UNIVERSITY OF OTAGO

Te Whare Wānanga o Otāgo

DECLARATION CONCERNING DISSERTATION PRESENTED FOR THE DEGREE OF

MASTER OF HEALTH SCIENCES FOR NURSING - CLINICAL

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solemnly and sincerely declare, in relation to the dissertation entitled:

RELATIONAL SECURITY FOR PREVENTING INTERPERSONAL VIOLENCE IN INPATIENT MENTAL HEALTH UNITS: an intergrative review

(a) That work was done by me, personally

and (b) The material has not previously been accepted in whole, or in part, for any other degree or diploma

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Relational Security for Preventing Interpersonal Violence in Inpatient Mental Health Units: an integrative review

A dissertation submitted in fulfilment for

Master of Health Sciences Nursing – Clinical

at

The University of Otago

by

Alice Fletcher

2018

Preface

This integrative review of relational security is a direct result of my role as a Clinical Nurse Specialist in a medium secure forensic unit in New Zealand. Safety has always been a high priority in the unit, but over the last few years, it has become paramount. Concern about inpatient aggression was increasing throughout Specialist Mental Health Services (SMHS). Staff members had been seriously injured, necessitating long periods of leave from work. Staff morale had declined, and staff retention had become more difficult. Understandably, all this was having a detrimental effect on patient care. With tight hospital budgets and an urgent need for change, I was curious to investigate whether relational security could provide the interpersonal safety required to support safe wards required for effective therapeutic care.

My first encounter with the concept of relational security was upon my arrival at forensic services. However, it was subsequently rarely mentioned or re-visited. Team discussions indicated that, while relational security was regarded as a valuable concept, it was poorly understood. Aspects of relational security were being used in practice, but they were occurring without conscious thought. Implementation was failing to meet its full potential, therefore leaving room for unnecessary risks. These happenings provided my rationale for wanting to fully integrate relational security into daily care, with all members of the team being able to understand its value in ensuring safety and care to patients while also keeping the staff safe.

Abstract

Background

Violence and aggression within inpatient psychiatric units is a serious problem affecting not only staff and patient safety, but the effectiveness of patient care. It is important that methods are found to effectively diffuse the imminent risk of violence in advance within psychiatric inpatient units. Relational security is a preventative measure integral to providing staff and patient safety in inpatient settings. Unfortunately, the current lack of clarity around relational security is undermining its application and limiting its use.

Objective

The aims of this integrative review are to:

1. Develop a clear working definition of relational security
2. Establish a framework to describe the core components of relational security and their relationship to each other
3. Assess which components of relational security have the strongest evidence for being effective in violence prevention

Methodology

A systematic search process was utilised to identify relevant primary data for this integrative review. Electronic databases PsychINFO, Ovid MEDLINE and Embase were searched using the terms 'aggression', 'violence', 'inpatient', 'mental disorder', 'aggression management' and 'psychiatry'. Due to the limited number of citations produced using the search term 'relational security', this term was removed from the final selection of search terms. Titles were then scanned, and abstracts read of relevant topics. Forty-eight full text articles were read, 17 of which, met criteria for further analysis. The final selection was then appraised for quality using the Joanna Briggs Institution quality assessment tools. Data from the studies was extracted and themes were drawn from the primary data.

Summary

The three key themes were obtained from the synthesis were: therapeutic relationship, ward climate and team dynamics. Each of these played a key role in the implementation of relational security, contributing to interpersonal safety within psychiatric inpatient settings. The findings also provided evidence for a proposed new definition of relational security which highlighted the importance of clinical knowledge of the patient, the patient mix and therapeutic programme, and communication within the clinical team.

A number of areas for further research were identified. There is a need for further qualitative research within the parameters of relational security, looking in depth at staff and patient perspectives regarding violence and its management through unstructured interviews and focus groups. There is also a need for quantitative data, measuring the impact of relational security measures on inpatient violence, isolating key elements within the relational security construct.

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Finally, I would like to thank my partner, family, friends and work colleagues for all the motivation, offers to proof-read and kind words. The continuous support has made this a positive journey.

List of abbreviations

ACMQ	Attitudes to Containment Measures Questionnaire
APDQ	Attitude to Personality Disorders Questionnaire
AWOL	Absence without leave
BPRS-18	Brief Psychiatric Rating Scale
CDHB	Canterbury District Health Board
DHB	District Health Board
DOH	Department of Health
HCA	Health Care Assistants
IMI-C	Impact Message Inventory – Circumplex
JBI	Joanna Briggs Institute
MAES:SF	Macarthur Admission Experience Survey: Short Form 1
MAVAS	Management of Aggression and Violence Attitude Scale
MBI	Maslach Burnout Inventory
MDT	Multidisciplinary Team
MSOAS	Modified Staff Observation Aggression Scale
MOH	Ministry of Health
MLQ	Multifactor Leadership Questionnaire
NZ	New Zealand
OAS	Overt Aggression Scale
PCC-SR	Patient-staff Conflict Checklist
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta Analyses
RC	Responsible Clinician
SMHS	Specialist Mental Health Service
STA	See Think Act
TCI	Team Climate Inventory
UK	United Kingdom
USA	United States of America
WAI-S	Working Alliance Inventory – Short Form
WAS	Ward Atmosphere Scale

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Chapter One – Background

1.1 Introduction

Violence and aggression within inpatient psychiatric units is a serious problem, and the notions are easily confused. Aggression is considered to be any behaviour that is carried out with the intention to cause harm to another individual whether it is physical, psychological or emotional harm, regardless of whether the action's intent occurs or not. (Rippon, 2000). Violence is regarded as an act of aggression which carries greater intensity, causing increased harm and consequence (Rippon, 2000). Both violence and aggression have detrimental effects on patient care, undermines staff well-being, and add extra costs to the organisation (Renwick et al., 2018). Perceived risks of aggression can be as problematic as actual aggression with the resulting psychological distress causing similar negative impacts (Hylén el al., 2018). As both the economic and psychological costs of violence and potential violence are high, effective measures to prevent interpersonal aggression are essential. Finding ways to prevent aggression in advance, as well as effectively diffusing imminent risks of violence are highly desirable goals (Hallett, Huber & Dickens, 2014).

A range of strategies are currently used to prevent and manage violent situations. These include reactive tools that are used when violence is imminent or has just occurred, such as physical restraint, seclusion, and verbal de-escalation (Cowman et al., 2017). Preventative approaches include environmental elements, for example building design and the use of locked doors (Kennedy, 2002). Procedural elements include ward guidelines, identification of banned items, and rules regarding visitors (Kennedy, 2002). Finally, there are relational tools, which include staff-patient ratios and time spent with patients (Kennedy, 2002).

Relational security is a preventative measure integral to providing safety for staff and patients within inpatient psychiatric environments. Unfortunately, its definition and scope are unclear and it is this issue that is explored in this dissertation. A useful initial working definition of relational security is the "quality of therapeutic relationship clinicians have with their patients and the way that this relationship is used to maintain safety throughout the recovery process" (Tighe & Gudjonsson, 2012,

p.184). Thus, it covers the interpersonal variables which are not related to procedural or environmental aspects of ward security.

This introductory chapter explains the concept of relational security and why it is so crucial for both safety and care. It begins with the historical context, explaining the concept's background, why it came into focus, and its relevance in today's care. Relational security's applicability to New Zealand is also discussed.

The review of current literature follows, consisting of four main parts aligned with the aims of this integrative review. The review begins with an overview of relational security, and highlights issues around definitions. Section 1.4.2 describes and defines relational security's quantitative elements. Section 1.4.3 clarifies the qualitative aspects of relational security. An outline of the integrative review aims completes the chapter.

1.2 Historical Context

In 1992, the Department of Health (DOH) and the Home Office in the United Kingdom (UK) completed a review of services for mentally disordered offenders which resulted in a three-pronged approach to security (Exworthy & Gunn, 2003). These were physical or environmental security, procedural security, and relational security (Kennedy, 2002). Figure 1 outlines the three aspects of security.

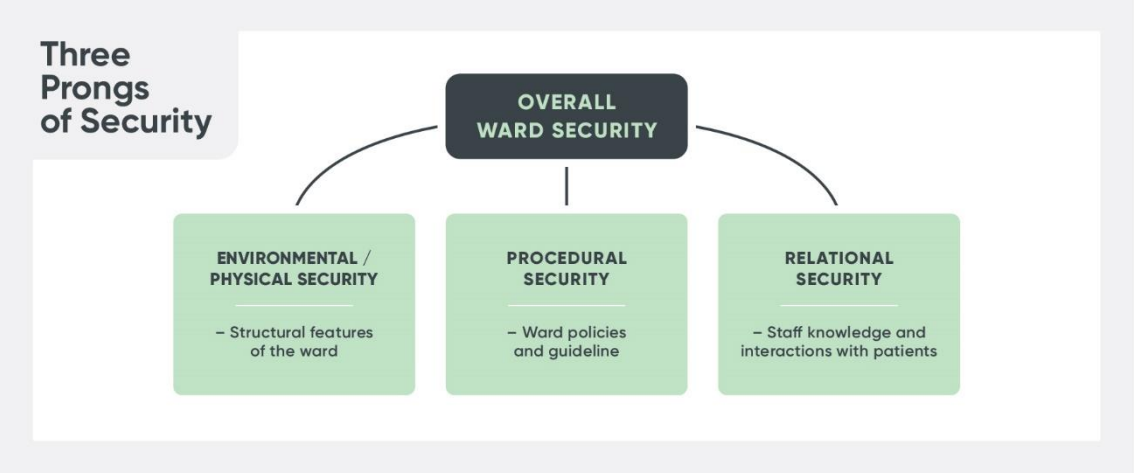

Figure 1: Three-prongs of security (Royal College of Psychiatry, 2003)

While all three features of security have been deemed important for the safe operation of an inpatient psychiatric ward (Collins, Davies & Ashwell, 2003; Exworthy & Gunn, 2003), relational security has increasingly been considered to have the most significant impact on patient care (Crichton, 2009) as it is the branch of security which closely relates to the care of the patient (Tighe & Gugjosson, 2012). This understanding of the impact relational security has on patient care and ward safety was reinforced with the creation and the implementation of the See Think Act (STA) guide (DOH, 2010) to relational security which was embedded into UK's medium secure forensic unit policy (E. Allen, personal communication, July 4th, 2018).

The STA guide (DOH, 2010) was created following several absences without leave (AWOL) incidents by patients from secure forensic wards in the UK. In 2009, the DOH, Ministry of Justice, and the head of policy for high, medium and low secure forensic units (Elizabeth Allen) met to consider how to prevent further AWOLs. While initially the focus was physical security, it was quickly identified that effective relational security was more likely to produce better outcomes (E. Allen, personal communication, July 4, 2018). Due to a desire for rapid change, a practical project was undertaken which looked at all incidents of assault and other serious events, across all forensic inpatient units throughout the UK. This review of incidents focused on what was happening before the incident, what changes in the patient presentation had occurred, and what had been noticed by the staff (E. Allen, personal communication, July 4, 2018). A synthesis of these incidents revealed eight key domains, with four overarching themes – team, other patients, inside world, and outside world (DOH, 2010).

There was a decrease in violent and aggressive interpersonal incidents within medium secure units (E. Allen, personal communication, July 4, 2018) after the formalised implementation of relational security in medium secure units through the STA guide (DOH, 2010). While not necessarily causal, this finding suggests there is value in examining relational security as a key violence prevention measure in these settings. More recently in 2015, Elizabeth Allen, instigator of the STA guide (DOH, 2010) completed a further informal review of the tool to see if it was still relevant. The review concluded that the relational security guide is still applicable to current care, but with greater emphasis on therapeutic work with clients (E. Allen, personal communication, July 4, 2018).

1.3 Relevance of Relational Security to New Zealand

New Zealand media frequently draws attention to a "mental health crisis" in the country. Since March 2017, 16 articles have been written containing concerns for staff safety and patient care in Christchurch's psychiatric hospital alone (Stuff, 2018). Waikato District Health Board (DHB) has reported a steady increase of assaults on inpatient staff since 2012 with figures rising from 136 in 2012 to 162 in 2015 (Biddle, 2016). A Government Inquiry into Mental Health and Addiction services commenced at the end of 2017 to identify problematic areas and to recommend solutions (Mental Health and Addiction Inquiry, 2018).

However, while media and the Government Inquiry have only recently been highlighting safety concerns, New Zealand literature has been documenting issues regarding the increasing pressures and unsafe working conditions nurses have faced for several years. Baby, Glue and Carlyle (2014) argued that psychiatric nurses have been required to work in increasingly challenging situations with fewer resources, heavier workloads, and increasingly hostile environments. The increasing interpersonal risk within psychiatric inpatient units has highlighted the need for skilled risk management. Violent incidents are not only financially costly to the individual and organisation, but also impact physically and psychologically on the individual and the wider team, not to mention the quality of patient care (Anderson & West, 2011; Baby et al., 2014; Chapman, Styles, Perry & Combs, 2010).

A related issue is New Zealand's aim to become seclusion free by 2020. According to the Ministry of Health's (MOH) Annual report, adult inpatient services accommodated 7,411 people in 2016. Of these, 10.8 percent required the use of seclusion (MOH, 2017). In forensic services, there were 511 seclusion events resulting in 112 people being put in seclusion for varying periods of time (MOH, 2017). These events were triggered by patients' extreme distress, aggression, interpersonal violence, or other risk behaviours caused by alcohol, drug and other substance use. For seclusion to be discontinued, safe ways to manage these risk situations must be available (Wilson, Hamblin & McNeil, 2018).

While ongoing improvements to the physical environment of inpatient psychiatric units are desirable and may lead to some reduction in violence within these units, the problem of acuity and increased exposure to inpatient violence will not be solved by physical structure alone (Crichton, 2009). Relational security not only provides the interpersonal security required to reduce inpatient aggression but also contributes to patient care (Tighe & Gudjonsson, 2012). In the UK, the DOH states that the "most effective form of security and, indeed, safety lies in the treatment of the patient" (DOH, 1994, as cited in Exworthy & Gunn, 2003, p.469). It reinforces relational security's essential role in ensuring care is provided to patients safely and effectively, as well as the need to focus on physical and procedural security (Collins, Davies & Ashwell, 2003). There is clearly a similar need in New Zealand's current mental health climate.

1.4 Breaking Down Relational Security

1.4.1 Defining Relational Security

There appears to be no clear, consistent definition of relational security. At times there is loose agreement in the literature about the overall concept, but the translation and emphasis on significant elements within relational security often vary. Variance in the definitions is likely to be at least partly caused by the Reed report, completed in 1994 in the United Kingdom, where the concept of relational security first arose. While the original report is unobtainable, it appears it produced several principles underlying the provision of services for mentally disordered offenders which are still in use today (Royal College of Psychiatrists, 2003). It did not provide a definitive definition of relational security, thereby laying the foundation for the inconsistencies in translation. The inconsistencies should not be overstated as there is some overall agreement that relational security provides interpersonal safety through the effective therapeutic alliance and in-depth knowledge that the multidisciplinary team has of the patient (Royal College of Psychiatry, 2003).

Tighe and Gudjonsson (2012) agree that there is no precise definition of relational security, describing it as a concept based on the "quality of therapeutic relationship clinicians have with their patients and the way that this relationship is used to maintain safety throughout the recovery process" (p.184). Collins and Davies (2005)

also note relational security's complexity, describing the concept as a clinician's detailed understanding of the patients receiving care, the management of patients' risk behaviours, and the relationship that the patient has with the clinical team. Crichton (2009) continues with these themes and relates relational security to risk assessment and management, based on the clinical team's relationship and knowledge of the individual.

Bergman-Levy, Bleich, Kotler and Melamed (2010) reduce relational security to a measure that indicates quality of care, while Exworthy and Gunn (2003) define relational security as the "detailed knowledge of patients, their backgrounds, and the reasons behind their admissions to high security hospital" (p.469). Davison (2004) returns to the focus on the therapeutic relationship, stating that relational security arises from the therapeutic relationship between staff and patients. Kennedy (2002) takes a slightly different perspective and defines relational security as relating to clinical resources and how they contribute to clinical care. Even the DOH agrees that relational security is challenging to define, and their definition is very general. They describe relational security in their 2010 See Think Act guide as the "knowledge and understanding staff have of a patient and of the environment, and the translation of that information into appropriate responses and care" (DOH, 2010, p. 5).

Comparison of the definitions of relational security show an evident variance; however, two underpinning themes feature in the definitions: the relationship between the clinical team and the patient, and the teams' knowledge of the patient (Collins & Davies, 2005; Crichton, 2009; Davison, 2004; DOH, 2010; Exworthy & Gunn, 2003; Tighe & Gudjonsson, 2012). Only Kennedy (2002) and Bergman-Levy et al. (2010) appear to have definitions of relational security that align more towards clinical resources and the effect on clinical care. Despite the underpinning themes, further investigation reveals considerable variation between the definitions according to the elements they variously identify as being paramount to relational security. These various elements can be classified by their quantitative and qualitative aspects and are discussed below.

