research Ethics Committees prior to data collection (HRE2019-0153) (Appendix O).

As part of the ethics submission, several safety parameters were included in the research design regarding participant recruitment in the study examining patient characteristics and the use of seclusion. Participant inclusion criteria were incorporated into the research design which specified that only patients aged over 18 years of age admitted to the research study site, during the six-month period, could be included. Participants were excluded if they met the following criteria: patients admitted to the research study site outside of the six-month period, patients under the age of 18 years old and patients covered by any guardianship and/or administration Act legislation. To minimise/avoid bias, including randomisation and blinding**,** all patients admitted to the research study site, who met the inclusion criteria, were included in the study.

When conducting research, it is important that researchers consider ethical implications for specific research participants. In particular, research participants who have a pre-existing relationship with the researchers such as long-term hospital patients, involuntary patients and prisoners, are people in dependent or unequal relationships and are considered vulnerable (National Health and Medical Research Council (Australia), 2018). These relationships may compromise the voluntary nature of participants' decisions to participate

in research studies, as they usually involve unequal status, where one party has or has had a position of influence or authority over the other (National Health and Medical Research Council (Australia), 2018).

The studies examining nurse and patient characteristics and their influence on RP use used retrospective case file audits of nurse rosters and case files of patients and no contact was made with the patients or nurses. While the Director of the study site had given permission for the principal researcher to access the sites workforce, rostering data, case, seclusion and restraint data for this research (See Appendix P), a waiver of consent application was made within the ethics application and was approved. The reasons for the waiver of consent for this part of the research were for the following reasons (as per the National Statement of Ethical Conduct in Human Research):

1. The research was retrospective and was focused on health professionals' care decisions in relation to the patient's presenting behaviours and the findings would benefit other patients and facilitate cultural change at the service.
2. As a retrospective study, the research had no impact or influence on care provision to the patient or clinical decision making.
3. The research activity was retrospective and in line with usual clinical practice to evaluate patient care.
4. A requirement for explicit consent would compromise the required level of participation. It would be impractical to obtain consent from all patients and staff (e.g., patients discharged, and staff no longer employed by the service). The research activity would likely be compromised if the required sample size was not achieved.
5. The research protocol provided sufficient protection of privacy

6. If this study was prospective in nature and consent was gained from patients and staff this may influence the care provided to patients during the data collection period.
7. The research was generally low risk, not invasive or would not cause potential distress to participants.
8. There were obvious benefits from examining the data leading to improvements in care and data was to be reported as group data only and no individual would be able to be identified. The benefits of the proposed activity outweighed the public interest in the protection of privacy.
9. Strict adherence to local governance processes (Department of Health) would ensure that data management and security, patient confidentiality and integrity would be maintained. For example, the management of the medical records would be secure by ensuring they were ordered and returned the same day in secure transport.
10. There was no breach of State, federal, or international law.

While no informed consent was required from study participants (as authorised by the waiver of consent approval), all aspects of the research process underwent rigorous processes through the Western Australian Department of Health Human Research Ethics Committee governance processes. As the nurse and patient characteristics studies were retrospective case file audits with no contact being made with any nurses or patients, participant withdrawal criteria and procedures were not required.

Finally, permission to publish the findings of the studies in PhD document and peer reviewed publications was requested in the ethics application and approved.

3.13 The research setting

In Western Australia, the Department of Health provides community, court, prison, and AFMHIS services that caters for the needs of individuals along their journey through the criminal justice system and through their life cycle. For younger individuals with suspected mental health issues facing criminal charges in court, assessment, support and referral are provided from a court-based service. For adult individuals with suspected mental health issues facing criminal charges in court, a multiagency specialist mental health court and community treatment program are available. A court liaison service is also available to provide mental health assessments for defendants appearing in courts. In addition, a consultation liaison service provides support to local mental health services by providing forensic risk assessment and advice on management of risk. Prison psychiatry clinics are provided in all Perth metropolitan prisons and some regional prisons, which assist and support services to provide specialist care for prisoners with mental illness. A specialist psychiatric consultation-liaison in-reach service also provides oversight of the assessment, treatment initiation and treatment monitoring of prisoners convicted of dangerous sex offences. At the point of release from prison a prison in-reach transition team facilitate the individuals transition back into the community with appropriate mental health and psychosocial support services in place.

This research was conducted in a 30 bed AFMHIS in Western Australia which provides in-patient care to patient's referred from prison, courts, or the community. The wards within this unit were mixed-gender wards catering for the needs of patients admitted for assessment and treatment under the Criminal Law (Mentally Impaired Accused) Act 1996 (Government of Western Australia, 1996) or the Mental Health Act 2014 (Government of Western Australia, 2014a). The unit was located in Australia's largest state, Western Australia, which had a catchment area of 2.646 million km² and a population of

approximately 2.6 million people ("Population of Western Australia 2022," n.d.). When compared with other Australian states and territories, Western Australia had the lowest number of forensic beds per 100,000 of the population (1.9 per 100,000 compared to the national average of 3.4, with Tasmania and New South Wales having over 5) (Government of Western Australia, 2018). In addition, since opening in 1993, the unit had not acquired any additional beds despite the state population increasing by 700,000 and the prison population tripling in number from 1800 to 5000 (Government of Western Australia, 2014b). The average length of stay for patients at the unit at the time of the study was 21 days compared to other services internationally, such as a facility in Canada which had an average length of stay of 128 to 131 days (Nicholls et al., 2009). Of the 240 (approximate) patients admitted each year, Indigenous Australians make up 30% of the patient population (Durey et al., 2014a).

3.14 The researcher

The researcher is a Caucasian Registered Nurse who has worked in mental health nursing for over 20 years and specialised in forensic mental health nursing for 16 years. Following graduation from university, the researcher gained experience in the area of acute and forensic mental health care (specifically in-patient settings) in the United Kingdom and Australia (Victoria and Western Australia) and completed further training to specialise in forensic mental health nursing in prison and AFMHISs. The researcher attained 16 years' experience as a nursing leader responsible for delivering and monitoring quality mental health care in the specialty area of AFMHIS.

An interest in the use of RPs in the AFMHIS stemmed from a career transitioning from the United Kingdom (UK) to Australia. Clinical experience in the UK AFMHIS saw lower levels of RP use compared to the Australian AFMHIS, where these interventions were used regularly and regarded as routine clinical interventions. Such dissonance in practices

ignited in the researcher a drive to explore what influenced such differences: staff, patient, cultural, environmental or organisational factors?

The researcher was employed in various nursing positions (SRN 3 to SRN 9) at the research site across the term of the research (2011 to 2021). Due to the researchers position as a leader within the organisation, the researcher did not participate in the staff interviews and did not discuss the research projects with service employees and study participants. This was important in reducing the likelihood introducing bias during the research process and influencing, or coercing, her peers' attitudes, and responses to the research questions. Supervision for all research studies occurred within the research team which included a Professor and Associate Professor at Curtin University. In addition, all studies were tabled as agenda items for service endorsement within local safety and quality committees as well as education and research committees. These afforded the opportunity for multidisciplinary input into the design, implementation, data analysis and data interpretation of each study.

3.15 Summary

As noted by a number of scholars, the use of RPs in the AFMHIS is under-researched (Decaire, Bédard, Riendeau, & Forrest, 2006; Gudjonsson, Rabe-Hesketh, & Szmukler, 2004; Hansen et al., 2020; Haw & Wolstencroft, 2014b; Hipp et al., 2018). However, the use of RPs is broad and complex and involves many influencing factors including staff, patients, environment organisational features. To achieve an in-depth understanding of this phenomenon, it was deemed crucial that the context of RP use be considered from the perspective of multiple factors using both quantitative and qualitative research methods. As a result, a multiphase mixed method research design (QUAN-qual) was used to investigate RP use in the AFMHIS. The development and use of a research framework assisted the researcher in designing the research in a logical and practical manner. Data collection occurred across four studies. Firstly, quantitative data were collected by administering a

survey to nurses employed within acute and AFMHIS to explore their attitudes towards the use of PRN psychotropic medications. Secondly, qualitative data were collected by face-to-face semi-structured interviews to explore nurses experience of working in the AFMHIS and managing challenging behaviours. Thereafter, two retrospective case file audits were completed to report on rates of RP use, nurse and patient's characteristics and their influence on RP use and interventions used to manage challenging behaviours.

3.16 Chapter precis

This chapter presented an overview of evidence-based practice, philosophical paradigms, and research designs. The choice of research methodology undertaken in this research and justification for using a multiphase mixed method research design (QUAN-qual) were presented. Each study was presented in terms of research aims, study participants, data collection and data analysis. In addition, data storage, data management and ethics of the research were detailed. A description of the research setting and the positioning of the researcher provided context to the research. Chapter 4 will now present the study that explored nurses' attitudes towards the use of PRN psychotropic medications in acute and AFMHISs.

CHAPTER 4

A QUANTITATIVE STUDY EXAMINING NURSES' ATTITUDES TOWARDS THE USE OF PRN PSYCHOTROPIC MEDICATIONS IN ACUTE AND FORENSIC MENTAL HEALTH SETTINGS

4.1 Introduction

This chapter presents a quantitative research study examining nurses' attitudes towards the use of PRN psychotropic medications in acute mental health and AFMHIS. PRN psychotropic medications are one strategy available for nurses to use to manage disturbed and aggressive behaviours without having to call a doctor (Haw et al., 2011; Haw & Wolstencroft, 2014b; Hipp et al., 2018). While patients can request PRN psychotropic medications, the decision to administer them depends on the decisions of nurses (Jimu & Doyle, 2019). However, their use is controversial due to the lack of evidence for their effectiveness in the management of disturbed or aggressive behaviours, and the perception by some patients that they are another form of restraint (Haw & Wolstencroft, 2014b; Hui et al., 2013; Ridley & Jones, 2012). Despite this, their use remains a common, yet under-researched, feature in AFMHIS (Cowman et al., 2017; Haw et al., 2011). Therefore, examining nurses' attitudes towards and experiences with the use of PRN psychotropic medications are important in providing insights into the decision making that surrounds this contentious intervention.

4.2 Publication 2 reference

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Author's contribution

All co-authors have consented to their work being included in this thesis and they have accepted the candidate's contribution as indicated below:

Mrs Lesley Barr	96%	Signature	
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Emeritus Professor Dianne Wynaden	2%	Signature	

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STATEMENT OF ORIGINALITY

We, the PhD candidate, and the candidate's principal supervisor, certify that the following text, figures and diagrams are the candidate's original work.

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ORIGINAL ARTICLE

Nurses' attitudes towards the use of PRN psychotropic medications in acute and forensic mental health settings

Lesley Barr,[1] Dianne Wynaden[2] and Karen Heslop[2]

This article has been included in this thesis in its original format with permission obtained from the publisher (Appendix Q).

ABSTRACT

Many countries now have national mental health policies and guidelines to decrease or eliminate the use of seclusion and restraint yet the use of Pro Re Nata (PRN) medications has received less practice evaluation. This research aimed to identify mental health nurses' attitudes towards the use of PRN medications with mental health consumers. Participants were working in forensic mental health and non-forensic acute mental health settings. The "Attitudes towards PRN medication use survey" was used and data were collected online. Data were analysed using the Statistical Package Social Sciences, Version 22.0. Practice differences between forensic and other acute mental health settings were identified related to the use of PRN medications to manage symptoms from nicotine, alcohol and other drug withdrawal. Differences related to the usage of comfort rooms and conducting comprehensive assessments of consumers' psychiatric symptoms were also detected. Qualitative findings highlighted the need for increased accountability for the prescribing and administration of PRN medications along with more nursing education/training to use alternative first line interventions. Nurses administering PRN medications should be vigilant regarding the indications for this practice to ensure they are facilitating the consumer's recovery by reducing the use of all forms of potentially restrictive practices in the hospital setting. The reasons for using PRN medications and PRN administration rates must be continually monitored to avoid practices such as high dose antipsychotics use and antipsychotic polypharmacy to ensure the efficacy of the consumers' management plans on their health care outcomes.

KEY WORDS: attitudes, consumer recovery, PRN medications, restrictive practices.

INTRODUCTION

The 'Australian Mental Health Strategy' is a national approach to promote the mental health of the community. It consists of mental health policy directives, a mental health plan and a mental health statement of rights and responsibilities (Australian Government, 2014). The strategy outlines the rights of a person diagnosed with a mental illness to be treated in the least restrictive environment and in a manner that respects their dignity and enhances their personal recovery, autonomy and freedom (Australian Health Ministers Advisory Council [AHMAC], 1997). Since the strategy's inception in 1992, policy direction has resulted in a dramatic reduction in the number of mental health hospital beds and the expansion of community mental health services. Hence, people now requiring hospitalization in acute mental health units are usually very unwell, experiencing a psychosis and have co-morbid physical and/or drug and alcohol problems (Heslop, Ross, Osmond, & Wynaden, 2013; Vancampfort, Probst, Knapen, Carraro, & De Hert, 2012).

In the acute mental health hospital setting, the use of seclusion and restraint is now highly regulated (Husum et al., 2010; Keski-Valkama et al., 2010) and mental health policy is focused on further reductions or the elimination of these practices (Steinert et al., 2010). Higher rates of medication use, including Pro Re Nata (PRN) use, have been reported internationally when there is a reduction in restraint and seclusion (Georgieva et al., 2012; Steinert et al., 2014). While systematic reviews have failed to show convincing evidence for the efficacy of PRN medication use in the mental health setting(Chakrabarti, Whicher, Morrison, & Douglas-Hall, 2007; Douglas-Hall & Whicher, 2015; Haw & Wolstencroft, 2014a; Srivastava, 2009), it remains common practice with nurses in a study by Baker et al. (2009), giving PRN medications the highest approval rating of 11 potential containment methods. Practice differences in the use of PRN medications occur with some clinicians viewing it as a front-line intervention (Baker, Lovell, & Harris, 2007), while others report using it only as the last resort (Usher, Baker, & Holmes, 2010). Yet, it is estimated that PRN medications are given to 80% of people admitted to acute mental health settings (Stewart, Robson, Chaplin, Quirk, & Bowers, 2012) and that it remains the intervention of choice for managing aggression (Bowers et al., 2012).

Numerous factors are reported to impact on nurses' decisions to administer PRN medications (Bilanakis, Papamichael, & Peritogiannis, 2011). These include, consumer diagnosis, agitation, distress, aggression, psychotic symptoms and safety concerns (Baker, Lovell, & Harris, 2008; Stein-Parbury, Reid, Smith, Mouhanna, & Lamont, 2008; Stewart et al., 2012; Usher, Baker, Holmes, & Stocks, 2009), along with unsettled behaviour, violence (Haw & Wolstencroft, 2014b), insomnia and distressing symptoms (Mullen & Drinkwater, 2011). Environmental factors include high levels of ward acuity, staffing levels and skill mix as well as the enforcement of smoking bans in hospitals (Stewart et al., 2012; Usher et al., 2009). Nurses with less skills and years of experience are reported to use more PRN medications (Baker, Lovell, Harris, & Campbell, 2007) and consumer ethnicity was also identified to be a factor in PRN prescribing and use (Usher et al., 2009). Some nurses reported they believed PRN medications were used for convenience to quieten wards or patients (Stewart et al., 2012). Similarly, consumers have also reported a misuse of power through the administration of PRN medications as the reasons they were given to them were not clear (Cleary, Horsfall, Jackson, O'Hara-Aarons, & Hunt, 2012). Additionally, the way in which they were administered left them feeling disempowered, threatened (Baker, Lovell, Easton, & Harris, 2006), and with a decreased level of autonomy, which impacted on their recovery by reinforcing feelings of being controlled by others (Hamilton & Manias, 2008). Some consumers have also reported that they preferred physical restraint to be used rather than being given PRN medications (Baker et al., 2009).

The ongoing reliance on medications as a treatment option has been criticized by consumers and carers (Baker et al., 2009) as it often precluded other interventions such as de-escalation through the use of effective communication techniques (Bowers et al., 2012; Mullen & Drinkwater, 2011; Price & Baker, 2012). Stewart et al. (2012) described that the best outcomes for PRN use were reported when the consumer requested it and when it was given for anxiety. Usher et al. (2009) reported that staff were more likely to use alternatives to PRN medications if they knew the person or assessed them to be a low risk within the ward environment. While PRN medication use should be monitored closely and only prescribed in accordance with developed guidelines (Baker, Lovell, & Harris, 2008; Baker et al., 2007; Emmerson et al., 2011), this process may not always have rigorous evaluation (Baker et al., 2007; Friedman, Nurenberg, Birnbaum, & Schleifer, 2012; Hilton & Whiteford, 2008) and nurses may lack awareness of local practice guidelines (Usher et al., 2010).The unclear chain of accountability between those who prescribe and those who administer PRN medications appears to be a major contributing factor compounding effective monitoring processes (Price & Baker, 2013). The reported advantage of PRN medication pre-scribing and administration includes an effective rapid response to the consumer's clinical deterioration and any escalating associated risks (Chakrabarti et al., 2007),while the disadvantages include the potential for excessive dosing and polypharmacy (Fujita, Nishida, Sakata, Noda, & Ito, 2013). The use of PRN antipsychotic medications can dramatically increase the number of consumers taking more than one antipsychotic drug and also presents the risk for high dose use of antipsychotics (Douglas-Hall & Whicher, 2015). This risk is particularly important to identify in people who are antipsychotic naïve (Baker et al., 2009). High dose multiple antipsychotic prescribing remains common (Paton, Barnes, Cavanagh, Taylor, & Lelliott, 2008), and Patel et al. (2014) identified this practice in up to 15%–20% of people with schizophrenia in a national audit in the United Kingdom. The prescribing occurred even though there was little efficacy for the practice except in the co-prescribing of clozapine. There are several guides to what constitutes high dose prescribing in the literature: a chlorpromazine equivalent in excess of 1000 mg day^{-1} (Adesola, Anozie, Erohubie, & James, 2013; Luft, 2013), doses exceeding the maximum daily dose as stated in the British National Formulary or a combination of percentages of maximum daily dose exceeding 100% where more than one antipsychotic is prescribed (Hung & Cheung, 2008), and multiples of the defined daily dose (Adesola et al., 2013; Barbui et al., 2007; Nosè et al., 2008). Taking PRN antipsychotics can increase the consumer's risk of developing metabolic syndrome and other physical health issues, experiencing problems with drug interactions, polypharmacy, receiving high doses of antipsychotics and an increased risk of medication side effects (Haw & Wolstencroft, 2014b; Stewart et al., 2012).

As nurses are the key decision-makers in the administration of PRN medication, there is increasing accountability on them to be transparent and articulate their practice based on contemporary standards and guidelines (Price & Baker, 2013). Yet, Haw and Wolstencroft (2014b) reported that the outcome of PRN use remains poorly documented and while it usually provided positive outcomes such as the 'patient being more settled', an absence of clinical documentation often precluded an evaluation of the indication for, or the effectiveness of the intervention.

In promoting the consumer recovery experience at the clinical level, the reasons for using PRN medications requires closer evaluation to ensure the person remains able to actively participate in decision-making about their care (Stein-Parbury et al., 2008). Muir-Cochrane et al., (2009) identified the need to research nurses' attitudes towards PRN medication use as practice differed depending on ward culture and models of service delivery (Stewart et al., 2012). As there is also an identified lack of research in relation to PRN use in the forensic mental health setting (Haw & Wolstencroft, 2014a), this paper presents the

findings of a study to identify nurses' attitudes and practice preferences in relation to PRN medication administration with consumers in a forensic and non-forensic acute mental health setting in Australia.

METHOD

The "Attitudes towards PRN medication use survey" (ATPMUS) was developed for this study and based on the "Attitude towards seclusion survey" developed by Heyman (1987). Heyman's survey has been used several times to evaluate mental health nurses' attitudes towards seclusion, most recently in 2011 (Happell & Koehn, 2011b; Meehan, Bergen, & Fjeldsoe, 2004; Trimmer, 2005; Wynaden et al., 2001). The "Attitude towards seclusion survey" reports test–retest scores from 0.62 to 0.69 (Happell & Koehn, 2011b). The ATPMUS adapted questions from Heyman's (1987) survey by replacing the words "seclusion" with "PRN medications" and "patient with consumer". For example, "Effects of seclusion on patients" was changed to "Effect of PRN medications on consumers". The descriptors for each question were not changed (see Wynaden et al., 2001, for original questions). The ATPMUS explored mental health nurses' perceptions of: (i) in which practice situations PRN medications would most likely be given; (ii) how consumers felt after they were given staff-initiated PRN medications; and, (iii) the effect that PRN medication had on the consumer. Participants were also able to provide free text data to document experiences with PRN medication administration and changes they believed would improve clinical practice. Demographic data relating to age, gender, and experience as a mental health nurse were also collected. The ATPMUS was then piloted with 10 nurses who did not take part in the larger study to establish face validity of the adapted survey. No changes were warranted based on feedback from participants as face validity was confirmed during pilot testing.

The study was registered as a quality improvement project at the health service and ethics approval was obtained from one university. The ATPMUS was distributed as an online survey to nurses working in three acute mental health units at one public mental health service and a forensic mental health service. The Nursing Directors at both sites invited staff to participate in the research and an information sheet was attached to their email. The information sheet included a link to access the online survey. Consent was implied if the survey was completed and no names of participants were collected. Data were collected using a secure Survey Monkey website. When the survey closed, data were transferred into the Statistical Package for Social Sciences, Version 22.0 on a password protected network at the university (Statistical Package for Social Sciences Inc 2013).

Data Analysis

Quantitative data were analyzed using descriptive statistics and χ^2 analyses determined between group differences. Participants were placed into two groups according to workplace, forensic mental health service (FMHS) (n=33, 47%) or acute mental health units (AMHU) (n=37, 53%). See Table 1 for comparisons of demographic data by group. A *P*-value of 0.05 signified statistical between group differences at a power of 0.80. Content analysis was conducted on the qualitative data. Responses provided by 27 participants were coded and grouped into themes. In presenting the themes, direct quotes from participants and their area of work are included.

RESULTS

Demographics.

From a convenience sample of nurses working in forensic and non-forensic acute mental health services,70 agreed to participate providing a response rate of 48%. χ^2 analysis revealed group differences in gender, with more males working in FMHS (n=21 (63.4%) compared with females, (n=12 (36.4%), χ^2 (df 1, 70) =8.081, *P*=0.008), and in the length of time working in the current area of mental health (with significantly more nurses working less than 5 years AMHU (n=24, 64.9% compared to n=15, 40.5%) and more nurses working in the FMHS for 11 years or more (n=15, 45.5% compared AMHU n=8, 21.6%; χ^2 (df 1, 70)=8.081, *P*=0.008). For the following groups of responses further analyses using χ^2 were conducted to determine whether these factors (gender and years worked in the area) impacted on the group differences reported.

TABLE 1: *Demographic data by group (FHMU and AMHU)*

	FMHS	AMHU	Total	χ^2	df	*P*-value
Age						
20–30	4	11	15	6.488	4	0.166
31–40	9	9	18			
41–50	9	12	21			
51–60	9	3	12			
>60	2	2	4			
Gender						
Male	21	11	32	8.081	1	0.008*
Female	12	26	38			
Length of time worked in mental health (years)						
<1	1	4	5	6.641	5	0.249
1–5	4	8	12			
6–10	9	10	19			
11–15	8	8	16			
16–20	6	1	7			
21+	5	6	11			
Length of time worked in current unit (years)						
<1	3	4	7	11.366	5	0.045*
1–5	6	20	26			
6–10	9	5	14			
11–15	9	6	15			
16–20	4	1	5			
21+	2	1	3			
Level of training						
Registered nurse (mental health)	19	17	36	1.22	3	0.748
Registered nurse (comprehensive)	12	18	30			
Enrolled nurse (medication certified)	2	2	4			
Total	33	37	70			

*Significant at $P < 0.05$.

General questions related to PRN medication use.

Participants were asked to indicate what time, day and circumstances they believed consumers would most frequently be given PRN medications. Thirty-nine participants (55.7%) reported that PRN medications were given equally on all shifts and 37 (52.9%) indicated that they were given on all days of the week. Fifty-seven (52.9%) responded that they could be given at any time during the consumer's hospital stay and 48 (68.6%) believed that consumer diagnosis had no influence on PRN administration, and they were given equally across all diagnostic groups. Fifty-one participants (72.9%) agreed that it was nurses who most often made the decision to administer PRN medications and 68 (97.1%) responded that they frequently declined consumer-initiated requests for PRN medications. However, participants were mixed in their responses as to the impact that national strategies to reduce the rates of seclusion and restraint had on PRN medication prescribing and administration. There were no group, gender or years worked in the area differences reported (P>0.05).

Responses to scenario questions on the use of PRN medications.

The next survey section required participants to determine which consumer behaviours they perceived would result in the consumer receiving PRN medication. Three differences were noted with more nurses working in AMHU believing that PRN medications were likely to be given to consumers who were agitated because they were unable to smoke cigarettes: (AMHU n=30, 81.1% compared to FMHS n=17, 51.5%; χ^2 (2, 70) =9.207, P=0.010); drink alcohol: (AMHU n=36, 97.3% compared to FMHS n=22, 66.7%; χ^2 (2, 70) =11.53, P=0.003); or access illicit drugs (AMHU n=37, 100% compared to FMHS n=20,60.6%; χ^2 (2, 70) =14.649, P=0.001). When 'gender' and 'years worked in the area' were analyzed as covariates of 'group' it was revealed that females working in the AMHU ward believed that consumers were likely to receive PRN medication for agitation associated with not being able to drink alcohol with 25 female nurses reporting this occurred sometimes or often. Additionally, nurses who worked for 5 years or less (n=26,78.8%) were more likely to report that PRN medication was given for agitation because they could not drink alcohol than nurses who had worked in the area for 10 years or more (n=24, 66.7%); χ^2 (5, 69) = 20.583, P=0.024) Fishers exact test.

When asked how often PRN medications were staff initiated or consumer initiated significantly more nurses in AMHU reported that PRN medications were mostly staff initiated than FMHS (n=27, 73% compared to n=15, 45.5% respectively; χ^2 (2, 70) =6.579, P=0.037). Conversely, FMHS nurses believed PRN medications were mostly consumer initiated (FMHS n=16, 48.5% compared to AMHU n=5, 13.5%; χ^2 (2, 70) =10.354, P=0.006). The belief that PRN medications were mostly consumer initiated was affected by gender (males n=16, 50% and females n=5, 13.2%; as more males (n=21, 63.6%) than females (n=12, 36.4%) worked in FMHS.

Participants were asked how they perceived consumers' felt when they were given staff-initiated PRN medications; nurses in AMHU reported that they believed consumers felt disempowered; (AMHU n=23, 63.9% compared to FMHS n=14, 43%; χ^2 (2, 68) =6.237, P=0.044. There were group differences in participants' perceptions of whether staff-initiated PRN medications were helpful to consumers. Thirty-four (94.4%) nurses who worked in AMHU reported that PRN medication sometimes did not help the consumer compared to 23 (70%) at FMHS (χ^2 (2, 69) =8.791, P=0.0012).

Participants then identified which interventions and practices they felt could reduce the use of PRN medications in acute mental health settings. Nurses working in AMHU highlighted the need for consumers to be accurately assessed on admission using standardised tools such as the Positive and Negative Symptom Scale (PANSS) to reduce the use of PRN medications during their hospital stay: (n=26, 70.3% AMHU compared to n=12, 36.4% FMHS; χ^2 (1, 70) =8.081, *P*=0.004) along with the need for improved use of safety plans to prevent PRN medication use during a crisis (n=23, 62.2% AMHU compared to n =11, 34.4% FMHS; χ^2 (1, 69) =5.301, *P*=0.021). When 'gender' and 'years worked in the area' were analyzed as covariates of 'group' it was revealed that 12 nurses who had worked for 1–5 years in the AMHU (60%) agreed that an accurate assessment was important to reduce the use of PRN medications compared with no nurses who had worked for a similar period of time in FMHS (χ^2 (1, 70) =6.686, *P*=0.017).

The last question on the survey required participants to determine how confident they were to use alternative interventions to PRN medications. Nurses working in AMHU were more likely to use comfort rooms (n=37, 100% AMHU compared to n=24,72.7% FMHS; χ^2 (1, 70) =18.688, *P*<0.001) and use music and relaxation techniques (n=37, 100% AMHU compared to n=28, 84.8% FMHS; χ^2 (1, 70) =6.080, *P*=0.048).

Qualitative responses.

Finally, participants were able to provide qualitative information on the use of PRN medications. Twenty-seven nurses responded and data analysis identified three themes.

Theme 1: Current PRN prescribing practices.

Participants identified a: "lack of consistency in health professionals' perception of the indications for PRN [medication use]" (AMHU nurse). They reported "if regularly prescribed medications were at an appropriate dose level when a person was admitted it would decrease the use of PRN medication" (FMHS nurse), "if people were prescribed adequate medication in the first place by their treating team the use of PRN's could be reduced considerably" (AMHU nurse). Conversely, "if the person was getting regular PRN medication then the treating team should look at increasing the regular medication in the acute phase to decrease PRN medication use" (FMHS nurse), "regular reviews or improved prescribing of regular medication" (FMHS nurse) would reduce the use of PRN medications, "Greater involvement by medical staff in the daily management of people whose behaviour is more challenging would ensure all staff are on the 'same page' and able to manage the behaviours effectively and appropriately" (FMHS nurse). These prescribing practices were viewed to lead to "an increased dependence on PRN medications [administration]" (AMHU nurse) and resulted in consumers developing "PRN seeking behaviour" (AMHU nurse).

They identified that health professionals needed to be "more responsible in prescribing and administering PRN medications" (AMHU nurse) and be aware of issues resulting from high dose medication use, polypharmacy, and physical health outcomes in this consumer population. One participant summarised these issues: we know that mental health consumers are a group at risk of physical co-morbidities, and we need to address this issue of polypharmacy. I have personally observed young people put on weight during a 2-year period after their first engagement with mental health services. We need a multidisciplinary approach to manage those at risk of developing metabolic syndrome (AMHU nurse).

Overreliance on PRN medications was raised "the [current] system of prescribing PRN medication allows nurses to give PRNs more frequently than necessary with repeat prescriptions [in some cases] not being reviewed" (AMHU nurse), "PRN has become the frontline of management whereas it used to be back up to regular medication" (FMHS nurse). It was identified that "PRN medication use can be dangerous when excessive amounts are used and multiple drugs given without review by doctors" (FMHS nurse).

Theme 2: Responding to consumer distress.

The second theme was related to the administration of PRN medications as a response to consumer distress particularly during their acute phase of hospitalisation; "when a person is very psychotic, PRN medication is the most appropriate treatment and I would regard not giving it as neglect" (FMHS nurse), "PRN is an integral part of the treatment and management of acutely unwell people in this specialized environment" (FMHS nurse). Indications for its use were to "help calm the person down" (AMHU nurse), and it was viewed as "an essential element in being able to de-escalate and manage people who are acutely psychotic. It is extremely helpful at times, particularly when the person is too unwell, or too angry to engage and listen" (AMHU nurse). When used "in combination with other interventions [PRN] was an essential element in being able to de-escalate and manage people who are acutely psychotic and unable to engage in any meaningful cognitive behavioural intervention" (FMHS nurse). It was explained that there "was a balance to giving PRN medication and trying to avoid the use of seclusion, which is more restrictive and potentially more damaging to the therapeutic relationship" (FMHS nurse).

Theme 3: Lack of alternative strategies.

The final theme was the lack of alternative strategies and participants wanted "increased education opportunities to learn alternative de-escalation strategies, such as cognitive behavioural therapy and relaxation techniques that would be of benefit in reducing use of PRN and seclusion and increasing the person's ability to self-control their emotions" (AMHU nurse). Another participant explained that: "without any psychodynamic interventions, the reliance on medication, including PRN, will always be great" (FMHS nurse). Security, operational and staffing requirements were viewed to "restrict the nurse's ability to encourage the utilization of distraction techniques (i.e., attend gym/go outdoors etc.)" (FMHS nurse), "staffing requirements frequently restrict the nurses' ability to encourage the utilization of distraction techniques" (AMHU nurse).

DISCUSSION

The road to mental health recovery is not a linear process (Chester et al., 2016), and the consumer's journey can be impacted in a multitude of ways during periods of hospitalization. The findings of this study suggest that the decision to use PRN medications in acute mental health and forensic settings remains dependent on the knowledge, skills and attitudes of individual nurses and this decision is supported by the service's medication prescribing culture.

When high rates of PRN medications are administered, health professionals must query why this is occurring especially if the consumer's management plan has been formulated on an accurate assessment of their current level of risk and presenting

symptoms/behaviours. An absence of quality control systems to monitor and inform clinical prescribing and administration practices has been identified in the literature (Price & Baker, 2013) and these levels of accountability are crucial to ensure best practice PRN prescribing and administration.

Usher et al. (2009) identified that ethnicity was a factor related to PRN prescribing and administration and with the high numbers of Indigenous Australians and people from culturally and linguistically diverse backgrounds in forensic mental health settings, awareness of this issue within the treatment team is paramount. Furthermore, the forensic mental health setting is a specialist environment where security, safety and treatment are intertwined (Durey et al., 2014). Within this context it is important to encourage a culture that promotes consumer empowerment and autonomy as the norm.

Fifteen FMHS participants in this study had worked in the area for 11 years or more and along with the male gender bias this level of experience may have accounted for their responses that most PRNs were consumer initiated. While the literature suggests that male nurses are perceived by consumers to control the environment and maintain safety (Muir-Cochrane & Gerace, 2015), it also suggests they are more willing to use containment methods than female nurses (Whittington, Bowers, Nolan, Simpson, & Neil, 2009). However, as PRN is deemed to be most effective when consumer initiated (Stewart et al., 2012) and is commonly given for agitation in the forensic mental health setting (Haw & Wolstencroft, 2014b), their care decisions in this current study are viewed as positive interventions to assist with de-escalation and early intervention to reduce physical aggression (Bowers et al., 2012).

A common theme emerging from the qualitative data was the uncoordinated approach of regular medication prescribing within the team. This was viewed as a fundamental reason for PRN use and for the repeated high rate of use with some consumers. Stewart et al. (2012) and Usher and Luck (2004) also identified poor collaboration between nurses and doctors over the prescribing and administration of PRN and how this impacted on the therapeutic management. The frequent use of PRN medications in acute mental health environments also suggests a lack of consumer involvement in care decisions and formulation of their management plans. The person needs to be involved in decisions about the medications they are receiving and the treating team should have regular reviews of prescribing practices (Stewart et al., 2012). Accurate assessment of the person on admission will provide better frameworks for medication prescribing and collaboration between nurses, pharmacists, doctors and consumers regarding the choice of medication along with educating the consumer about the medication they are prescribed. The use of psychotropic medications in line with international guidelines must also be reflected in PRN prescribing and administration (Usher & Luck, 2004).

Participants in this study support the need for health services to have systems in place to effectively monitor the administration of PRN medications. This includes multi-disciplinary reviews of prescribed PRN medications to evaluate the efficacy of the practice and to determine if adjustments are required to the consumer's regular prescribed medications. This would facilitate a decreased rate of PRN administration and support more effective pharmacological prescribing practices. These reviews should also routinely evaluate PRN use at the service and triggers that can account for deviations from service norms. Consumer involvement in multi-disciplinary care planning will also assist clinicians to identify and facilitate their recovery goals and the strategies needed to achieve these.

Forensic and non-forensic mental health units now care for acutely unwell consumers (Cleary, 2004) and only 51.4% of nurses in this current study had specialist mental health nursing qualifications. The remaining participants were nurses who had graduated from comprehensive or generalist nursing programmes with varying levels of exposure to mental health nursing during their educational preparation. Nurses who lack confidence or are

unprepared to work with this consumer group may feel the need to use PRN medications more often as a first line management strategy (Holmes, 2006), and for several decades the profession has highlighted the evolving problem of the loss of a skilled mental health nursing workforce due to nursing education changes (Happell & Cutcliffe, 2011; Wynaden, 2010). While these problems are now becoming more apparent in clinical settings (Clinton & Hazelton, 2000), many universities have yet to address the impact through curricula content changes. As a result, the lack of preparation of new graduates adds to the complexity of delivering quality and safe mental health care, particularly within forensic and other acute care environments. It also impacts on the nurses' ability to assess the 'lived experience' of the consumer, which is critical in understanding their presenting mental state (Slade,M, 2013).

Mental health nurses must develop enhanced verbal de-escalation skills to reduce their reliance on PRN medications (Curtis, Baker, & Reid, 2007; Price & Baker, 2012; Whittington et al., 2009). There is also a need for ongoing staff development programs so nurses remain updated on medication practice guidelines. Usher et al. (2009) identified that much of the drug education provided was by pharmaceutical companies and services need to be aware of the implications of this on care delivery.

Participants in this study voiced their concerns about the lack of accountability between those who prescribe and those who administer PRN medications (Price & Baker, 2013), and how this impacts on the ability to formulate consumer management plans based on best practice physical health care (Stanley & Laugharne, 2011). High rates of PRN medication use further increases the consumer's risk of a sedentary lifestyle and disengagement with healthy living practices.

Nurses working in AMHU stated that they would use PRN medication more frequently to manage increased consumer arousal levels due to withdrawal from nicotine, alcohol and other drugs than those working at the FMHS. This highlights the increasing co-occurring drug and alcohol issues in consumers, the need for improved screening and effective management of withdrawal symptoms using alternative strategies to PRN medications (Heslop et al., 2013). Improved assessment on admission will also decrease the PRN medication seeking behaviours from this group of consumers.

Pro Re Nata medication use has been viewed by consumers as another form of restraint (Ridley & Jones, 2012) and as such disempowers them and places restrictions on their level of autonomy. To address this issue, they need to be given information by nurses about the medication they are receiving and why it is being administered. Cleary et al. (2012) identified that up to 50% of consumers did not know why they were given the medication and this lack of information led them to feel angry, have a lack of control and loss of choice into the care they received. In promoting recovery focused care in acute mental health settings consumers have the right to be fully informed about all aspects of their treatment trajectory. This collaboration is key to reducing the rate of PRN use in mental health settings.

STUDY LIMITATIONS

While a response rate of 48% provides insights into the attitudes of participants to the use of PRN, it is acknowledged as a study limitation.

CONCLUSION

While nurses value the use of PRN medications with consumers who are acutely psychotic and highly aroused, it is also used as a front-line management strategy particularly for managing aggression. This suggests the need for services to regularly monitor and review

medication prescribing and administration practices at the service level to reduce reliance on PRN medication administration. While the efficacy of PRN practice is questioned, it remains common practice in forensic and acute mental health settings.

RELEVANCE FOR CLINICAL PRACTICE

There is increasing accountability on nurses to work collaboratively with all members of the health care team to reduce PRN prescribing and administration practices. They need to develop enhanced skills to work therapeutically with consumers and to engage early to de-escalate situations to reduce reliance on PRN medications. An awareness of the physical health risks to consumers of high dose and polypharmacy use posed by PRN medications is also important. The use of recovery focused nursing care can reduce reliance on PRN medications.

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4.3 Summary

The findings of this study provide a unique insight into practice differences in clinical assessments and the use of clinical interventions (including PRN psychotropic medication use) between acute and AFMHIS nurses. The qualitative findings indicate procedures regarding the prescribing and administration of PRN psychotropic medications impact on nursing practice and further education and training are required in least restrictive interventions. From a professional perspective, nurses must maintain high standards of practice to ensure patients safety and maintain rigorous documentation regarding their use.

4.4 Chapter precis

The study presented in this chapter provided a glimpse into one type of RP- PRN psychotropic medications. Chapter 5 will now present a qualitative study that explored the experiences of nurses working in the forensic mental health inpatient setting and the challenges in managing complex patient behaviours.

CHAPTER 5

A QUALITATIVE STUDY EXPLORING THE EXPERIENCES OF NURSES WORKING IN THE FORENSIC MENTAL HEALTH INPATIENT SETTING

5.1 Introduction

This chapter presents a qualitative study exploring the experiences of nurses working in the AFMHIS. The findings highlight the complexity of the AFMHIS and the need for nurses working in this specialist area to possess a unique skill set. Opportunities to support nurses are identified and the importance of leadership and teamwork are re-enforced.

5.2 Publication 3 reference

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Author's contribution

All co-authors have consented to their work being included in this thesis and they have accepted the candidate's contribution as indicated below:

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ORIGINAL ARTICLE

Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices

Lesley Barr,[1] *Dianne Wynaden*[2] *and Karen Heslop*[2]

This article has been included in this thesis in its original format with permission obtained from the publisher (Appendix R).

ABSTRACT

Reducing and eliminating the use of restrictive practices, such as seclusion and restraint, is a national priority for Australia's mental health services. Whilst legislation, organization and practice changes have all contributed to a reduction in these practices, forensic mental health services continue to report high rates. This paper details the findings of research that examined the experiences of nurses working in the inpatient forensic mental health setting. The research aimed to (i) document the experiences of nurses working in the forensic mental health setting, (ii) articulate their perceived unique skill set to manage challenging patient behaviours, and (iii) determine how their experiences and skill set can inform practice changes to reduce the use of restrictive practices. Thirty-two nurses were recruited from one Australian forensic mental health service. Data were collected using semi-structured interviews and analysed using inductive content analysis. Four categories were identified that influenced practice experiences: (i) working in a challenging but interesting environment, (ii) specialty expertize, (iii) exposure to aggression and resilience as a protective factor, and (iv) the importance of effective teamwork and leadership. Forensic mental health care is complex, highly specialized, and often delivered in an unpredictable environment. Whilst high rates of restrictive practices may be linked to the unique characteristics of forensic patients, training, teamwork, and leadership are critical factors influencing their use in this setting. Nurses working in this area need to be educated and supported to work confidently and safely with this high-risk patient cohort.

KEY WORDS: aggression, forensic mental health nursing, leadership, restrictive practices

INTRODUCTION AND BACKGROUND

Over the last decade, decreasing and eliminating the use of restrictive practices has become a focus of mental health policy reform (Bowers, 2014). Evidence based models and frameworks of care have emerged such as the Six Core Strategies (Huckshorn, 2004) and 'Safewards' (Bowers, 2014) to assist services to reduce the use of restrictive practices. However, globally, efforts to reduce the use of restrictive practices have occurred with varying success (Maguire et al., 2012; Te Pou, 2017). Attempts to examine and compare rates of restrictive practices across countries and specialties have proved problematic due to different definitions of restrictive practices and different methods of data collection (Lepping et al., 2016). What is known is that the type of restrictive practice used and the frequency of use vary across countries, organizations, and individuals (Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, & Tiihonen, 2017a; Lepping et al., 2016). These variations are influenced by legislation (that governs the use of such practices), organization factors (type of setting, policies, and procedures), physical/environmental factors (ward atmosphere, use of space), staff characteristics (gender ratio, skill mix, training, experience), and patient characteristics (diagnosis, propensity for aggression) (Kuivalainen et al., 2017a; Price, Baker, Bee, & Lovell, 2018).

Across Australia, the use and reporting of restrictive practices are highly regulated and scrutinized. Over the last 5 years, the national seclusion rates in public sector acute mental health hospital services have reduced by an average annual rate of 6.7% and the number of seclusion events has reduced nationally by 4.1% (Australian Institute of Health and Welfare [AIHW], 2020). However, public sector forensic mental health hospital data continue to report high rates of seclusion events (14.7 per 1000 bed days compared to 7.4 nationally), the longest average duration of seclusion (59.1 hours compared to 5.8 hours nationally), and the highest proportion of episodes of care involving seclusion events (23.4 compared to 4.3 nationally) (AIHW, 2018). Similarly, whilst the Australian national rate for physical and mechanical restraint is falling in public sector acute mental health hospital services, the rates of physical restraint in public sector forensic mental health services remain high at 89.0 events per 1000 beds days compared to the national average of 8.3 (AIHW, 2018) and mechanical restraint rates are 4.8 events per 1000 bed days compared to the national average of 0.9 (AIHW, 2018). There is limited research to explain the disparity in the use of restrictive practices between forensic and other inpatient mental health services (Smith, Ashbridge, Altenor, Steinmetz, Davis, Mader, & Adair, 2015; Vollm & Nedopil, 2016).

In Western Australia, the Mental Health Act 2014 (Government of Western Australia, 2014) is the legal framework regulating the use of restrictive practices on patients (including forensic patients) receiving care in authorized mental health hospitals. Neither seclusions nor bodily restraints are regarded as treatment under this act (they are deemed mental health interventions), and there are penalties for improper use of such interventions (Government of Western Australia, 2014).

Forensic Mental Health Care

Forensic mental health care is a specialist area situated at the intersection of health, social, and criminal justice systems where care is provided in prisons, police custody centres (Martin, 2009), inpatient units, courts, and the community (Barnao & Ward, 2015). People under the care of forensic mental health services have been charged with criminal offences

and are remanded or committed to custody for assessment and/or treatment for their mental illness (Holmes 2009). Therefore, many aspects of their care are mandated by legislative requirements of local criminal law, such as the Western Australian Criminal Law (Mentally Impaired Accused) Act 1996 (Government of Western Australia, 1996). They are required by law to receive specialist care because their mental illness poses a threat to them-selves or to the community (Maguire et al., 2012). This process protects the community, treats the person and allows comprehensive evaluations of the person's level of mental health to be obtained for the courts (Pyrek, 2006).

Forensic Mental Health Nursing

Nurses employed in forensic mental health settings work with one of the most vulnerable populations in society–prisoners (Durey et al., 2014). Care is provided to a high concentration of acutely unwell, high-risk patients with complex needs and challenging behaviours who often have co-occurring mental illness, substance abuse, and longstanding trauma (Durey et al., 2014; Smith et al., 2015). To manage these complex needs nurses working in this specialty area must be competent in mental health nursing (Martin, 2009) and have additional specialist forensic mental health knowledge and skills (O'Donahoo & Simmonds, 2016). This includes balancing the therapeutic role with managing risk and maintaining safety and security (Durey et al., 2014). Risk assessment and management relate to issues around security management (including environmental, procedural, and relational security), integrating security with therapeutic goals, maintaining safety, and demonstrating professional integrity when faced with challenging behaviours (Maguire et al., 2012; Martin, 2009; Martin et al., 2013; Tighe & Gudjonsson, 2012). In addition, a sound knowledge and understanding of the legal framework and the connection between mental illness and criminal offending are critical skills for maintaining a higher level of safety and security than other inpatient mental health services (O'Donahoo & Simmonds, 2016). However, despite the identified need for specialist skills in this area there are no requirements for nurses to have specialist qualifications in forensic mental health nursing to gain employment in this setting (Martin, 2009). Such a gap in training and skill exposes staff, patients and organizations to sub-optimal care and safety issues. A culture of containment can develop whereby nurses become increasingly ill-equipped to provide specialist care and resort to risk-averse approaches (including seclusion and restraint) that focus on keeping people safe rather than assisting people to recover (Ford, 2014; Muir-Cochrane, 2018b).

Aggression, or the threat of aggression, occurs daily in forensic mental health settings (Dickens et al., 2013; Fluttert et al., 2008) and research shows that there are significantly higher rates of aggression in forensic settings (47.7 per cent of patients and 4.1events per patient, respectively) compared with acute mental health settings (26.2 per cent of patients and 0.07 events per patient;) (Dickens et al., 2013). Patients with personality disorders, a history of trauma, criminal behaviours, substance misuse, and active symptoms of psychosis are more likely than other mental health patients to be physically and verbally aggressive towards nurses (Dickens et al., 2013; Lauvrud, Nonstad, & Palmstierna, 2009). For this reason, effective communication, listening skills, empathy, and the ability to monitor the person's emotional responses are viewed as essential skills for nurses to maintain safe and effective therapeutic relationships (Bowen & Mason, 2012; Martin, 2009). Behaviours such as being judgemental, confrontational, and over-reacting are undesirable qualities for nurses working in this setting (Bowen & Mason, 2012). This is particularly important in a clinical environment where patients may be provided treatment against their will (Maguire et al., 2012). Nurses need to have a repertoire of de-escalation techniques to

avert potential aggression whilst still being able to provide compassionate recovery-focused care (Ogloff, 2010).

Despite a growing body of research into reducing restrictive practices in general mental health services, less attention has been focused on forensic mental health settings (Maguire et al., 2012; Vollm & Nedopil, 2016). The higher rates of aggression and use of restrictive practices in forensic mental health services reported in the literature (Australian Institute of Health and Welfare [AIHW], 2020; Dickens et al., 2013) warrants further investigation. This research addresses this gap in knowledge on the qualitative experiences of nurses in the forensic mental health inpatient setting and identifies factors which can influence the use of restrictive practices. Such knowledge can assist services to develop support mechanisms and strategies to sustainably reduce the use of restrictive practices.

Objectives of the Study

The objectives of the research were to: (i) document the experiences of nurses working in the forensic mental health setting, (ii) articulate their perceived unique skill set to manage challenging patient behaviours, and (iii) determine how their experiences and skill set can inform practice changes to reduce the use of restrictive practices.

METHOD

This qualitative research used inductive content analysis as described by Elo and Kyngas (2008). It employed a three-stage process of preparation, organizing and reporting to analyse and interpret data using a systematic and objective approach (Elo & Kyngäs, 2008). This approach was chosen as there were no previous studies investigating this phenomenon and inductive content analysis is an established methodology in nursing research (West, Rudge, & Mapedzahama, 2016).

Ethics

Prior to commencing data collection ethics approval was obtained from the North Metropolitan Health Service – Mental Health Service and Curtin University, Human Research Ethics Committees. There were no challenges in obtaining approval as the research was a single site study and regarded as low risk.

Study Participants

The State Forensic Mental Health Service (SFMHS) in Western Australia comprises a thirty-bed high secure inpatient unit, and specialist community, prison, and court services. Approximately 240 patients are admitted to the inpatient unit each year and Indigenous Australians make up approximately 30% of patient admissions (Durey, et al., 2014).

All nurses working at the service were invited to participate in the research and were provided with an information sheet outlining the study aims and what their participation would entail. Participant numbers were important in obtaining rich and varied experiences and perspectives of the phenomenon (Graneheim, Lindgren, & Lundman, 2017).

Data Collection

Data were collected using semi-structured interviews. Interviews were held in a venue and location that optimized participant interaction (away from the wards, prevented disruption and distraction). An interview guide was developed based on a literature review in the area to meet the study objectives. It consisted of a number of open-ended questions to be covered during each interview, for example, 'what are the three most important things that impact on your nursing practice?' and, 'tell me what you believe are the most valuable attributes for forensic mental health nurses'. Semi-structured interviews afforded the interviewee the freedom to express their views, whilst the interviewer had the flexibility to clarify and explore responses given whilst ensuring discussions did not digress into areas not relevant to the study. All participants provided written informed consent prior to the interview commencing. Demographic data were also collected. All interviews were digitally recorded and transcribed verbatim. All data were stored electronically on the principal researcher's password protected research drive at the university.

Data Analysis

The inductive content analysis approach involved the research team identifying similarities and differences in the data obtained from staff interviews (Graneheim et al., 2017). Open coding techniques involved reading the written material and identifying as many headings as necessary which were written down to describe the content (Elo & Kyngäs, 2008). The headings were then transferred to coding sheets and, through the process of abstraction and interpretation, content-related categories began to emerge that captured the opinions, attitudes, perceptions, and experiences of the participants (Elo & Kyngäs, 2008; Graneheim et al., 2017). Through a process of discussion and reflection, the research team reviewed the data and agreed on four categories that described groups of data that shared common features (Graneheim et al., 2017).

Trustworthiness of data was ensured by adherence to the method as outlined by Elo and Kyngas (2008) during all stages of the research process. To ensure transferability in this process, the researcher provided clear descriptions of the context, selection and characteristics of participants, data collection, and process of analysis (Elo & Kyngäs, 2008). Authentic citations added to trustworthiness (Elo & Kyngäs, 2008) and to ensure that the voice of the study participants was not lost in the interpretation of the data (Graneheim et al., 2017). Participant numbers were used at the end of direct quotes to ensure participant confidentiality. Researcher checks and consensus at all stages of data analysis by the research team added further to the trustworthiness of data. A challenge with the process of inductive content analysis was ensuring that the levels of abstraction and the degree of interpretation were logical and consistently maintained throughout the process so as not to over or under-interpret the data (Graneheim et al., 2017).

RESULTS

Sample description.

Thirty-two participants (61% of the SFMHS nursing workforce) agreed to be interviewed (See Table 1 for demographics). Seventy-eight per cent of participants were registered nurses

and the remainder were enrolled nurses. There was an even distribution of male and female participants.

Table 1. Demographic of study participants

Question	Response	Number % (n = 32)
Nursing qualification	Registered nurse	25 (78)
	Enrolled nurse	7 (22)
Gender	Males	16 (50)
	Females	16 (50)
Age	20–35 years	12 (37.5)
	36–50 years	8 (25)
	>51 years	12 (37.5)
Employment status	Full time	24 (75)
	Part time	8 (25)
Highest nursing education	Bachelor degree	15 (47)
	Diploma (Nursing/ Enrolled nursing)	11 (34)
	Hospital based nursing certificate	8 (25)
	Master degree	3 (9)
Years of experience in forensic mental health nursing	<2 years	8 (25)
	Between 2 and 20 years	16 (50)
	>21 years	8 (25)

Four categories emerged that captured the experiences and skill set of participants: (i) working in a challenging but interesting environment; (ii) specialty expertize; (iii) exposure to aggression and resilience as a protective factor; and (iv) the importance of effective teamwork and leadership.