1.4.2 Quantitative Elements of Relational Security

The literature incorporates a range of quantitative aspects of relational security with three main elements featuring regularly but not consistently. These elements are the staff-patient ratio, staff retention, and face-to-face time with patients (Bergman-Levy et al., 2010; Kennedy, 2002; Tighe & Gudjonsson, 2012). However, the various authors commonly do not define what is meant precisely by these aspects of relational security, leaving definitions to be assumed by the reader. This ambiguity makes application more difficult as it engenders inconsistencies in the implementation of relational security within inpatient units.

In medium and high security forensic units, high staff-patient ratios are normal (Kennedy, 2002). It is believed that patients in these contexts experience least restrictive care when there are high staff ratios in an already highly restrictive environment (Donat, 2002). Staff also benefit, as staff with lower patient loads experience greater job satisfaction and are less likely to experience burnout (Jenkins & Elliott, 2003). Many authors cite the staff-patient ratio as an essential element of relational security (Bergman-Levy et al., 2010; Crichton, 2009; Davison, 2004; Kennedy, 2002; Parry-Crooke & Stafford, 2009; Tighe & Gudjonsson, 2012). While the research indicates staff-patient ratios are an important element of relational security, and that fewer incidents of violence occur in wards where the staff-patient ratio approaches one-to-one, it is interesting that the STA relational security guide (DOH, 2010) does not mention the staff-patient ratio.

Staff retention and the use of temporary staff is the second frequently mentioned element of relational security (Bergman-Levy et al. 2010; Kennedy, 2002; Tighe & Gudjonsson, 2012). A high incidence of violence has been noted in shifts that include high levels of temporary staff (Owen et al., 1998). A higher incidence of violence on inpatient units has also been associated with lower levels of experience among nurses, new employees and lower rates of staff training (Owen et al. 1998). These factors reinforce the importance of staff training and retention in inpatient units.

The final frequently mentioned quantitative aspect of relational security is the face-to-face time staff have with patients (Bergman-Levy et al. 2010; Kennedy, 2002; Tighe & Gudjonsson, 2012). Face-to-face engagement with patients is arguably one of the primary functions of nursing (Whittington & McLaughlin, 2000), with research

indicating that increased staff-patient interactions, alongside patient activity, results in better clinical outcomes for the patient (Sharac et al., 2010). Again, the STA guide (DOH, 2010) does not specify face-to-face contact as an element of relational security; however, the guide does reinforce the importance of staff setting an example to patients through consistent, considerate and respectful interactions with patients (DOH, 2010).

1.4.3 Qualitative Elements of Relational Security

While there is relative agreement around the quantitative aspects of relational security, the qualitative aspects are less well defined (Tighe & Gudjonsson, 2012). This may be due to the qualitative elements being intertwined with the definitions available regarding relational security. Two of the central qualitative elements are the clinicians' knowledge of the patient and the relationships which are built between patient and staff.

Both Collins and Davies (2005) and the DOH (2010) definitions of relational security refer to the importance of knowing the patient. Collins and Davies (2005) describe the knowledge of the patient as the understanding of the circumstances that resulted in the patient being admitted and how that contributes to their current and future risk. The STA guide (DOH, 2010), in its initial definition of relational security, speaks to the importance of knowing the patient; however, the guide does not appear to mention this point again. Instead, the guide (DOH, 2010) refers to relational security on a more general basis, looking at the whole ward, rather than the knowledge of the individual. This change in focus creates challenges with the definition of relational security, as the variations in scope are likely to cause variations in interpretation.

The other constant in the relational security definition discussions is referral to the therapeutic relationship, but here again there are inconsistencies in definition. Kennedy (2002) and Exworthy and Gunn (2003) both mention the therapeutic relationship without further definition. Bergman-Levy et al. (2010) confine their view of the therapeutic relationship to the importance of communication and trust. Crichton (2009), Davison (2004), the DOH (2010), and Parry-Crooke and Stafford (2009), take a broader approach and extend the therapeutic relationship to include the patient, the ward programme, and greater ward active involvement in therapeutic activities. Adding to the confusion around the definition of relational security, literature often refers to the

therapeutic relationship or therapeutic alliance as staff-patient interactions when associated with violence outcomes (Hamrin, Iennaco & Olsen, 2009).

In summary, it is evident that defining relational security is a considerable challenge, as is isolating the concept's essential elements. While it is considered essential and arguably the most important branch of security, it also appears to be poorly researched (Royal College of Psychiatry, 2003). Through literature searches of PsychINFO, OvidMEDLINE, Embase, and Google Scholar, (using "relational security" as a key word) no research examining relational security and the effectiveness of its elements in managing interpersonal violence was found. Only one article (Tighe & Gudjonsson, 2012) and one dissertation (Chester, Alexander & Morgan, 2012) directly examining relational security were found. However, the aims of both were to assess the effectiveness of tools used to measure implementation of relational security within inpatient units. It is evident that relational security as a concept requires further research. The need for further research, the issues around the definition, and the problems deciphering the key elements of relational security collectively comprise the impetus for this integrative review. The integrative review aims are set out below.

1.5 Integrative Review Aims

It is hypothesised that while relational security is challenging to define, it is used throughout psychiatric inpatient units as an essential way to manage and contain risk. With this in mind, the aim of this integrative review is to evaluate the evidence of relational security factors in preventing violence within inpatient psychiatric settings.

1.6 Structure of this Dissertation

There is an array of ambiguities associated with the definition and scope of relational security which then translate into considerable difficulties in applying such an important concept. This integrative review attempts to remedy some of these problems.

The remainder of this review is divided into three sections. The first (chapter two) outlines the methodology used to complete the review. It outlines the approach

taken, identifies why an integrative review was chosen (section 2.2), specifies the inclusion criteria (section 2.3.2) and the key words used to search literature (section 2.4.2).

Chapter three focuses on results. It summarises the characteristics (section 3.2) and identifies the results drawn from the primary research, isolating key themes appearing across the data (section 3.3). Limitations found within the primary data are signposted, and the foundation is laid for further discussion.

The final section is the discussion chapter (chapter four). This chapter examines the meaning which can be taken from the results and the implications it has for current practice (section 4.5). It also provides a possible direction for further research, highlighting gaps in the current literature, and providing suggestions for how this can be remedied (section 4.6).

Chapter Two – Methods

2.1 Introduction

This chapter explains the methodology used in this integrative review. It begins with the rationale for such an approach. Section 2.3 clarifies the review method, establishes the integrative review objectives, and documents inclusion and exclusion criteria. Section 2.4 describes the search strategy, lists the selected databases, and identifies keywords. Section 2.5 details the process used for study selection. Section 2.6 describes the quality appraisal of the primary research, while section 2.7 identifies the data to be extracted from the primary research. Finally, section 2.8 describes the method for analysis.

2.2 Integrative Review Rationale

An integrative review is a research method involving an in-depth search of the literature on a specific topic, resulting in the evaluation of the evidence found and drawing of conclusions (Whittemore, 2005). It utilises primary data from a wide range of methodologies and provides a detailed analysis of a clinical issue or experience (Torraco, 2005; Whittemore, 2005). According to Torraco (2005), there are two main types of integrative review. One is a review of a well-known issue, resulting in a summary of what is already known or the re-conceptualising of the issue. The other, is a review of an emerging clinical issue, potentially leading to the initial conceptualising of a clinical problem (Torraco, 2005). This integrative review is the former, as relational security is a relatively well-known concept but is poorly defined and not well integrated into clinical care.

Like all research, integrative reviews have strengths and weaknesses. The main advantage lies in the ability to integrate data from studies with different types of methodologies, thereby enabling the use of a greater variety of material. This enables conclusions to be drawn from a greater breadth of data sources than could be obtained by use of a single methodology (Whittemore, 2005). The main weaknesses of an integrative review are its potential for bias from the researcher, and the challenges the researcher faces when managing a complicated analysis due to the inclusion of multiple research designs (Whittemore, 2005).

An integrative review was chosen for this dissertation as its breadth enables an overview of all that is currently known on relational security. It can incorporate a wide range of methodologies and analyse both experimental and non-experimental research (Whittemore & Knafl, 2005). The methodology allows a comprehensive understanding of the issues by presenting all the current available evidence (Whittemore & Knafl, 2005). It also enables essential elements concerning a clinical issue (in this case relational security) to be identified (Whittemore & Knafl, 2005). These attributes made an integrative review an ideal choice for completing the current examination given the broad nature of the relational security concept and its quantitative and qualitative elements. These elements would not have been captured if the study had been limited to one type of primary data.

2.3 Integrative Review Methods

The following review method is outlined as per the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist (2009).

2.3.1 Integrative Review Objectives

As outlined in chapter one, section 1.5, the aims for this integrative review were to:

4. Develop a clear working definition of relational security
5. Establish a framework to describe the core components of relational security and their relationship to each other
6. Assess which components of relational security have the strongest evidence for being effective in violence prevention

2.3.2 Inclusion Criteria

Population of Interest

The population of interest included in this integrative review comprised of psychiatric inpatient units that housed adults, including older adults, aged 18 years old and older. The inpatient units included acute, intensive care, and long-term rehabilitation units, as well as high, medium and low-security forensic units. The wards were not required to be gender specific.

Exposures of interest

The exposures of interest for this study are listed below and are derived from the items considered key to relational security in the range of definitions provided in chapter one:

- Staff-patient ratio
- Staff retention
- Use of temporary staff
- Face-to-face time with patients
- Patient activity/therapeutic activities
- Knowledge of the patient
- Therapeutic relationship

Outcome Measure

The primary outcome is the incidence of interpersonal violence and aggression within an inpatient setting. This outcome can be measured through actual incidents or through hostility rating scales; either self-rated by a participant or through an independent assessor. In addition to this, studies that investigated staff and patients' beliefs on what contributes and prevents escalation of the aggression and violence in inpatient units were also sought. 'Aggression' and 'violence' are often words used as synonymous for one another (Rippon, 2000). Due to this usage, it is a challenge to have separate definitions; however, for the purpose of this integrative review 'aggression' is defined as any behaviour carried out with the intent to cause harm to another individual, whether it be

physical, psychological or emotional (Rippon, 2000). This also includes any action that was aimed to do harm regardless of whether the actions intent was successful or not. It also includes any purposeful action taken with the intention to do harm towards an object. Violence is considered as acts of aggression which carry increased intensity, causing greater harm and consequence from the action (Rippon, 2000). Whether the action of the perpetrator is intended to cause harm and the severity of the resulting harm will be defined by the primary research obtained.

Study Design

This integrated review included all primary research designs, including case control, cohort, cross-sectional, randomised trials, case series, and qualitative studies that meet the other inclusion criteria. It also includes any studies that examine patient and staff beliefs about relational security and its use in managing interpersonal violence.

2.3.3 Exclusion Criteria

Any primary research that did not mention the outcome measure and any interventions not deemed to be in keeping with relational security were excluded from further analysis. This integrative review did not aim to specifically examine seclusion or restraint (including chemical restraint) methods for managing violence and aggression; however, articles which referred to restraint measures in their outcomes but utilised relational security methods to initially manage aggression and violence before the use of restraint, were included.

Articles specifically examining children and adolescents (aged <18), people with dementia, and those with organic brain injuries or intellectual disabilities were excluded due to the different care requirements required in managing their aggression and violence. Units predominantly focused on managing personality disorders were also excluded due to their different care requirements (Clarkin et al., 2007).

Literature reviews, dissertations and conference briefs were excluded from further analysis because they were not deemed primary research; however, their reference lists were examined to aid in the identification of relevant studies meeting the inclusion criteria (Evans & Pearsons, 2001). Texts were limited to English language only. As the concept

of relational security dates from the Reed report, which was published in 1994, only texts published from 1995 until the present day were considered.

2.3.4 Ethical Approval

Due to this being an integrated review of already published literature, no formal ethical approval was required. However, this work was conducted in accordance with the standards expected by both the University of Otago and the Canterbury District Health Board (CDHB), the organisation funding this review. To be included in this review all primary research had to demonstrate that ethical approval was obtained.

2.4 Search Strategy

2.4.1 Databases Selected

A comprehensive online database search was completed on the following electronic databases during March and April 2018:

- PsychINFO 1806 to April Week 4 2018
- Ovid MEDLINE® 1946 to present day with daily updates
- Embase 1947 to April 2018 with daily updates

Each database was selected for its own specific reason. PsychINFO was chosen due to its focus on mental health. It is considered the key database for mental health related topics (University of Otago, 2018a). Ovid MEDLINE was selected due to it being a large multidisciplinary database that is considered a good source for most medical research (University of Otago, 2018b). Embase is a biomedical and pharmaceutical database that covers a wide range of international literature and considered a comprehensive source for mental health research (University of Otago, 2018c).

CINAHL, a database providing nursing and allied health literature (University of Otago, 2019) was also considered. However, due to the difficulties in obtaining relevant citations in the pilot searches, it was not included in the final database search.

2.4.2 Search Terms

With the support of a librarian at the Otago School of Medicine, Christchurch campus library, an initial pilot search was performed to identify keywords. A search using the term "relational security" identified only three citations that met search criteria. Therefore, an expanded list of keywords was used, including aggression, violence, inpatient, mental disorder, aggression management and psychiatry. Due to the lack of a cohesive definition of relational security and the focus on violence management, terms including "relationship" or "communication" were not included due to the potential difficulties associated with narrowing the results. A pilot search using the term 'therapeutic relationship' and 'therapeutic alliance' was completed with minimal results relating to the inclusion criteria. During searches of each database these keywords were truncated and mapped to subject headings. A detailed outline of the search strategy is found in Appendix One.

As shown in Appendix One, Boolean operators were used to combine keywords within each database (Dinet, Favart & Passerault, 2004). This helped define the relationship between the keywords, focusing the search to meet the researcher's search criteria (Dinet et al, 2004; Yuan, 1997). Firstly, the terms 'violence' and 'aggression' were truncated, mapped to subject headings and combined with the Boolean operator OR. The terms were then combined with 'inpatients' which went through its own truncation and mapping to subject headings yelding 63675 results. The terms 'mental disorder', 'aggression management' and 'psychiatry' were similarly truncated and mapped and combined via Boolean operator AND to reduce the results to 947. The remainder of the study selection process can be found in the results chapter, section 3.2.

2.5 Study Selection

Figure 2 below shows the PRISMA flow diagram created to show the processes used for study selection.

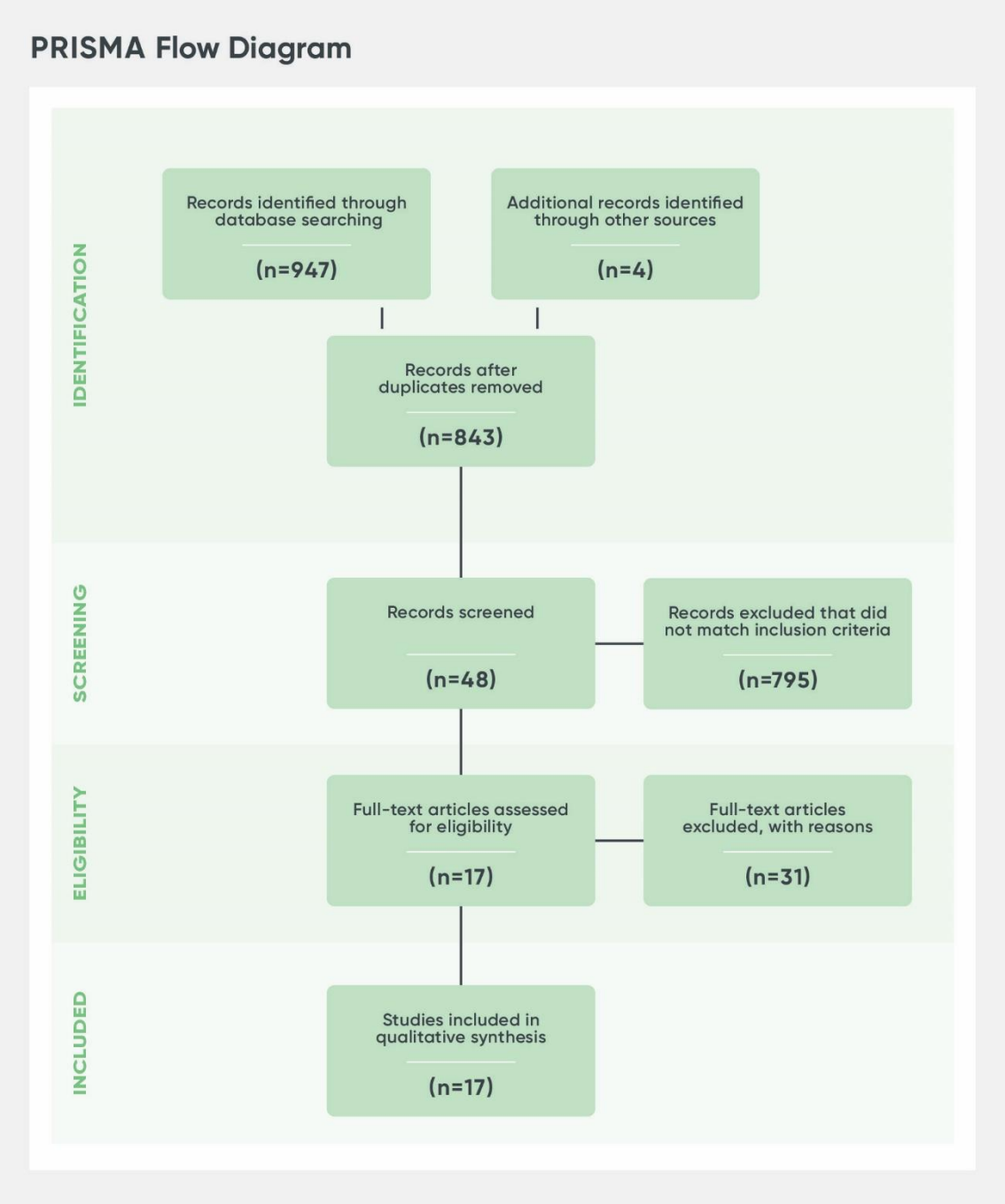

Figure 2: PRISMA Flow Diagram (Moher et al., 2009)

As noted in the search strategy section (2.3.2) and as illustrated above, a total of 947 articles were identified following a keyword search. All duplicates were removed, resulting in 843 citations. The remaining titles were screened, and abstracts subsequently reviewed for any study with a title indicating it might be relevant to the aims of this integrative review. Following the review of abstracts, 44 studies were deemed appropriate for inclusion. A further four articles were found through Google Scholar and by scanning the reference lists of included studies. This resulted in a total of 48 citations advancing to the review stage of the full text. Upon review of the full

text, 31 articles were removed due to either not mentioning violence and aggression outcomes or failing to have relational security elements as interventions. This resulted in a final selection of 17 articles eligible for the final data set, which examined relational security measures and its association with interpersonal violence and aggression within inpatient psychiatric settings.

2.6 Quality Appraisal and Assessment of Bias in Individual Studies

2.6.1 Joanna Briggs Institute Critical Appraisal Tools

The Joanna Briggs Institute (JBI) critical appraisal tools were used to assess the quality of the primary research in this integrative review as an essential step for identifying the best standard of research suitable for evidence-based decision making (Wendt & Miller, 2012). This is essential in an integrative review, as the primary research is largely heterogeneous (Whittemore & Knafl, 2005), requiring close attention to the quality of the material (Kmet, Lee & Cook, 2004).

Four JBI checklists were used in this review: qualitative research, analytical cross-sectional studies, case series, and case-controlled studies (JBI, 2017). Each checklist has a predetermined set of criteria against which the primary research is critiqued. The checklists criteria address the potential for bias within the research by questioning the transparency of critical features in each methodology (JBI, 2017). For example, in the qualitative research checklist, it asks if the "conclusions drawn in the research report flow from the analysis or interpretation, of the data?" (Lockwood, Munn, & Porritt, 2015, p.3). Details of the checklists used can be found in Appendix Two.

2.6.2 Joanna Briggs Institute Quality Assessment Results

The JBI critical appraisal tools were used to assess the quality of the primary research by examining the strengths and limitations of the methodologies used (Moola et al., 2017). Each article was independently reviewed by a primary and secondary reviewer. Following article reviews, any differences in scores were reviewed and

discussed before allocating the final JBI appraisal score. Table 1 outlines the JBI scores of the primary research.

Table 1: Joanna Briggs Institute Quality Assessment

Article	Study Method	JBI Score
Bensley, Nelson, Kaufman, Silverstein & Shields (1995) USA	Qualitative	9/10
Bond and Brimblecombe, 2003, UK	Qualitative	6/10
Hinsby & Baker (2004) UK	Qualitative	9/10
Meehan, McIntosh & Bergen (2006) Australia	Qualitative	9/10
Wright, Duxbury & Crampton (2014) UK	Qualitative	7/10
Spokes, Bond, Lowe, Jones, Ilingworth, Brimblecombe & Wellman (2002) UK	Qualitative	7/10
Bowers, Allan, Simpson, Jones, Merwe & Jeffery (2009) UK	Cross sectional	4/8
Cookson, Daffern & Foley (2012) Australia	Cross sectional	7/8
Daffern, Mayer & Martin (2006), Australia	Cross sectional	5/8
Dickens, Piccirillo, & Alderman (2013), UK	Cross sectional	6/8
Duxbury (2002) UK	Cross sectional	4/8
Janssen, Noorthoorn, van Linge & Lendemeijer (2007) The Netherlands	Cross sectional	5/8
Pulsford, Crumpton, Baker, Wilkins, Wright & Duxbury (2013) UK	Cross sectional	3/8
Duxbury & Whittington (2004) UK	Qualitative Cross sectional	7/10 3/8
Chou, Lu & Mao (2002) Taiwan	Case Control	3/10
Reade and Nourse (2012) USA	Case Series	3/9
Shephard and Lavender (1999) UK	Case Series	6/10

As evident from table 2 above, there is a range in quality of the final 17 articles selected. Several received lower scores because of uncertainty over whether they met checklist criteria. For example, whether their outcomes were measured in a valid and reliable way. Regardless of the scores, all the relevant articles continued to be included

in this integrative review due to the limited research in this area, and to ensure that no bias was created by removal of primary research.

2.7 Data Extraction

Data were extracted from all the studies using a data extraction template created by the reviewer (Appendix Three). From each study the following data were obtained:

- Author(s)
- Title
- Country
- Type of research
- Setting and demographics of patient(s)
- Perspective
- Measures
- Factors associated with violence and aggression
- Violence and aggression outcomes
- Measures of association between relational security interventions and violence outcomes

2.8 Data Analysis

Data analysis is the process of understanding the relevant data gathered from primary material (Caudle, 2004). In an integrated review, data analysis is undertaken to provide a summary of the primary research (Whittemore & Knafl, 2005). As the primary data methodologies are heterogeneous, the data analysis stage can be a considerable challenge (Whittemore & Knafl, 2005). This is because a direct comparison of findings cannot be completed in many cases. Instead, the data must be systematically organised, coded and finally summarised to form a coherent conclusion (Whittemore & Knafl, 2005). Some of the challenges expected in this review were the different data collection contexts. For example, secure forensic units versus general adult; UK versus United States of America (USA).

The four stages of analysis approach utilised in this review has been described by Whittemore and Knafl (2005). It was chosen due to its systematic approach to

analysis, it's compatibility with managing data from a diverse range of methodologies, and its ability to make sound comparisons between different types of primary data (Whittemore & Knafl, 2005). The four stages of analysis involve: data reduction, data display, data comparison, and finally, conclusion drawing and verification (Whittemore & Knafl, 2005). These four stages are outlined below.

Data Reduction

Data reduction involves the division and organisation of data to facilitate further analysis given the diversity of methodologies (Whittemore & Knafl, 2005). The collected research was grouped according to methodology. This enabled further extraction and coding of data (Whittemore & Knafl, 2005). All pertinent data relating to relational security interventions and violence and aggression outcomes was then transferred onto an Excel spreadsheet. A summary of these findings can be found in Appendix Four. Codes were applied according to the similarity of intervention. For example, all data referring to staff-patient communication was grouped under a code labelled 'communication'. The process refined the data into a manageable volume of information and provided a basis for assessing the data in a meaningful way (Whittemore & Knafl, 2005). Once data reduction was completed, the data display stage could begin.

Data Display

Data display involves taking the data from individual primary sources and combining it with other primary sourced data with similar variables (Whittemore & Knafl, 2005). This stage was also completed via an Excel spreadsheet, with colour coding to indicate the data coding. The process resulted in the creation of eight primary codes, enabling patterns and themes within the studies to be identified (Whittemore & Knafl, 2005).

Data Comparison

Data comparison followed the data display stage. This involved drawing out any patterns, themes or relationships in the compiled data and grouping these findings together. Again, this study made use of an Excel spreadsheet and colour coding. Similar variables were grouped, and relationships within the data began to appear (Whittemore & Knafl, 2005).

Conclusion Drawing and Verification

This final stage of data analysis involved common relationships, patterns and differences being highlighted placed in overarching themes (Whittemore & Knafl, 2005). Primary sources were re-checked to ensure accuracy and to prevent premature conclusions (Whittemore & Knafl, 2005) and the eight codes were consolidated down to three major themes (Appendix Five). This final stage of data analysis enabled conclusions to be drawn about the themes and relationships that had been highlighted (Whittemore & Knafl, 2005).

2.9 Conclusion

An integrative review was chosen for this study as it allowed for all current primary research, exploring all the different aspects of relational security. This methodology enabled extraction, classification, analysis of key data, allowing conclusions to be drawn in a meaningful object manner. The findings from this process are examined in the next chapter, alongside identification of limitations within the primary research.

Chapter Three – Results

3.1 Introduction

This chapter presents the integrative review findings in two sections. The first (section 3.2) examines the characteristics of the primary research found, and highlights the types of methodologies used, country of origin, study focus and setting. The second section (3.3) provides a narrative of the data synthesised from the primary research.

To help summarise the data, section 3.3 has been split into the three main themes synthesised from the primary research. These are*: therapeutic relationship*, *ward climate*, and *team dynamics*. Each of these themes is defined and further reduced to its subthemes, where the qualitative and quantitative research results are presented in a table with a narrative summary beneath.

The sub-themes highlighted are used to develop a working definition of relational security and to identify the key elements which help mitigate the risk of interpersonal violence within psychiatric inpatient facilities. A detailed explanation regarding the process used for data analysis can be found in chapter two, section 2.8.

3.2 Characteristics of Included Studies

Table 2 below highlights the characteristics of the 17 articles which met the eligibility criteria of this integrative review.

Table 2: Characteristics of Included Studies

(full names and definitions of the measures can be found in appendix six)

Author, Date and Country	Methodology	Primary Aim, Research Design and Measures	Focus and Setting	Summary of Relational Security components relating to violence and aggression
Bensley, Nelson, Kaufman, Silverstein & Shields (1995) USA	Qualitative	• Aim: to obtain staff and patient views on factors influencing staff assaults • Focus group interviews with patients + questionnaire survey with staff	• Staff (n=137) and patient (n=69) perspectives • 8 inpatient wards across two hospitals (exact types unspecified)	• Staff interpersonal skills • Perception of not being treated with respect • Poor explanation of ward rules • Staff training in management of aggression • Adequate staffing numbers
Bond and Brimblecombe, 2003, UK	Qualitative	• Aim: to obtain staff views regarding individual staff characteristics contribute to inpatient violence • Semi-structured interviews based around the following three questions: 1. Do you believe that the individual characteristics of staff can increase the likelihood of them being victims of violence at work?	• Nursing staff perspectives (n=102) • Unspecified psychiatric inpatient setting	• Good communication, manner, human relation skills, decisiveness, diversional skills, assessment skills, experience and knowledge and non-threatening style all important when preventing/managing aggression • Poor communication, personality factors, rudeness/affront and placing self in positions of risk all contributors to aggression

		2. What characteristics do you believe that you possess which decreases the likelihood of you personally being a victim of a violent incident? 3. Which, if any, personal characteristics of other staff do you believe may make them more likely to be a victim of a violent incident?		
Hinsby & Baker (2004) UK	Qualitative	• Aim: Staff and patient descriptions of violence • Semi-structured interviews which asked participants to identify and describe a violent incident they were closely involved with	• Staff (n=4) and patient (n=4) perspectives • Medium secure forensic	• Power struggle for control • Management of violence/aggression seen as punishment/punitive • Flexibility of rules depended on staff experience and confidence • Nurses felt a need to control situation, rather than understand • Emphasis on control/safety rather than understanding and care
Meehan, McIntosh &	Qualitative	• Aim: to obtain patient perceptions of factors that led to aggression and strategies to	• Patient perspectives (n=	• Staff lack of understanding/empathy

Bergen (2006) Australia		reduce the risk of such behaviours • Focus group discussions: ○ 5x discussion groups with 4-7 patients in each	27; 22x male, 5x female) • Two high secure forensic unit (1x admission, 1x long stay)	• Staff readiness to help patients with requests • Inflexible/strict staff • Cancelled activities/lack of meaningful activities • Early intervention – proactive approach
Wright, Duxbury & Crampton (2014) UK	Qualitative	• Aim: obtain the attitudes of patients and staff towards the management of violence and aggression • Semi-structured interviews	• Staff attitudes (n=10) and patient attitudes (n=8) • High secure forensic	• Patient's trust in staff & perception of patient/staff role • Staff receptiveness & availability to patient needs • Ward activities • Staff attitudes • Staff gender balance
Spokes, Bond, Lowe, Jones, Ilingworth, Brimblecombe & Wellman (2002) UK	Qualitative	• Aim: to obtain staff views about staff behaviours and other factors which contributed to or reduced inpatient violence • Structured interviews through a specifically designed staff interview form	• Nurse and health care assistants' perspectives (n=108) • 10x Acute admission, 2x intensive care, 1x low secure forensic unit	• Strengths in interpersonal skills – verbal skills, rapport, giving explanations, observational skills, rationalising, backing off • Weaknesses in interpersonal skills – poor communication, rude & patronising, non-verbal skills, listening skills • Nurse characteristics positives – self-awareness, being calm, self-controlled, confident, exerting control, not scared

				• Nursing characteristics weaknesses – confidence, fear, self-control, confrontational, physical avoidance, authorisation • Team Characteristics strengths – teamwork, knowledge, physical skills, length of service, experience of violence • Team characteristics weaknesses – training courses, physical skills, teamwork, lack of experience, practice, knowledge

Bowers, Allan, Simpson, Jones, Merwe & Jeffery (2009) UK	Cross Sectional	• Aim: to assess relationship of patient aggression with other conflict behaviours
		• Multivariate cross-sectional design
		• Measures:
		  ○ PCC-SR
		  ○ ACMQ
		  ○ APDQ
		  ○ WAS
		  ○ TCI
		  ○ MLQ
			• Antecedents to aggression
			• Acute inpatient
				• Holding regular community (patient and staff) meetings
				• Planned ward activities
				• Better team functioning (communication, organisation, lower rates of burnout) reduce ward aggression

		○ MBI		
Cookson, Daffern & Foley (2012) Australia	Cross Sectional	● Aim: to examine the relationship between interpersonal style, perceived coercion, psychiatric symptoms on therapeutic alliance ● Semi-structured interviews: ○ MAES: SF ○ BPRS-18 ○ WAI-S ○ IMI-C ○ OAS	● Patients (n=79) ● Acute inpatient	● Hypothesis of poor therapeutic relationship would predict aggression towards staff unsupported
Daffern, Mayer & Martin (2006), Australia	Cross Sectional	● Aim: examine staff gender ratio relationship with inpatient aggression ● Nursing roster review: Ratio of male to female staff per shift and gender of shift lead recovered over a 6 month period. Compared with time of aggressive incidents.	● Staff gender ratio ● Secure forensic facilities – 2x acute male units, 1x acute female, 1x extended care unit, 1x intensive psychosocial rehabilitation unit	● No significant relationship between gender of staff and aggression regarding both severity and occurrence of incidents

Dickens, Piccirillo, & Alderman (2013), UK	Cross Sectional	• Aim: to explore staff and patient attitudes regarding the management of violence • Cross-sectional comparative questionnaire ○ MAVAS	• Staff (n=72) and patients (n=98) perspectives • Medium and low secure forensic	• Improvement in relationship and communication between staff and patients required • Negotiation an important tool in managing aggression • Not all expressions of anger require staff intervention

Duxbury (2002) UK	Cross Sectional	• Aim: record nature and management of aggressive and violent incidences. Obtain staff and patient views of causes and management of violence
		• Pluralistic evaluation design
		  ○ MAVAS
		  ○ Semi-structured interviews with 4 nurses, 3 doctors and 4 patients
		  ○ MSOAS
			• Nursing staff (n=72), medical staff perspectives (n=10) and patient perspectives (n= 80)
			• 3x acute inpatient
				• Staff interactions
				• Patients perceiving themselves to be victims of a controlling style of nursing in context of a restrictive environment
				• Nursing staff perception that they are victims of patient aggression and an inadequate organisation

Janssen, Noorthoorn, van Linge & Lendemeijer (2007) The Netherlands	Cross Sectional	• Aim: to explore effects of staffing levels on seclusion episodes • Three years of data collected regarding seclusion incidents,	• Influence of staffing levels • 4x adult long stay, 6x adult admission units	• Patients less likely to exhibit potentially dangerous behaviours in presence of permanent staff • High female ratios result in high levels of seclusion

		patient admissions, and staff members working each day: ○ Gender ○ level of education ○ work experience ○ employment status ○ staff patient ratio ○ male female ratio		• Mixed team experience - a balance of both old and new staff permanent staff important • High patient staff ratios and temporary cause increased incidents of seclusion
Pulsford, Crumpton, Baker, Wilkins, Wright & Duxbury (2013) UK	Cross Sectional	• Aim: Obtain staff and patient perspective regarding causes and management of violence • Cross-sectional comparative questionnaire: ○ MAVAS - with 5-point Likert scale	• Staff perspectives (n=109) and patient perspectives (n= 26) • High secure forensic	• Improved relationships and communication between staff and nurses • Aggression expressions of frustration and anger – responses to theses cause or prevent escalation • Cultural differences between staff and patients • Staff gender mix
Duxbury & Whittington (2004) UK	Qualitative Cross Sectional (Mixed Method)	• Aim: Obtain staff and patient perspectives regarding causes and management of violence • Cross-sectional comparative questionnaire: ○ MAVAS	• Staff perspectives (n= 80) and patient perspectives (n=82) • Acute, intensive care and high dependency	• Need for improved interactions with patients when managing aggression • Poor communication and ineffective listening skills