Category 1: working in a challenging but interesting environment

To explore the experiences of nurses working in the forensic mental health setting, interviews began with each nurse being asked: 'Why do you work in this practice area?' Participants described a passion for working with challenging patients who had multifaceted problems:

> [It is] where my skills lie, working with difficult people with complex needs; [P12]
> I find this area challenging, interesting, and rewarding; [P1]
> I love working in forensic mental health it's so unpredictable. [P11]

They were interested in working at the interface of the health and criminal justice systems, specifically, the legal aspect of forensic mental health nursing:

I am interested in legal issues and working with prisoners who have a mental illness; [P14]
I am interested in the legal side of care. [P16]

They talked of a challenging workplace where they had to be continually aware of the potential risks posed by working with forensic mental health patients and an overarching responsibility to provide a safe environment 'to make sure everyone is safe'[P17]. Participants also described a need to balance providing care to patients with the assessing and observing part of their role to 'identify people who do not have legitimate symptoms of a mental illness' [P32].

Whilst the inpatient area was described as an unpredictable environment, participants reported that there were many opportunities to develop and use 'valuable skills in negotiation and de-escalating situations' [P23] to manage aggressive incidents. Participants also found it satisfying to work with the same patients over a longer period of time than was possible in other areas of mental health nursing. This enabled them to get to know the person and see improvement over time:

[We have to] look at the medium and long-term recovery goals with the patient; [P19]
[It is] so it's great when you get success and improvement. [P28]

Category 2: specialty expertise

A specialist skill identified was possessing knowledge and an understanding of how offending behaviours may be manifested in people during an acute phase of their mental illness. Participants described the need to separate the criminal issues from the person's mental illness:

[We need to] understand the reason why the patient was at the service from both a mental and legal position; [P9]
[We need to see] the patient as a victim of his/ her mental illness; [P30]
[It is] easy to be fearful of somebody in the forensic [mental health] system and judge them for their criminal behaviour. [P24]

Working in a high-risk environment also required specialist skills to de-escalate volatile situations through accurate assessment whilst also developing therapeutic relationships with patients:

Building that therapeutic relationship is important; [P19]
Treating people with respect, being honest and immediate; [P23]
Being open-minded and respectful; [P21]
Tolerant and not fiery. [P9]

Displaying confidence, having a non-judgemental attitude, and demonstrating flexible boundaries to accommodate the wide range of patient behaviours were identified as an important clinical skill in preventing and managing aggression whilst maintaining the therapeutic environment. In addition, empathy, compassion, and hope were highly valued and regarded as necessary to provide individualized care:

[We need to] identify the patient's skill sets and [use]those strengths; [P13]

[We are] working with them to be the best they can be; [P29]
[We must remain] optimistic that they can get better; [P9]
[We] work alongside the patient rather than just doing it for them; [P28]
[We must remain] flexible and calm. [P10]

An advanced skill set identified was assessment and information gathering as well as an ability to confidently 'sit with risk' [P15]. Specifically, being 'risk aware and risk assessment competent' [P26]. Participants also expressed the importance of balancing security and safety with ensuring equity of care whereby the forensic mental health patient is treated the same as any other mental health patient:

[We have to] see the human being not what they have done; [we must] see them firstly as a person. [P17]

Other enabling skills were to be 'self- motivated and able to problem solve' [P30], and to be continually 'thinking outside the box' [P8]. Emotional intelligence was an identified skill that allowed participants to work effectively with patients whilst managing emotions arising from their knowledge of the person's offending history. In addition, clinical supervision was regarded as important to produce nurses who had good skills in communication and maintained non-judgemental attitudes.

Participants expressed a positive attitude towards reducing the use of restraint and seclusion with an understanding of the risks involved in using restrictive practices:

No one wants to restrain; it puts you at risk as soon as you put your hands on the patient; [P25]
I've never met a nurse who likes to grab someone [re-strain a patient] and put them into a room [seclude]. [P5]

Category 3: exposure to aggression and resilience as a protective factor

Participants reported high levels of work-related stress as a result of their regular exposure to aggression:

[you have to] manage the verbal aggression directed towards you; [P31]
the job is stressful being sworn at all day; [P20]
there is a lot of aggression, a lot of angst in the acute [forensic mental health] wards; [P4]
It's a hard place to work if you are a soft soul. [P5]
Staff morale was impacted when risk levels increased and 'patients were aggressive, abusive and violent' [P19].

Repeated exposure to aggression increased nurses' level of fear and anxiety and impacted on their ability to work therapeutically with particular patients. Some participants spoke of an overwhelming fear of entering the ward area and speaking to patients:

violence has a huge impact [on me] it makes me anxious [and] not really wanting to spend time with that person; [P28]
some days I am almost too scared to go onto the floor to talk to the patients; [P19]
everyday [I] really hope nothing goes wrong. [P2]

There were concerns relate to the physical demands of the job including a fear of being injured at work as a result of assaultive behaviours. The need for a 'thick skin' [P31] was regarded as necessary protection against the physical and verbal aggression directed at staff on a daily basis:

> I am concerned about being able to work through the physical side of the job, the damaged knees [resulting from injury], facing that every day; [P4]
> You should not expect to get hurt when you go to work; [P9]
> I'm scared of getting hit; [P11]
> not knowing if I can come back to work; [P8]
> colleagues have been so injured they cannot work anymore. [P17]

Category 4: effective teamwork and leadership

Effective teamwork and leadership were deemed critical to providing quality nursing care. Confidence and trust in colleagues were the foundation for staff to feel physically and psychologically safe:

> knowing how to share your opinion with colleagues is essential; [P30]
> It's your colleagues that make your environment safe; staff are the only resources that make the place work; [P10]
> one or two nurses can escalate/de-escalate the situation and you need to know the relationship between staff and patients; [P1]
> everyone needs to know about safety, everyone needs to be doing the same thing; [P3]
> it all depends on the crew I work with [if I am] going home in one piece [not to be injured]; [P27]
> inexperienced staff increase the risk of harm. [P9]

Being safe was aligned with an effective team containing a good skill mix. Participants reflected on the impact of working with ineffective teams:

> [Some staff have] a negative attitude and poor communication [skills]; [P18]
> Some staff [are] more obstructive and judgemental, sometimes you end the shift positively sometimes it is more difficult [depending on the staff mix]; [P31]
> the way [some staff] react to patients makes them [the patients] more volatile; [P15]
> a bad [staff] mix can trigger violence. [P21]

The shift coordinator role was deemed a critical role within the nursing team and was key to a well-functioning team. The qualities of the shift coordinator included '[having] experience and knowledge' [P11]; '[Someone who] took charge and led, staying calm, delegating and collaborating' [P11]. Inconsistent leadership where nurses 'followed the rules rather than common sense' [P10] or 'coordinators varied [in their leadership style]' [P23] confused team members and impacted on patient care and on the workplace. This led to staff aligning themselves with 'the unrecognised leader' [P16], 'the staff [member] who others feel safe with' [P16].

To ensure an effective team, staff felt employers had a responsibility to be selective when recruiting staff to work in this practice area and only recruiting staff who 'want to be there' [P13].

DISCUSSION

Exposure to aggression

As the forensic mental health setting intersects with the criminal justice system, aspects of prison culture can permeate into the healthcare environment (Maguire et al., 2012; Pyrek, 2006). This culture can bring the reality of aggression, offending behaviour, and interpersonal boundary issues to the workplace for nurses (Pyrek, 2006). Whilst occupational safety in health care is a fundamental requirement for employers (Haines et al., 2017), staff working within inpatient mental health settings often perceive workplace violence as being a 'part of the job' (Ward, 2013). Verbal aggression and aggressive splitting behaviour are experienced by a higher number of staff working within a forensic setting than those in non-forensic setting (Haines et al., 2017). The impact of this was revealed by the study participants who reported repeated exposure to aggression which increased their level of fear, anxiety and stress and adversely impacted on their ability to work therapeutically with particular patients. Repeated exposure to aggression puts nurses at risk of vicarious trauma, occupational stress, and burnout syndrome (Dickinson & Wright, 2008; Harris et al., 2015). These phenomena in the workplace have been reported widely in forensic mental health care (Harris et al., 2015; Jacob & Holmes, 2011; Jacob, Gagnon, & Holmes, 2009). Evidence in the literature suggests that increased levels of violence on nurses has directed nursing practice towards a more restrictive and defensive approach to care (Ward, 2013). This is supported by Dickens et al. (2013) who suggest that nurses' attitudes about the causes and management of aggression affects their choice of intervention which can increase the use of restrictive practices. Smith et al. (2015) found a reduction in seclusion and restraint was achieved through an emphasis on staff training and a focus on improving staff de-escalation techniques. They achieved success through training, monitoring, policy revision, and cultural change (Smith et al., 2015), whilst also reducing workplace violence towards staff. Additionally, the use of resilience interventions as a preventive approach to addressing workplace stress can improve staff overall health and well-being (Foster et al., 2018).

Education and training.

Working in forensic mental health settings requires specific skills and training (Harris et al., 2015). It is much more than practicing mental health nursing in a forensic context (Martin et al., 2013) and requires an understanding of the complex processes of risk assessment, early intervention, and aggression prevention (Harris et al., 2015; Maguire et al., 2012). Yet undergraduate nursing education in Australia is insufficient to prepare newly qualified nurses to work competently with mental health patients (McIntosh, 2017; Wynaden, 2010) let alone prepare them to care for forensic patients who can 'evoke feelings of disgust, repulsion and fear' and leaving them feeling unskilled and fearful of their own safety (Harris et al., 2015; Martin et al., 2013). Interestingly, only three (9%) participants in this study had postgraduate qualifications and the majority were comprehensive/generalist nurses who had chosen to

work in the area but had no specialist/advanced educational preparation. Whilst clinical experience can be an effective learning strategy to develop skills from novice to expert, the lack of specialist knowledge and understanding of issues specific to forensic mental health nursing gained through post-graduate education may exacerbate the levels of fear and anxiety experienced in the workplace (Koskinen, Likitalo, Aho, Vuorio, & Meretoja, 2014).

Culturally safe care

In Western Australia, despite constituting only 3% of the Western Australian population, Indigenous Australians represent 38% of the prison population (Government of Western Australia, 2017). Mental illness is a major health burden for Indigenous populations (Durey et al., 2014) with hospital separations relating to psychoses, alcohol, and other substance use occurring at three times the rate of non-Indigenous populations (Azzopardi et al., 2018). Moreover, psychological distress is further impacted by the legacy of colonization and racial discrimination (Durey et al., 2014). In a study by Durey et al. (2014), at the same research site, they found 37% of health professionals at the service had trained outside Australia and had limited knowledge of Australian Indigenous culture and social history. As Indigenous Australians are over represented in forensic mental health settings, it is vital that staff are educated to provide culturally sensitive and safe care (Durey et al., 2014). Failure to do so can lead to practices and interventions that compromise the health of Indigenous people and increase the gap between the health outcomes of Indigenous and non-Indigenous Australians (Durey et al., 2014).

Recovery-focused care

Supporting mental health recovery is now national policy in many countries (Department of Health and Ageing, 2013) and utilizing recovery-focused models of care can provide nurses with a framework to engage more therapeutically with patients (Leamy, Bird, Boutillier, Williams, & Slade, 2011). Recovery-focused care is facilitated by relationships and environments that provide hope, empowerment, choices, and opportunities for achieving one's full potential (Smith et al., 2015). Consistent with the findings of Maguire et al. (2012) participants in this study found the length of engagement with patients to be professionally satisfying as they had the time to develop therapeutic relationships and observed improvements in the person's level of mental health. However, they believed building these relationships was often compromised by their need to ensure a safe and secure environment. Whilst the use of restrictive practices is viewed as incompatible with this vision of recovery (Ashcraft & Anthony 2008), the ability to apply these principles of care to detained forensic inpatients was demonstrated by Livingston et al. (2015). These authors reported that opportunities exist to meaningfully engage patients in the design, delivery and evaluation of services. Additionally, the integration of trauma-informed care approaches in mental health settings can encourage least restrictive practices when staff understand the experiences of patients who have a history of trauma (Te Pou, 2017). In-service education and training in offending behaviour and trauma-informed care can assist nurses to work from a recovery framework and increase their confidence to work with this patient cohort (Souter, 2015).

Teamwork and leadership

Muir-Cochrane (2018) asserts that unit culture is the core factor in influencing the use of restrictive practices in acute inpatient units. Therefore, developing a positive and safe workplace culture plays an important role in reducing such practices. To achieve this, effective leadership and team cohesiveness (Pyrek, 2006) are crucial yet participants in this study reported their fear and anxiety were heightened by skill deficits, leadership styles, experience, gender mix of team members, as well as their own level of expertise to work with high-risk patients. Employers need to recruit nurses with specialist qualifications and expertise to mentor and role model these skills to less experienced staff. Pyrek (2006) identified that reducing fear was linked to showing nurses how to work with dangerous patients and the importance of using emotional intelligence in their interactions (Birks & Watt, 2007). Similarly, clinical supervision and training in managing vicarious trauma are essential for nurses working in emotionally charged environments where vicarious traumatization may occur (Harris et al., 2015). It can reduce burnout, encourage best practice, and self-reflection (Dickinson & Wright, 2008).

Understanding factors that contribute to the use of restrictive practices is important when considering interventions to reduce or eliminate their use (Happell & Koehn, 2010). The findings from this study provide insights into the experiences of front-line workers which may account for the higher rates of seclusion and restraint rates reported in this specialist setting. It reveals the impact of aggression on staff and highlights the critical influence of training, leadership and teamwork in an often volatile and unpredictable work environment.

CONCLUSION

Forensic and non-forensic mental health populations present with different care needs and complexities. Forensic mental health care is unique and a highly specialized area with nurses working in an often hostile and unpredictable environment. It would appear that, consistent with the literature, higher rates of aggression in forensic mental health inpatient settings are resulting in an increasingly restrictive nursing environment. The findings of this study identify a range of specialist skills and critical factors necessary to care for this patient group whilst maintaining the psychological and physical safety of staff. Whilst forensic mental health nursing is seen as a specialist area which requires specialist skills, the majority of participants in this study acquired their forensic expertise through clinical practice rather than advanced educational specialization. This method of skill acquisition potentially impacts on the team's ability to deliver specialist nursing care. It can also impact on nurses' perceived levels of stress and well-being which can translate to the workplace. Leadership, clinical supervision, and mentoring by more experienced staff are essential to support less experienced nurses to reflect on their practice and build their knowledge and skills in this specialist area. Despite the challenges faced in the workplace, the majority of staff interviewed expressed a desire to work in the forensic setting. This study exemplified how nurses, despite threats of aggression, strive to positively engage with their patients in challenging situations. More investment is now needed, at university and organization level, to equip forensic mental health nurses to acquire and develop skills that reduce restrictive practices, promote de-escalation, and promote recovery-focused care. This study provides evidence that nurses working in this specialist area need to be educated and supported to develop specialist knowledge and skills, which are culturally safe, to work confidently and safely with this high-risk patient cohort.

RELEVANCE FOR CLINICAL PRACTICE

This study provides a better understanding of staff experiences and critical factors that may support organizations and staff to reduce the use of restrictive practices in the forensic context. It further contributes to international efforts to reducing restrictive practices in this specialty area. Further research is required to understand the influence of individual, team, and leadership factors on the use of restrictive practices in this unique setting.

LIMITATION OF THE STUDY

This research was conducted at one Australian forensic mental health service which limits broader generalizations. However, these study results should be considered as an opportunity to enhance knowledge and understanding in the forensic mental health arena.

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5.3 Summary

This publication reports on the study that explored the experiences of nurses working in the AFMHIS. It articulated the nurses' perceived skill set to manage patient aggression in this unique clinical setting and opportunities to reduce the use of RPs. Qualitative data identified four factors that influence the practice environment, including working in a challenging but interesting environment, the importance of teamwork and leadership, and resilience in the face of aggression and violence. The study identified occupational safety and health implications for reducing aggression and violence in the workplace, while highlighting the importance of education and training to sufficiently equip nurses with the required skills to employ alternatives to RPs.

5.4 Chapter Precis

Chapter 6 will now present a quantitative study that explored nursing staff composition and its influence on seclusion use in AFMHIS.

CHAPTER 6

A QUANTITATIVE STUDY EXPLORING NURSING STAFF COMPOSITION AND ITS INFLUENCE ON SECLUSION USE

6.1 Introduction

Chapter 6 presents the findings from a quantitative study that explored nursing staff composition and its influence on seclusion use.

6.2 Publication 4 reference

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Author's contribution

All co-authors have consented to their work being included in this thesis and they have accepted the candidate's contribution as indicated below:

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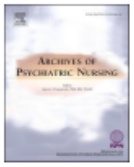

Nursing staff composition and its influence on seclusion in an adult forensic mental health inpatient setting: The truth about numbers

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ABSTRACT

Introduction

Research on the influence of nursing staff composition and use of seclusion in the forensic mental health inpatient settings is sparse. Nursing staff composition refers to staffing levels, roles, gender ratio and skill mix of the ward teams. Internationally, the rates of seclusion in some forensic mental health inpatient settings have increased over the past 10 years despite global efforts to reduce and eliminate its use.

Aim

To examine whether the use of seclusion in a forensic mental health inpatient setting can be attributed to staffing composition or to contextual factors such as day of the week, month or other clinical factors.

Method

Retrospective data collection was conducted using seclusion data, daily ward reports and staff rosters. Data were collected for all shifts in the hospital over a six-month period.

Results

Three staffing variables were identified as having an influence on the use of seclusion: the number of registered nurses on duty, the presence of the shift coordinator and having a lead nurse on shift.

Discussion

Senior nurse oversight and guidance are important factors in assisting staff to identify clinical deterioration and intervene early which may assist services reduce the use of seclusion.

Implications for practice

As staffing levels and composition are modifiable, the results of this study may assist nurse leaders to consider workforce improvements to reduce seclusion use.

Keywords - forensic mental health nursing, staffing levels, staffing profiles, seclusion

INTRODUCTION

Despite national and international legislation and policy changes to reduce and eliminate the use of seclusion in acute and forensic inpatient mental health settings, these practices continue to be used to manage agitated, disturbed and violent behaviour (Barr et al., 2019; Maguire et al., 2012; Muir-Cochrane et al., 2018).

In Western Australia, seclusion is defined as 'the confinement of a person, at any time of the day or night alone in a room or area from which it is not within the person's control to leave' (Government of Western Australia, 2014). The practice of seclusion is highly controversial (Janssen et al., 2007; Lau et al., 2020; Maguire et al., 2012), because of its association with significant staff and patient harm including injury, trauma and patient deaths (McKeown et al., 2019). The use of seclusion also poses a threat to patients' human rights and quality care (Brophy, Roper, Hamilton, Tellez, & McSherry, 2016). The growing consumer movement has asserted strong views about the harm posed by seclusion which leave patients feelings distressed, frightened, angry and helpless (Brophy et al., 2016).

Nurses play a key role in the decision to seclude a patient, and the decision to use seclusion should only be considered as a 'last resort' after all least restrictive alternatives have been exhausted (Janssen et al., 2007; Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, & Tiihonen, 2017a). While studies indicate that nurses want to eliminate these practices, their use continues in many countries due to a lack of effective alternatives (Doedens, Vermeulen, Boyette, Latour, & Haan, 2020). Furthermore, studies examining effective alternatives to seclusion have tended to focus on general mental health settings, which limits their applicability in the highly specialised forensic mental health inpatient setting (Lawrence et al., 2021).

BACKGROUND

Prevalence of seclusion in forensic mental health inpatient settings

Seclusion data is now regarded as an important metric for measuring the quality of inpatient mental health care (Smith, Ashbridge, Altenor, Steinmetz, Davis, Mader, & Adair, 2015). International data indicates that all areas of mental health care (including forensic mental health inpatient services) have at times yielded reductions in seclusion use (Australian Institute of Health and Welfare [AIHW], 2020; Lau et al., 2020). For example, in their United Kingdom study, Qurashi et al. (2010) reported a 67% reduction in seclusion episodes over five years (between 2002 and 2007), while Noorthoorn, et al. (2016) analysed five years of seclusion data from the Netherlands and reported a reduction in the seclusion rate from 11.8% in 2008 to 7.0% in 2013, and a reduction in the median duration of seclusion from 92 to 16 hours. However, there is some evidence that reductions in seclusion use have not been sustained. A

study conducted in Switzerland by Lau et al. (2020), reported a reduction in the annual total number of seclusions in a forensic mental health inpatient service between 2011 (74 seclusion events) and 2012 (35 seclusion events), before seclusion events increased to 273 events in 2018. In addition, the maximum duration in seclusion increased from 440 hours in 2010 to 685 in 2018 (Lau et al., 2020). In Germany, Flammer et al. (2020), conducted a study comparing seclusion rates between forensic and acute mental health services. In this study, the number of patients experiencing seclusion in the acute mental health setting remained stable at 2.9% between 2015 and 2017, while the forensic mental health setting reported a rise in seclusion events from 20.1% in 2015, to 22.6% in 2017 (Flammer et al., 2020).

In Australian public sector forensic mental health inpatient settings, the national rate of seclusion has almost doubled (21.2 per 1,000 bed days in 2018/19 compared to 10.8 in 2008/9) (AIHW, 2020). While a reduction in the average seclusion duration has been achieved in public sector acute forensic mental health services in Australia (64.7 hours per 1,000 bed days in 2013/14 compared to 48.1 hours in 2018/19), the proportion of admissions involving seclusion has increased (19.9 per 1,000 bed days in 2013/14 compared to 32.4 in 2018/19) (AIHW, 2020). In addition, the average number of seclusion events per admission went up from 3.1 events per 1,000 bed days in 2013/14 to 5.6 events in 2018/19 (AIHW, 2020).

Forensic mental health care

Reducing seclusion in a forensic mental health inpatient setting is complex (Maguire et al., 2012). As a recognised subspecialty of mental health care, forensic mental health care can be defined as providing assessment and treatment for individuals charged with criminal offences who have come into contact with the legal system and are remanded or committed to custody (Barr et al., 2019; Haines et al., 2017). Sitting at the intersection of health, social, and criminal justice systems (Martin et al., 2013), forensic mental health patients present with complex needs, physical comorbidities, and a history of trauma and drug abuse (Durey et al., 2014). Detention in a forensic inpatient unit often occurs because the person has the potential to cause serious psychological and physical harm to others (Flammer et al., 2020; Maguire et al., 2012). The very nature of detention into a forensic mental health inpatient setting creates a unique social system where the patients reside, often unwillingly and resentfully, in a highly structured and regulated environment (Edwards-Fallis, 2007).

Forensic mental health patients present with significant challenging behaviours, including aggression and violence, intimidation, destructive behaviours and fear inducing impulsivity (Maguire et al., 2012). Research has shown that aggression occurs at significantly higher rates in forensic mental health inpatient settings compared to acute mental health settings (Dickens et al., 2013), which may explain the higher levels of seclusion use compared to acute mental health inpatient settings. However, the unique characteristics of forensic mental health patients and their behaviours alone are unlikely to account for the higher rates of seclusion use in this setting (Barr et al., 2019; Muir-Cochrane et al., 2018). More recently, researchers have focused on factors relating to staffing composition that may influence seclusion use in mental health inpatient settings, including safe staffing levels, role, gender ratio, skill mix, training and experience (Daffern et al., 2006; Doedens et al., 2020; Janssen et al., 2007; McKeown et al., 2019). However, the results are often conflicting and have not been fully explored, particularly in the forensic mental health inpatient

setting (Doedens et al., 2020; McKeown et al., 2019). A growing body of evidence over the last 20 years has linked low nurse staffing levels with poor patient outcomes and increased hospital mortality rates, however, the vast majority of studies have been conducted in general hospitals (Bowers & Crowder, 2012; Griffiths et al., 2016).

Working in mental health and forensic settings requires specific skills and training (Harris et al., 2015), yet there is no specialist mental health nursing undergraduate program in Australia (Hungerford & Hodgson, 2013) and no requirements for nurses to have specialist qualifications in forensic mental health nursing to gain employment in forensic mental health services (Martin, 2009). All nursing students are comprehensively educated to diploma or degree level as Enrolled Nurses (EN) or Registered Nurses (RN). Those who wish to work in forensic and mental health settings are encouraged to undertake a post graduate study program (Hungerford & Hodgson, 2013). Once employed as an RN, nurses can undertake the role of a Shift Coordinator for the duration of a shift, where they are responsible for the supervision of RNs and ENs (Western Australian Industrial Relations Commission [WAIRC], 2021). RNs may then apply for a promotional position as a Senior Registered Nurses (SRN), where they are responsible for providing leadership of a designation setting, with a focus on clinical/professional consultancy, implementing and developing policy and standards and recruiting staff (WAIRC, 2021).

A REVIEW OF THE LITERATURE

A literature review was conducted by Hui et al. (2016) on studies investigating the use of seclusion, restraint and rapid tranquilisation in forensic mental health settings between 1980 and 2015. The review identified 18 international studies, of which, only 2 studies were conducted in Australia (Hui et al., 2016). None of the studies identified focused on nursing staff composition and its influence on seclusion in the acute forensic inpatient mental health setting.

One study not included in the Hui et al. (2016) review, due to the mixed sample of forensic mental health patients and acute mental health patients, was the study by Morrison and Lehane (1995), which found that as staffing levels increased the number of seclusion events fell significantly. They also reported that seclusion rates reduced as the number of female and qualified staff increased on the ward, and when the 'charge nurse' was on duty (Morrison & Lehane, 1995). In a study by Daffern et al. (2006), they identified that the gender of the shift leader did not influence the decision to seclude a patient.

Due to the limited research in forensic mental health settings, a broader search was made into the area of acute mental health settings, however, the results are conflicting. Bowers and Crowder (2012) identified that higher nurse numbers led to more adverse events while O'Malley, et al. (2007) reported that higher nurse numbers led to fewer seclusion events in acute mental health settings. In a study by Lay et al. (2011) a reduction in patient days per nursing staff (i.e., a lighter workload) was positively associated with an increased risk of seclusion, whereas, Janssen et al. (2007) reported that seclusion events increased when the number of patients per staff was greater. Janssen et al. (2007) also found that more female and less male nurses in a shift predicted an increase in seclusion rates. Bowers et al. (2010) identified that the use of seclusion was slightly associated with higher numbers of male staff on duty. Janssen et al. (2007) reported that the presence of less educated staff, temporary staff, nursing aids/assistants and student nurses were associated with more seclusion events.

Finally, Bowers et al. (2012) identified that the presence of security guards appeared to be associated with increased restraint use.