		○ Follow up interviews with 5 staff and 5 patients		
Chou, Lu & Mao (2002) Taiwan	Case Control	• Aim: examine inpatient assaults and staff factors related to them • Prospective survey design: ○ Log system used to record occurrence of assault in each ward. Once assault identified, interview conducted with victim of assault	• Nurses (n=79) • 7x acute inpatient wards in four hospitals	• Assaulted staff – younger, had less experience and less training in identifying risk factors of assaultive patients and management techniques
Reade and Nourse (2012) USA	Case Series	• Aim: to report on the management of 5 patients considered high risk of violence, following their involuntary admission • Retrospective analysis	• Patient management – 5 patient's cares reviewed • Acute inpatient	• Staff availability to patients • Provision of therapeutic interventions for de-escalation/individualised care plans • Ward capacity + staff increase to manage acute situations/continue to run ward programmes/activities • Efficient and effective communication between floor staff, greater MDT and security

Shephard and Lavender (1999) UK	Case Series	• Aim: to look at antecedents and management of violence incidents • Semi-structured interviews • Collection of incident data over a 5-month period across 13 inpatient wards with follow up interview with one staff member involved in the incident (n=130)	• Staff (n=130) • 3x rehabilitation, 3x continuing care, 2x elderly, 2x admission, 1x substance misuse, 1x low secure, 1x medium secure	• Verbal strategies, patient centre focus • Nil incidents of aggression occurred during therapeutic context • Access to extra staff important

Table 1 shows that a range of methodologies was used with both qualitative (Bensley et al., 1995; Bond & Brimblecombe, 2003; Hinsby & Baker, 2004; Meehan et al., 2006; Spokes et al., 2002; Wright et al., 2014) and cross sectional (Bowers et al., 2009; Cookson et al., 2012; Daffern et al., 2006; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Janssen et al., 2007; Pulsford et al., 2013) designs being the most common. Ten of the seventeen articles investigated the perspectives of staff and/or patients (Bensley et al., 1995; Bond & Brimblecombe, 2003; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Hinsby & Baker, 2004; Meehan et al., 2006; Pulsford et al., 2013; Spokes et al., 2002; Wright et al., 2014), often focusing on participants beliefs about the antecedents and management of inpatient aggression. Only two articles performed quantitative analyses of the association between relational security factors and violence outcomes. In both cases, these studies examined the effect of staffing levels and staff gender ratios on inpatient aggression (Daffern et al., 2006; Janssen et al., 2007).

Ten of the seventeen articles originated from the UK (Bond & Brimblecombe, 2003; Bowers et al., 2009; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Hinsby & Baker, 2004; Pulsford et al., 2013; Shephard & Lavender, 1999; Spokes et al., 2002; Wright et al., 2014), while three came from Australia (Cookson et al., 2012; Daffern et al., 2006; Meehan et al., 2006), and two were from the USA (Bensley et al., 1995; Reade & Nourse, 2012). Of the remaining two, one comes from the Netherlands (Janssen et al., 2007), and the other from Taiwan (Chou et al., 2002). The date range of the articles was 1995 to 2014, with the majority written during or after 2002 (Bond & Brimblecombe, 2003; Bowers et al., 2009; Chou et al., 2002; Cookson et al., 2012; Daffern et al., 2006; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Hinsby & Baker, 2004; Janssen et al., 2007; Meehan et al., 2006; Pulsford et al., 2013; Reade & Nourse, 2012; Spokes et al., 2002; Wright et al., 2014). Six of the articles looked exclusively at high, medium and low secure forensic settings (Daffern et al, 2006; Dickens et al., 2013; Hinsby & Baker, 2004; Meehan et al., 2006; Pulsford et al., 2013; Wright et al., 2014), five were set in acute inpatient units (Bowers et al., 2009; Chou et al., 2002; Cookson et al., 2012; Duxbury, 2002; Reade & Nourse, 2012), and another four in a range of inpatient units including acute and long-term care (Duxbury & Whittington, 2004; Janssen et al., 2007; Shephard & Lavender et al., 1999; Spokes et al., 2002). Only two articles did not specify the type of psychiatric inpatient units examined (Bensley et al., 1995; Bond & Brimblecombe, 2003).

3.3 Synthesis

3.3.1 Overview of Themes

The primary research revealed three overarching themes: *therapeutic relationship*; *ward climate*; and *team dynamics*. The characteristics of each of these constructs are discussed in more detail in section 3.5.2, 3.5.3 and 3.5.4 respectively. These themes were mapped from the primary research through the data analysis process described in chapter two. The analysis included grouping similar variables, thus enabling common relationships within the primary data to appear. Figure 3 displays the sub-themes which underpin these three themes.

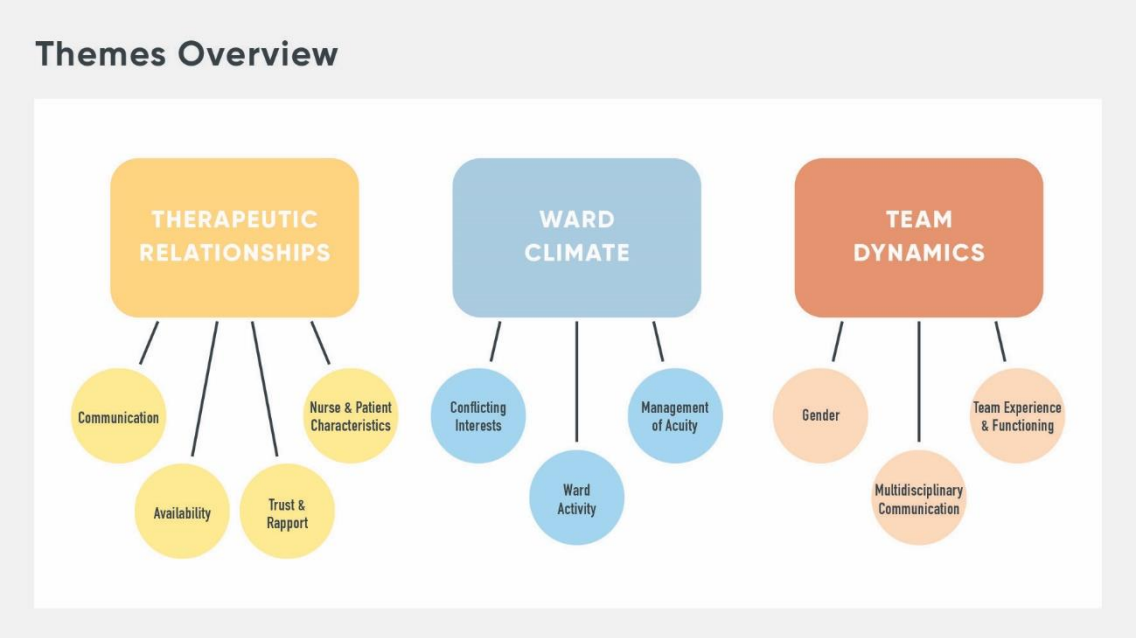

Figure 3: Themes Overview

Each sub-theme is then defined, and the research results relating to the sub-theme described. While the themes and sub-themes have been listed as distinct individual elements, the findings show that these elements often overlap and that, as in the three branches of security discussed in the first chapter, each is as important as the other elements in reducing the risk of interpersonal violence within inpatient settings.

3.3.2 Theme One: The Therapeutic Relationship

The therapeutic relationship is seen as a "dynamic, two-way, reciprocal relationship" (Ramjan, 2004, p. 496). It is a relationship formed between clinician and patient, regarded as patient-centred, and reliant on trust, empathy and respect (Hagerty & Patusky, 2003; Hewitt & Coffey, 2005). The therapeutic relationship theme consists of four sub themes: communication, availability, trust and rapport, and nursing and patient characteristics.

Communication

Communication refers to the verbal dialogue between staff and patients, as well as use of non-verbal communication tools, such as body language (Stein-Parbury, 2009). Communication is a key component of the therapeutic relationship as it is through communication that staff can de-escalate and manage potentially dangerous situations.

Table 3 below provides a summary of the six articles identifying communication as being an important factor in mitigating the risk of interpersonal aggression. Five out of the six articles focus on staff and patient beliefs about factors that influence interpersonal violence (Bond & Brimblecombe, 2003; Dickens et al, 2013, Duxbury, 2002; Duxbury & Whittington, 2004; Pulsford et al, 2013). Four of these articles use the Management of Aggression and Violence Attitude Scale (MAVAS) tool (Duxbury, 2003), a level of agreement scale that assesses participants' attitudes regarding aggression and its management (Duxbury, 2003).

The final study, Shepherd and Lavender (1999), collected incident data, noting how each incident was managed. However, again, the context is missing with the management of situations being reduced to short phrases, for example "other verbal interventions" (Shepherd & Lavender, 1999, p. 165). The article's usefulness is limited as there is little context given around exactly what the strategies were and how their effectiveness was assessed.

Table 3: Communication

Author, Date, and Country	Results
Pulsford, Crumpton, Baker, Wilkins, Wright & Duxbury, 2013, UK	• Staff and patients agree that 'poor communication between staff and patients lead to patient aggression' • Staff and patients agree that 'negotiation could be used more effectively when managing aggression and violence'

Dickens, Piccirillo, & Alderman, 2013, UK	• Staff and patients agree that 'poor communication between staff and patients lead to patient aggression' • Staff and patients agree that 'negotiation could be used more effectively when managing aggression and violence'
Duxbury & Whittington, 2004, UK	• Patients agree that 'poor communication between staff and patients lead to patient aggression' – staff disagree • Staff and patients agree that 'the use of negotiation could be used more effectively when managing aggression and violence' • Follow up interviews reinforced patient belief regarding ineffective listening skills causing aggression, while staff continued to disagree but did acknowledge that their management of inpatient violence could be improved
Duxbury, 2002, UK	• Staff and patients agreed that 'poor communication between staff and patients leads to patient aggression' ($p = 0.001$) • Participants' beliefs regarding if 'the use of negotiation could be used more effectively when managing aggression and violence' was not reported on
Bond & Brimblecombe, 2003, UK	• 70 staff (71.4%) felt good communication skills lessened the risk of violence. Attributes included: use of body language, use of voice and active listening • 61.7% felt poor communication increased risk of violence. Attributes included: lack of understanding, not explaining, being accidentally inattentive

Shepherd & Lavender, 1999, UK	• Verbal strategies utilised to manage 39 incidents
	  ○ 14 used 'other verbal interventions' – what these interventions involved was not disclosed
	  ○ "Counselling" employed on 25 occasions – 91% of these occasions this consisted of staff exerting their authority; 8.7% of these occasions involved patient-centred situations where patients were invited to vent their feelings or express their perspective

All the six articles agreed that poor communication increased the risk of inpatient aggression and violence to some extent. Three of the studies (Dickens et al., 2013; Duxbury, 2002; Pulsford et al., 2013), found that both staff and patients agreed that poor communication between staff and patients heightened the risk of inpatient violence, while

Duxbury and Whittington (2004) who also utilised MAVAS tool, found that patients agreed with the above statement, but staff disagreed. Again, in three of the articles (Dickens et al., 2013; Duxbury, 2002; Pulsford et al., 2013) found that patients and staff both believed that negotiation could be used more effectively when managing aggressive situations.

Bond and Brimblecombe (2003) found that staff viewed good communication as a protective trait and included the use of body language, use of voice and active listening in their definition of communication. Shepherd and Lavender (1999) also reported on communication in the management of aggressive incidents: out of 127 aggressive incidents, 39 were managed solely with verbal strategies. Twenty-five out of the 39 were described as managed by 'counselling'. However, 91% of these incidents involved staff exerting their authority and in only 8.7% of counselled aggressive incidents were patients allowed to express their feelings and voice their perspective.

Availability

For this integrative review 'availability' refers to the physical presence of all staff on the ward; staff spending time with patients and patients' perception of staff being receptive to engaging when patients need to express their feelings. By supporting patients in this manner, staff are acknowledging and validating the patient, reinforcing that the patient is valued (Stein-Parbury, 2009). Table 4 below summarises the eight articles that informed this subtheme.

Many of the review findings identifying nursing availability as relevant to inpatient aggression were explored from the nurse and patient perspective (Bensley et al., 1995; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Meehan et al., 2006; Pulsford et al., 2013; Wright et al., 2014), meaning that availability was never objectively measured. Open ended questions were included in a number of these studies (Bensley et al., 1995; Meehan et al., 2006; Wright et al., 2014) providing further context to participants' answers and the appropriateness of care (JBI, 2014).

Reade and Nourse (2012) completed a retrospective analysis of five cases of patients who were deemed to be high risk of interpersonal violence, reviewing the management put in place both for patient care, and for wider safety within the unit. However, there may be bias

in the results as it was not made clear how the cases were selected. This could mean that the results are not able to be generalised across other settings.

Table 4: Availability

Author, Date, and Country	Results
Wright, Duxbury & Crampton, 2014, UK	• Staff's approachability, availability, receptiveness and perception of trustworthiness is important to patients
Reade & Nourse, 2012, USA	• Staff provided time for patients to vent their feelings as a defusing, coping mechanism • Staff provided patients with therapeutic choices to de-escalate, ensuring patients maintained their autonomy
Bensley et al, 1995, USA	• Patient focus groups were held in 8 wards across two hospitals. In 3 of the 8 wards patients felt that a lack of staff attention was an important contributor to ward aggression
Meehan, McIntosh and Bergen, 2006, Australia	• Patients felt that there was a lack of care from nurses and due to this perception, there were increased thoughts of harm towards staff and retaliatory aggression • Staff also depicted as ignoring patients' requests for help
Pulsford et al, 2013, UK	• Patients agreed that 'aggressive patients will calm down if left alone', while staff disagreed. • Patients agreed that 'patient aggression could be handled more effectively on the ward' while staff disagreed. • Staff and patients agree that 'it's largely situations that can contribute to the expression of aggression by patients'
Dickens, Piccirillo, & Alderman, 2013, UK	• Patients agreed that 'aggressive patients will calm down if left alone', while staff disagreed. • Staff and patients agreed that 'patient aggression could be handled more effectively on this ward'
Duxbury & Whittington, 2004, UK	• Patients agreed that 'aggressive patients will calm down if left alone' – staff disagreed • Staff and patients agreed that 'patient aggression could be handled more effectively on the ward'.
Duxbury, 2002, UK	• Study used MAVAS tool but did not report on results from all statements including 'aggressive patients will calm down if left alone' statement • Staff and patients agreed that 'patient aggression could be handled more effectively on wards'

- Of the overall reported incidents of violence: 18% patient aggression caused by staff interaction, 25% by patients being denied something, and 26% unknown cause

One qualitative study determined that patients value staff's approachability, availability, receptiveness and trustworthiness (Wright et al., 2014). This finding was supported by a further seven studies regardless of methodology (Bensley et al., 1995; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Meehan et al., 2006; Pulsford et al., 2013; Reade & Nourse, 2012). Reade and Nourse (2012) found that nurses providing time for patients to vent their feelings was a valuable management tool, while Meehan et al. (2006) found that patients felt nurses lacking availability to respond to requests and provide care gave rise to thoughts of harm towards staff. Bensley et al. (1995) also found that patients in three wards across two hospitals thought that a lack of staff attention was an important contributing cause to interpersonal violence within wards.

In all four articles using the MAVAs (Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Pulsford et al., 2013), participants (staff and patients) agreed that aggression could be handled more effectively on the units. Three of the articles (Dickens et al., 2013; Duxbury & Whittington, 2004; Pulsford et al., 2013) also found that patients believed aggressive patients would calm down if left alone, while the staff disagreed. Duxbury (2002) found that 18% of aggressive incidents were caused by staff interactions, 25% caused by patients' requests being denied, and in a further 26% the cause of the aggression went unidentified.

Trust and Rapport

Trust and rapport refers to the therapeutic relationship developed between nurse and patient and the use of this relationship to manage and prevent conflict. According to Stein-Parbury (2009), if patients can trust staff, they also feel they can rely and depend on them.

The six articles in table 5 below all found that trust and rapport was an important component in providing a safe inpatient setting. The studies that had findings relevant to this theme were all qualitative in design and sought the views of nurses and patients about what impacted aggression in inpatient environments. Bensley et al. (1995) put lists up in each ward where a focus group was to be held, providing 15 predetermined topics related to

hospital practices and seven predetermined topics relating to the physical environment that might contribute to conflict on the ward. The predetermined list creates a potential bias to their results.