A review of the literature also identified some possible seasonal influence on the use of seclusion in this setting. Specifically, Kuivalainen et al. (2017b), investigated seasonal variation of violence and seclusion over a five-year period with the results implying that the use of seclusion is related to seasonal variation among staff. In their study, Salib et al. (1998), identified seasonal variations in single and multiple seclusions, with an increase in January (winter in the UK) and a reduction in July (summer in the UK). In addition, a study by Heilbrun et al. (1995), examined the use of seclusion and restraint in a sample of civil and forensic patients identified that the highest frequency of seclusion and restraint use occurred in December and February (winter in the US) and on Wednesday and Thursday, with the lowest frequency occurring on Saturday. Salib et al. (1998), also examined the influence of time of day on the rate of seclusion but found no effect on the rates of use.

Variations in seclusion data to date suggests that recent legislative and policy initiatives to minimize these use of seclusion practices may have altered practice patterns related to type, frequency and duration of seclusion. Such variability in research results creates further questions regarding the impact of nursing staff composition and seclusion use in this setting; specifically, whether the influence sits at the individual, team, organisational or cultural level. However, further knowledge and understanding about the reasons for this in acute forensic mental health settings is urgently required.

AIM

The aim of the study was to determine if seclusion is influenced by nursing staff composition. The study also sought to determine if seclusion events were influenced by contextual factors including day of the week, month, the number of admissions to the unit, the number of patients requiring specials the unit (specifically, patients requiring one nurse for continuous monitoring and care) and whether the presence of security officers on the wards influenced the use of seclusion.

HYPOTHESES

It was hypothesised that seclusion would:

1) be more likely to occur a) during periods of high clinical activity such as during office hours (08:30hrs to 16:30hrs) and b) during the week rather than weekends;
2) be less likely in the ward when there was a) high staff to patient ratio and b) with high ratios of registered nurses;
3) increase as the number of permanent staff on shift decreased;
4) be reduced with the presence of senior nursing leadership roles;
5) increase as clinical acuity increased, such as the number of specials on the ward and the number of admissions onto the ward;
6) increase as overtime shifts increased due to fatigue factors;
7) increase with the presence of security staff on the ward.

METHOD

SETTING

In Australia, public sector acute forensic mental health inpatient units vary in size across jurisdictions from 8 beds to 138 beds (AIHW, 2021). This retrospective analysis was undertaken at a 30-bed high secure adult acute inpatient forensic mental health unit. All wards within this unit were mixed-gender wards. Approximately 240 patients are admitted to the unit each year with Indigenous Australians making up approximately 30% of patient admissions (Durey et al., 2014).

In the twelve months prior to the study being undertaken, local seclusion data indicated significant monthly variations in seclusion use ranging from 1.1 episodes of seclusion per 1,000 days to 36.7 episodes of seclusion per 1,000 days (Department of Health, 2016).

The unit had a lead nurse (Senior RN) who provided leadership and support for the unit, whilst a shift coordinator provided leadership and support for each ward within the unit. All nursing staff, on commencement of employment within the service, were required to attend a mandatory four-day aggression management training package, and an annual refresher day training thereafter.

DATA COLLECTION

Data were collected from 546 shifts across a six-month period (January to June 2016). Data were obtained from staff rosters, daily ward reports and the services' clinical incident management system. Seclusion event data (day, shift and month) were collected for all nursing shifts (day shift - 07.00- 15.39; late shift – 15.00-11.39; night shift - 11.15-07.39). For each shift, nursing rosters were reviewed to determine the number and ratio of male and female staff for the ward and unit, the number and ratio of registered and enrolled nurses, the number and ratio of temporary (casual and agency) and permanent staff, the number of staff working overtime, whether the ward shift coordinator was a permanent staff member (as opposed to acting up into higher duties) and if the unit's lead nurse was rostered on duty. Daily ward reports were reviewed for data for each shift including seclusion events, staff to patient ratio on the ward, the bed occupancy of the unit and ward, the number of admissions, the number of specials and the presence of security officer/s on the ward.

ETHICS

Prior to commencing data collection ethics approval was obtained from the North Metropolitan Health Service – Mental Health Service and Curtin University, Human Research Ethics Committees in Western Australia.

DATA ANALYSIS

There were 61 incidents of seclusion during the study period. The frequency of seclusions by day of the week, month and shift type are presented in Table 1, 2 and 3.

Table 1 - **Frequency of seclusions per shift by day of the week**

Shifts (N=546)

Day	Seclusion	Frequency	
Mon	No	67	(86%)
	Yes	11	(14%)
Tues	No	70	(90%)
	Yes	8	(10%)
Weds	No	68	(87%)
	Yes	10	(13%)
Thurs	No	67	(86%)
	Yes	11	(14%)
Fri	No	72	(92%)
	Yes	6	(8%)
Sat	No	70	(90%)
	Yes	8	(10%)
Sun	No	71	(91%)
	Yes	7	(9%)

Table 2 - **Frequency of seclusions by month**

Shifts (*N*=546)

Month	Seclusion	Frequency	
January	No	81	(87%)
	Yes	12	(13%)
February	No	84	(97%)
	Yes	3	(3%)
March	No	86	(92%)
	Yes	7	(8%)
April	No	79	(88%)
	Yes	11	(12%)
May	No	70	(75%)
	Yes	23	(25%)
June	Yes	85	(94%)
	No	5	(6%)

Table 3 - **Frequency of seclusions by shift**

Shifts (N=546)

Shift	Seclusion	Frequency	
Day Shift	No	153	(84%)
	Yes	29	(16%)
Late Shift	No	159	(87%)
	Yes	23	(13%)
Night Shift	No	173	(95%)
	Yes	9	(5%)

The dependent variable was 'seclusion events per shift', therefore Poisson regression was used to analyse the data. A modelling approach using multiple Poisson regression plus model comparison was undertaken (Tables 4). Model comparison assesses the improvement in fit attained when a set of variables is added to the multiple regression. The first set of variables included the three external factors variables of month, day of week, and shift type. The second set of variables included operational factors of bed occupancy, admissions, and specials. The third set of variables were related to staffing and modelled in two ways: counts of staff members and ratio of staff members. This was to tease apart conflicting results in the literature regarding staffing ratios versus absolute staffing numbers.

Table 4. **Categorisation of variables**

Category	Variables
External Factors	Month Day of the week Shift Type
Operational Factors	Bed occupancy of the unit and ward Number of admissions Number of specials
Staff Factors	Number and ratio of male and female staff Number and ratio of Registered and Enrolled Nurses Number and ratio of temporary (casual and agency) staff Number of permanent staff Number of staff working overtime Staff to patient ratios Permanency status of the shift coordinator If the CNS (SRN3) was rostered on duty The presence of security officer/s on the ward

For the model comparison procedure, each group of variables that comprised a regression model were compared against each other (e.g., external factors model versus the staff ratio model) and in combination (e.g., external factors versus operational factors plus staffing ratio) (Table 5). Comparisons were conducted using analysis of deviance tests using Chi-square and the Akaike information criteria (Akaike, 1974). This process allows the determination of which set of variables best improves the ability to predict seclusion counts. AIC differences greater than 2 indicate notable improvements in fit. Alpha for statistical significance was set at the standard 0.05. Data were analysed in R version 4.0.3 (R Core Team, 2020).

RESULTS

Table 5 presents the model comparison outcomes from the series of Poisson regressions assessing the 4 groupings of variables.

Table 5. **Data Modelling**

		Model Comparison				
Models	AIC	Comparison Model	ΔDeviance	df	p	ΔAIC
Model 0 - Intercept only	469.99					
Model 1 - External Factors	435.74	Model 0	60.2	13	<0.0001	34.25
Model 2 - Model 1 + Operational Factors	438.42	Model 1	3.32	2	0.34	-2.68
Model 3 - Model 1 + Staff Factors – Ratio	429.49	Model 1	22.25	8	0.0045	6.25
Model 4 - Model 1 + Staff Factors – Count	429.03	Model 1	24.71	9	0.0033	6.71
Model 3		Model 4	2.46	1	0.11	0.46

Univariate Regression

Table 6 presents the univariate Poisson regression coefficients for each of the variables assessed. Several variables were significantly associated with seclusion events including shift type, month, the presence of a registered nurses, the shift coordinator and the lead nurse.

Table 6 - Regression Coefficients

		Model 1 - Environmental Variables			Model 2 - Model 1 + Patient Variables			Model 3 - Model 1 + Ratio Variables			Model 4 - Model 1 + Count Variables		
		β	p	sig	β	p	sig	β	p	sig	β	p	sig
Month	*Feb*	**-1.63**	**0.010**	*****	**-1.67**	**0.008**	*****	**-1.74**	**0.007**	*****	**-1.52**	**0.019**	*****
(Base = Jan)	*Mar*	-0.73	0.09		-0.41	0.37		-0.46	0.32		-0.53	0.25	
	Apr	-0.26	0.50		-0.28	0.47		-0.32	0.45		-0.01	0.98	
	May	**-0.64**	**0.037**	*****	-0.53	0.10		-0.54	0.11		**-0.88**	**0.018**	*****
	Jun	**-1.17**	**0.023**	*****	**-1.23**	**0.017**	*****	**-1.05**	**0.049**	*****	-0.62	0.27	
Day of Week	*Day Tues*	-0.10	0.81		-0.18	0.67		-0.11	0.80		-0.13	0.76	
(Base = Mon)	*Day Wed*	-0.14	0.72		-0.07	0.87		-0.05	0.91		-0.03	0.94	
	Day Thurs	-0.14	0.72		-0.08	0.84		-0.14	0.74		-0.09	0.84	
	Day Fri	-0.39	0.39		-0.45	0.33		-0.26	0.58		-0.30	0.52	
	Day Sat	-0.39	0.39		-0.38	0.41		-0.09	0.84		-0.14	0.77	
	Day Sun	-0.22	0.61		-0.19	0.65		-0.19	0.69		-0.09	0.85	
Shift	*Late*	-0.37	0.14		-0.40	0.11		-0.37	0.36		-0.36	0.40	

(Base = Morning)	*Night*	**-1.47**	**<0.001**	***	**-1.45**	**<0.001**	***	**-0.98**	**0.15**	***	0.34	0.69
Patient Variables	*Bed Occupancy*				0.14	0.24						
	Admissions				0.15	0.46						
	1:1 Special				-0.88	0.41						
Common Variables to Model 3	*Number of Overtime Staff*							-0.07	0.62		-0.02	0.86
	Security Guard on Shift							-0.02	0.96		0.14	0.61
	Lead nurse							**0.97**	**0.018**	*	**1.03**	**0.018**	*
	Shift Coordinator							**-0.84**	**0.002**	**	**-0.73**	**0.006**	**
Ratio Model Variables	*Staff: Patient*							-3.09	0.070			
	Male: Female Ward							0.49	0.46			
	Perm: Casual							-0.53	0.64			
	RN: EN							-1.18	0.41			
Count Model Variables	Number Males										-0.02	0.89
	Number Agency Staff										-0.30	0.12

Number Permanent Staff	-0.20	0.13	
Number RN	**0.34**	**0.045**	*
Number EN	**0.54**	**0.014**	*

Multiple Poisson Regression and Model Comparison

Table 6 presents the regression coefficients (betas, standard errors, and p-values) for each variable within each of the models. The model with external factors was significant ($p<0.0001$) compared to a null model (i.e., a model with only an intercept), with month and shift indicating significant associations with seclusion events. For the effect of month, February was associated with a lower rate of events (n=3), and May was associated with a greater rate of events (n=23). While, night shifts were associated with a much lower rate of events (n=9) compared to day shifts (n=29) and late shifts (n=23). The strength of some of these associations between external factors and seclusion events were altered following the inclusion of staffing variables in models 3 (ratio) and 4 (count), especially with respect to shift, and are detailed further below. The effect of day of week was not significant in this model.

The addition of variables within the operational factor category did not significantly improve prediction of events over the model with external factors (operational factors [model 2] versus external factors [model 1]: $p = 0.34$, AIC difference = -2.68), indicating minimal impact of bed occupancy, admissions, and specials on seclusion events.

The addition of staffing ratio and staffing count variables both significantly improved model fit (staffing ratio [model 3] versus external factors [model 1]: $p = 0.0045$, AIC difference = 6.25; staffing count [model 4] versus external factors [model 1]: $p = 0.0033$, AIC difference = 6.71), and there was no significant difference between the two staffing models (staffing ratio [model 3] versus staffing count [model 4]: $p = 0.11$, AIC difference = 0.46). Two variables common to both staffing models were significant: presence of a lead nurse was positively associated with seclusion events; and presence of a shift coordinator was negatively associated with seclusion events. In addition, the staffing count model (model 4) also indicated that the number of RNs and number of ENs were both positively associated with seclusion events. The staffing count model in particular altered the association between shift and events, most notably by switching the sign of the effect of night shifts on events (i.e., from negative to positive). This is potentially due to the addition of the number of ENs and RNs on duty into the model, which was lowest during the night shift. Therefore, we restricted the analysis to morning and late shifts to further explore this association. Total numbers of RNs and ENs remained significant in this model, with the strength of the association consistent with the original model (RN $\beta = 0.36$, $p = 0.034$; EN $\beta = 0.58$, $p = 0.0089$).

DISCUSSION

With a paucity of research on the influence of nursing staff composition and the use of seclusion in the forensic mental health inpatient settings (Lau et al., 2020), this study aimed to examine whether the use of seclusion in a forensic mental health inpatient setting could be attributed to nursing staff composition or to contextual factors such as day of the week, month or other clinical factors.

The main findings of the study imply that the presence of the lead nurse position was associated with an increase in the use of seclusion, while the presence of the shift coordinator reduced seclusion use, therefore hypothesis 3 was partially supported. The lead nurse position is a supervisor role (located off the ward). The lead nurse

works the day shift and is tasked with overseeing unit clinical activity, bed management, quality of care and use of resources of the unit while the shift coordinator is the senior nurse in charge of the ward and the nursing staff within it. As reported in a previous study (Barr et al., 2019), the shift coordinator role is deemed a critical role within the service and is key to a well-functioning nursing team. The continual presence of the shift coordinator on the ward may provide staff with feelings of safety, security and confidence when dealing with challenging situations. As an experienced clinician the shift coordinator's presence can importantly guide staff to monitor, engage and intervene early when necessary. What was not ascertained from the data was whether the lead nurse was present on the ward performing daily tasks, attended the ward in response to an incident that resulted in seclusion or whether the lead nurse attended the ward and instigated the seclusion intervention.

Consistent with other research (Happell & Gaskin, 2011; Smith, et al., 2015), this study found that seclusion events occurred most often on day and late shifts (supporting Hypothesis 1a). This could be attributed to a number of variables including higher clinical acuity on the wards during daylight hours; increased presence of interdisciplinary team members, administrative and operational burdens taking nurses away from direct patient care. In addition, day shifts are times when most legal matters are dealt with in the courts, ward rounds occur and patients may receive distressing legal or clinical information. Also, adverse events are less likely when patients are asleep during the night shifts, particularly if they are sedated or have yielded the benefit of their medications during the day.

The study examined whether the use of seclusion varied by day of the week. While other studies (Smith, et al., 2015), have reported higher containment rates during the week, our study found no statistically significant association between seclusion use and day of the week, failing to support hypothesis 1b. This suggests that triggers for seclusion events are present across all days of the week. This finding is of particular importance in the forensic mental health inpatient setting where a combination of highly structured regimes, stringent security measures (Edwards-Fallis, 2007), and high patient acuity can result in a hostile and unpredictable environment (Barr et al., 2019). For this reason, it is critical that nurses in this setting possess a repertoire of skills that promote a positive therapeutic environment and who can deescalate potentially aggressive patient's behaviours in a dignified and respectful manner (Barr et al., 2019).

During the study period, February (summer season in Australia) was associated with a lower rate of events, and May (Autumn season in Australia) was associated with a greater rate of seclusion events which is somewhat consistent with the findings from studies in acute mental health setting (Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, & Tiihonen, 2017b; Salib et al., 1998). While the study sampling period is too short to evaluate whether any seasonal variation exists in the use of seclusion, the findings do prompt consideration for further research.

While the results of other studies in acute mental health services have indicated that increased staffing levels can result in increased seclusion events (Bowers & Crowder, 2012; Fukasawa et al., 2018), ours did not. Fluctuations in nursing staff to patient ratios did not have a statistically significant influence on seclusion use, therefore we failed to find support for hypothesis 2a. There are many other factors that may account for this including the use of physical space in the ward to prevent

overcrowding and excessive noise, the interactions between patients and staff in a therapeutic manner (including activities) and the capacity of the staff to occupy the patients in a meaningful and respectful manner. Having adequate staffing levels assists staff to be able to better observe and interact with patients (Bak et al., 2015; McKeown et al., 2019). Also, adequate staffing alleviates stress within the team which can have a positive impact on the ward milieu which, in turn can foster a recovery orientated environment (Bak et al., 2015). While this study did not assist in identifying an 'ideal' staff to patient ratio it does support Bowers & Crower (2012) in their assertion that the utilisation of staff may be as important as overall staff numbers, more specifically, 'having the right people, with the right skills, are in the right place at the right time'(NHS England, 2013).

Consistent with other studies (Bowers & Crowder, 2012), this study demonstrated that the presence of the RNs did have an influence on the use of seclusion in that an increased number of incidents occurred on shifts with a higher presence of registered nurses, therefore hypothesis 2b was not supported. However, this observation is complicated by the fact that managers tend to deploy nurses with greater experience and qualifications to wards with higher patient acuity and disturbance (Bowers & Crowder, 2012). Also, RNs, as senior clinicians, tend to be called upon or respond to, ward disturbances or patients in distress (Bowers & Crowder, 2012). They may also take the lead over less qualified staff in managing challenging situations, providing distressing news to patients or refusing patient's requests (Bowers & Crowder, 2012). Finally, ENs may also refer potentially difficult or dangerous issues to RNs to attend to (Bowers & Crowder, 2012).

No statistically significant findings were found related to employee type, specifically permanent versus agency or casual staff. This is an interesting finding given that previous research has found that patients were less likely to exhibit potentially dangerous behaviour in the presence of permanent staff members (Janssen et al., 2007). It is suggested that permanent staff members have the knowledge and experience of the patients, including the ability to detect early warning signals of behavioural disturbance, and employ strategies known to work for individual patients (Janssen et al., 2007). Bak et al. (2015), suggests that temporary staff lack knowledge and familiarity of the unit structures, processes and patients, which can generate instability and insecurity for staff and patients which can create adverse incidents that lead to seclusion. The results of this study suggests that within the service studied there are team, operational and organisational systems that provide 'safe-guards' that reduce the likelihood of seclusion being used as a containment measure during periods of staff instability. Such safeguards may include policies regarding staff supervision and support, close monitoring of patients regarded as being vulnerable or at risk of aggression, individual care plans focusing on symptom control, sensory modulation, structured activities and risk management.

The study data indicated that clinical acuity (including bed occupancy, admissions and specials) had minimal impact on seclusion events, therefore hypothesis 5 was not supported. There has been much discussion in the literature regarding factors such as higher rates of aggression in forensic mental health inpatient settings compared to acute mental health settings (Dickens, Picchioni, et al., 2013), high acuity, staffing levels, staff burnout and excessive administrative tasks contributing to seclusion practices (Griffiths et al., 2016; McKeown et al., 2019; Muir-Cochrane et al., 2018). The results of this study suggest that seclusion was

implemented appropriately due to the presence of significant patient risk which could not be managed in a less restrictive manner, rather than in response to environmental and operational pressures. The difference found in this study could be explained by individual, team, environmental, organisational and operational influences (Barr et al., 2019; Lepping et al., 2016), which promote the use of seclusion as an intervention of last resort, such as prioritising and delegating tasks amongst the multi-disciplinary team, utilising available staff to provide therapeutic activities to patients and facilitating breaks for staff.

The results in this study did not identify significant associations between overtime rates per shift and variations in the use of seclusion, therefore hypothesis 6, that seclusion events would increase as overtime shifts increased due to fatigue factors, was not supported. This is a surprising result as much has been said in the literature regarding staff shortages and staff fatigue leading to a focus on managing crisis and risk (Care Quality Commission, 2020). This result suggests that staff within the unit are not adversely affected by working additional hours which may be accounted for by local practices including limiting the amount of overtime hours that can be worked in a week, rotating staff around wards, facilitating adequate breaks, providing strong leadership and support.

No statistically significant findings were found in relation to the use of seclusion and restraint and the presence of security officers. However, security officers were only on the ward for 12 shifts, therefore there was a lack of data to properly assess hypothesis 7. The low number of security officers present on the ward is a positive indication that the service minimises the use of security staff and their presence does not adversely impact on the ward milieu and contribute to an increased use of seclusion.

Previous research has indicated that staff confidence in managing aggression (that leads to seclusion) may be influenced by the presence of male staff. Specifically, that male nurses are better able to manage aggressive patients or that their presence can be a deterrent for patients to become aggressive (Daffern et al., 2006). Consistent with the results of Daffern et al. (2006), our study found that there was no statistically significant relationship between staff gender and the use of seclusion either at the ward level or at the unit level in this study. This is an important finding in understanding the influence of gender and seclusion use as previous studies have produced conflicting results; Doedens et al. (2017) found a non-significant association between seclusion use and female nurse gender and Janssen et al. (2007), suggested that having more female and less male nurses during a shift have been connected to greater use of seclusion.

There is now clear evidence that better practices can be achieved in providing safe care to patients while also reducing the use of seclusion across all areas of mental health settings (Huckshorn, 2014). However, the inherent restrictiveness of the forensic mental health inpatient environment, with the strict regimes, restricted patient movements and rigid security protocols, poses unique challenges for forensic mental health nurses in promoting positive and therapeutic environments (Martin et al., 2013; Tomlin, Bartlett, Völlm, Furtado, & Egan, 2020). This research addresses a gap in knowledge on the nursing staff composition and its influence on seclusion use in the forensic mental health inpatient setting. The strengths of this study, compared to other studies on staffing levels and seclusion use, is that a number of other factors (ratio of staff gender, ratio of role, ratio of casual staff, day of the week, month, number of

admissions, number of specials, presence of security officers) were analysed separately and in combination to determine if they had an influence on the use of seclusion. The setting, a mix-gender ward, enhances our understanding of the interaction between patients and male and female staff. This study stands out because it obtained rich data because it used shift-by-shift staffing data.

The findings that staffing levels and working conditions were not associated with seclusion, while the presence of senior nurses on the ward did influence seclusion is important. Such findings support the six-core strategy model which advocates for leadership toward organizational change to reduce the use of seclusion (Huckshorn, 2006; Vruwink, Wierdsma, Noorthoorn, Nijman, & Mulder, 2021). This finding is particularly important for nurse leaders working in acute mental health and forensic settings and reinforces the importance of a leadership presence on the wards to optimise staff and patients' feelings of safety and care. The results of this research also provide important insights for acute mental health and forensic nurses in understanding what factors may increase the likelihood of seclusion use as well as opportunities to reduce the need to use seclusion.

CONCLUSION

Understanding why forensic mental health inpatient services are lagging behind in reducing seclusion use can assist services to develop effective sustainable interventions in this complex area. The findings that the presence of a senior nurse on the ward positively contributes to a reduction in seclusion events further supports the evidence on the importance of clinical skills, leadership and staff support. Having skilled, senior nurse oversight and guidance are important factors in assisting staff to identify clinical deterioration and intervene early which may assist services reduce the use of seclusion. Our study highlights the importance of organisations considering staffing profiles to optimise staff and patients' feelings of safety and therapy.

LIMITATIONS

Our findings should be understood in the context of an acute forensic inpatients setting in Australia.

Due to the retrospective nature of the study, the authors were unable to obtain data on the nursing staff such as their age, educational background, personality types, duration of their employment within the service and staff turnover. Further research in this area is recommended.

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6.3 Summary

The findings of this research highlight the importance of nursing leadership in contributing to the reduction in RPs. These results demonstrate that even when faced with fluctuations in acuity and clinical risk, RPs can be avoided and care delivered safely and trauma free. To maintain low rates of RP use, organisations must invest in training Shift Coordinators to enable them to provide support and guidance to the nursing teams, particularly RNs.

6.4 Chapter precis

Chapter 7 will now present the study that described and analysed patient characteristics and the use of seclusion in an AFMHIS.

CHAPTER 7

A QUANTITATIVE STUDY EXAMINING PATIENT CHARACTERISTICS AND THE USE OF SECLUSION IN AN ADULT FORENSIC MENTAL HEALTH INPATIENT SETTING

7.1 Introduction

Chapter 7 presents the findings from a quantitative study that explored patient characteristics, including age, gender, and ethnicity, and the use of seclusion in an AFMHIS in Australia. A quantitative analysis and examination of seclusion events and clinical interventions pre, during and after each seclusion event also occurred. This study has been accepted for publication by the British Journal of Mental Health Nursing, and is presented in the format submitted to the journal as a printed version is not yet available (see Appendix T).

7.2 Publication 5 reference

Barr, L., Heslop, K., Wynaden, D. (in press). Patient characteristics and the use of seclusion in an adult forensic inpatient mental health service in Australia: a quantitative analysis and examination of clinical interventions. *British Journal of Mental Health Nursing*.

Author's contribution

All co-authors have consented to their work being included in this thesis and they have accepted the candidate's contribution as indicated below:

Mrs Lesley Barr	96%	Signature	
Associate Professor Karen Heslop	2%	Signature	
Emeritus Professor Dianne Wynaden	2%	Signature	

Higher Degree Research Thesis by Publication

Curtin University

STATEMENT OF ORIGINALITY

We, the PhD candidate, and the candidate's principal supervisor, certify that the following text, figures, and diagrams are the candidate's original work.

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ABSTRACT

Background - In Australia, national data indicates that the rate of seclusion use in public forensic mental health inpatient settings has almost tripled, with the number of patients being admitted to these settings being secluded more often but for shorter durations.

Aim - The aim of this study was to describe and analyse the use of seclusion within an adult forensic mental health inpatient setting in Australia. The study also sought to compare and examine the characteristics of patients who experienced seclusion and those who did not.

Method – This quantitative study was achieved by completing a retrospective case file audit.

Results - Data indicated that patient gender and diagnosis increased the likelihood of a seclusion event occurring.

Discussion –Identifying patient characteristics that increase the risk of seclusion is important in enabling services to design early intervention strategies to enhance patient safety.

Keywords – forensic mental health, patient characteristics, seclusion, restrictive practices.

Key Points

Data from this research study found:

- Male patients experience seclusion more than females.
- There is a relationship between primary and secondary diagnoses and the use of seclusion.
- Physical aggression is the main reason for seclusion use.
- Medication changes were the main post seclusion interventions.

Reflective Questions

Understanding the reasons for seclusion use are important, therefore clinicians should consider:

- What could be causing the rates of seclusion to rise in forensic mental health inpatient settings.?
- What strategies could be implemented to reduce the use of seclusion during the early stages of inpatient admissions?
- What gender sensitive strategies could assist in seclusion reduction?
- How can clinicians provide culturally safe care?

INTRODUCTION

The use of seclusion in acute and forensic inpatient mental health services is controversial (Doedens et al., 2017; Hansen et al., 2020; Heilbrun et al., 1995; Voskes et al., 2021), due to the harmful effects on both patients and staff including physical injury, psychological distress and even death (Lawrence et al., 2021; McKeown et al., 2019; Oster et al., 2016; Power et al., 2020). However, seclusion remains a common feature in acute and forensic mental health inpatient settings to keep patients and staff safe (Hui, 2016; Krieger, Moritz, Lincoln, Fischer, & Nagel, 2020).

In a German study, the use of seclusion in forensic settings was on average eight times higher and six to nine times longer in duration compared to acute mental health settings in the same country (Flammer, Frank, & Steinert, 2020). In Australia, the rate of seclusion use in forensic mental health inpatient settings has almost tripled since 2008 (10.8 seclusion events seclusion events per 1,000 bed days in 2008/2009 compared to 30.5 in 2019/2020) (Australian Institute of Health and Welfare [AIHW], 2020), but the reasons for this increase is not clear. In addition, while the average duration of seclusion in forensic mental health inpatient settings has reduced, the proportion of admissions involving a seclusion event rose significantly between 2013/2014 (19.9) and 2018/2019 (32.4) (AIHW, 2020). This suggests that patients being admitted into forensic mental health inpatient settings are being secluded more often but for less periods of time (AIHW, 2020).

The rising rates of seclusion use in Australian forensic mental health inpatient settings are concerning and require scrutiny due to the lack of evidence supporting its therapeutic value, the impact on patient's autonomy and individual human rights, and the risk of patient harm, including death.(Günther, Kirchebner, & Lau, 2020; Kennedy et al., 2020; Qurashi et al., 2010). Sitting at the junction of health, social, and criminal justice systems, forensic mental health inpatient settings are characterised by restrictive security procedures designed to maintain the safety and security for staff, patients, visitors and the community (Martin et al., 2013; Tomlin et al., 2020). These restrictions include access to personal belongings and routine patient searches, (Tomlin et al., 2020). Such restrictions can often lead to patient aggression and result in an escalation in restrictive practice use by nurses, including the administration of PRN medications, physical restraint, and seclusion (Hallett & Dickens, 2015; Thomas et al., 2009; Tingleff, Hounsgaard, Bradley, Wilson, & Gildberg, 2019).

Attempts to understand the reasons for, and frequency of, seclusion use in the forensic mental health inpatient setting, require consideration of a number of factors including organisational factors (policies, procedures), environmental factors (use of natural light, space), staff factors (training, experience), and patient factors (gender, diagnosis) (Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, Tiihonen, et al., 2017; Price, Baker, Bee, & Lovell, 2018). However, limited empirical studies have been conducted examining these factors in the forensic inpatient settings (Lau et al., 2020).

BACKGROUND

Of the studies undertaken on patient factors and their influence on seclusion use, inconsistent results have been reported. Griffiths et al. (2018), reported no gender differences between secluded patients, while other studies reported that female patients were secluded more often than male patients (Ahmed & Lepnurm, 2001; Mason, 1998; Paavola & Tiihonen, 2010; Pannu & Milne, 2008). However, other studies have reported that males were secluded more frequently (47% to 76.5%) than females (27.1% to 35%) (Keski-Valkama et al., 2010; Kuivalainen, Vehviläinen-Julkunen, Louheranta, Putkonen, Repo-Tiihonen, Tiihonen, et al., 2017; Mathias & Hirdes, 2015; Thomas et al., 2009). Findings on duration of seclusion by gender are more consistent with Pannu & Milne, (2008) and McKenna et al. (2017) reporting that seclusion duration for females was shorter than males.

Younger patients tend to be secluded more often and for longer than older patients (Griffiths et al., 2018; Hansen et al., 2020; Hui et al., 2013) with the mean age of secluded patients ranging from 29.10 years (Thomas et al., 2009), to 31.6 years (Ahmed & Lepnurm, 2001).

Some studies have reported that non-Caucasian, Asian and black patients were secluded disproportionately more than white patients (Pannu & Milne, 2008; Price et al., 2004). However, Smith et al. (2015), reported that the duration of seclusion was similar for both white and black patients (57 +1 minutes compared to 56 +1 minutes respectively).

Studies reporting seclusion prevalence and diagnosis have also produced conflicting results. Some identified that seclusion was common for patients with a diagnosis of schizophrenia and psychotic disorders (Keski-Valkama et al., 2010; Paavola & Tiihonen, 2010; Smith, et al., 2015; Thomas et al., 2009), while others reported that a diagnosis of personality disorder accounted for 65% of seclusions and substance related disorders were associated with 40.8% of seclusions (Ahmed & Lepnurm, 2001).

As reported by Hui et al. (2013), there is a notable dearth of research on the use of seclusion in forensic mental health settings, particularly in Australia, and further research is required examining patient characteristics and seclusion use.

AIM

The aim of this quantitative study was to describe and analyse the use of seclusion within an adult forensic mental health inpatient setting in Australia. The study also sought to compare and examine the patient characteristics of patients who were subjected to seclusion and those who were not.

HYPOTHESES

Background research assisted in developing the hypothesise that:

1) Seclusion events would not be influenced by patient characteristics (null hypothesis);
2) Seclusion events would be more likely to occur with young (aged between 18 and 24 years), male and ethnic minority patients;
3) Seclusion events would be more likely to occur with patients with a primary diagnosis of schizophrenia and psychotic disorders;
4) Seclusion events would be more likely to occur within 24 hours of admission.

SETTING

Public sector forensic mental health inpatient settings across Australia vary in size from 8 beds to 138 beds (AIHW, 2021). This retrospective case file audit was undertaken at a 30-bed, mixed-gender, adult forensic mental health inpatient setting in Australia. The service provides assessment and treatment of patients referred from prison, court or the community under the Criminal Law (Mentally Impaired Accused) Act 1996 (Government of Western Australia 1996), or the Mental Health Act 2014 (Government of Western Australia 2014).

During the six-month study period the inpatient forensic mental health setting reported an average rate of seclusion use of 6.3 per 1,000 bed days (Western Australian Department of Health, 2016) which was lower than the reported national average rate for public sector forensic mental health hospitals at that time (9.2 per 1,000 bed days) (AIHW, 2020). In addition, the average duration of seclusion for the unit was 65.9 hours per 1,000

bed days (Western Australian Department of Health, 2016), lower than the reported national average of 87.9 hours per 1,000 bed days, during that period of time (AIHW, 2020).

METHODOLOGY

Data collection

Data were collected on all patients admitted to the service during a six-month period (January to June 2016). Data were obtained from medical records including age, gender, ethnicity, primary and secondary diagnosis, referral source, previous admissions to acute and forensic mental health inpatient settings. Where a patient experienced a seclusion, further data were obtained on the month, date, time, reason for the seclusion, the patient's condition prior to the seclusion event and duration of the seclusion event. Data were collected on the number of patients who had a 'Coping and Awareness' tool completed in their medical file (a tool used to assist a patient identify strategies that may assist in preventing seclusion use). Risk assessment scores of the patient on the day of the seclusion event were obtained from the Dynamic Appraisal of Situation Aggression (DASA) (the mandated risk appraisal tool used at the service). Data related to the use of PRN medication administration was obtained from the medication charts. Levels of clinical observations being carried out by nurses (including hourly observations, 15-minute observations, one to one nurse special and two to one nurse special) were obtained from health records.

Data analysis

Descriptive statistics were used to provide a profile of the study sample, specifically, differences in those patients who were secluded and those who were not. Categorical data were reported as numbers and percentages, and continuous data presented in relation to the mean, median, and standard deviation.

Chi-square analyses were carried out to compare the samples and binary logistic regression were conducted to analyse relationships between variables. Further analyses focused on the characteristics and care provision of those who were secluded. Analyses were carried out using IBM SPSS Statistics (version 26) predictive analytics software.

ETHICS

Ethics approval was obtained from North Metropolitan Health Service- Mental Health, and Curtin University, Human Research Ethics Committee in Western Australia.

RESULTS

During the six-month study period, 117 admissions to the service occurred involving 109 patients. There were 61 seclusion events involving 20 (18%) patients. Eighty-nine patients (82%) did not experience any seclusion events. The patient profile by intervention type is reported in Table 1.

Table 1. Patient profile by intervention type

Patient profile by intervention type (N=109), N (%)		**Total**	**No Intervention n=89 (n%)**	**Seclusion n=20 (n%)**	**Pearson Chi-square Test Value**	***P***
Gender	Male	81 (74%)	66 (60%)	15 (14%)	**15.73**	**.003***
	Female	28 (26%)	23 (21%)	5 (5%)	3.08	0.54
Age Range	18-24	18 (16%)	9 (8%)	9 (8%)	0.4	0.53
	25-34	53 (49%)	46 (43%)	7 (6%)	0.04	0.84
	35-44	25 (23%)	21 (19%)	4 (4%)	2.43	0.12
	45-54	11 (10%)	11 (10%)	0 (0%)	N/A	N/A
	55-64	1 (<1%)	1 (<1%)	0 (0%)	N/A	N/A
	65+	1 (<1%)	1 (<1%)	0 (0%)	N/A	N/A
Ethnicity	Caucasian	77 (71%)	63 (58%)	14 (13%)	0.15	0.9
	Non-Caucasian	32 (29%)	26 (24%)	6 (5%)	0.12	0.73
Primary Diagnosis	1) Schizophrenia spectrum & psychotic disorders	86 (79%)	71 (65%)	15 (14%)	0.57	0.45
	2) Personality Disorder	10 (9%)	8 (7%)	2 (1%)	0.63	0.43
	3) Mood Disorder	8 (7%)	7 (6%)	1 (<1%)	0.38	0.54
	4) Diagnosis not defined	5 (5%)	3 (3%)	2 (2%)	2.22	0.14

Secondary Diagnosis	1) Mental and behavioural disorder due to drug use	64 (59%)	47 (43%)	17 (16%)	0.24	0.62
	2) Adjustment disorder	2 (2%)	2 (2%)	0 (0%)	*	*
	3) Disorder of Intellectual Development/disability/mental retardation	5 (5%)	5 (5%)	0 (0%)	*	*
	4) Dissocial personality disorder	11 (10%)	10 (9%)	1 (1%)	0.11	0.74
	5) Anxiety disorder	1 (<1%)	1 (<1%)	0 (0%)	*	*
	6) Other (Drug induced tremor, self-harm, schizophrenia)	3 (3%)	3 (3%)	0 (0%)	*	*
	7) None	23 (21%)	21 (17%)	2 (0%)	0.22	0.64
Referral source	Prison	48 (44%)	40 (37%)	8 (7%)	0.59	0.44
	Court	58 (53%)	46 (42%)	12 (11%)	0.12	0.73
	Other	3 (3%)	3 (3%)	0 (0%)	*	*
Prior MH admissions to a public mental health facility	Yes	85 (78%)	72 (66%)	13 (12%)	0.05	0.82
	No	24 (22%)	17 (16%)	7 (6%)	0.04	0.84

Prior admissions to the forensic inpatient unit	Yes	47 (43%)	40 (37%)	7 (6%)	0	0.99
	No	62 (57%)	49 (45%)	13 (12%)	0.13	0.72

The mean duration of seclusion was 108 minutes, with the longest seclusion event lasting 550 minutes. Seclusion most often lasted less than 1 hour (36%, N=22) followed by 60-119 minutes (34%, N=21) (Table 2).

Table 2. Duration of seclusion (N=61)

Frequency	
<1 hour	22 (36%)
60-119 minutes	21 (34%)
120-179 mins	11 (18%)
>180 mins	7 (12%)

Of the 61 seclusion events, 14 (23%) occurred within 24 hours of admission, 23 (38%) occurred within the first week of admission and 19 (31%), occurred within the first month of admission. Nine (45%) of the 20 patients only experienced seclusion once, whilst 11 patients (55%) experienced more than one seclusion event during the study period.

PATIENT DEMOGRAPHICS

Gender

Of the study sample, male patients represented 74% (n=81) of the total sample, of which 14% (n=15) experienced seclusion. Only 5% (n=5) of the female sample experienced seclusion. A chi-square test was used to evaluate whether patient gender was related to whether seclusion was used or not. The chi-square test was statistically significant for gender X^2 (4, *N*=109) = 15.73, *p .003* (see table 1).

Of the 20 patients who experienced a seclusion event, a chi-square test for goodness of fit (with *a* =.05) was used to assess whether there was a relationship between gender and the use of seclusion. The chi-square test was statistically significant for gender X^2 (1, *n*=20) = 5.00, *p.025* (see table 3). As an index of effect size, Cohen's *w* was 0.5, which can be considered large. Follow up examination of gender and the number of seclusion events experienced (one or more), was not statistically significant (*p*=.44, Fisher's exact test).

Table 3. Seclusion and patient demographics (n=20)

	Gender	Ethnicity	Age range
Chi-Square	5.000	3.200	1.900
df	1	1	2
Asymp. Sig.	.025	.074	.387

Age

The mean age of the secluded patients were 27 years (minimum 18 years, maximum 38 years, standard deviation 6.52). The mean age of the non-secluded patients were 34 years

(minimum 18 years, maximum 66 years, standard deviation 9.10). Patients aged 18–24 years had the highest rate of seclusion (45%, n=20) followed by those aged 25–34 years (35%, n=20) and patients aged 35-44 years (20%, n=20). There were no seclusion events for patients over 45 years of age.

Of the 20 patients who experienced a seclusion event, a chi-square test for goodness of fit (with *a* =.05) was used to assess whether there was a relationship between age range and the use of seclusion. The chi-square test was not statistically significant X^2 (2, *N*=20) =1.90, *p.387* (see table 3).

Ethnicity

Caucasian patients represented the largest proportion of the total sample 71% (n=77), of which 13% (n=14) experienced seclusion. Non-Caucasian patients accounted for 5% (n=6) of the sample who experienced seclusion.

Of the 20 patients who experienced a seclusion event, a chi-square test for goodness of fit (with *a* =.05) was used to assess whether there was a relationship between ethnicity and the use of seclusion. The chi-square test was not statistically significant for ethnicity, X^2 (1, N=20) = 3.20, *p.074* (see table 3).

Diagnosis

To assess whether there was a relationship between primary and secondary diagnoses and the use of seclusion, a chi-square for goodness of fit was completed (with *a* =.05). The chi-square test was statistically highly significant for primary diagnosis, X^2 (3, *N*=20) =26.80, *p<.001,* and secondary diagnosis X^2 (2, *N*=20) = 24.10, *p* <.001. As an index of effect size for primary diagnosis, Cohen's *w* was 1.16, which can be considered large. For secondary diagnosis, Cohen's *w* was 1.09, which can also be considered large (see table 4).

Table 4. Patient diagnosis and use of seclusion (n=20)

	Primary Diagnosis	Secondary Diagnosis
Chi-Square	26.800	24.100
df	3	2
Asymp. Sig.	<.001	<.001

Referral source

Of the total sample, 53% (n=58) were referred from court and 44% (n=48) were referred from prison. Of the patients who experienced seclusion, 11% (n=12) were referred from court compared to 7% (n=8) referred from prison. A chi-square test for goodness of fit was completed (with *a* =.05) to assess whether there was a relationship between referral source (prison, court or community) and the use of seclusion, however, no statistical significance was found (X^2 (1, *N*=20) =.800, *p.371).*

Prior admission to acute and forensic mental health inpatient settings

Of the total sample, 85 (78%) patients had a prior history of admission to a public acute mental health inpatient setting, while 47 (43%) had a prior history of admission to a

forensic mental health inpatient setting. To assess whether there was a relationship between the use of seclusion and prior admissions to acute and forensic mental health inpatient settings, a chi-square for goodness of fit was completed on the patients who experienced seclusion (with *a* =.05). The chi-square test was not statistically significant for either a prior history of admission to a public acute mental health inpatient setting, X^2 (1, *N*=20) =1.80, *p.180*, or prior admissions to forensic mental health inpatient settings, X^2 (1, *N*=20) =1.80, *p.180.*

CLINICAL ASSESSMENTS & INTERVENTIONS FOR THE SECLUDED PATIENTS

Of the 20 patients who experienced a seclusion event 20% (n=4) had a completed 'Coping & Awareness' tool, 50% (n=10) did not and 30% (n=6) of the patients refused to complete the tool. To assess whether there was a relationship between the use of seclusion and the completion (or not) of the 'Coping & Awareness' tool, a chi-square for goodness of fit was completed (with *a* =.05). The chi-square test was not statistically significant, X^2 (2, n=20) =2.80, *p*=.25.

On the day of a seclusion event, the patients were rated with the highest DASA score (7), across all risk domains on 41 occasions (67%); irritability, impulsivity, unwillingness to follow direction, sensitivity to perceived provocation, easily angered when requests denied, negative attitude and verbal threats. Of all the seclusion events, fifteen (25%) did not have a patient risk assessment completed or a reason for not completing the assessment documented in the health record.

At the time of seclusion 79% (n=48) of the patients were being monitored on hourly observations. Only 5% (n=3) of patients were being intensively monitored on 1:1 special and 6% (n=4) were on a 2:1 special (see table 5).

Table 5- Clinical Observation levels at the time of the seclusion (n=61)

Frequency	N (%)
15 mins	6 (10%)
1hrly	48 (79%)
1:1 special	3 (5%)
2:1 special	4 (6%)

PRN Medication Administration

PRN medications were administered within a period of 2 hours before a seclusion event (59%, n=36), during a seclusion event (48%, n=29), and after a seclusion event (25%, n=15). The route of intramuscular medication increased from 17% before a seclusion event to 52% during a seclusion event. Initiation of PRN medication by staff was high throughout the seclusion event, whereas the patient as an initiator of PRN medication, was low (before 8%, during 0% and after 6%). The clinician's assessment of the patient's response to PRN medication indicated a reduction in arousal, however, the recording of the second rating post PRN administration was not completed in approximately half of all seclusion events.

Reason for seclusion

Of the 61 seclusion events, the clinician's justification for seclusion included (in order of frequency), physically injuring themselves or another person (87%), to preventing injury or damage (77%) and persistently causing serious damage to property (34%).

The clinicians described the patient's condition at the time of the seclusion as, physical aggression (90%), verbal aggression (82%), physical aggression to property (48%), delusional (10%) and hallucinating (6%).

Post seclusion care

After the seclusion event 40% (n=8) of the patients had a medication change, 25% (n=5) had a change in their plan of care, 5% (n=1) had a change in clinical observation levels and 30% (n=6) had no change in their care.

DISCUSSION

During the study period, 18% of the patients in the sample experienced seclusion, which is in the lower range of the 44% reported in a forensic study in Australia (Thomas et al., 2009), 42.8% reported in America (Price et al., 2004), 29.6% (Pannu & Milne, 2008), and 15% (Torpy & Hall, 1993), reported in the UK . When compared to acute mental health settings, which report a range of 21% to 59 percent (Raboch et al., 2010), this study provides evidence from one service, that seclusion is not used more frequently in forensic than acute mental health inpatient services, as the literature suggests. Consistent with other studies, this study indicated that the use of seclusion was required only on a small proportion of the total population sample (Lau et al., 2020).

The average duration of seclusion was 108 minutes with the longest seclusion lasting 550 minutes. When compared to the Australian average seclusion duration in public forensic mental health inpatient settings (87.9 hours) (AIHW, 2020), and other studies reported in the literature (23 hours) (Heilbrun et al., 1995), the duration of seclusion at the study site is significantly shorter.

Data from this study suggest that 23% of seclusion events occurred within 24 hours of admission. As noted by Hui, et al. (2013), newly admitted patients are more likely to present with acute symptoms that may pose risks to themselves or others. In addition, patients and staff may feel threatened by each other during the initial stages of the admission (Hui et al., 2013). Patients in particular who may be unfamiliar with the staff and ward routines, may perceive power imbalances between themselves and staff, combined with paternalistic treatment cultures as particularly threatening (Hipp & Kangasniemi, 2021; Hui et al., 2013). However, this study also indicates ongoing seclusion use for up to a month. There may be a number of reasons for this including ongoing symptoms of psychosis or confusion, frustration with ward rules and routines, developing conflict with peers and staff, legal issues and a sense of isolation from the outside world and family (Dickens, Piccirillo, et al., 2013; Knowles et al., 2015; Tomlin et al., 2020).

Whilst other studies have found that female patients tend to experience seclusion more often than male patients (Ahmed & Lepnurm, 2001; Paavola & Tiihonen, 2010; Pannu & Milne, 2008), this study did not. Male patients were secluded three times more often than female patients therefore the null hypothesis was rejected. The reason for this may lie in the low sample population of female patients. Female patients represented only 26% of the total sample, and only 5% of these experienced seclusion. Consist with the study by Thomas et al. (2009), who reported that male patients were secluded more often than female patients (47%

and 35% respectively), this study also identified that male patients were secluded more than females (14% and 5% respectively) which supported hypothesis 2.

Seclusion was used more often with patients aged between 18 and 24 years which supports hypothesis 2. The mean age of the secluded patient in this study was 27 years, which is consistent with other study results (Ahmed & Lepnurm, 2001; Pannu & Milne, 2008; Thomas et al., 2009). As noted by Salib et al. (1998), a combination of young age, a more energetic and aggressive patient who is experiencing psychotic experiences may act defensively or be more reactive to staff.

Caucasian patients were more likely to experience seclusion and restraint in this study though this was not statistically significant. Therefore, the hypothesis that ethnic minority patients were secluded more often was not supported. These results are not consistent with other studies which have suggested that ethic minority groups are more likely to experience seclusion (Pannu & Milne, 2008). This is an important and welcoming find given that non-Caucasian and Indigenous populations are overrepresented in Australian prison populations (Hansen et al., 2020). As an example, at this study site, Aboriginal Australians represented 30% of admissions to the service despite only constituting 3.1% of the Western Australian population (Durey et al., 2014).

In this study, patients with a primary diagnosis of schizophrenia spectrum and other psychotic disorders, were secluded at higher rates than patients with other diagnoses (Kalisova et al., 2014; Paavola & Tiihonen, 2010), therefore hypothesis 3 was supported. The presence of high levels of positive symptoms in this patient group that may manifest itself in hostile and aggressive behaviours may account for this finding. In addition, 77% of the patients who experienced seclusion had a secondary diagnosis of mental and behavioural disturbance due to drug use which may exacerbate mental and behavioural disturbances.

Sixty percent of the patients who experienced seclusion were referred from the courts and 40% were referred from the prisons, though this was not statistically significant. This may be an indication of patient acuity with patients referred from courts having experienced recent illicit drug use which affects their behaviour and mental health. Patients referred from prison may be less likely to have exposure to drugs due to the stringent security protocols of the prison system.

Of the patients who experienced seclusion, 65% of the patients had prior admissions to mental health services, while for 65%, it was their first admission to forensic mental health inpatient services. Patients being admitted to a forensic inpatient setting for the first time (having previously been admitted to less secure and less restrictive acute mental health inpatient settings), may find the rules and procedures confronting, distressing and traumatising which may lead to aggressive behaviours

Consistent with the studies of Heilbrun et al. (1995) and Pannu & Milne (2008), violence and aggression were the main reason for seclusion, which suggests that the risk posed by the patient had exceed the capacity of the staff to safely manage the situation in a less restrictive manner

Low rates (20%) of completed 'Coping & Awareness' tools for those patients who experienced a seclusion event were a cause of concern. Such tools have been identified as part of the six core strategies as successful strategies in reducing seclusion rates (Oster et al., 2016). However, the capacity for clinicians to complete such tools with patients on admission, especially if patients are confused, agitated or experiencing psychotic symptoms, is challenging and potentially could provoke aggression.

In 25% of the seclusion events, the patients did not have a completed DASA. The completion of risk assessments is important in forensic mental health inpatient settings. Such assessments give clinicians the capacity to plan and develop individualised care plans to support patients. In addition, a DASA profile provides staff a reference point for the patients

progresses on a shift-by-shift basis which can enhance not only the patient's care, but also the safety of staff.

Given that a high percentage of patients were identified as having the highest score on the DASA, it was interesting that 79% (n=48) of the patients were being monitored on hourly observations and only 11% were being cared for using 1:1 or 2:1 special. Alternative, and less restrictive methods of managing challenging risk behaviours include clinical observations conducted by nurses (Whitehead & Mason, 2006). Such observations vary in their definitions across organisations but can be generally described as general observations (e.g., hourly checks), intermittent observations (usually 15- or 30-minute intervals), close observations or constant 'specialling' (either within eyesight or within arm's length) (Whitehead & Mason, 2006). The reason for the results in this study may be related to the risk the patient posed towards the staff, specifically the patient was deemed too high risk but this information could not be elicited from the health record.

Findings regarding PRN use suggest that clinicians are not using medication as a first line intervention when managing a deteriorating patient. Coupled with low rates of seclusion events, this suggests that other less restrictive interventions were being implemented and warrant further investigation.

CONCLUSION

The results of this study provide a snapshot of the rates and reasons for the use of seclusion in an Australian forensic mental health inpatient setting over a 6-month period. The results offer a promising picture of a low reliance on seclusion. Seclusion was used on a small number of patients who presented a high risk, specifically, young, Caucasian, males with a diagnosis of schizophrenia or a psychotic disorder and drug related symptoms. The low rate of seclusion on female patients, non-Caucasian patients and patients over 45 years indicate a positive shift in forensic mental health care. This study indicates that seclusion was required, as an intervention of last resort, for a small proportion of high-risk patients. Therefore, the results of this study may assist forensic mental health inpatient services to consider evidence-based practices and local initiatives to tailor care provision for patients identified as a risk for seclusion.

LIMITATIONS OF THE STUDY

As this study was conducted retrospectively, the collection of data was reliant on the accuracy and reliability of health records. To ameliorate potential quality issues, a number of data sources were used throughout the data collection process to cross-reference and confirm the information. A prospective study could improve the research design. The generalizability of the study results outside of Australia are not known due to variations in legislation and local policies and procedures.

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DECLARATION OF CONFLICTING INTEREST

The authors declare that there is no conflict of interest.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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7.3 Summary

This quantitative study identified that patient gender and diagnosis influenced the use of seclusion. Low rates of seclusion use, particularly with non-Caucasian and female patients were reported, which indicates a positive step towards reducing seclusion at the study site. The results of this study also provided important insights into care provision pre, during and after seclusion use, including patient assessments, medication administration practices and patient monitoring systems. Opportunities were identified to optimise patient care and manage risk.