Table 5: Trust and Rapport

Author, Date, and Country	Results
Pulsford et al, 2013, UK	• Staff and patients agree that 'improved one-to-one relationships between staff and patients can reduce the incidence of aggression'
Dickens, Piccirillo, & Alderman, 2013, UK	• Staff and patients agree that 'improved one-to-one relationships between staff and patients can reduce the incidence of aggression'
Duxbury & Whittington, 2004, UK	• Patients agreed that 'improved one-to-one relationship between staff and patients can reduce the incidence of aggression' – staff disagree • Follow up interviews noted patients feeling like the staff did not care • Follow up interviews noted staff felt that they needed an "identified therapeutic approach" (p. 474)
Wright, Duxbury & Crampton, 2014, UK	• Staff identified that a combination of connectedness, right attitude and a strengths-based approach help reduce the risk of aggression • Patients agreed, noting that aggression often related directly to staff attitudes
Spokes et al, 2002, UK	• Staff mentioned rapport being an important interpersonal skill to help mitigate interpersonal risk 80 times – 40 times it was mentioned in relation to the interviewee's own skill set, another 40 times it was mentioned in relation to their colleague's skill sets
Bensley et al, 1995, USA	• Patient focus groups were held in 8 wards across two hospitals. In five of these wards, patients felt that the respect they received from staff was an important contributing factor in the level of interpersonal violence experienced on the ward • Staff felt that their clinical and interpersonal skills was one of the top five factors that influenced the number of assaults on staff; however, the mean importance rating remained low with a total mean of 1.6 across the two hospitals

All six articles found that the trust and rapport between staff and patients were important. Two of these articles (Dickens et al., 2013; Pulsford et al., 2013) found that participants felt that improved one-to-one relationships would reduce incidents of aggression, while one article (Duxbury & Whittington, 2004) found that patients believe this statement to

be true, but that staff disagreed. Duxbury and Whittington (2004) discovered through their follow up interviews that some patients felt staff did not care about them, while the staff thought that they needed to take an "identified therapeutic approach" (Duxbury & Whittington, 2004, p. 474).

A reason for these differences in findings could be the settings in which the surveys took place. Both Pulsford et al. (2013) and Dickens et al. (2013) completed their studies in secure forensic units, albeit with different levels of security, while Duxbury and Whittington (2004) completed their questionnaires in general population inpatient units. Differences in how these various wards were typically run, staffed, and the types of patients admitted could be important contributors to the differences in findings.

Wright et al. (2014), Spokes et al. (2002) and Bensley et al. (1995), each using a different methodology, also found that staff and patients relationships were critical in the management of aggression. In all three pieces of primary research, staff identified that their interpersonal skills could reduce the risk of assault. Through qualitative interviews, Wright et al. (2014) also found that patients felt their aggression was often related directly to staff attitudes. Bensley et al.'s (1995) findings were congruent with this as their patients reported that the respect they received from the staff was an essential factor influencing the rates of aggression.

Nurse and Patient Characteristics

Nursing and patient characteristics encompass the personality traits and behaviours of individual nurses and patients that play a role in aggressive incidents, either reducing the impact or causing an escalation. Skilled psychiatric nurses can use their own personal characteristics to enhance the care of their patients (Stein-Parbury, 2009). Conversely, nurses who are not aware of how their interpersonal style impacts interactions with patients may risk causing or escalating a dangerous situation (Stein-Parbury, 2009). At the same time, patient traits are complex. They are often driven by past and current experiences, exacerbated at times by illness, and therefore plays a role in interpersonal incidents (Moeller, Gondan, & Novaco, 2017).

Table 6 below summarises two articles that identified nursing characteristics and their impact on inpatient aggression. The table also highlights one article that considers the relevance of patient characteristics to inpatient aggression.

Table 6: Nurse and Patient Characteristics

Author, Date, and Country	Results
Spokes et al, 2002, UK	● 80 out of 108 staff interviewed, cited ability to stay calm important; 39 of the 80 staff felt they had this characteristic, 41 contributed the skill to their colleagues ● 66 staff believed self-control important; 33 felt they had this attribute, another 33 contributed this skill to their peers ● 58 staff valued confidence; 23 saw this as one of their skills, 28 saw it as one of their colleagues' strengths ● 38 valued exerting control; 20 staff to themselves, 18 to their colleagues ● 46 felt a lack of confidence increased risk; 22 to themselves, 24 their colleagues ● 43 felt fear caused problems; 19 to themselves (missing opportunities due to fear), 24 in relation to their colleagues ● 34 cited lack of self-control; 14 in relation to themselves, 20 related to colleagues ● 25 cited confrontational behaviours; 6 related to their own behaviours, 19 related to their colleagues ● 20 felt their colleagues' physical avoidance was problematic and increased risk ● 19 staff felt their colleagues' authoritarian behaviours problematic ● 6 staff felt their own personal oversensitivity problematic
Bond & Brimblecombe, 2003, UK	● 63 staff felt a calm manner is likely to decrease risk. Attributes included: appearance of calm, staff confidence, staff not overreacting ● 37 staff thought human relation skills important. Attributes included: likability, humour, courtesy, empathy, warmth ● 31 staff felt decisiveness was important. Attributes included: organisation skills, clear boundaries ● 38 staff cited personality factors where likely to increase risk. Attributes included: opinionated, controlling, over eager, shy, and poor self-image ● 32 felt staffs' rudeness, sarcasm, belittling, ignoring, arguing and poor attitude increase risk ● 12 staff thought individuals' fearfulness heightened risk

	• 9 staff cited racial motivation as a contributor to inpatient aggression
Cookson, Daffern & Foley, 2012, Australia	• Patients who scored significantly higher on the IMI: dominance and IMI: hostility scales (Appendix Six) were far more aggressive towards staff but did not show any differences on the other scales compared to non-aggressive patients • WAI: total had positive correlation with MPCS and IMI: friendly/submissiveness. • Patients admitted involuntarily scored significantly higher on WAI: total than voluntary admissions • Patients who scored high on dominant interpersonal style could be predicted to display high levels of aggression towards staff

There are several findings that both Spokes et al. (2002) and Bond and Brimblecombe (2003) had in common. In both pieces of primary research, being confident and calm was significant in the prevention of violence; as was a degree of self-control. Both articles also found staffs' fear heightened the potential for risk, with Spokes et al. (2002) commenting that it caused missed opportunities in the delivery of care. Only Bond and Brimblecombe (2003) mentioned the importance of staff being likeable, empathetic, warm and courteous in mitigating risk.

Both articles (Bond & Brimblecombe, 2003; Spokes et al., 2002) involved interviews of similar size samples of nurses (n=102 and n=108 respectively), both qualified and unqualified, in a range of inpatient mental health settings. The exact types of wards Bond and Brimblecombe (2003) neglect to mention. Spokes et al. (2002) obtained their sample across NHS trusts in Hertfordshire and Oxfordshire, while Bond & Brimblecombe (2003) only looked at one NHS in Hertfordshire, whether it was the same NHS trust is unclear. This raises a closely related issue. It is possible Spokes et al. (2002) and Bond and Brimblecombe (2003) are not completely independent pieces of primary research. Both articles featured semi-structured interviews and focus on staff characteristics and the relationship this has with inpatient violence. They also appear to overlap with regions where the primary research is conducted and have close publication dates, publishing within a year of each other.

Cookson, Daffern and Foley (2012) looked at patients' interpersonal style and the relationship it had with interpersonal violence and aggression. They found that patients who scored high on both hostility and dominance factors were far more aggressive towards staff than patients who scored lower on these scales. Interestingly, this study only looked at the

interpersonal style of patients, neglecting to look at the interpersonal style of staff and how that may influence interpersonal conflict.

3.3.3 Ward Climate

Ward climate is the second major theme that refers to the social and emotional state of the inpatient setting (Godelieve de Vries et al., 2016). The inpatient setting is a dynamic setting where the ward climate can change rapidly. These changes have been reported to affect the level of engagement and motivation of the patients to participate in treatment (Godelieve de Vries et al., 2016) and are believed to affect the level of engagement from staff, contributing to burnout and job satisfaction (Godelieve de Vries et al., 2016). Three sub-themes underpin this overarching theme: conflicting interests, ward activity, and the management of acuity.

Conflicting Interests

Conflicting interests refers to the tension caused by perceived and actual power imbalances between staff and patients and the damage these perceptions can unintentionally cause. Such tensions can be more apparent in forensic psychiatric units due to a nursing focus on managing risk, enforcing ward rules, and often the perceived need to provide paternalistic care (Marshall & Adams, 2018).

Six of the 17 primary research articles referred to the tensions caused by conflicting interests between staff and patients within inpatient units. Again, this evidence is solely reliant on staff and patient perspectives of these tensions; however, in this case, qualitative research can give a valid perspective since conflicting interests are intrinsically based on individual experience. The results of these findings are summarised below in table 7.

Table 7: Conflicting Interests

Author, Date, and Country	Results
Wright, Duxbury & Crampton, 2014, UK	● Patients held the belief that it was 'them and us' – believing staff's lack of interest in patients created a division ● Staff disagreed but felt that it was important to treat "them as normal as possible and trying not to maximise the idea of patient and staff" (p. 186)

	● The way patients viewed themselves varied. Some termed themselves as 'patient', some 'prisoner' ● Patients felt that they were treated like children. This belief created tension and frustration amongst the patients
Pulsford et al, 2013, UK	● Patients agreed that 'differences in cultural beliefs between patients and staff may lead to aggression' – staff unsure
Duxbury & Whittington, 2004, UK	● Staff often referred to ward design as problematic but did recognise some of the issues were indistinguishably linked with cultural barriers ● Patients felt the ward culture was more like prison than hospital
Duxbury, 2002, UK	● Patients saw themselves as victims of a controlling style of nursing within a restrictive environment ● Staff saw themselves as victims of patient aggression and inadequate organisation ● Both patients and staff felt these beliefs lead to reactive aggressive incidents (n=95), resulting on a reliance on reactive approaches, based on crisis management and attempts to control aggressive situations
Meehan, McIntosh and Bergen, 2006, Australia	● Patients perceived staff adopted superior attitudes and utilised controlling behaviours to enforce strict hierarchy of authority, rather than focus on delivering therapeutic care ● Patients also felt that ward procedures, such as queuing at the office to talk to staff, were demeaning and a source of frustration ● Patients felt that staff ignored their requests, were inflexible and strict when it came to enforcing rules ● Staff also perceived to override rules and privileges with no apparent reason ● Patients felt staff operated from a position of custody rather than care ● Patients also noted that when a number of staff who operated in this manner where on the same shift together, there was more tension on the unit and a higher potential for aggression
Hinsby and Baker, 2004, UK	● Nurses ability to provide flexibility depended on their experience and confidence to act due to any alteration from usual ward responses carrying the risk of blame if things go wrong often resulting in the most attractive management option being the more restrictive one ● Nurses felt powerless to change policy but did note their ability to change the delivery of the rules, utilising explanation, reassurance and information. ● Different styles of rule delivery noted on by the patients – "they may be saying the exact same thing as the other nurse, saying 'no you can't do this, do that', but it is the way it is said and the reasons that are given" (p. 2004) ● Tension evident between staff and patients around the management of aggression. Staff saw it as they were implementing an 'intervention', patients saw it as 'punishment' and a punitive part of ward life

In the six articles, there are several common findings. Patients saw themselves fulfilling many roles including patient, prisoner, child and victim (Duxbury, 2002; Meehan et al., 2006; Wright et al., 2014). They also felt that staff often operated from a position of authority, rather than care (Meehan et al., 2006) and were inclined to deliver a controlling style of nursing (Duxbury, 2002).

In two articles, the ward culture was also referred to (Duxbury & Whittington, 2004; Pulsford et al., 2013). Pulsford et al. (2013) found that patients believed that cultural differences between staff and patients led to tension, while the staff disagreed. Staff in the Duxbury & Whittington (2002) article noted that cultural barriers caused many issues within their unit.

Staff also reported feeling powerless in two articles (Duxbury, 2002; Hinsby & Baker, 2004). Hinsby and Baker (2004) reported nurses feeling powerless to change policies, with flexibility depending on their experience and confidence. Duxbury (2002) referred to nurses feeling like victims of an inadequate organisation with a reactive approach to aggression, focused on crisis management and attempts to control aggressive situations.

Three of the six articles were based in high secure forensic settings (Meehan et al., 2006; Pulsford et al., 2013; Wright et al., 2014). Hinsby and Banker (2004) was based in a medium secure forensic unit, while Duxbury (2002) examined acute wards and Duxbury and Whittington (2004) investigated a range of acute wards: admission, high dependency and intensive care. The forensic nature and high acuity of the general population wards may have contributed to the results found. The interaction and impact of these factors are discussed in chapter four.

Ward Activity

Ward activity refers to both the communal areas of the ward, where patients and staff congregate in groups, for example, the dining room; and the therapeutic activities and management of boredom within inpatient units. In this subtheme the boundaries between relational and environmental security get blurred; however, while the environmental security dictates the furnishings, layout and design of wards (Kennedy, 2002), how patients and staff interact with these areas and with each other is dictated by relational security.

Table 8 below summarises the nine articles that refer to ward activity and the impact it has on inpatient aggression. In this table there is a mixture of quantitative and qualitative research. Here the qualitative data is useful for explaining what staff and patients see as triggers of interpersonal violence, while the quantitative data establishes the location and timing of the incidents.

Table 8: Ward Activity

Author, Date, and Country	Results
Wright, Duxbury & Crampton, 2014, UK	● Boredom on the unit cited as a trigger for aggression by patients – "I get bored very easily and I start messing around and doing things to wind staff up… laugh at them and spar…" (pp.186) ● Staff found active sessions appeared to reduce risk of aggression – "activities can de-stress, can remove aggression, especially if it is sports activities" (pp. 186)
Meehan, McIntosh and Bergen, 2006, Australia	● Patients found boredom a source of frustration and that lack of meaningful activity and enforced inertia gave rise to aggression ● Patients found the cancellation of activities irritating, noting that activities were often cancelled due to staffing issues or acuity on the unit
Pulsford et al, 2013, UK	● Staff and patients agreed that it was 'largely situations that contributed to patient aggression'
Dickens, Piccirillo, & Alderman, 2013, UK	● Staff and patients agreed that it was 'largely situations that contributed to patient aggression'
Duxbury & Whittington, 2004, UK	● Staff and patients agreed that it was 'largely situations that contributed to patient aggression'
Bowers et al, 2009, UK	● Ward community meetings and planned patient sessions not associated with aggressive behaviour ● Complex ward environments resulted in lower rates of aggression
Chou, Lu & Mao, 2002, Taiwan	● Assaults more likely to occur during 2x peak activity times: 5-7pm (26.8%), 12-2pm (22.0%) any day of the week ● Common places for assaults to occur: patient bedrooms (28.1%), in front of nursing station (25.0%), dining room (16.8%), ward corridor (13.8%)
Shepherd & Lavender, 1999, UK	● 4.3% incidents occurred due to staff's insistence of participation in an activity ● 3.4% incidents occurred during unoccupied/passive activity time ● 93% incidents occurred on assailant's own ward – 75% occurring in communal areas

	• No incidents reported during therapeutic activities such as therapy sessions, use of day centre or one-to-one time with staff
Bensley et al, 1995, USA	• 4 out of the 8 wards indicated that poor explanation of ward rules key contributor to assaults • 3 wards reported boredom contributed to aggression • 2 wards found staffs' lack of flexibility problematic

The three articles that all used the MAVAS tool (Dickens et al., 2013; Duxbury & Whittington, 2004; Pulsford et al., 2013) found that both staff and patients agreed it was mainly situations that contributed to patient aggression; however, what was classed as 'situation' was left undefined by the MAVAS tool and was not defined further by the primary researchers. Meehan et al. (2006), Shepherd and Lavender (1999) and, Wright et al. (2014) all found boredom was a trigger for aggression, with Bowers et al. (2009), Shepherd and Lavender (1999) and Wright et al. (2014) noting that active and therapeutic sessions appeared to reduce the risk of aggression. Meehan et al. (2006) reported patients found the frequent cancellation of activities frustrating and indicated that this was often due to the acuity of the ward and staffing issues.

Both Chou et al. (2002) and Shepherd and Lavender (1999) found that the majority of aggressive incidents occurred in communal areas, with the latter study establishing that this was the case in 75% of the recorded incidents. Bowers et al. (2009) noted that complex ward environments appeared to result in lower rates of aggression; however, they were unsure if this was due the increased interactions occurring in more communal ward design or due to the lack of visibility from staff observation in the more complex ward designs (Bowers et al., 2009). While these results appear to relate to environmental security, they also relate to relational security, a relationship which will be further discussed in chapter four as part of the discussion section.

Management of Acuity

The term 'patient acuity' refers to the severity of illness a patient is experiencing, and the level of nursing care the patient requires (Brennan & Daly, 2009). Management of acuity examines how the changes in patient acuity are managed, examining both the effects on the

individual and on the greater ward environment. It also looks at the effect staff-patient ratios have on violent outcomes. Eight articles identified factors relevant to this subtheme.

Of these eight articles, four (Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Pulsford et al., 2013) utilised the MAVAs tool to determine staff and patients' level of agreement regarding pre-set statements about the current management of interpersonal violence. Reade and Nourse (2012) provided a retrospective view on the management of five patients admitted to a psychiatric ward, who were considered at high risk of violence. Bensley et al. (1995), conducted interviews with staff regarding priorities of change and factors contributing to interpersonal violence. None of the articles quantitatively measured acuity and its association with violent outcomes. The final two articles explored the possibility of an association between staff numbers and violent incidents on the wards (Bowers et al, 2009 & Chou et al, 2002). A summary of these eight articles findings are described in table 9 below.