7.4 Chapter precis

Chapter seven presented a research study that explored patient characteristics that may influence RP use. Chapter 8 will now present a synopsis of the four research studies completed as part of this thesis. The results of all four studies will be integrated and discussed, with recommendations made regarding implications for health professionals,

health services, policy makers and training and education services. Implications of the results will be discussed with recommendations for future research suggested.

CHAPTER 8

DISCUSSION AND RECOMMENDATIONS

8.1 Introduction

The concluding chapter of this thesis summarises and integrates the major findings of the research conducted into the use of RPs in the AFMHIS. Implications of the findings are presented from clinical, professional, organisational and education/training perspectives. Finally, the significance and contributions of the research is discussed and recommendations for further research suggested.

8.2 Summary of key research findings

The overall aim and objectives of this thesis was to explore the use of RPs, specifically, seclusion, restraint, and PRN psychotropic medication, in an AFMHIS. A focus of the research was to understand why RP rates in AFMHIS remain high while other areas of mental health have seen reductions. It sought to identify what makes the AFMHIS patient population unique that leads to the high RP use. It also explored what makes the AFMHIS nurses utilise RPs practices and what changes in policy and practice can assist to reduce rates of RP use in this setting. A summary of the key findings of the four research studies can be found in table 8.1.

The research identified several key findings. Firstly, nurses working in forensic mental health inpatient settings use PRN psychotropic medications, comfort rooms, and assessments differently from nurses working in acute mental health inpatient units. These results highlight the importance of standardised screening and assessment procedures and the need for training on alternatives to PRN psychotropic medication use. Secondly, the use of seclusion was influenced by the presence of senior nurses on the wards. Thirdly, patient

gender and diagnosis had a statistically significant influence on the use of seclusion. Finally, lower rates of seclusion use and low rates of non-Caucasian patients experiencing seclusion were found.

Table 8-1. Summary of key finding from four research studies

Thesis chapter	Key Findings
Chapter 4 – Nurses attitude towards PRN psychotropic use	**Quantitative findings** Individual nurses' attitudes, knowledge, and skills influenced decisions on the use of PRN medications in acute and forensic mental health inpatient settings. Practice differences between nurses in forensic and acute mental health settings were identified in: • The use of PRN medications to address symptoms of nicotine, alcohol, and other substance withdrawal • The use of comfort rooms and the process for undertaking assessments of patient's presenting symptoms . **Qualitative findings** • Theme 1 - Current PRN prescribing practice- Improved accountability required regarding the prescribing and administration of PRN medications. • Theme 2: Responding to patient distress- Improved practices in administering PRN medications at the optimum time. • Theme 3: Lack of alternative interventions- Improved nurse education and training regarding alternative interventions to PRN medications.
Chapter 5 – Critical factors to assist nurses reduce the use of RPs	Four variables were found as influencing nurses' practice experiences: • working in a tough but interesting setting; • speciality skills and knowledge; • exposure to aggressiveness and resilience as a protective factor; • the importance of teamwork and leadership.
Chapter 6 – Nurse characteristics and their influence on seclusion	Increased seclusion use was associated with: • the presence of the lead nurse position • an increased number of registered nurses on duty

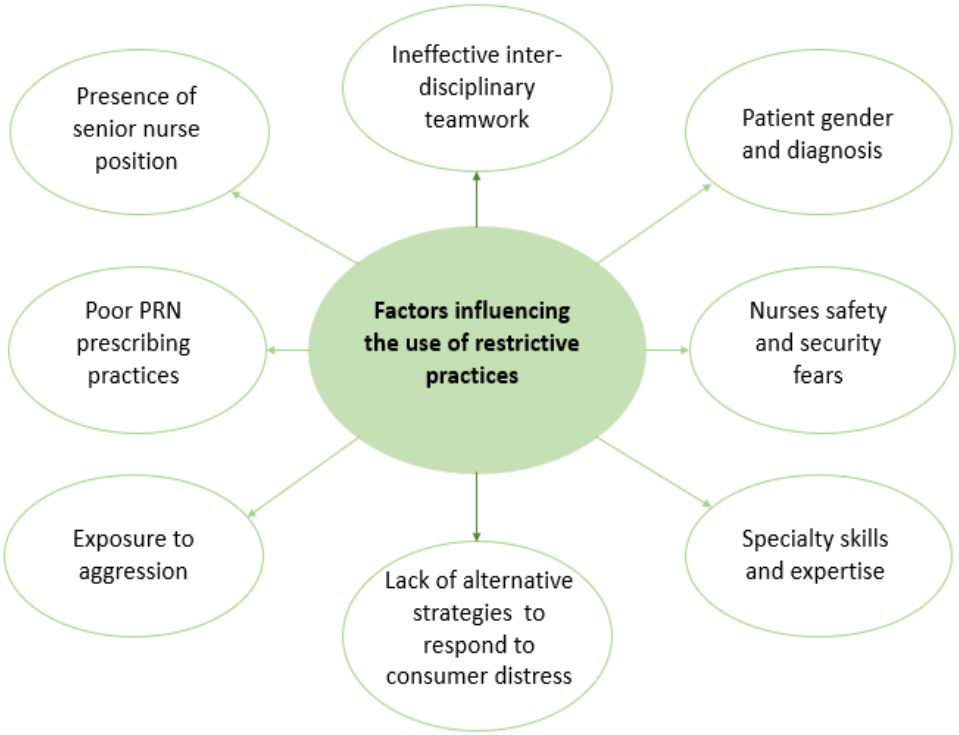
	Decreased seclusion was associated with: • the presence of the shift coordinator. No statistically significant findings were found related to seclusion use and: • Nurse to patient ratios • Employee type, (i.e., permanent versus agency or casual staff) • The number of nurses undertaking an overtime shift • Staff gender • The presence of security officers on the wards • Day of the week Clinical acuity (including bed occupancy, admissions and specials) had minimal impact on seclusion events, Seclusion events occurred most often on day and late shifts. February (summer season in Australia) was associated with a lower rate of seclusion events, and May (Autumn season in Australia) was associated with a greater rate of seclusion events.
Chapter 7 – Patient characteristics and the use of seclusion	Rates of seclusion use are low when compared to other AFMHISs. Patient characteristics that increased the likelihood of a seclusion event occurring: • Gender - male • Diagnosis - schizophrenia spectrum and other psychotic disorders No statistically significant findings were found related to seclusion use and: • Age range • Ethnicity • Referral source (prison, court or community) • Prior history of admission to a public acute mental health inpatient setting or forensic mental health inpatient settings • Completion (or not) of the ‘Coping & Awareness’ tool

8.3 Integration of mixed methods research

Once integrated, the research findings from all four studies provide evidence of eight factors that had an influence on the use of RPs in the AFMHIS (see figure 8.1). Ineffective teamwork, combined with deficits in PRN prescribing practices, and not having alternative options (other than to use RPs), led to nurses fearing for their safety when working with aggressive patients. The results suggest RPs were used within the context of maintaining staff and patient safety when faced with the risk of imminent violence or to manage behavioural disturbance and patient distress.

Overall, these results indicate that a lack of procedural robustness and quality control (such as clinical audits) existed at an organisational level, which culminated in inconsistent assessments and clinical care. As a result, the type and quality of care was dependent on the individual nurses' knowledge, skills and attitudes rather than policies that should be influenced by evidence-based practice.

Figure 8-1. Eight factors influencing the use of RPs in the AFMHIS



8.4 Implications of the research findings

The implications of the research findings are now presented from clinical, professional and education/training perspectives.

8.4.1 Clinical implications

8.4.1.1 The importance of nurse leadership to support front-line staff

A major finding of this research was the influence of nursing roles and leadership on the use of seclusion, rather than staffing levels or working conditions as hypothesised. The presence or absence of a nurse leader influenced seclusion use (Chapter 5), with the seclusion use increasing with the presence of the lead nurse position and seclusion decreasing with the presence of the shift coordinator. The increased use of seclusion with the presence of the lead nurse was a surprising result which requires further research as it may indicate a low threshold for seclusion use at an individual level. The quantitative study data (Chapter 6) identified that the shift coordinator role was deemed a critical role by nurses and considered an essential element to a well-functioning team. In addition, the data revealed that inconsistent leadership styles destabilised the nurses and created an element of fear. Fear led to the nurses aligning themselves with their peers who, while not holding official leadership roles, they regarded as displaying leadership qualities that generated a sense of safety within the team. This finding adds further to the evidence of how nurses use both formal and informal mechanisms of support, particularly after clinical incidents (Stevenson, Jack, O'Mara, & LeGris, 2015; Zhang, Zheng, Cai, Zheng, & Liu, 2021). The results are consistent with the findings of Stevenson et al. (2015), who reported that nurses accessed formal support such as debriefing and injury management, from nursing leadership roles, but most often sought informal support from colleagues. The implications of these important findings reinforce the importance of nurses feeling supported and safe, and having an available resource to seek guidance from (Ching et al., 2010; Goodman et al., 2020;

Markham, 2022). The importance of leadership in reducing seclusion and restraint is supported by frameworks including the six core strategies which advocates for leadership to support organisational change, as well as the use of data to inform practice, workforce development, the use of RP prevention tools, debriefing and embedding consumer roles within inpatient settings (Azeem, Aujla, Rammerth, Binsfeld, & Jones, 2017; Ching et al., 2010; Huckshorn, 2008). While prior studies and authors in the literature have extolled the importance of nurse leadership and seclusion reductions, this research provides significant evidence of the connection between consistent and continuous senior nurse support, as seen by the shift coordinator role, with patient outcomes. In order to foster leadership and support emerging leaders, organisations must invest in mentorship initiatives, facilitate time off the wards for nurses to participate in clinical supervision, encourage the development of strong professional networks, and the formation of collegial connections with peers (Cleary, Thomas, & Hungerford, 2015).

8.4.1.2 Maintaining robust assessments of patients to facilitate safe care

The completion of risk assessments on patients is considered an important first step in reducing the risk of aggression from patients towards staff and others in AFMHIS (Maguire, Daffern, Bowe, & McKenna, 2019; Nicholls et al., 2009; Rodrigues et al., 2021), therefore, the research finding that 25% of the secluded patients did not have a completed DASA on the day of a seclusion event is concerning. The value of utilising DASA assessments to determine appropriate clinical care was highlighted by recent research, which demonstrated that the completion of the DASA tool in AFMHIS increased the frequency of interventions conducted by nurses, such as providing PRN medications, limit setting, close observations and giving reassurance (Maguire et al., 2018). Consequently, an absence of a DASA assessment represents a significant missed opportunity for nurses to identify patients who are more likely to become aggressive, and enables them to dedicate resources to meet the

patient's needs and reducing the need for RPs (Maguire et al., 2019). In addition, while 67% of the patients were rated with a DASA score of 7 (the highest score), most patients (79%), were being monitored on hourly observations and only 11% were being cared for using 1:1 or 2:1 special. The clinical reasons for this require further evaluation, however, it does raise questions regarding the process undertaken to determine the appropriate observations level consistent with the risk level presented.

Despite the seriousness of restricting a patient's movement, liberty and autonomy through the application of RPs (Cowman et al., 2017), the quantitative research results (Chapter 7), highlighted concerning inconsistencies in the completion of assessments such as 'coping and awareness' tools and PRN efficacy assessments undertaken before, during and after administration. The low rates of completed 'coping and awareness' tools signifies another missed opportunity to engage with patients to support them to identify and manage their relapse symptoms. The findings indicate that clinical practices are not always consistent with evidence-based practice. Importantly, failing to conduct and document timely patient assessments, evaluations and decision-making are also in contravention of the Nursing and Midwifery Board of Australia Registered Nurse Standards for Practice (Nursing and Midwifery Board of Australia, 2016). The findings clearly highlight the importance of nurses providing comprehensive care and maintaining defensible documentation regarding the outcome of their assessments and the interventions that they undertake.

8.4.1.3 Collaboration and cohesion of the inter-disciplinary team

Nurses do not perform their roles in isolation (Martin et al., 2013), and the quality of patient care can be affected when the functioning of the inter-disciplinary team is compromised (Björkdahl, Hansebo, & Palmstierna, 2013; Martin et al., 2013; Stevenson & Taylor, 2020). This was evident in the study on PRN medications (Chapter 4), whereby study participants reported concerns regarding a lack of inter-disciplinary reviews of

prescribed PRN medications to determine if adjustments were required to the patient's regular prescribed medications. As a result, high rates of PRN use were justified by nurses to provide safe care to agitated and distressed patients, which has the potential to compromise the physical health of the patient. Effective teamwork was also identified as being a critical element in nurses feeling physically and psychologically safe (Chapter 5). This highlights the importance of nurses working collaboratively with all members of the inter-disciplinary team. In addition, nurses are uniquely positioned to advocate for forensic mental health patients who are often stigmatised and discriminated against (Askew, Fisher, & Beazley, 2020; Martin et al., 2013; McKenna et al., 2017), by ensuring patient rights are maintained, and least restrictive care is delivered. Services must also build in mechanisms to enhance inter-disciplinary collaboration and cohesion, such as team-building programs and group clinical supervision.

8.4.1.4 Implementing patient tailored initiatives

The use of seclusion was found to have a statistically significant association with patient age and gender (Chapter 7). In addition, younger, Caucasian males, and patients referred from courts were secluded most often. These results are important and may assist services to consider such patient characteristics when developing and evaluating their models of care and procedures to ensure individualised care and support for this group of patients (Mathias & Hirdes, 2015). As an example, the notion that patient characteristics may influence patient outcomes and the use of RPs has prompted Canada to incorporate gender-specific indicators for policy and intervention strategies as outlined within the Canadian Mental Health Strategy (Mathias & Hirdes, 2015).

8.4.2 Professional implications

8.4.2.1 Forensic mental health nursing specialty skill and identity

Only 51.4% of nurses in the study regarding nurses' attitude towards PRN use had specialist mental health nursing qualifications. The issue of the loss of a skilled specialist acute and forensic mental health nurse workforce, due to changes in university curricula, has been debated in the literature (Edwards-Fallis, 2007; Happell & Cutcliffe, 2011; Martin, 2009; Wynaden, 2010). Indeed, research evidence has demonstrated that professional education and training have left nurses working in the AFMHS feeling unprepared, unsupported and fearful (Harris et al., 2015). Such feelings can result in nurses using RPs as a first line intervention while lacking confidence and skills in applying less restrictive alternatives. Some have argued that all nurses entering forensic mental health nursing practice should be required to complete a professionally recognised postgraduate specialty education programme (Bowen & Mason, 2012). Improved under-graduate and post graduate education can assist nurses prepare for employment in the AFMHIS by forging the links between theory and practice, develop their confidence in their skill set and learn important aspects of assessments and interventions including alternatives to RPs. Notwithstanding, nurses also have a professional responsibility to remain updated on practice guidelines, such as in the use of medications and alternatives to RPs.

8.4.2.2 Working in the shadow of fear

Qualitative results indicate that nurses working within the AFMHIS perceive the environment as being volatile and unpredictable. The use of seclusion was therefore used within the context of maintaining staff and patient safety, and security. However, while the findings highlight the volatile environment in which forensic mental health nurses find

themselves working, the low prevalence rate of RP use provides testament to the nurses' endeavours to work within the principles of least restriction in a challenging environment.

The results highlight resilience and regular clinical supervision as important self-care strategies for nurses working with this complex and challenging patient cohort. Clinical supervision is an effective method of self-reflection which enables nurses to consider their practices, attitudes and experiences in the clinical setting (Stevenson & Taylor, 2020).

8.4.3 Education/training implications

8.4.3.1 Nurse leadership training

The critical role leadership skills have on the use of seclusion has been demonstrated, despite this, there are no prerequisites to hold any leadership qualifications or credentials to gain a senior nurse role at the study site. Therefore, the development and implementation of a leadership education and training package is highly recommended. In particular, services must proactively identify and support emerging leaders through performance appraisals and talent management programs.

8.4.3.2 Accountable and defensible documentation

Opportunities for improved staff education and training, particularly for patient assessment and substance abuse management, were identified. In addition, education and training regarding the importance of defensible documentation are highlighted. Organisations can ensure their nurses are educated regarding the latest evidence-based practice principles by providing ongoing staff development programs and ensuring policies and procedures support these approaches.

8.4.3.3 Working with high-risk patients

The reported low rates of seclusion use, and in particular low rates of non-Caucasian patients experiencing seclusion, demonstrates a positive picture of culturally safe and least restrictive clinical care provision, and are to be commended. These results provide evidence, consistent with other studies (Lau et al., 2020), that seclusion is being used as a last resort on a small proportion of patients who do not respond to less restrictive interventions. However, fluctuations in use of RPs can occur when nurses lack training in skills to provide safe care for high-risk patients. This is particularly pertinent for the AFMHIS where forensic mental health patients are often detained against their will (Edwards-Fallis, 2007), and are often resentful and hostile of their detainment. Antisocial behaviours can present challenges for nurses working in this setting (Thomas et al., 2009; Walker & Tulloch, 2020). In order for nurses working with this high-risk patient population to do so with confidence and safety, they need to be trained and supported (Edwards-Fallis, 2007; Mathias & Hirdes, 2015). To successfully minimise the use of RPs, nurses must have the appropriate skills and expertise to implement strategies that can predict, prevent and manage aggression and violence.

Stigma of forensic mental health patients is well documented (Goodman et al., 2020; Tomlin et al., 2020), and negative attitudes towards forensic mental health patients by nurses caring for them can have a detrimental impact on care delivery to them (Goodman et al., 2020). The use of derogatory terms, the imposition of strict rules, condescending, and negative communication styles can all contribute to a cycle of aggression and seclusion within the AFMHS (Askola et al., 2018; Dickens et al., 2013; Markham, 2022). For this reason, nurses working with this patient group should undertake training that focuses on breaking down the barriers of stigma which can assist nurses to implement strategies to cope in challenging situations and challenging patients. Regular training can assist nurses to be non-judgemental (Bowen & Mason, 2012), demonstrate empathy, unconditional positive

regard (Huckshorn, 2007), and therapeutic optimism (Happell & Koehn, 2011a; Martin et al., 2013).

Many forensic mental health patients have a history of trauma (Markham, 2022; Smith, Ashbridge, Altenor, Steinmetz, Davis, Mader, & Adair, 2015). McKenna et al. (2019) found that all patients in their study had experienced trauma at some point in their lives, with 75% of patients experiencing trauma in childhood and 92% in adulthood. Therefore, training programs regarding trauma informed principles and care delivery are crucial in assisting nurses to be cognisant of the trauma carried by the individual patients, how that may manifest in their clinical presentation and strategies that nurses can implement to provide a safe and caring environment.

8.5 Contributions of this thesis to the identified research gaps

The findings of the systematic literature reviews (Chapter 2), highlighted the paucity of research on RP use in AFMHIS when compared to acute mental health care (Lau et al., 2020). In addition, the scarcity of studies conducted in Australia was evident with only five studies, of the 60 studies identified, having been completed in Australia (Hansen et al., 2020; Hui et al., 2013; Lawrence et al., 2021). Studies conducted thus far have produced conflicting results (Griffiths et al., 2018). As data is now indicating an increase in RP use in AFMHIS (AIHW, 2020), there is a new level of urgency to understand factors that contribute to these complex and controversial clinical interventions.

The systematic literature review (Chapter 2) identified several research gaps which have been addressed as outlined in Table 8.3.

Table 8-2. Thesis contribution to the research gaps

Chapter/Publication	Gaps in research identified in the literature reviews
Chapter 4 - Barr, L., Wynaden, D., & Heslop, K. (2018), Nurses' attitudes towards the use of PRN psychotropic medications in acute and forensic mental health settings. International Journal of Mental Health Nursing, 2018-02, Vol.27 (1), p.168-177. DOI: 10.1111/inm.12306	• Staff perspectives on the indicators for restrictive practice use and the influence of the multi-disciplinary team (Hui, et al., 2013). • The emotional experiences of staff during and after the use of restrictive practices (Lawrence et al., 2021) • Explore other aspects of restrictive practice use that also have a detrimental impact on patients (Lawrence et al., 2021)
Chapter 5 - Barr, L., Wynaden, D., & Heslop, K. (2019). Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices. *International Journal of Mental Health Nursing*, 2019-08, Vol.28 (4), p.888-898. DOI: 10.1111/inm.12588	• Staffs' experiences of violent incidents and the use of seclusion and restraint (Hinsby & Baker 2004). • Qualitative research incorporating interviews with staff to examine practice changes, culture and attitudes that may be helpful in reducing seclusion use (Ching et al., 2010). • The emotional experiences of staff during and after the use of restrictive practices (Lawrence et al., 2021). • Drivers and contributors that lead to the use of restrictive practices in the forensic mental health inpatient setting (Happell & Koehn, 2010)
Chapter 6 - Barr, L., Heslop, K., Wynaden, D. & Albrecht, A. (2022). Nursing staff composition and its influence on seclusion in an adult forensic mental health inpatient setting: the truth about numbers. *Archives of Psychiatric Nursing*, *41*, 333–340. DOI: 10.1016/j.apnu.2022.09.011	• Examine the dynamic nature of interactions between patient and nurses and the experiences of nurses with differing levels of training and experience (Sequeira & Halstead, 2004). • Staff responses to aggression (Martin & Daffern, 2006).
Chapter 7 - Barr, L., Heslop, K., Wynaden, D. (in press). Patient characteristics and the use of seclusion in an adult forensic inpatient mental	• Patient age as a predictor of seclusion frequency and duration (Reimann & Nussbaum, 2011). • Pannu & Milne (2008), seclusion use with female patients.

health service in Australia: a quantitative analysis and examination of clinical interventions. *British Journal of Mental Health Nursing.*	• Understanding treatment factors in different racially groups (Price et al., 2004). • Determine if restrictive practices are used more in forensic mental health settings than acute mental health settings (Hui et al., 2013). • Patient gender (Hansen et al., 2020; Hui et al., 2013) age and length of admission and the use of restrictive practices (Hui et al., 2013). • Staff perspectives on the indicators for restrictive practice use (Hansen et al., 2020). • Gender specific risk factors and identify timely and appropriate interventions that may reduce the use of seclusion in the forensic mental health inpatient settings (Hansen et al., 2020) • The impact of post-restrictive intervention debriefing remains understudied (Lawrence et al., 2021).

8.6 Significance

To the best of our knowledge, this is the first original study exploring nurse and patient characteristics, and their influence on the use of RPs in an AFMHIS in Western Australia. The use of a mixed methods research design facilitated the production of rich quantitative and qualitative data which provided practical and clinically significant results. The results of this research strengthen existing knowledge while also eliciting new information in understanding the influence of patient and nurse characteristics on the use of RPs. When published in peer reviewed journals the findings of this research will add to existing literature in the area. Importantly, the findings of the research are transferrable to similar services in other jurisdictions and countries. The research is very important with the results potentially benefiting patients, healthcare organisations, forensic mental health nursing professionals and education/training services.

8.6.1 Significance for healthcare organisations

The research results are particularly important for healthcare organisations as they focus on issues impacting the delivery of patient care to a vulnerable patient population – forensic mental health patients. By examining patient characteristics and their influence on seclusion use (Chapter 7), the research responds to calls from several scholars (Hansen et al., 2020; Hui et al., 2013; Pannu & Milne, 2008; Price et al., 2004), for further research on the influence of gender, ethnicity and diagnosis and the use of RPs. The results provide new knowledge which may benefit services in augmenting care pathways and models of care to provide early interventions for this patient population. The recommendations made may assist organisations to consider opportunities for practice and policy improvements.

This research produced new knowledge regarding nursing staff composition and its influence on seclusion. Such knowledge can assist services better support nurses and manage

human resourcing during periods of high acuity and ensure staffing composition optimises staff and patients' feelings of safety and care.

There has been limited research into the impact of nursing interventions in the AFMHIS (Maguire et al., 2018). Therefore, the study examining the clinical assessments and interventions used prior to, during and after seclusion use provides important contextual information. These findings may provide a benchmark on which other services can examine their own practices.

As noted by Lawrence et al. (2021), 67% of studies in the literature focused specifically on seclusion and restraint. This research responds to this by providing a broader exploration of RPs which includes PRN psychotropic medications. The findings are important due to the potential harmful effects of PRN psychotropic medications on patients, and provides valuable insights into nurses' practice, which contribute significantly to an under-researched subject.

The paucity of Australian research, and more specifically Western Australian identified in Chapter 2, is addressed in this research study. This is particularly important when considering cultural implications from both staff and patient perspectives. Opportunities to enhance cultural safety in the AFMHIS are critical in reducing the gap in health outcomes for ethnic minorities and vulnerable patient groups.

8.6.2 Significance for forensic mental health professionals

This research study provides a significant and important contribution to the field of forensic mental health nursing and the use of RPs. Importantly, the findings of this research provided a voice for nurses working in the AFMHIS and responds to a lack of research in the literature on the emotional experiences of forensic mental health staff and its influence on the use of RPs (Lawrence et al., 2021). Nurses working in this specialty area are reported to feel

isolated (Hui, 2016; Puzzo, Aldridge-Waddon, Bush, & Farr, 2019). This research study provided two opportunities to gain insights into the attitudes, experiences and decision-making of nurses when working in the AFMHIS (Chapter 4 and Chapter 5). This insight is important and can inform education, policy and practice changes to ensure quality and safety in health care delivery.

Providing an insight into what it is like working within a AFMHIS may facilitate more positive attitudes towards forensic mental health nurses. Indeed, the data on the use of seclusion within the study site provides a positive indication that nurses within the service are implementing skills and interventions to only use seclusion as an intervention of last resort. In addition, nurses working in other AFMHISs may find the testaments of the study participants as providing solace, reducing their feelings of isolation and providing comfort in knowing that their lived experience is experienced elsewhere.

The research findings demonstrate the important role forensic mental health nurses play in integrating recovery focused care and maintaining the safety and security of staff, patients and visitors. As front-line workers, maintaining least restrictive patient care when faced with patient aggression and violence, relies on the application of specialised nursing skills including communication, listening and interacting (both verbally and non-verbally) (Power et al., 2020). Managing patient distress during times of crises is critical in delivering therapeutic care and fostering patient engagement.

Researching the use of RPs is important for nurses as they represent the largest group within the health service workforce (McKenna, Furness, Dhital, Park, & Connally, 2014), are front-line workers who provide 24 hour direct patient care, and therefore can bring about change in clinical practice and improve the quality-of-care delivery.

8.6.3 Significance for education/training organisations

Opportunities to enhance staff training are identified that builds the capacity of nurses and prepares them for their role in providing culturally safe care that is respectful and enhances the patient experience. Recommended opportunities for staff training and support, including strong leadership and comprehensive assessments and interventions, can contribute to a more positive and safer workplace.

8.7 Limitations of the research

The research presented in this thesis has limitations. The studies examining nurses' attitudes and experiences assumed that nurses authentically communicated their experience of working in the AFMHIS. However, authenticity of the participant's experiences could have been affected by the positioning of the research participants within structures of power and peers (Grant, 2014). Specifically, participants may have responded to the research questions in a way that portrayed a favourable impression of themselves, or their organisations for fear of reprisal. However, the possibility of this occurring was minimal as the study participants expressed both positive and negative attitudes and experiences. The research studies did not include patient views which would have enriched the analysis.

The study examining nurses' attitudes towards the use of PRN psychotropic medications in acute and forensic mental health settings (Chapter 4), adapted and utilised the "Attitudes towards PRN medication use survey" (ATPMUS), which had not been psychometrically validated.

For both retrospective data collection audits, data collection was reliant on the accuracy of the documentation recorded in the medical record by nurses. To address any potential data omissions or quality issues, several data sources were used to cross-reference

and confirm the information throughout the data collection process. In addition, a potential methodological weakness in both quantitative studies may have been the study period of six months, which was relatively short. A longer data collection period may have provided richer data however, the time constraints associated with undertaking a PhD prevented a longer data collection period.

8.8 Recommendations for further research

Further research in the following areas is recommended:

- Identifying opportunities and barriers for practice improvement regarding PRN psychotropic medication use. Examining the use of PRN psychotropic medications from the point of prescription to administration, and evaluation.
- Evaluate why and what aspects of the senior nurses' presence influence the use of RPs.
- Explore which leadership qualities support emerging leaders.
- Exploring barriers and facilitators to collaborative and cohesive inter-disciplinary team functioning in this setting.
- Identify barriers to undertaking clinical assessments such as DASA and 'Coping and Awareness tools' from the perspectives of patients and staff.
- Explore the factors that influence the use of RPs from a patient perspective, such as triggers for aggression, and identify strategies and interventions that may inhibit RP use.

8.9 Conclusion

This research presented a multiphase mixed method research design as a series of chapters and peer reviewed journal publications. To achieve the stated aims and objectives the research began with a systematic literature review to explore and synthesise international

studies and identify gaps in research. The literature review identified a number of research gaps requiring further examination. These gaps laid the foundation for critical enquiry into the use of RPs within the AFMHIS, the need for this research and the subsequent research design. As a result, the aims and objectives of this research were addressed through a series of peer reviewed journal publications using a multiphase mixed method research design (QUAN-qual). Firstly, one quantitative study examined nurses' attitudes and experiences related to the use of PRN psychotropic medication use in acute and AFMHISs, this was followed by a qualitative study that explored the experiences of nurses working in the AFMHIS and sought to identify critical factors that could assist nurses to reduce the need to use RPs. Thereafter, a quantitative study was completed which reported on nurses' characteristics and their influence on the use of seclusion in the AFMHIS. Finally, a quantitative study was completed which examined patient characteristics and their influence on the use of RPs and clinical interventions before, during and after seclusion use.

The use of a mixed methods research design facilitated a comprehensive exploration of a complex phenomenon from multiple perspectives and offered unique insights which can inform practice and policy development. The research approach enabled the researcher to elucidate the attitudes, experiences and perceived skill set of nurses working in the AFMHIS. In addition, the rates of seclusion, interventions used pre, during and after seclusion, and patient and staff characteristics influencing seclusion, were reported. Integration of the research findings identified eight factors that influenced the use of RPs.

The findings indicate that while working in an AFMHIS is volatile and unpredictable, leaving nurses fearing for their safety, nurses are committed to the profession and strive to provide least restrictive care. The use of RPs is bound up in an innate need for nurses to fulfill their duty of care by maintaining the safety of staff, patients and visitors. Importantly, the qualitative research provided a platform to represent the voices of the nurses working in

this complex and challenging clinical setting, while the quantitative findings revealed a number of positive indicators of nurses striving to avoid RPs. Nurses in this research were cognisant of what they required to provide a sense of safety in the clinical setting: inter-disciplinary cohesion and collaboration, evidence-based standards, guidelines and procedures, organisational support, education and training.

Finally, the research demonstrates that globally forensic mental health nurses work in challenging environments. Therefore, research that provides evidence-based information that enables them to have safer workplaces and provide quality care within the least restrictive environments is critical to both the nursing workforce and patient health outcomes. This research adds to the body of literature that nurses can utilise to enhance their practice and workplace environments.

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APPENDICES

Appendix A - Publication 1 - Copyright permission

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ISSN	2049-5919	Portion	Chapter/article

LICENSED CONTENT

Publication Title	British journal of mental health nursing	Country	United Kingdom of Great Britain and Northern Ireland
Date	01/01/2012	Rightsholder	MA Healthcare Limited
Language	English	Publication Type	Journal

REQUEST DETAILS

Portion Type	Chapter/article	Rights Requested	Main product
Page range(s)	1-11	Distribution	Worldwide
Total number of pages	11	Translation	Original language of publication
Format (select all that apply)	Print, Electronic	Copies for the disabled?	No
Who will republish the content?	Academic institution	Minor editing privileges?	No
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NEW WORK DETAILS

Title	Reducing the use of restrictive practices in adult forensic mental health services – An explorative study into patient and nurse factors that prevent or promote their use.	Institution name	Curtin University
		Expected presentation date	2024-01-31
Instructor name	Lesley Barr		

ADDITIONAL DETAILS

Order reference number	N/A	The requesting person / organization to appear on the license	Lesley Barr

REUSE CONTENT DETAILS

Title, description or numeric reference of the portion(s)	Journal article	Title of the article/chapter the portion is from	N/A
Editor of portion(s)	N/A	Author of portion(s)	Lesley Barr, Dianne Wynaden, Karen Heslop
Volume of serial or monograph	N/A	Issue, if republishing an article from a serial	N/A
Page or page range of portion	1-11	Publication date of portion	2022-08-01

Appendix B - Comparison of literature review results by author

Author(s)	**Country**	**Barr (2011)** **Date range:** January 2001 to December 2011	**Hui et al., (2013)** **Date range:** January 1980 to January 2012	**Barr et al., (2022)** **Date Range:** January 2010 and December 2020	**Hansen et al., (2020)** **Date Range:** None	**Lawrence et al., (2021)** **Date range:** June 2015 to May 2020
Tomlin et al. (2020a)	United Kingdom					✓
Tomlin et al. (2020b)	United Kingdom					✓
Walker & Tulloch (2020)	United Kingdom					✓
Askew et al. (2020)	United Kingdom					✓
Flammer et al. (2020)	Germany					✓
Chu et al. (2020)	United Kingdom					✓
Barr et al. (2019)	Australia					✓
Maguire et al. (2019)	Australia					✓
Kipping et al. (2019)	Canada					✓
Hilton et al. (2019)	Canada					✓
Sustere & Tarpey (2019)	United Kingdom					✓
Tomlin et al. (2019)	United Kingdom					✓
Tingleff et al. (2019)	Denmark					✓
Franke et al. (2019)	Germany					✓
Nielsen et al. (2019)	Denmark					✓
Puzzo et al. (2019)	United Kingdom					✓
Maguire et al. (2018)	Australia					✓
Nielsen et al. (2018)	Denmark					✓
Green et al. (2018)	United Kingdom					✓
Griffiths et al. (2018)	United Kingdom					✓
Lambert et al. (2018)	United Kingdom					✓
Nielsen et al. (2017)	Denmark					✓
Cabral & Carthy (2017)	United Kingdom					✓

Whitmore (2017)	Canada					✓
Jalil et al. (2017)	United Kingdom					✓
Hui (2017)	United Kingdom					✓
McKenna et al. (2017)	Australia				✓	
Kuivalainen et al. (2017a)	Finland				✓	✓
Kuivalainen et al. (2017b)	Finland					✓
Tully et al. (2016)	United Kingdom					✓
Price et al. (2016)	United Kingdom					✓
Long et al. (2016)	United Kingdom					✓
Gustafsson & Salzmann-Erikson (2016)	Sweden					✓
Turner & Mooney (2016)	United Kingdom					✓
Long et al. (2015)	United Kingdom					✓
Smith et al. (2015)	United States				✓	✓
Holmes et al. (2015)	Canada					✓
Mathias & Hirdes (2015a)	Canada				✓	
Boumans et al. (2012)	Netherlands			✓		
De Benedictis et al. (2011)	Canada			✓		
Mann-Poll et al. (2011)	Netherlands			✓		
Haw et al. (2011)	United Kingdom	✓				
Reimann & Nussbaum, (2011)	Canada	✓				
Keski-Valkama et al. (2010)	Finland	✓	✓		✓	
Fluttert et al. (2010)	Netherlands	✓				
Paavola & Tiihonen (2010)	Finland	✓	✓			
Qurashi et al. (2010)	United Kingdom	✓				
Ching et al. (2010)	Australia	✓				
Cormac et al. (2010)	United Kingdom	✓				
Thomas et al. (2009)	Australia	✓	✓		✓	
Nicholls et al. (2009)	Canada	✓				
Beck et al. (2008)	United States		✓			
Pannu & Milne (2008)	United Kingdom	✓	✓		✓	
Martin & Daffern (2006)	Australia	✓				
Price et al. (2004)	United States	✓	✓			
Sequeira & Halstead (2004)	United Kingdom	✓	✓			
Hinsby & Baker (2004)	United Kingdom	✓				

Repo-Tiihonen et al. (2004)	Finland	✓				
Hales & Gudjonsson (2004)	United Kingdom	✓				
Parkes (2003)	United Kingdom	✓				
Repo-Tiihonen et al. (2002)	Finland	✓				
Exworthy et al. (2001)	United Kingdom	✓	✓			
Ahmed, &.Lepnurm, (2001)	Canada	✓	✓		✓	
Dolan & Lawson (2001)	United Kingdom	✓				
Heilbrun et al. (1995)	United States		✓			
Klinge (1994)	United States		✓			
Mason (1998)	United Kingdom		✓		✓	
Mason (1993)	United Kingdom		✓			
Harris, Rice & Preston (1989)	Canada		✓			
Lehane & Morrison (1989)	United Kingdom		✓			

Appendix C - Study 1 - Nurse Director Approval & Email distribution

From: Redknap, Robina
Sent: Monday, 12 March 2012 15:46
To: Barr, Lesley
Cc:
Subject: RE: Nurses' attitudes towards the use of PRN medication in the mental health setting - survey

Hi Lesley

I'm happy for this to be put into place.

John, Ruth if you have any queries, please do not hesitate to contact Lesley or myself.

This survey will come out in the form of survey monkey. Can you please ensure there is a link on the nursing station computer under the generic log in. It will also be necessary to ensure staff are aware of the survey and actively encourage staff to complete. It is a fairly short survey and will not take long to complete.

Many thanks

Kind regards
Robina

Robina Redknap
Nurse Director
Graylands Hospital

From: Barr, Lesley
Sent: Monday, 12 March 2012 10:06
To: Redknap, Robina
Subject: FW: Nurses' attitudes towards the use of PRN medication in the mental health setting - survey

Hi Robina,

I have not had any further requests for changes to the survey so if you are happy are you able to arrange for the survey to be distributed to the staff on Dorrington and smith ward?
I have added the info below for staff as an introduction.
Thanks
Lesley

Lesley

Dear Colleagues,

We invite you to participate in a study to determine "Nurses' attitudes towards the use of PRN medication in the mental health setting". The findings will be utilised to inform further educational and research initiatives in this area.

The study has been approved as a quality improvement project at your service. If you have any questions prior to completing the survey please contact me on 9347 6974 to discuss these.

Please follow the link below to complete the survey

https://www.surveymonkey.com/s/99RQKVC

Kind Regards

Ms Lesley Barr

Appendix D - Study 1 - Information and survey document

Survey of nurses' attitudes towards the use of PRN medications

Dear Colleague,

We invite you to be part of this study to determine "Nurses' attitudes towards the use of PRN medication in the mental health setting". The findings will be utilised to inform further educational and research initiatives in this area.

If you agree to participate you need to select the response that best represents your answer for each question. Please answer all questions and provide your responses without conferring with anyone.

Completion of the survey implies your consent to participate and to have the findings of the study published. However, at all times your responses will remain confidential and all findings presented in reports will be reported as group findings. You will also be provided with feedback about the group findings of the study.

The study has been approved as a quality improvement project at your service. If you have any questions prior to completing the survey please contact me on 93476964 to discuss these.

Ms Lesley Barr
CNS
Statewide Forensic Mental Health Services

PRN Survey

Most of the questions in this survey simply require you to tick what you believe is the most appropriate response to each question. Please give your own responses without conferring with anyone else. Answer all of the questions.

1. In your opinion, are most PRN medications given during

- ◯ Day shift
- ◯ Afternoon shift
- ◯ Night shift
- ◯ Equally over all shifts

2. In your opinion , are most PRN medications given:

- ◯ During the weekdays
- ◯ During the weekend
- ◯ Equally over all days of the week

Page 1

3. When a patient is given a PRN medication, do you think it mostly occurs

- ◯ Early in the patient's stay in hospital
- ◯ Late in the patient's stay in hospital
- ◯ Could happen at any time
- ◯ Other (please specify)

4. At the health service where you work which ward do you think has the highest rate of PRN medication useage?

5. Who most often decides when to use PRN medication?

- ◯ Primary /allocated nurse
- ◯ Medication nurse
- ◯ Patient
- ◯ Senior nurse/ 1IC
- ◯ Psychiatric registrar
- ◯ Psychiatrist
- ◯ Pharmacist
- ◯ Other (please specify)

6. Do you believe PRN medications are most commonly given to patients with:

- ◯ Schizophrenia
- ◯ Borderline personality disorder
- ◯ Psychosis
- ◯ Anxiety
- ◯ Other (please specify)

7. If a patient on your ward is doing one of the following things, do you think they would be given PRN medications?

	Never	Sometimes	Often
Is becoming excited and out of control	◯	◯	◯
Is hitting another patient	◯	◯	◯
Is yelling and making too much noise	◯	◯	◯
Is hitting a staff member	◯	◯	◯
Demands to be given PRN medication	◯	◯	◯
Wants to sleep	◯	◯	◯
Is displaying inappropriate sexual behaviour	◯	◯	◯
Is being annoying or interrupting other people	◯	◯	◯
States that PRN medication helps them	◯	◯	◯
Is trying to break something like a chair or window	◯	◯	◯
Is cursing or swearing at people	◯	◯	◯
Is agitated because they want to smoke	◯	◯	◯
States that they miss their family and feel isolated	◯	◯	◯
Is agitated because they can not drink alcohol	◯	◯	◯
Is demanding to see their medical team members	◯	◯	◯
Is agitated because they do not have access to illicit drugs	◯	◯	◯
Is trying to hurt themself	◯	◯	◯
Won't take their regularly prescribed medications	◯	◯	◯
States that they are bored	◯	◯	◯
Is waking other patients during the night	◯	◯	◯
Is demanding food between meals	◯	◯	◯
Is asking to go into the seclusion room	◯	◯	◯

8. If a patient on your ward is doing one of the following things, do you think it is a good reason to give them PRN medications?

	Never	Sometimes	Often
Is becoming excited and out of control	◯	◯	◯
Is hitting another patient	◯	◯	◯
Is yelling and making too much noise	◯	◯	◯
Is hitting a staff member	◯	◯	◯
Demands to be given PRN medication	◯	◯	◯
Wants to sleep	◯	◯	◯
Is displaying inappropriate sexual behaviour	◯	◯	◯
Is being annoying or interrupting other people	◯	◯	◯
States that PRN medication helps them	◯	◯	◯
Is trying to break something like a chair or window	◯	◯	◯
Is cursing or swearing at people	◯	◯	◯
Is agitated because they want to smoke	◯	◯	◯
States that they miss their family and feel isolated	◯	◯	◯
Is agitated because they can not drink alcohol	◯	◯	◯
Is demanding to see their medical team members	◯	◯	◯
Is agitated because they do not have access to illicit drugs	◯	◯	◯
Is trying to hurt themself	◯	◯	◯
Won't take their regularly prescribed medications	◯	◯	◯
States that they are bored	◯	◯	◯
Is waking other patients during the night	◯	◯	◯
Is demanding food between meals	◯	◯	◯
Is asking to go into the seclusion room	◯	◯	◯

9. How do you feel a patient usually feels when they are given PRN medications

	Yes	No	Unsure
Scared	◯	◯	◯
Angry/Agitated	◯	◯	◯
Confused	◯	◯	◯
Helpless	◯	◯	◯
Releived	◯	◯	◯
Depressed or sad	◯	◯	◯
In control	◯	◯	◯
Calm	◯	◯	◯
Safe	◯	◯	◯
Satisfied	◯	◯	◯
Disgusted	◯	◯	◯
Happy	◯	◯	◯
Punished	◯	◯	◯
Violated	◯	◯	◯
Disempowered	◯	◯	◯
Out of control	◯	◯	◯
Controlled by others	◯	◯	◯
Frightened	◯	◯	◯

10. In your opinion, what effect does the use of PRN medication have on an patient

	Never	Sometimes	Often	Always
It helps calm them down	◯	◯	◯	◯
It makes them feel frustrated	◯	◯	◯	◯
It makes them better behaved	◯	◯	◯	◯
It decreases frustrating social interactins with other people	◯	◯	◯	◯
It makes them feel angry towards staff	◯	◯	◯	◯
It allows them to control angry feelings in a way that is not destructive to the rest of the patients on the ward	◯	◯	◯	◯
It makes them feel that staff care	◯	◯	◯	◯
It changes the way they feel	◯	◯	◯	◯
It makes them happy/relaxed	◯	◯	◯	◯
it changes the way the behave	◯	◯	◯	◯
it does not help them at all	◯	◯	◯	◯
It makes them feel "spaced out"	◯	◯	◯	◯
it disempowers them	◯	◯	◯	◯
It controls their thoughts and behaviours	◯	◯	◯	◯
It frightens them	◯	◯	◯	◯
It makes them feel powerful	◯	◯	◯	◯

11. What changes would you like to see made to the use of PRN medications in the ward?

	Strongly agree	Agree	Disagree	Strongly disagree
Improved use of patient safety plans to prevent PRN medication use during a crisis	◯	◯	◯	◯
Providing the patient with strategies to assist them to relieve their symptoms without the use of PRN medications	◯	◯	◯	◯
Clearer prescribing regimes which conform to accepted standards, for example, NICE Guidelines	◯	◯	◯	◯
Specific identification of the patient's target symptoms at the time medical staff prescribe PRN medication	◯	◯	◯	◯
Specific identification of the patient's target symptoms when administering PRN	◯	◯	◯	◯
completion of an assessment using a standardised tool, for example, Positive and Negative Symptom Scale (PANSS) prior to giving the patient PRN medication	◯	◯	◯	◯
Clearer guidelines regarding the dose and route of PRN medication regimes (oral or IMI)	◯	◯	◯	◯
The use of psychosocial interventions, for example, cognitive behavioural intervention as a first line response	◯	◯	◯	◯
The medication nurse should administer all PRN medications to patients as required	◯	◯	◯	◯
The primary/allocated nurse should administer PRN medications to the patient they are allocated to	◯	◯	◯	◯
Improved monitoring of the side effects following the administration of PRN medications	◯	◯	◯	◯
Improved training in the identification and management of side effects that result from the frequent use of PRN medications	◯	◯	◯	◯
Improved medical review of PRN use and prescribing	◯	◯	◯	◯
Increased collaboration between health team members regarding the dose, type and route of PRN medications used with patients	◯	◯	◯	◯
A staff member should remain with the patient until the crisis has abated and they are settled following the administration of PRN medication	◯	◯	◯	◯
Improved documentation of PRN medication administered to patients in case notes	◯	◯	◯	◯
improved documentation of PRN medication efficacy for patients in case notes	◯	◯	◯	◯

12. How confident do you feel to use the following alternative strategies to the use of PRN medication?

	Never	Sometimes	Often
Use of comfort rooms	◯	◯	◯
Use of psychosocial interventions such as cognitive behavioural techniques	◯	◯	◯
Distraction techniques	◯	◯	◯
Use of de-escalation techniques to control aggressive and/or disruptive behaviours	◯	◯	◯
Music and relaxation techniques	◯	◯	◯
Discuss care plan revisions with patient	◯	◯	◯
Increase time spent with patient to assist them to solve the presenting issue and calm down	◯	◯	◯
Behavioural programs	◯	◯	◯
Seclusion	◯	◯	◯
Not confident as PRN medication is a major strategy used to prevent and contain aggressive/disruptive patient behaviours	◯	◯	◯
Encourage patient to engage in exercise program	◯	◯	◯
Specialling of patient	◯	◯	◯
Educating patients to elf manage problem symptoms and bheavours	◯	◯	◯
Feel confident to use alternative strategies but have limited time to implement them with patients	◯	◯	◯
Feel confident but I do not use other strategies as I am not confident of the knowledge and skills of other staff if the patient's behaviour escalates	◯	◯	◯

13. For each of the following statements please tick the box that best represents your answer to the statment

	Disagree	Undecided	Agree
The use of PRN medications has decreased on the ward along with the use of seclusion and restraint	◯	◯	◯
The use of PRN medications has increased on the ward since seclusion and restraint has been reduced	◯	◯	◯
The use of PRN medications to calm a patient is better than the use of seclusion	◯	◯	◯

DEMOGRAPHIC DATA

14. Please indicate your age by selecting from the age ranges below

- ◯ 20-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ >60

15. What is your gender?

- ◯ Male
- ◯ Female

16. How long have you worked in the area of mental health?

- ◯ < one year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ 16-20 years
- ◯ 21 years +

17. Which is the ward where you spend most of your work time

- ◯ Acacia
- ◯ Banksia
- ◯ Caesia
- ◯ Dorrington
- ◯ Smith

18. How long have you worked in this area of mental health?

- ◯ < one year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ 16-20 years
- ◯ 21 years +

19. Please indicate if you are a

- ◯ Registered Nurse (Mental Health)
- ◯ Registered Nurse (Comprehensive)
- ◯ Registered Nurse (General and Mental Health)
- ◯ Enrolled Nurse (Mental Health or Comprehensive)

Appendix E - Study 2 - Information Sheet

Government of **Western Australia**
Department of **Health**
North Metropolitan Area Health Service

Curtin University

FORENSIC MENTAL HEALTH NURSE STUDY

PARTICIPANT INFORMATION SHEET

Principal Coordinating Investigator:
Professor Dianne Wynaden – Curtin University
Phone (08) 92662203
Email: d.wynaden@curtin.edu.au

Site Contact:
Ms Lesley Barr – State Forensic Mental Health Services
Phone: (08) 93476373
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Mr Mark Hills- State Forensic Mental Health Service
Email: Mark.hills@health.wa.gov.au

Dr Jenny Tohotoa – Curtin University
Email: J.tohotoa@curtin.edu.au

Dr Karen Heslop, - Curtin University
Email: k.heslop@curtin.edu.au

My name is Professor Dianne Wynaden and I am the Principal Coordinating Investigator for a project the abovementioned research team will be commencing at the State Forensic Mental Health Service (SFMHS). This information sheet tells you about the study and we are inviting you to participate. If after reading this information sheet you have any questions please do not hesitate to contact me via email or phone.

What is the purpose of the research?
With the ongoing changes in mental health service delivery in Australia this study will investigate how nurses can deliver high quality forensic mental health care while facilitating cultural change. Cultural change refers to the process of facilitating greater consumer and carer participation in planning and delivery of care and the consolidation of recovery focused models of care delivery. As nursing staff are key stakeholders in facilitating cultural change and implementing new models of care it is critical to engage them in this process to have input into the change process.

The objectives of this research are to:
1. Articulate the characteristics of high quality forensic mental health nursing care;
2. Identify barriers and facilitators in the forensic health care environment that influence consumer, family and health professionals' health and wellbeing;
3. Ensure mental health nursing practice is based on best international standards.
4. Identify forensic mental health nursing professional development needs;
5. Describe how the profession can be unified to facilitate cultural change at the clinical level.

What does your participation in research involve?

If you agree to participate in this study you will be asked to complete an interview that will last approximately 45 minutes with a member of the research team who works at Curtin University. Prior to the commencement of the interview the researcher will meet with you and go over the information sheet and answer any questions you may have. They will then ask you to sign the consent form and will give you a copy of the signed form for your records. You will be consenting to be interviewed by the researcher and to have the findings of the study published.

You will also be asked to provide some information about yourself but this information will be limited so you will not be able to be identified in any reports that result from the study. You can withdraw from the study at any time without penalty and your data will be destroyed.

What will happen to the information about me?
Confidentiality: The interview will be digitally recorded and then transcribed verbatim. The data will then be analysed by two researchers and major categories will be identified. A report will then be written and the findings of the study will be published in a nursing journal. Presentations of the findings will also occur at national and international conferences. At no time will you be able to be identified in these reports.

Publication of results: The results of the research will be published in peer reviewed journals and presented at conferences. Research data will be stored by the Principal Investigator for seven years and then destroyed in line with current State Health policy at the time.

Who is organising and supporting the research?
This research is supported by the State Forensic Mental Health Services and Curtin University. The research has been approved by the Human Research Ethics Committees of the North Metropolitan Mental Health Service Research Ethics and Governance Office (NM MHS REGO) in accordance with their ethics review and approval procedures (approval number 8/2015) and Curtin University Human Research Ethics Committee (HREC) (approval number 166/2015). If you have any questions regarding this project please contact me on (08) 93476911. If you have any questions regarding the approval of this project please contact the NM MHS REG Executive Officer on (08) 93476502 or NMAHSMHREGO@health.wa.gov.au or the secretary of the Curtin HREC on (08) 92669223 or hrec@curtin.edu.au.

Appendix F - Study 2 - Demographic data sheet

Government of **Western Australia**
Department of **Health**
North Metropolitan Area Health Service

Curtin University

FORENSIC MENTAL HEALTH NURSE STUDY

DEMOGRAPHIC INFORMATION SHEET

Role:		**Gender:**		**Age Group:**	
Enrolled Nurse	❑	Male	❑	20 to 35	❑
Registered Nurse	❑	Female	❑	36 to 49	❑
Other	❑			50 or older	❑

How long have you worked as a mental health nurse?

❑❑ Years

What is your employment?

Part-time ❑ Full-time ❑ Other ❑ Please specify:

_____

What is your highest educational qualification in nursing?

Diploma❑ Bachelor❑ Master❑ PhD❑ Other❑, Please specify:

Appendix G - Study 2 – Consent form

Government of **Western Australia**
Department of **Health**
North Metropolitan Area Health Service

Curtin University

FORENSIC MENTAL HEALTH NURSE STUDY
CONSENT FORM

Principal investigator: Professor Dianne Wynaden
Other investigators: Ms Lesley Barr, Ms Christina Bygrave, Dr Jenny Tohotoa, Mr Mark Hills and Dr Karen Heslop

Thank you for agreeing to take part in this research. Information gathered will only be used by the researchers and data published will not reveal your identify. Please read the following carefully and ask the attending researcher any additional questions you may have before signing the consent form.