Table 9: Management of Acuity

Author, Date, and Country	Results

Reade & Nourse, 2012, USA	• Only one minor staff injury occurred during 5 patients' admissions. This success was credited to relational security input including:
	  ○ Decrease in bed numbers from 23-20
	  ○ Increased staffing levels for one-one staffing and continuance of normal staffing levels on main ward
	  ○ Patients only attending groups when ready
	  ○ Limit setting by allocated nurse only
	  ○ All patients provided time to voice any concerns and given reassurances regarding safety

Pulsford et al, 2013, UK	• Staff and patients disagreed that seclusion should be discontinued and that it is used more than necessary • Staff and patients agreed the use of de-escalation can be successful in preventing violence • Patients felt aggression could be handled more effectively, staff disagreed
Dickens, Piccirillo, & Alderman, 2013, UK	• Staff and patients agreed that seclusion was one of the most effective methods for managing aggression and that the use of de-escalation could be successful in preventing violence. • Staff and patients agreed that aggression could be handled more effectively and disagreed that seclusion should be discontinued

Duxbury & Whittington, 2004, UK	• Staff and patients agreed violence could be handled more effectively. • Staff felt that seclusion was one of the more effective approaches to managing aggression; patients disagreed • Staff felt de-escalation often useful in preventing aggression; patients disagreed
Duxbury, 2002, UK	• Staff and patients agreed that aggression could be handled better • Staff thought seclusion should be continued; patients disagreed • Patients felt that de-escalation could be successful in preventing aggression; staff less sure
Bensley et al, 1995, USA	• Both hospitals- staff felt that adequate numbers of staff were a key factor influencing assaults and a priority for change
Chou, Lu & Mao, 2002, Taiwan	• Patient nurse ratio ranged from 2.6 – 3.3 in the four hospitals • Partial correlation indicated that the severity of assaults was associated with the space density of an area during the incident ($p < 0.01$) and the patient-nurse ratio ($p < 0.01$) • Result confirmed after primary researchers controlled for the differences between hospitals and ward sizes
Bowers et al, 2009, UK	• The level of restrictions placed on patients was positively associated with aggression towards others ($r = 0.206$; $p = 0.016$) and aggression towards objects ($r = 0.287$; $p = 0.001$) • Searching of patient property inversely associated with aggression towards objects • There was a strong positive association between nursing staff numbers and aggressive behaviour – individual shifts showed higher levels of aggressive behaviour when more staff were on duty

Only one study (Reade & Nourse, 2012) looked directly at both the management of the individual and the greater ward in times of high acuity. Although a retrospective analysis of care, they found that increasing staffing levels to accommodate the change of acuity and provide the individual with the level of nursing they require without depleting the ward of staff was beneficial. This finding appears consistent with the conclusions of the sub-theme 'ward activity' as Meehan et al. (2006) noted, patients found the cancellation of ward activities due to staff shortages and increased acuity a source of frustration.

Both de-escalation and seclusion are often used to manage situations that are overwhelming, where often there is a heightened risk for safety for both staff and patients (Te Pou, 2012). These measures on their own can be considered to cause a higher ward acuity,

therefore any interventions used in these periods are considered to be 'management of acuity'. Agreement to their effectiveness varied in the literature.

Dickens et al. (2013), Duxbury (2002), Duxbury and Whittington (2004), Pulsford et al. (2013) all used the MAVAS tool in their studies; however, there are differences in their findings. Pulsford et al. (2013) and Dickens et al. (2013) findings showed that both staff and patients disagreed about seclusion being discontinued and about the use of de-escalation for preventing violence. In two articles (Duxbury, 2002; Duxbury & Whittington, 2004), staff felt that seclusion should continue to be used in the management of aggression, while the patients disagreed. The staff in Duxbury and Whittington's (2004) article also thought that de-escalation was useful in the prevention of aggression, while the patients disagreed. In Duxbury's (2002) article, the reverse was found. The patients thought that de-escalation was useful, and the staff were less sure. Again, as mentioned in the section regarding trust and rapport, these differences could relate to the different settings where the surveys took place.

Bensley et al. (1995) found that staff across the two hospitals, felt that adequate staff numbers were a key factor in interpersonal violence and a priority for change. However, no further context was given. Chou et al. (2002) found a positive correlation between the severity of the assaults, space density on the unit ($r = .27$) and the patient staff ratio ($r = .22$). Bowers et al. (2009) also found that patients showed higher levels of aggressive behaviour when more staff were on duty ($p < 0.001$). It is possible these findings reflect reverse causation with more staff being rostered on as a response to ward conditions, as well as more staff being present due to an unfolding incident. Staff-patient ratios are frequently used in the management of acuity with inpatient wards.

3.3.4 Team Dynamics

Team dynamics is the third major theme around relational security and it refers to the nursing team and the wider clinical team, and how the multidisciplinary team (MDT) interacts to provide coordinated care, managing to attend to a wide variation in patient needs (Song et al. 2015). This theme consists of three sub themes including gender, MDT communication and experience.

Gender

The sub-theme gender covers the number of male and female staff on a shift, as well as the relationship a particular gender can have on the management of aggression within inpatient units. Table 10 below outlines the six articles that found a relationship between the gender of staff and interpersonal aggression within inpatient units.

Two of the six articles (Daffern et al., 2006; Janssen et al., 2007) provide quantitative findings related to gender and its relationship with interpersonal violence. Three articles (Bond & Brimblecombe, 2003; Pulsford et al., 2013; Wright et al., 2014) examined patient and staff beliefs regarding the effect staff gender has on inpatient violence. The final article (Reade & Nourse, 2012) looked retrospectively at the management of five patients and the effect that staff gender had on the management of the individuals involved.

Table 10: Gender

Author, Date, and Country	Results
Daffern, Mayer & Martin, 2006, Australia	• Out of 502 shifts, on an exclusively female acute ward, there was a female shift lead on 341 occasions, male 139, 22 occasions gender unconfirmed. Nil statistical significance found • Mean percentage of females working: 68.71% aggressive incident, 68.02% no aggressive incident • No statistical significance between severity of incident and percentage of male staff present (Pearson correlation 0.115, n=66) • Out of 1092 shifts on male ward: female in charge 453 times, males 639 times. No statistical significance found • Mean percentage of males working: 56.51% aggressive incident, 58.41% no incident • No correlation between severity of incident and percentage of male staff working
Janssen et al, 2007, The Netherlands	• More males were employed on admission wards – days that seclusion was utilised, proportion of males decreased to 47%. Days seclusion was not utilised – males staff made up 60% of the nursing team • On average, fewer males employed on rehabilitation units (39%) – proportion of males only 33% on days seclusion was used • On all units, days where females dominated staff teams, significantly more patients secluded
Wright, Duxbury & Crampton, 2014, UK	• Patients and staff believed female staff had a positive effect on reducing aggression

Pulsford et al, 2013, UK	• Staff and patients agreed that having both male and female staff on the shift is important for the management of aggression
Bond & Brimblecombe, 2003, UK	• Six female staff thought being female lessened the risk of violence • 10 female staff also felt that physical attributes decreased the risk of violence, compared to one male staff member who felt this was the case. What was meant by physical attributes was left undefined.
Reade & Nourse, 2012, USA	• Strong communication between hospital security team and nursing staff – resulting in security team being present on the ward at appropriate intervals • Security team routinely included a male presence and always had an appropriate number of responders to an incident • Two male patients responded particularly well to male security presence – evidenced by improved anger control • Same two patients far more responsive to male nurse limit setting

Daffern et al. (2006) found that there was little or no difference between the numbers of female staff working on shifts where an aggressive incident occurred, compared to shifts where no aggressive incidents occurred (68.71% versus 68.02%) on an exclusively female ward. This was similar to males working on male-only wards with a mean of 56.51% males working when an incident occurred, compared to 58.41% when no incident occurred. The effect of male staff on female wards and female staff on male wards was unreported so it is unclear if this would have made a difference.

Janssen et al. (2007) looked at seclusion events and staff gender and found that on days where females dominated staff teams significantly more patients were secluded. Reade and Nourse (2012) looked retrospectively at the management of five high-risk patients. They found that two of their patients responded particularly well to the male presence, which was evidenced by improved anger control.

Both Daffern et al. (2006) and Janssen et al.'s (2007) results appear to conflict with the staff and patient beliefs identified by Bond and Brimblecombe (2003), Pulsford et al. (2013) and Wright et al. (2014): these articles found that staff and/or patients thought staff gender played a role in managing inpatient aggression. Both Bond and Brimblecombe (2003) and Wright et al. (2014) participants thought that female staff reduced the risk of aggression, while Pulsford et al. (2013) found staff and patients agreed that having both male and female staff was necessary.

Multidisciplinary Communication

Multidisciplinary communication refers to the whole multidisciplinary team (MDT) and how its members interact with each other, and how the MDT communicates and provides relational security information for the unit. This includes the use of policy and procedures, surveillance, and communication. Table 11 summarises the findings of three articles that had findings relevant to this sub-theme.

Table 11: Multidisciplinary Communication

Author, Date, and Country	Results
Reade & Nourse, 2012, USA	• Nurses updated and communicated important information regarding patients' behaviours, symptoms, triggers, medication responses on a shift by shift basis • Information regarding successful and unsuccessful management strategies passed on to staff on each shift and the greater MDT – supported consistency in care and management of violence • All staff safety concerns and injuries reviewed and discussed by nursing program manager
Hinsby and Baker, 2004, UK	• Policy and procedures featured heavily in nurses accounts of their management of violence • Nurses found policies as ready-made decision makers – drivers in team responses to inpatient aggression and the management of security • Nurses felt that incidents were not looked at individually, rather were managed with a predetermined set of consequences • Both staff and patients referred to the nurses' role as a bridge between doctor and patient with more absent doctors relying on nurses' accounts
Meehan, McIntosh and Bergen, 2006, Australia	• Patients felt staff where often reactive and that if staff reacted earlier, a lot of inpatient incidents could be prevented • Patients also recognised some incidents occurred with little warning and would be challenging to predict

Reade and Nourse (2012) found that shift by shift communication and the frequent updating of management plans to the nurses and the wider MDT was useful in providing safe patient care. They also noted that the nursing program manager reviewed all safety concerns and injuries, which contrasted with Hinsby and Baker (2004), who identified that nurses felt

all incidents were managed with a predetermined set of consequences, rather than assessed individually.

Meehan et al. (2006) noted that patients felt the staff were often reactive and that if staff acted earlier, incidents often could be prevented. Again, this is contrary to Hinsby and Baker's (2004) findings where nurses stated that they found polices ready-made decision makers, driving the team response to violent incidents and the management of security. Whether nurses found this an effective way for managing incidents was unclear; however, these tensions appear to correlate with staff feeling unable to change policy due to the risk of reprimand mentioned in the subtheme titled *conflicting interests* (section 3.5.3). The issues raised here are discussed further in chapter four.

Team Experience and Functioning

Team experience refers to the education level, employment capacity, and the time a staff member has been employed in the specialty. Team experience also refers to the functioning of the team as a whole including how long and how effectively they work together within the unit. Employment capacity refers to whether the individual staff member is a permanent member of the team or a temporary staff member. Table 12 below provides a summary of the five articles that found that team experience had a relationship with inpatient aggression.

Table 12: Team Experience and Functioning

Author, Date, and Country	Results
Bowers et al, 2009, UK	• Better team functioning, positive attitudes to difficult patients, lower burnout, order and organisation all associated with less patient aggression
Janssen et al, 2007, The Netherlands	• Admission and long-stay wards made up of 93% permanent staff and 7% temporary • Long-stay ward increased seclusions associated with increase in the ratio of patients per permanent staff member and an increase in the number of temporary nurses • Composition of team and level of education never consistent but most teams consisted of predominantly mid-level vocational educated nurses (four-year course at secondary school)

	• On admission wards, more staff with higher professional level and mid-level vocational education employed – this was not associated with likelihood of seclusion • On long stay wards there were more nurse aides, student nurses and less mid-level vocational educated nurses on seclusion days • On acute wards, more males (mean on seclusion days = 0.942, no seclusion days = 1.2010) and more variability on work experience (seclusion days = 6.1268, no seclusion days 7.1027) was related to a decrease in seclusion. • This was also the case on long-stay wards where more males (mean on seclusion days = 0.6521, no seclusion 0.9499) and more variability in work experience (seclusion days = 6.2100, no seclusion = 6.9056) was related to a decrease in seclusion episodes
Chou, Lu & Mao, 2002, Taiwan	• 79 nurses participated in the study – 93.7% of them were female • Average work experience 2.92 years • 60% were victims of assault – average age 25.8 years, average work experience 23 months • Non-victims of assault – average age 30 years, 50 months' work experience • 66% staff who had been assaulted graduated from junior nursing college, 14% graduated from college • 47% non-victims graduated from junior nursing college, 38% completed a bachelor's degree • Completion of training to identify risk factors of assaultive patients, seclusion and restraint techniques protective factor from being assaulted
Hinsby and Baker, 2004, UK	• Process of safety dependant on the confidence of the nurse. More restrictive measures often utilised when staff felt less confident or equipped to manage the situation • Seen by staff that controlling a situation was a more valuable skill than understanding the meaning of it
Spokes et al, 2002, UK	• 71 staff mention teamwork as an important clinical skill – 35 staff mentioned the skill in relation to themselves having it, 36 staff mentioned it in relation to their colleagues having it "working as a team, knowing other staff, knowing other staff's skills" (pp. 202). • 30 staff mention the lack of teamwork as a precipitator of increase risk of aggression – "not knowing the other staff, procedures, who to call etc" (pp. 203)

Janssen et al. (2007) found that on both acute and long stay wards, longer work experience was positively associated with a decrease in seclusion (p=0.000). On the long stay wards, increased numbers of lower educated staff increased the likelihood of seclusion

(student nurses seclusion days mean = 0.028, no seclusion = 0.024; nurse aids seclusion = 0.016, no seclusion = 0.011). This finding compares with Chou et al. (2002) who found that staff who were victims of assault tended to have less education, less job experience and less on the job risk training.

Bowers et al. (2009) found that lower levels of patient aggression were associated with better team functioning (p=0.014 aggression to others), lower burnout (p=0.027 aggression to others) and positive staff attitudes (p=0.034 aggression to objections). The finding agreed with both Hinsby and Baker (2004) and Spokes et al.'s (2002) conclusions. Spokes et al. (2002) found that staff believed good teamwork to be a strength, while poor teamwork would be a destabiliser, noting that not knowing the other staff increased risk.

Hinsby and Baker (2004) noted that safety depended on staff confidence and that high levels of restrictive care were provided by staff who felt less equipped to manage the situation. This finding potentially could explain the higher number of seclusion episodes in long-term wards found by Janssen et al. (2007) when low staff education dominated the clinical teams. Further discussion regarding the potential conclusion to these findings will be discussed in chapter four.

3.4 Conclusion

This chapter has presented findings found in the primary literature. The chapter has outlined the characteristics of the primary research found, identifying the differences in methodologies, countries of origin and study settings (section 3.2). Section 3.3 identified three themes as significant for relational security: *therapeutic relationship*, *ward climate* and *team dynamics*. These themes were defined and explained by the sub-themes from which they were comprised, drawing out evidence from the primary data. Throughout this process, limitations of the data were revealed. In chapter four, these limitations and the findings are further summarised. The evidence is then used to identify areas for further research and the conclusions that can be taken from this integrative review.

Chapter Four – Discussion

4.1 Introduction

Violent and aggressive incidences are major problems within psychiatric inpatient wards. They affect not only the care of the patient (Foster, Bowers & Nijman, 2007) but the wellbeing of the staff, causing stress, burnout, low morale, injury and sickness (Renwick et al., 2018). The problems add significant costs to the organisation via lowered staff retention, extended periods of sick leave, and often longer inpatient admissions (Hallett, Huber, & Dickens, 2014).

Approaches to reducing violence within psychiatric inpatient settings are changing. There is a move away from traditional restrictive methods, which cause increased trauma to both patient and staff (Price et al., 2017). The new interventions place a much greater emphasis on the relational aspects of violence prevention. It is therefore important to improve understanding of which aspects of these relational interventions are both most effective and can readily be put in place. Verbal and non-verbal de-escalation techniques are one strategy for reducing violence and aggression (Price et al., 2017), and a crucial skill set for any psychiatric nurse. However, they are often used reactively, after a situation has already escalated. Successful application of these techniques depends on pre-existing working relationships between staff and patient (Kuivalainen et al., 2017). For safety in inpatient units to be achieved, the focus needs to be on preventative measures, rather than reactive interventions.

In forensic psychiatric units, environmental, procedural and relational security are utilised to manage the overall safety of the facility (Kennedy, 2002). The role of each of these security methods was outlined in chapter one (figure 1). Each domain is important and, without success in all three domains, overall ward safety is compromised (Exworthy & Gunn, 2003). Relational security is increasingly considered to have the greatest impact on patient care and management of interpersonal violence (Crichton, 2009). However, it is poorly understood and is often a neglected area (Tighe & Gudjonsson, 2012). The potential positive impact of relational security in mitigating interpersonal violence, combined with the poor understanding of its nature and role, and its ongoing neglect, are the reasons it is the focus of this integrative review.