Declaration by Participant

- I have read and understood the Participant Information Sheet and I have been given a copy of it.
- I understand the purpose of the research described in the project.
- I have had the opportunity to ask questions and I am satisfied with the answers I have received.
- I agree to participate in the research and understand that I am free to withdraw at any time during the study without affecting my future employment.
- I understand that I may keep a copy of this Consent Form.
- I agree that the research data collected can be published in peer reviewed journals and reports as long as my name and any identifying data are not used in the publication.
- I agree that the findings of the study will also be shared with staff at the health service where the research was completed. It may also be presented at national and international conferences.

Name of Participant (please print) _____

Signature _____ Date_____

Name of Investigator (please print) _____

Signature _____ Date_____

Note: All parties signing the consent section must date their own signature

Appendix H - Study 2 - Interview Guide

Government of **Western Australia**
Department of **Health**
North Metropolitan Area Health Service

Curtin University

FORENSIC MENTAL HEALTH NURSE STUDY
INTERVIEW GUIDE

The researchers will introduce themselves to the participant and go through the information sheet allowing time for any questions prior to asking the participant to sign the consent form. The demographic data sheet will then be completed as this will provide time for the participant to relax and for a relationship to be developed.
Question guide:

1. Tell me about your experiences as a mental health nurse
2. When and why did you start working in forensic mental health nursing?
3. Tell me what you believe are the most valuable attributes for forensic mental health nurses.
4. Can you explain what recovery focused patient centred care mean to you?
    a) How do your translate this to patient care?
5. Tell me about some of your experience of working in this setting:
    a) Who initiates clinical decisions, for example, giving PRN medications
    b) Do you believe you are empowered as a nurse in the clinical decisions you make regarding patients?
    c) Do you feel you are part of the multi-disciplinary team?
    d) How do you see your role within the multi-disciplinary team?
    e) How do you perceive that critical incidents are managed by the multidisciplinary team, for example, aggression?
    f) How do you see nurses being unified in this environment, for example, supervision, protecting one another)
    g) How are new staff mentored into the role of a forensic mental health nurse?
6. How do we develop nurse leaders in this area of nursing?
7. What in your opinion facilitates unity in the nursing profession?
8. What resources (a) security (b) technology (c) educational (d) professional would improve nursing practice in this setting? How could the environment be improved for patients and staff?
9. What will forensic mental health nursing look like in 10 years?
10. What would be your recommendations/suggestions be to improve this service?
11. What worries you most about coming to work in the forensic environment?
12. What are the three most important things that impact on your nursing practice?
13. Is there anything you would like to add or to ask me about before we close the interview?

Appendix I - Study 3 & 4 – Data collection spreadsheet

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
UIN (Unique ID Number)	Age (years)	Gender	Ethnicity (Caucasian or non-Caucasian only)	ICD-10 Primary Diagnosis on discharge	ICD-10 Secondary Diagnosis on discharge	Number of admissions to SFMHS (including this one)	Admission date	Prior MH admissons to a public MH facility	Incident number	Severity	Date	Day	Incident time since admission	Time

P	Q	R	S	BF	BG	BH	BI	BJ	BK	BL	BM
DASA score on day of incident	DASA 1-Irritability 2- Impulsivity 3-Unwillingness to follow directions 4- Sensitivity to perceived provocation 5- Easily angered when requests are denied 6 - Negative attitudes	Location (Ward/ room)	Special observations at the time of the imcident (intermittent or continuius ie 1:1 or 15/60	Date of seclusion	Time of seclusion	Duration of seclusion (mins) as per MH Act form 11A	Reason for authorising the seclusion (as per MH Act 11B): a) Physically injuring themselves or another person; and/or b) Persistently causing serious damage to property; and /or c) There is no least restrictive way of preventing injury or damage	Patient's condition at the time of the seclusion ? a) Verbal aggression b) Physical aggression to others c) Physical aggression to property d) Hallucinating e) Delusional	Was the patient restrained prior to the seclusion?	Did the medical examiner/ nurse a) Revoke the seclsuion b) Continue the seclusion until it expired or c) Extend	If C, what was the overall seclusion duration (in mins)

BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB
Regular prescribed medication prescribed at the time of the seclusion	Was PRN given within 2 hours **before** the seclusion ? If yes, specify.	Specify Drug	Specify Dose	Specify Route	How was the PRN initiated ?	Insert rating 1 (as per PRN chart)	Insert rating 2 (as per PRN chart)	Was PRN given **during** the seclusion? If yes, specify.	Specify Drug	Specify Dose	Specify Route	How was the PRn Initiated ?	Insert rating 1 (as per PRN chart)	Insert rating 2 (as per PRN chart)

BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM
Was PRN given **during** the seclusion? If yes, specify.	Specify Drug	Specify Dose	Specify Route	How was the PRn Initiated ?	Insert rating 1 (as per PRN chart)	Insert rating 2 (as per PRN chart)	Was PRN given within 4 hours **after** the seclusion? If yes, specify.	Specify Drug	Specify Dose	Specify Route	How was the PRN initiated ?	Insert rating 1 (as per PRN chart)	Insert rating 2 (as per PRN chart)	Patient 'Coping & Awareness ' form completed :	Patient debriefed after seclusion ?	Did the restraint or seclusion result in a change in their management?	Specify: a)medication change b) management plan updated c)change in special observations d) other

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Incident number	**Date**	**Day**	**Shift**	**Number of seclusion events for the shift**	**Staff/patient ratio (bed occupancy) for the ward *high acuity/special staff**	**Ward**	**Bed occupancy out of 30**	**Total number of nursing staff per shift (not including CNS) for the unit**	**Number of male staff FOR THE UNIT**	**Number of male staff FOR THE WARD**	**Number of female staff FOR THE UNIT**	**Number of female staff FOR THE WARD**	**Permanent L2 on duty on ward?**	**Total number of agency staff**	**Total number of casual/GR staff**	**Total number of permanent staff**	**Total number of RN staff**	**Total number of EN staff**	**SRN 3 on shift?**	**Total number of overtime staff**	**Security officer ward sits per shift**

Appendix J - Study 4 – Unique identification number template

Government of Western Australia
Department of Health
North Metropolitan Area Health Service

Curtin University

UNIQUE IDENTIFICATION NUMBER (UIN)
TRACKING SHEET

Chief investigator: Ms Lesley Barr – State Forensic Mental Health Services
Phone (08) 93476373 or Lesley.barr@health.wa.gov.au

Other investigators Professor Dianne Wynaden – Curtin University
Phone: (08) 92662203 or d.wynaden@curtin.edu.au

Dr Karen Heslop, - Curtin University
Phone: (08) 92662090 or k.heslop@curtin.edu.au

UMRN	UIN

Appendix K - Study 1 - NMHSMH HREC exemption from ethical review

Government of **Western Australia**
Department of **Health**
North Metropolitan Health Service Mental Health

06 October 2014

Ms Lesley Barr
State Forensic Mental Health Services
Frankland Centre, Graylands Campus
Private Bag 1
PO Claremont WA 6910

(QI 2012_01) Pro re nata (PRN) medication evaluation and improvement plan

Dear Ms Barr,

The request for quality improvement exemption for the above project was considered by the Chair of the North Metropolitan Health Service Mental Health Human Research Ethics Committee (NMHSMH HREC).

The Chair granted exemption from ethical review for the following reasons:

1. The activity was undertaken with the consent of the participants and the institution involved.
2. The proposed activity did not impose an additional risk of harm or discomfort or burden on participants beyond that to which they may already be exposed.
3. Participation or non-participation was not adversely affecting the participant's normal health care delivery.
4. Participant records or information was accessed only by those with usual access relating to an existing health care delivery program, and any person reviewing such information is bound by legislation and/or a professional code of ethics.
5. Access to any personal information was not beyond that required for an existing health care delivery program, and there was no risk of a breach of confidentiality of an individual's personal information.
6. There was no significant departure from the existing health care delivery program involving the participants.
7. There was no randomisation of groups of participants, or use of placebo interventions.

Yours sincerely

Camelia Zota
Delegate of the Chair

pp Prof Mathew T. Martin-Iverson
B.Sc., Ph.D. (Neurological Sciences)
Chair, NMHS MH HREC

Page 1 of 1

Appendix L - Study 1 - Curtin University ethics approval

Curtin University

Memorandum

To	Professor Dianne Wynaden, Ms Lesley Barr, Dr Karen Heslop, Dr Jenny Tohotoa
From	Professor Phillip Della
Subject	Protocol Approval SONM31-2013
Date	19 August 2013
Copy	

Office of Research and Development

Human Research Ethics Committee

Telephone 9266 2784
Facsimile 9266 3793
Email hrec@curtin.edu.au

Thank you for your "Form C Application for Approval of Research with Low Risk (Ethical Requirements)" for the project titled: "***Nurses' attitudes towards the use of use of PRN medication in the acute mental health setting***". On behalf of the Human Research Ethics Committee, I am authorised to inform you that the project is approved.

Approval of this project is for a period of 4 years from the 19th August 2013 to 19th August 2017.

Your approval has the following conditions:

(i) Annual progress reports on the project must be submitted to the Ethics Office.

(ii) It is your responsibility, as the researcher, to meet the conditions outlined above and to retain the necessary records demonstrating that these have been completed.

The approval number for your project is **SONM31-2013**. Please quote this number in any future correspondence. If at any time during the approval term changes/amendments occur, or if a serious or unexpected adverse event occurs, please advise me immediately.

Professor Phillip Della
Head
School of Nursing and Midwifery

This project has been reviewed by Dr Mohammed Ali (Minimal Risk Reviewer) at the SONM.

Please Note: The following standard statement must be included in the information sheet to participants:
This study has been approved under Curtin University's process for lower-risk Studies (Approval Number SONM31-2013). This process complies with the National Statement on Ethical Conduct in Human Research (Chapter 5.1.7 and Chapters 5.1.18-5.1.21).
For further information on this study contact the researchers named above or the Curtin University Human Research Ethics Committee c/- Office of Research and Development, Curtin University, GPO Box U1987, Perth 6845 or by telephoning 9266 9223 or by emailing hrec@curtin.edu.au.

Appendix M - Study 2 - NMHSMH HREC ethics approval

Government of **Western Australia**
Department of **Health**
North Metropolitan Health Service Mental Health

11 August 2015

Prof Dianne Wynaden
Curtin University
School of Nursing, Midwifery and Paramedicine
GPO Box U 1987
PERTH WA 688454

Project (08_2015) Forensic Mental Health Nurse Study

Dear Prof Wynaden

The above research project was considered by the North Metropolitan Health Service – Human Research Ethics Committee (NMHS MH HREC) and found to be satisfactory and compliant with the NHMRC requirements and the WA Health Research Governance Policy.

On behalf of the NMHS-MH HREC I hereby grant ethical approval to the study.

This project has ethical approval until the **11 August 2019.** If you would like to extend your project beyond this date, please write to the NMHS MH Research Ethics and Governance Office requesting an extension of up to three additional years.
This approval is in conjunction with the Terms of Approval statement, which is attached to this letter.

Please note that your project is subject to institutional monitoring, in accordance with section 5.5 of the National Statement on Ethical Conduct in Human Research and with the WA Health Research Governance Policy and Procedures.

This letter constitutes ethics approval only. This project CANNOT proceed at any NMHS MH site until institutional authorisation has been obtained from the Executive Director or Delegate of the institution.

This letter constitutes ethics approval only. This project CANNOT proceed at any NMHS MH site until institutional authorisation has been obtained from the Executive Director or Delegate of the institution.

The NMHS-MH HREC wishes you well for this project.

Please quote Project Number (**08_2015**) on all correspondence associated with this project and address it to:

NMHS-MH REGO
Executive Officer
Gascoyne House, Graylands Campus
Locked Bag No. 1
PO CLAREMONT WA 6910

Yours sincerely

Camelia Zota

Delegate of the Chair
pp Prof Mathew Martin-Iverson B.Sc., Ph.D. (Neurological Sciences)
Chair NMHS MH HREC

1 of 1

Appendix N - Study 3 & 4 - NMHSMH HREC ethics approval

Government of **Western Australia**
North Metropolitan Health Service
Mental Health, Public Health and Dental Services

Ms Roslyn Elmes
Mental Health, Public Health and Dental Services, North Metropolitan Health Service
54 Salvado Road
WEMBLEY, Western Australia 6014

25 March 2019

Mrs Lesley Barr
State Forensic Mental Health Service - Frankland Centre
Brockway Road
MOUNT CLAREMONT, Western Australia 6010

Dear Mrs Barr

PRN: RGS0000000156

Project Title: Seclusion, restraint and psychotropic Pro Re Nata (PRN) medication administration – Reducing the use of restrictive practices in forensic mental health services

Protocol Number: 1

Thank you for submitting the above research project for governance review. I am pleased to advise you that North Metropolitan Mental Health Executive has granted authorisation for this research project to be conducted at the following participating site(s):

- State Forensic Mental Health Service - Frankland Centre

In addition to those approved by the Human Research Ethics Committee (HREC), the approved site specific documents include:

Document	Version	Version Date
Nil	-	-

Site authorisation of this project is valid from 20 March 2019 subject to continued ethical approval from the North Metropolitan Area Mental Health Services Human Research Ethics Committee and compliance with the 'Conditions of Site Authorisation for a Research Project' (Appendix A). To find the original letter and any possible attachments, click here when logged into RGS.

In line with these specifications, the NMHS-MH REGO will conduct planned and ad-hoc audits of all research projects. To help you to comply with the auditing requirements, please find attached to this letter research logs which you are required to maintain during the course of your project.

The following site specific conditions must also be met for this project:

1. No data can be shared outside of the SFMHS to ensure maximum privacy and anonymity.
2. All findings must be presented as group findings (i.e. specific individuals cannot be identified).
3. No reported data can be identified. Research protocol and ethics forms amended accordingly.

Should you have any queries about North Metropolitan Health Service Mental Health Executive's consideration of your project, please contact the Research Governance Office at NMAHSMHREGO@health.wa.gov.au or on (08) 9347 6502. For more information on how to comply with the NMHS-MH human research policy and procedures, please consult the Standard Operating Procedures for the Approval of Research which is available on the NMHS-MH REGO website: http://www.nmahsmh.health.wa.gov.au/ethics/index.cfm.

I wish you every success in your research.

Yours sincerely

Vivian Chiu
Acting Research Governance Officer
pp Ms Roslyn Elmes
Executive Director, Mental Health, Public Health and Dental Services, NMHS

Appendix A

CONDITIONS OF SITE AUTHORISATION FOR A RESEARCH PROJECT

The following general conditions apply to the research project, which has been authorised to be conducted at the above nominated site(s). The acceptance of site authorisation will be deemed to be an acceptance of these conditions by all investigators involved in the research project at the nominated site(s).

1. The responsibility for the conduct of this project at the nominated site(s) lies with the site Principal Investigator (PI).
2. The PI will inform the Research Governance (RG) Office of any event that requires a modification to the protocol or other project documents and submit any required amendments to approved documents, or any new documents, for site authorisation. Amendments cannot be implemented at this site until they have received ethics approval and site authorisation.
3. The PI will submit any necessary reports related to the safety of research participants to the Research Governance Office in accordance with the WA Health Research Governance Standard Operating Procedures.
4. The PI will submit a progress report to the RG Office annually from the ethics approval date and notify the RG Office when the project is completed at the site(s). The RG Office can request additional reporting requirements as a special condition of a research project. Site authorisation is subject to the receipt of these reports and authorisation may be suspended if the report is not received.
5. The PI will notify the RG Office of his or her inability to continue as PI at the site(s) and will provide the name and contact information of their replacement.
6. The PI will notify the RG Office of any changes in investigators at the site(s).
7. The site has the authority to audit the conduct of any project without notice if some irregularity has occurred, a complaint is received from a third party or the site decides to undertake an audit for quality improvement purposes.
8. The site may conduct random monitoring of any project. The PI will be notified if their project has been selected. The PI will be given a copy of the monitor's report along with the HREC and RG Office.

9. Complaints relating to the conduct of a project should be directed to the RG Office and will be promptly investigated according to the WA Health's complaints procedures.
10. The PI should ensure participant information and consent forms are stored within the participant's medical record in accordance with the WA Health's RecordKeeping Plan.
11. Once the project has been closed at site, the PI will submit a final report. If the report is not received within 30 days the project will be closed and archived.
12. The PI will notify the RG Office if the project is temporarily halted or prematurely terminated at the site(s) before the expected completion date, with reasons provided. Such notification should include information as to what procedures are in place to safeguard participants.
13. If a project fails to meet these conditions the RG Office will contact the PI to address the identified issues. If, after being contacted, the issues are not addressed the site authorisation will be withdrawn.

Appendix O - Study 3 & 4 – Curtin University reciprocal approval

Curtin University

Research Office at Curtin

GPO Box U1987
Perth Western Australia 6845

Telephone +61 8 9266 7863
Facsimile +61 8 9266 3793
Web research.curtin.edu.au

27-Mar-2019

Name: Dianne Wynaden
Department/School: School of Nursing, Midwifery and Paramedicine
Email: D.Wynaden@curtin.edu.au

Dear Dianne Wynaden

RE: Reciprocal ethics approval
Approval number: HRE2019-0153

Thank you for your application submitted to the Human Research Ethics Office for the project Seclusion, restraint and psychotropic Pro Re Nata (PRN) medication administration – Reducing the use of restrictive practices in forensic mental health services.

Your application has been approved by the Curtin University Human Research Ethics Committee (HREC) through a reciprocal approval process with the lead HREC.

The lead HREC for this project has been identified as North Metropolitan Area Mental Health Services Human Research Ethics Committee.

Approval number from the lead HREC is noted as RGS0000000156.

The Curtin University Human Research Ethics Office approval number for this project is **HRE2019-0153**. Please use this number in all correspondence with the Curtin University Ethics Office regarding this project.

Approval is granted for a period of one year from **27-Mar-2019** to **28-Sep-2023**. Continuation of approval will be granted on an annual basis following submission of an annual report.

Personnel authorised to work on this project:

Name	Role
Wynaden, Dianne	CI
Barr, Lesley	Co-Inv
Heslop, Karen	Supervisor

You must comply with the lead HREC's reporting requirements and conditions of approval. You must also:

- Keep the Curtin University Ethics Office informed of submissions to the lead HREC, and of the review outcomes for those submissions
- Conduct your research according to the approved proposal
- Report to the lead HREC anything that might warrant review of the ethics approval for the project
- Submit an annual progress report to the Curtin University Ethics Office on or before the anniversary of approval, and a completion report on completion of the project. These can be the same reports submitted to the lead HREC.
- Personnel working on this project must be adequately qualified by education, training and experience for their role, or supervised
- Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, that bears on this project
- Data and primary materials must be managed in accordance with the Western Australian University Sector Disposal Authority (WAUSDA) and the Curtin University Research Data and Primary Materials policy

Appendix P - Study 3 & 4 - SFMHS Director approval

Government of Western Australia
Department of Health
North Metropolitan Area Health Service

Chair HREC,
North Metropolitan Health Service (Mental Health) Human Research Ethics Committee,
Research Ethics and Governance Office (REGO),
Graylands Health Campus,
Brockway Road,
Mt Claremont, WA 6010.

15th April 2018

Dear HREC Chair,

This letter is to confirm my support for Ms Lesley Barr's PhD research program, which will be completed at the State Forensic Mental Health Service. I give permission for Ms Barr to conduct a case file audit of consumers who have been admitted during a six month time period in 2016-2017. I also give permission for Ms Barr to access seclusion and restraint data, Datix-CIMS, ROSTAR, Lattice and the Frankland Centre Nursing Hour per Patient Day (NHpPD) database for information relating to patient care delivery for the same period. I am satisfied that the protocol for the study ensures that consumers and staff will not in any way be adversely affected.

I believe this study will facilitate cultural change and raise awareness in staff of the need to decrease the use of restictive practices at the service to facilitate consumer centred care and recovery.

If you need any further information from me, please do not hesitate to ask.

Best Wishes

E. h. A. Petch

Dr Edward Petch
Director, SFMHS
Clinical Associate Professor

Appendix Q - Publication 2 - Copyright permission

Nurses' attitudes towards the use of PRN psychotropic medications in acute and forensic mental health settings

Author: Karen Heslop, Dianne Wynaden, Lesley Barr
Publication: International Journal of Mental Health Nursing
Publisher: John Wiley and Sons
Date: Mar 24, 2017

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Licensed Content Date	Mar 24, 2017
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Expected presentation date	Jan 2024

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Appendix R - Publication 3 - Copyright permission

Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices

Author: Karen Heslop, Dianne Wynaden, Lesley Barr
Publication: International Journal of Mental Health Nursing
Publisher: John Wiley and Sons
Date: Mar 27, 2019

Order Completed

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Licensed Content Author	Karen Heslop, Dianne Wynaden, Lesley Barr
Licensed Content Date	Mar 27, 2019
Licensed Content Volume	28
Licensed Content Issue	4
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Institution name	Curtin University
Expected presentation date	Jan 2024

Additional Data

Order reference number	2022

Requestor Location

Requestor Location	Mrs. Lesley Barr Curtin University Perth, other 6102 Australia Attn: Mrs. Lesley Barr

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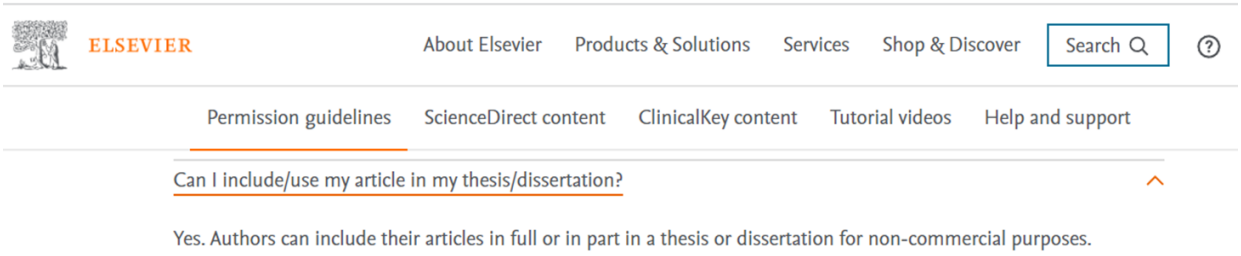
Appendix S- Publication 4 – Elsevier permission to publish in this thesis



ELSEVIER

Dear Lesley Barr,

Thank you for your query.

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You are not permitted to post the Published Journal Article (PJA) on the repository."

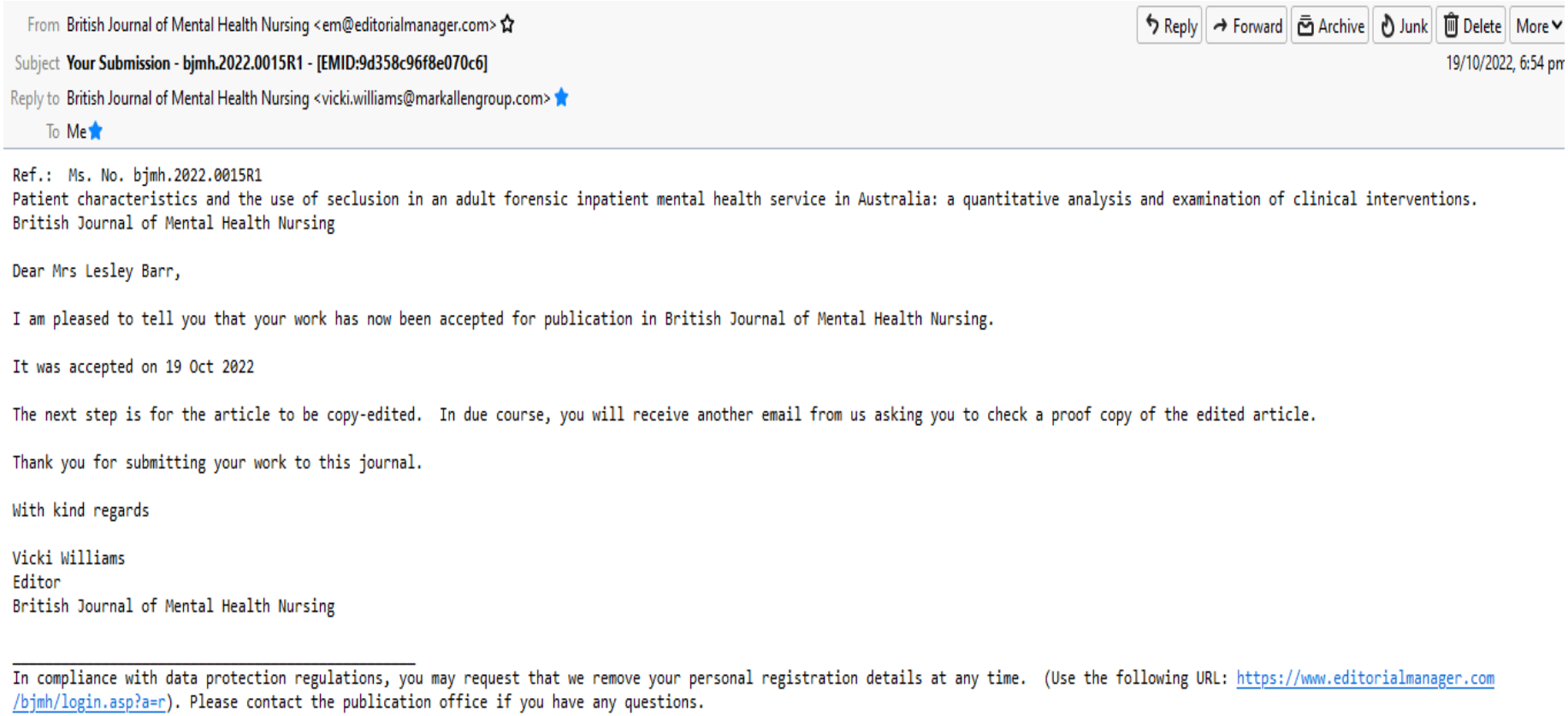
Please feel free to contact me if you have any queries.

Kind regards,

Kaveri Thakuria

Senior Copyrights Coordinator

Appendix T – Publication 5 - Evidence of article acceptance for publication



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Ref.: Ms. No. bjmh.2022.0015R1
Patient characteristics and the use of seclusion in an adult forensic inpatient mental health service in Australia: a quantitative analysis and examination of clinical interventions.
British Journal of Mental Health Nursing

Dear Mrs Lesley Barr,

I am pleased to tell you that your work has now been accepted for publication in British Journal of Mental Health Nursing.

It was accepted on 19 Oct 2022

The next step is for the article to be copy-edited. In due course, you will receive another email from us asking you to check a proof copy of the edited article.

Thank you for submitting your work to this journal.

With kind regards

Vicki Williams
Editor
British Journal of Mental Health Nursing

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