As stated in chapter one, this review had three aims. The first was to develop a clear working definition of relational security. The second was to establish a framework to describe the core components of relational security and their relationship to each other. The third was to assess which components of relational security have the strongest evidence for being effective in violence prevention.

Chapter two outlined the method used to conduct the integrative review. A search criterion was created, resulting in 17 articles identified as eligible for further analysis. Utilising a range of different methodologies, the selected articles revealed three key themes regarding relational security; *therapeutic relationship*, *ward climate* and *team dynamics*. These were explored in chapter three.

The current chapter, chapter four, contains a discussion of the extrapolated findings in relation to the aims of this integrative review. It compares findings with both previous literature and with conclusions from other settings where violence prevention measures are also required. A discussion of limitations follows. This section looks at both the limitations of the primary data, and of this integrative review. The final two sections of the chapter examine the review's implications for clinical practice and for future research.

4.2 Summary of Findings

4.2.1 Aim One – Defining Relational Security

Currently there is no consensus on the definition of relational security. In table 13 below some of the different definitions of relational security are outlined.

Table 13: Definitions of Relational Security

Author	Definitions of Relational Security
Department of Health (2010, p.5)	"the knowledge and understanding we have of a patient and of the environment, and the translation of that information into appropriate response and care"
Tighe & Gudjonsson (2012, p.186)	"quality of therapeutic relationship clinicians have with their patients and the way that this relationship is used to maintain safety through the recovery process"
Collins & Davies (2005, p.41)	"in general refers to a detailed understanding of those receiving secure care and how to manage them"
Kennedy (2002, p.434)	"Quantitative: the staff-to-patient ratio and amount of time spent face-to-face contact. Qualitative: the balance between intrusiveness and openness; trust between patients and professionals"

There is general agreement that relational security provides safety to staff and patients through the relationship the treating team has with the patient. It also includes clinicians obtaining and using in-depth knowledge regarding the patient's history, risk behaviours, and triggers (Royal College of Psychiatry, 2003).

This general agreement is a useful starting point for understanding relational security but is a poor guide to implementation. The very broad description, both causes a lack of understanding of relational security and undermines its effectiveness in providing safety in inpatient psychiatric units. The Reed Committee's guiding principle "the most effective form of security and indeed safety, lies in the treatment of the patient" (DOH, 1994 as cited in Exworthy & Gunn, 2003, p.469) provides a starting point for a definition. A working definition of relational security needs to begin with the individual patient.

Research for this integrative review revealed three key themes regarding relational security: *therapeutic relationship, ward climate* and *team dynamics* (section 4.2.3). When combined with the Reed Committee's guiding principle, these themes lead to reconceptualising relational security as three rings around the individual patient. Figure 4 below illustrates the relationships between these rings.

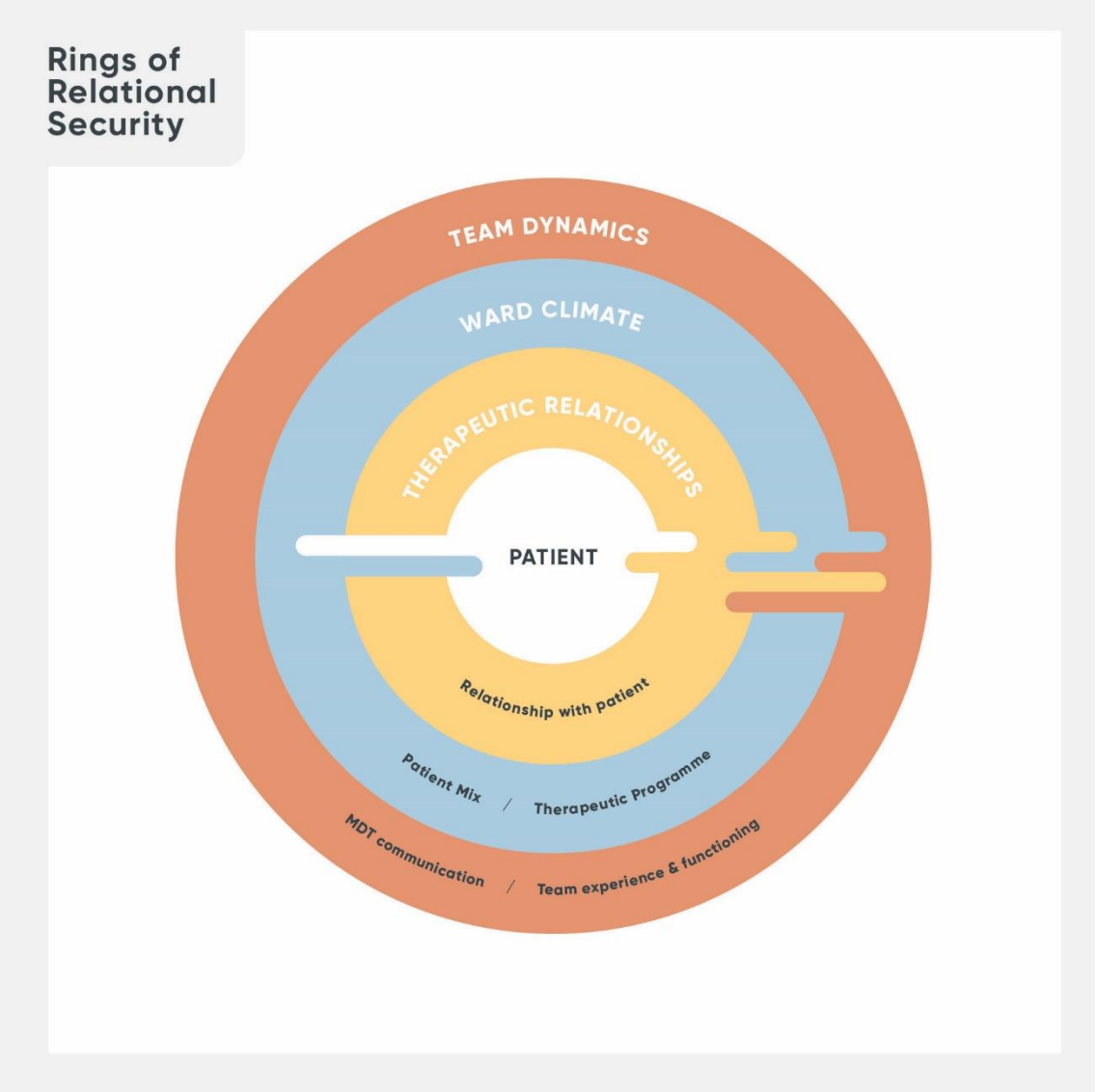

Figure 4: Rings of relational Security

The first ring, the ring closest to the patient, represents the therapeutic relationship. This is the direct relationship between ward staff and the patient. The results revealed three key sub-themes to this ring: communication, availability, trust and rapport. Each one of these themes highlights the one-to-one nature of the nurse-patient relationship, a relationship used to facilitate care, role model behaviours, and support patients to develop new methods to manage social stressors and challenging situations (Rask & Brunt, 2007).

The middle ring represents the ward climate. This ring describes the relationship the patient has with the rest of the ward. In psychiatric inpatient units, patients are often detained against their will, with patients and staff with whom they would not usually socialise (Gadon et al., 2006). Often patients also have their daily activities and movements limited and

heavily monitored by staff (Gadon et al., 2006). This ring speaks to these frustrations, encompassing the patient mix, management of acuity, and the therapeutic activity on the ward. It also includes the management of any previous or current feelings of disharmony felt by patients and staff as these can be key risk factors for interpersonal violence (Gadon et al., 2006).

The third and final ring is team dynamics. This ring is a step away from direct contact with the patient. It highlights the importance of the clinical team and their interactions with each other. The team dynamics ring encompasses MDT communication, including how the team passes on information, and ensures consistency in care, and how individual members support each other. It also includes the skill, experience and gender mix of the nursing staff. While this ring does not directly relate to the patient in terms of process; management structures, quality and quantity of staff, knowledge within the unit, and ability to manage the patients cared for within the unit, all contribute to reducing the levels of interpersonal violence and the success of patient care (Gadon et al., 2006).

While each of these rings have been described separately, they are interconnecting. Each has an impact on the success or failure of each of the other elements. This has led to a proposed three tier definition:

Relational security is the detailed clinical knowledge of a patient and the translation of this knowledge into safe management of their care. It is also the organisation of the wider ward, including the management of increased acuity and the therapeutic programme. Finally, it is the understanding of staff dynamics and the impact this has on effective communication within the team and the translation of clinical knowledge to the delivery of patient care.

4.2.2 Aim Two – Description of Relational Security within Inpatient Settings

The second aim of this integrative review was to describe the implementation of relational security in a range of inpatient settings. Due to the limited nature of the primary data, this aim could not be met, and therefore describing the implementation of relational security in a range of inpatient settings is an area for future research (section 4.6). Ten of the 17 articles analysed investigated the perspectives of participants regarding the antecedents and management of violence within inpatient settings. Only one article (Reade & Nourse,

2012) provided a descriptive account of how relational security was implemented in an inpatient setting. This was through a retrospective case series on five patients who were at a high risk of interpersonal violence (Reade & Nourse, 2012). These primary researchers reported on the implementation of a variety of relational security techniques useful in managing risk. Two of their key strategies were to increase staffing levels to accommodate one-to-one nursing without impacting on the rest of the ward and its therapeutic activities; and to continuously update and communicate important information regarding patient behaviours, symptoms, triggers and medication responses on a shift by shift basis (Reade & Nourse, 2012). While this account was useful, its value was limited by its restriction to a single ward and its potential bias due to the lack of clarity regarding case selection.

An additional problem is transferability. The applicability of descriptive accounts of the application of relational security in inpatient settings was also limited due to all the evidence originating from Western cultures. Ten of the articles were from the UK, while the remainder were primarily from Australia, the USA, and Europe. Only one article originated from Asia (Chou, Lu & Mao, 2002). This limited the body of knowledge as there was no information regarding strategies used to manage interpersonal violence in non-Western cultures. The result is that valuable knowledge is missing.

As all of the articles were from overseas, the transferability of results to the New Zealand (NZ) culture needs to consider the unique characteristics of the NZ population. Māori, the indigenous people of NZ, are known to have higher rates of psychiatric admissions (McLeod et al., 2017), and higher levels of restrictive care (Kumar et al., 2008) compared to non-Māori. Any implementation of relational security in NZ facilities requires further investigation to explore the specific factors which may be relevant to the application of relational security in the NZ context.

4.2.3 Aim Three – Key Elements of Relational Security

The primary data revealed key elements of relational security. These were addressed as sub-themes that underpinned the three main themes*: therapeutic relationship*, *ward climate* and *team dynamics*. These key elements are worthy of further attention, as are the elements of relational security which were not revealed in the primary data. These aspects are discussed next.

Therapeutic Relationship

The predominant data around the therapeutic relationship were qualitative and based on seeking staff and patient perspectives. The primary data found good communication contributed to preventing violence, while poor communication escalated it. Both staff and patients believed it played a vital role in interpersonal violence. All five articles which asked about communication obtained consistent results (Bond & Brimblecombe; Dickens et al., 2013; Duxbury, 2002; Duxbury & Whittington, 2004; Pulsford et al., 2013; Shepherd & Lavender, 1999).

The primary researchers' findings are consistent with current literature. Wyder et al. (2017) noted that clear communication and trust were essential to support inpatient safety, symptom reduction and recovery. Cornaggia et al. (2011) noted that interpersonal violence could be decreased through good communication within the therapeutic relationship, alongside staff being both available, and working in collaboration with the patient. Staff availability for patients was another key element of relational security. Again, most of the evidence came from participant perspective, with one retrospective case series (Reade & Nourse, 2012) noting that providing time for patients to vent their feelings was a valuable defusing method. Wright, Duxbury and Crampton (2014) found that patients valued the approachability, availability and receptiveness of staff. Cornaggia et al. (2011) noted that staff being available was an important part of the therapeutic relationship, while Kennedy (2002) defined face-to-face time with patients as a key quantitative aspect of relational security.

Ward Climate

Participants' perspectives provided the bulk of the evidence about ward climate. Investigations included collection of both quantitative and qualitative data; a mix of research methods with an emphasis on qualitative studies. It was clear that boredom, cancellation of activities and lack of meaningful activities were all considered by patients as factors that could lead to aggression (Meehan et al., 2006; Wright et al., 2014). These findings agreed with quantitative data findings which show that ward community meetings and planned patient sessions were not associated with aggressive behaviour (Bowers et al., 2009).

These findings are similar to findings from the prison setting. While prison is not intended as a therapeutic setting, it has some similarities in that it is a population of individuals detained against their will, with limited access to activity, close supervision, and housed with people they may not usually associate with (Gadon et al., 2006). Gadon et al. (2006), in a systematic review of situational variables in prisons, noted that violent incidents were most likely to occur in the evening and over the weekend, hypothesising that this was due to the decrease in structured prison activity.

Conflicting interests between the nurses and patients is another key sub-theme that arose from the primary data. Qualitative studies showed reasonable agreement that underlying tensions between staff and patients were common, with patients often feeling like the victim of staff's restrictive methods and lack of interest (Duxbury, 2002; Hinsby & Baker, 2004; Meehan et al., 2006; Wright et al., 2014). While a patient centred model of recovery stipulates that in order for patients to recover, they are required to have a level of autonomy and self-determination (Oades et al., 2005), nurses have a number of competing agendas to try and manage. These include societal expectations to manage risk, organisation risk aversion and the avoidance of blame for adverse outcomes (Slemon, Jenkins & Bungay, 2017). These factors have the potential to reinforce restrictive models of care, which in turn creates tension between staff and patients. These underlying tensions are deemed important to manage, as ward culture sets the tone for the therapeutic relationship, helping to prevent or foster interpersonal violence (Hamrin et al., 2009).

Chou et al., (2002), Shephard and Lavender (1999) and Bowers et al. (2009) all commented on the ward physical design, an environmental security aspect, but an aspect also closely linked to relational security due the impact environment can have on individuals' interpersonal interactions (Szabo et a., 2015). While a change of ward design can be necessary in some situations, often it is impractical for financial reason and is likely to only have a time limited effect on inpatient problems due to the continuously changing nature of inpatient units (Ng et al., 2001). Effective relational security enables a constant review of practices, reviewing the patient mix, level of staff presence and the provision of therapeutic activity to be dictated by current need, maximising the likelihood of positive care outcomes (Sharac et al., 2010). Implementation of adequate relational security also nourishes an environment that encourages listening, support and respect, all associated with lower levels of inpatient violence (Te Pou, 2008).

Team Dynamics

A range of methodologies was used in the work around team dynamics. Quantitative studies illustrated the impact of staff gender, experience, and education on violence outcomes (Chou et al., 2002; Daffern et al., 2006; Janssen et al., 2007). Work by Daffern et al. (2006) showed minimal differences between the number of females working on an all-female ward and violent incidents, and similarly, with the number of males working on an all-male ward (Daffern et al., 2006). Work by Janssen et al. (2007) indicated relatively high rates of seclusion occurred when females dominated the staffing, despite both nurses and patients reporting beliefs in qualitative studies that the presence of female staff was associated with the reduced risk of violence (Bond & Brimblecombe, 2003; Wright et al., 2014).

The quantitative findings around gender were consistent with previous literature about prison settings in which staff gender was not shown to significantly influence the incidence of violent incidents (Gadon et al., 2006). However, whatever the staff gender, both the primary data in this integrative review and Gadon et al.'s (2006) systematic review of institutional violence, showed that staff experience and training played a significant role in mitigating the risk of interpersonal violence (Chou et al., 2002; Janssen et al., 2007)

One key aspect of relational security, where there is a consensus in current definitions, but which is not mentioned in the primary research, is the importance of the knowledge the team has of the patient and how this information is communicated and utilised by staff on the floor. With challenging and complex patients, it is important for everyone to understand the patient's history, potential risk behaviours and triggers (Collins et al., 2003). It is also important for everyone to understand how to manage these crucial factors and the management strategy being used, as uncertainty in patient management is closely linked with interpersonal violence (Camerino et al., 2008). This management information needs to be accessible, easily communicated and understood by all the team members.

High turnover of staff, high use of temporary staff, and high levels of new or inexperienced staff can undermine both management plans and specialised knowledge of patients (Iozzino et al., 2015). This is due to the time taken for new or temporary staff to obtain the knowledge and form the therapeutic relational required to work safely with patients. The quantity and quality of the staff is vital (Hamrin et al., 2009), as is both the

staff's understanding and the wider knowledge within the institution about who is being cared for and how that care is best carried out (Gadon et al., 2006).

4.3 Comparison with previous literature

The STA guide produced by the DOH in the UK (2010) is a key piece of previous literature. This guide to relational security was created following a review of all incidents of assault and other serious incidents that occurred in forensic units across the UK (E. Allen, personal communication, July 4, 2018).

The STA guide and the findings of this integrative review clearly reflect that the therapeutic relationship is important. The STA guide identified the importance of clear consistent boundaries, adhered to by all staff in contact with the patient on a regular basis (including non-clinical staff) (DOH, 2010). There was also agreement about the importance of patient mix and dynamics, which highlighted the need to constantly monitor subtle changes on a ward and the risks that these changes could cause. A key difference between the guide and this integrative review, is that this review highlights the importance of clinical (and non-clinical staff) team dynamics. This was not explicitly a domain of the STA; however low staff turnover and sickness which is allied with team dynamics was considered a sign of successful implementation of relational security (DOH, 2010).

4.4 Limitations of this Integrative Review

This integrative review aimed to include all articles investigating the management of violence through relational security methods. It is possible some primary data has been missed. To help mitigate that risk, broad search terms were used, utilising the terms: 'aggression', 'violence', 'inpatient', 'mental disorders', 'aggression management' and 'psychiatry'. These terms were truncated and combined with Boolean operators as per the method outlined in chapter two. The term 'relational security' was not included in the search terms for two reasons. Firstly, it was used in an initial search and due to the limited results, it was considered an ineffective search term. Secondly, relational security is a concept born out of the UK and carries the potential to limit results to the UK. The results were also limited to English language publications which may have limited the articles retrieved from non-native

English-speaking countries. However, there were no articles found from Canada or New Zealand either, which reinforces the idea that research in this area may be limited.

There is also the chance that articles were missed due to only three databases being included in the literature search. However, PsychINFO, OvidMEDLINE, and Embase were selected because they are key medical and mental health databases, considered to host most international literature on these topics (University of Otago, 2018). Conference briefs, literature reviews and dissertations were excluded as they did not constitute primary research; however, their reference lists were reviewed for any relevant articles (Evans & Pearson, 2001).

The primary data retrieved in this review had its own set of limitations. The vast majority (n =10) of the articles focused on obtaining participants' perspectives on antecedents and management strategies for violence and aggression. The evidence obtained was largely questionnaire based, further limiting the depth of answers provided by the participants. Even further limitations resulted from participants' responses being placed on Likert scales with no open ended follow up questions for participants to qualify their responses. Responder bias was also a risk as participants answers may reflect socially desirable responses (Van Herk, Poortinga & Verhallen, 2004). All these shortcomings indicate the literature base would benefit from further qualitative studies, focused on unstructured interviews and focus groups, as well as further quantitative literature (section 4.6).

4.5 Implications for Clinical Practice

Relational security covers all aspects of inpatient settings that relate to interpersonal connections. This includes the treatment of the patient, therapeutic activities and behaviour role modelling. By itself, relational security is not enough to ensure ward safety as both environmental and procedural elements are required for complete safety (Collins & Davies, 2005). Key environmental aspects aim to ensure inpatient facilities are fit for purpose, creating an environment that promotes therapeutic care. Procedural security is also essential, and involves regulations regarding ward rules, including boundaries around banned items on the ward, and regulations around visitors (Kennedy, 2002). Without these three aspects of security working together, overall inpatient safety is weakened (Collins & Davies).

Both procedural and relational security are dynamic in nature, making them a challenge to implement into clinical practice. Te Pou (2012) also points to other challenges: the services readiness for change and the current staff values, attitudes and skill set. Initially, training sessions would be required to educate staff regarding relational security; what it is, why it is important and what it looks like if done successfully. This would require a comprehensive approach, looking at relational security elements that minimise or prevent violence; and, a change in focus away from immediate aggression management techniques, though it would still be important to teach staff these de-escalation techniques (Te Pou, 2012). Training sessions would need to be provided in modules suitable for all disciplines on the unit, including regular ward cleaners and assistance staff. It would also be important for ward communication strategies to be created for all staff to share information, report issues, voice concerns and actively monitor the implementation of relational security. For successful change to occur, it would be important for all staff to be involved, not just in education sessions but also in the development of practices alongside service users and their families (Te Pou, 2008).

An auditing tool would be useful to ensure successful implementation. This could be two tiered. One tier, usable by all staff could be a constructive addition to team meetings or a ward level debriefing. This tool could take the form of a discussion point checklist, highlighting key areas of relational security, providing guidance and support for staff to discuss the effectiveness of current ward practices, highlighting strengths and areas to work on, in a similar way that the *See Think Act* guide (DOH, 2010) checklist encourages a team discussion. It should be designed as a tool, that can be used regularly, to reinforce staff actions when things are going well and to direct constructive discussion when an incident has occurred on the ward, or the ward feels less stable. Prior to this auditing tool being established, a working committee would need to be formed to identify key relational security elements in the New Zealand context. This should involve staff from all disciplines and levels throughout inpatient services. It would also require service user input, as well as input from family members.

The second tier of the auditing tool could operate at a particular service level, for example forensic service governance meetings. This tier could be undertaken monthly, examining incidents of interpersonal violence over the month, assessing for common issues and identifying areas where improvements could be made. It would also need to involve a

constructive approach, looking at how the ward as a whole could make improvements, rather than focusing on particular individuals.

For this to be possible, higher oversight would be required. The District Health Boards (DHB) would need to support the implementation of relational security, providing the training, resources, policies, oversight and evaluation. But it would also require political will and oversight, with the MOH supporting the implementation at a government level, providing guidelines and regulations. This would involve a culture shift towards preventing the risk of inpatient aggression, rather than assessing and managing it. This shift has already begun as Te Pou has published a number of foundation documents focusing on the need for restraint and seclusion reduction. Through these documents it has been highlighted that a reduction of restraint and seclusion use is through key relational security elements: high ratio of staff, stable staffing, staff education, and limited use of temporary staff (Te Pou, 2008).

There is evidence suggesting that relational security is appropriate for application in other settings. Prison settings, dementia care units and intellectual disability settings all face some of the same challenges as psychiatric care (Cashmore et al., 2015; Hensel et al., 2013; Holst & Skär, 2017). Each of these areas faces risks of interpersonal violence. Therefore, the underlying principles of relational security could be utilised in each of these areas according to their specific needs.

4.6 Implications for future research

The most important need for future research is to take these findings from overseas literature and test their applicability in the New Zealand context. Further observational studies would be useful, especially ones examining the association between relational security elements that are believed to be important by staff and patients, and violence on the ward. It would also be useful to support these investigations with further unstructured qualitative interviews or focus groups, looking at why and in what circumstances patients and staff find key elements important. For example, a female presence was deemed to be valuable for preventing violence. Qualitatively and quantitatively, it would be useful to gather further information to ascertain whether a female presence is effective in de-escalating imminent violence or is it the earlier proximity of a female presence on the ward that prevents violence? Does this effect occur with female patients or is it just male patients who find a

female presence de-escalating? When completing further qualitative research, it is important to control for volunteer bias, as well as ward selection of patients deemed appropriate by responsible clinicians to participate in qualitative research.

While challenging, gathering experimental data regarding interventions key to relational security would be a useful addition to the research. This could be completed at a cluster randomisation level, for example at a ward level. A pilot study would initially need to be undertaken. A training package for staff around relational security could be provided to a randomised section of wards across New Zealand. This could be measured against violence incidents that occurred pre-training session and post training session across all wards. Such a study would have several limitations which would need to be identified and managed where possible. For example, other variables affecting the ward environment such as admission rates or drug use.

When measuring the effectiveness of relational security measures, it would be useful to consider measuring them against inpatient lengths of stay, readmission rates, staff retention, and use of temporary staff. Successful relational security focuses on patient care, therefore when successfully implemented, it is hypothesised that inpatient wards would see lower rates of inpatient aggression and violence, shorter inpatient stays, lower re-admission rates, higher staff retention and lower rates of use of temporary staff.

4.7 Conclusion

The potential positive impact of relational security in mitigating interpersonal violence, combined with the poor understanding of its nature and role, and its ongoing neglect, are the reasons relational security has been the focus for this integrative review. This review proposes a new, broader definition of relational security which helps to clarify the concept. Relational security is not limited to clinical teams' knowledge of the patient and the clinical team-patient relationship. It extends to include the relationship the patient has with the wider ward environment, and with the other patients. The definition also needs to include the relationships among the whole clinical team, focusing on how they communicate with one another, share critical information regarding patient care, and work together to ensure ward safety.

Currently, implementation of relational security is poorly described within existing research. This highlights a need for further investigation including both the collection of improved quantitative experimental data, as well as in-depth qualitative research carefully designed to avoid potential for bias. Such research needs to measure the effectiveness of relational security interventions, and the broader context of patient and staff beliefs about the management and prevention of violence.

Finally, analysis regarding relational security's suitability and its potential to reduce ward violence in the New Zealand context requires further investigation. The underlying principles of relational security are versatile; but further thought and research needs to be given on how it can be appropriately implemented to improve patient and staff safety in New Zealand care.

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Appendix One: Mapped Search Terms

PsychINFO 1806 to April Week 4 2018:

1. Aggress* → map term to subject heading (aggressive behaviour OR aggressiveness OR violence OR interpersonal interaction)
2. Violen* → map term to subject heading (aggressive behaviour OR hospitalised patients OR psychiatric patients)
3. Inpatient* → (hospitalised patients OR psychiatric patients OR psychiatric hospitalisation OR mental disorders OR hospitalisation OR client attitudes)
4. Mental disorders → mental disorders OR mental health)
5. Aggression management → aggressive behaviour OR patient violence OR forensic psychiatry OR anger OR nursing)
6. Psychiatry → (forensic psychiatry OR psychiatry)

Ovid MEDLINE® 1946 to present day with daily updates:

1. Aggress* → mapped term to subject heading (aggression OR adult OR anger)
2. Violen* → mapped term to subject heading (violence OR mental disorders OR aggression)
3. Inpatient* → (inpatients OR hospitalisation)
4. Mental Disorder* → (mental disorders OR mental health services)
5. Aggression management → (aggression OR violence OR mental disorder OR psychiatric nursing OR nursing staff OR hospital OR nurse-patient relations OR hospital, psychiatric)
6. Psychiatry → forensic psychiatry or psychiatry)

Embase 1980 to April 2018:

1. Aggress* → map term to subject heading (anger OR aggression)
2. Violen* → map term to subject heading (violence OR aggression)
3. Inpatient → (hospitalisation OR hospital patient OR patient)
4. Mental disorder → (mental disease)

5. Aggression management → (nurse patient relationship OR violence OR aggression OR nursing staff OR psychiatric nursing OR mental disease OR mental hospital)
6. Psychiatry → (psychiatry OR forensic psychiatry)

Appendix Two: Joanna Briggs Critical Appraisal Tools

JBI Critical Appraisal Checklist for Qualitative Research (Lockwood, Lee & Cook, 2015)

Reviewer_____Date_____

Author _____Year_____Record Number_____

		Yes	No	Unclear	Not applicable
1.	Is there congruity between the stated philosophical perspective and the research methodology?	☐	☐	☐	☐
2.	Is there congruity between the research methodology and the research question or objectives?	☐	☐	☐	☐
3.	Is there congruity between the research methodology and the methods used to collect data?	☐	☐	☐	☐
4.	Is there congruity between the research methodology and the representation and analysis of data?	☐	☐	☐	☐
5.	Is there congruity between the research methodology and the interpretation of results?	☐	☐	☐	☐
6.	Is there a statement locating the researcher culturally or theoretically?	☐	☐	☐	☐
7.	Is the influence of the researcher on the research, and vice- versa, addressed?	☐	☐	☐	☐
8.	Are participants, and their voices, adequately represented?	☐	☐	☐	☐
9.	Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	☐	☐	☐	☐
10.	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

JBI Critical Appraisal Checklist for Analytical Cross Sectional Studies (Moola et al., 2017)

Reviewer_____Date_____

Author _____Year_____Record Number_____

	Yes	No	Unclear	Not applicable
11. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
12. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
13. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
14. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
15. Were confounding factors identified?	☐	☐	☐	☐
16. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
17. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
18. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

JBI Critical Appraisal Checklist for Case Series (Moola et al., 2017)

Reviewer_____Date_____

Author _____Year_____Record Number_____.

	Yes	No	Unclear	Not applicable
1. Were there clear criteria for inclusion in the case series?	☐	☐	☐	☐
2. Was the condition measured in a standard, reliable way for all participants included in the case series?	☐	☐	☐	☐
3. Were valid methods used for identification of the condition for all participants included in the case series?	☐	☐	☐	☐
4. Did the case series have consecutive inclusion of participants?	☐	☐	☐	☐
5. Did the case series have complete inclusion of participants?	☐	☐	☐	☐
6. Was there clear reporting of the demographics of the participants in the study?	☐	☐	☐	☐
7. Was there clear reporting of clinical information of the participants?	☐	☐	☐	☐
8. Were the outcomes or follow up results of cases clearly reported?	☐	☐	☐	☐
9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?	☐	☐	☐	☐
10. Was statistical analysis appropriate?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

JBI Critical Appraisal Checklist for Case Control Studies (Moola et al., 2017)

Reviewer_____Date_____

Author _____Year_____Record Number_____

	Yes	No	Unclear	Not applicable
11. Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	☐	☐	☐	☐
12. Were cases and controls matched appropriately?	☐	☐	☐	☐
13. Were the same criteria used for identification of cases and controls?	☐	☐	☐	☐
14. Was exposure measured in a standard, valid and reliable way?	☐	☐	☐	☐
15. Was exposure measured in the same way for cases and controls?	☐	☐	☐	☐
16. Were confounding factors identified?	☐	☐	☐	☐
17. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
18. Were outcomes assessed in a standard, valid and reliable way for cases and controls?	☐	☐	☐	☐
19. Was the exposure period of interest long enough to be meaningful?	☐	☐	☐	☐

20. Was appropriate statistical analysis used? ☐ ☐ ☐ ☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

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_____

Appendix Three: Data Extraction Template

Author(s)	
Title	
Country	
Type of Research	
Settings and demographics of patient(s)	
Perspectives	
Measures	
Factors relating to violence/aggression	
Violence and aggression outcomes	
Measures of association between relational security interventions and violence outcomes	

Appendix Four: Summary of Data Extraction

Author(s), Year, Country	Title	Participants, Ward & Methodology	Summary of RS components relating to violence and aggression outcomes
Wright, Duxbury & Crampton, 2014, United Kingdom	A qualitative study into the attitudes of patients and staff towards violence and aggression in a high security hospital	• Nurses + psychiatric patients detained under the MHA (n=18) • Forensics • A qualitative study	• Patient's trust in staff & perception of patient/staff role • Staff receptiveness & availability to patient needs • Ward activities • Staff attitudes • Staff gender balance
Hinsby & Baker, 2004, United Kingdom	Patient and nurse accounts of violent incidents in a medium secure unit	• Nurses + psychiatric patients (n = 8) • medium secure forensic unit • Qualitative research	• Power struggle for control • Management of violence/aggression seen as punishment/punitive • Flexibility of rules depended on staff experience and confidence • Nurses felt a need to control situation, rather than understand • Emphasis on control/safety rather than understanding and care
Reade & Nourse, 2012, United States of America	Intervening to prevent violence on psychiatric units	• Patients (n=5) • Acute • Retrospective analysis	• Staff availability to patients • Provision of therapeutic interventions for de-escalation/individualised care plans

			• Ward capacity + staff increase to manage acute situations/continue to run ward programmes/activities • Efficient and effective communication between floor staff, greater MDT and security
Janssen, Noorthoorn, van Linge & Lendemeijer, 2007, The Netherlands	The influence of staffing levels on the use of seclusion	• Admission & long stay • Quantitative research	• Patients less likely to exhibit potentially dangerous behaviours in presence of permanent staff • High female ratios result in high levels of seclusion • Mixed team experience - a balance of both old and new staff permanent staff important • High patient staff ratios and temporary cause increased incidents of seclusion
Daffern, Mayer & Martin, 2006, Australia	Staff gender ratio and aggression in a forensic psychiatric hospital	• Staff make-up on shifts (n=1092) • Forensic • Quantitative research	• No significant relationship between gender of staff and aggression regarding both severity and occurrence of incidents
Duxbury, 2002, United Kingdom	An evaluation of staff and patient views of and strategies employed to manage inpatient aggression and violence	• Staff + psychiatric patients (n=152) • acute inpatient units • Pluralistic evaluation design	• Staff interactions • Patients perceiving themselves to be victims of a controlling style of nursing in context of a restrictive environment

	on one mental health unit: a pluralistic design		• Nursing staff perception that they are victims of patient aggression and an inadequate organisation
Pulsford, Crumpton, Baker, Wilkins, Wright & Duxbury, 2013, United Kingdom	Aggression in a high secure hospital: staff and patient attitudes	• Nurses, HCA, + psychiatric patients (n=135) • high secure hospital • A cross-sectional comparative questionnaire survey	• Improved relationships and communication between staff and nurses • Aggression expressions of frustration and anger – responses to theses cause or prevent escalation • Cultural differences between staff and patients • Staff gender mix
Dickens, Piccirillo, & Alderman, 2012, United Kingdom	Causes and management of aggression and violence in a forensic mental health service: perspectives of nurses and patients	• Nurses, HCA + psychiatric patients (n=170) • low and medium secure psychiatric units • A cross-sectional comparative questionnaire survey	• Improvement in relationship and communication between staff and patients required • Negotiation an important tool in managing aggression • Not all expressions of anger require staff intervention
Duxbury & Whittington, 2004, United Kingdom	Causes and management of patient aggression and violence: staff and patient perspectives	• Staff and psychiatric patients (n=162) • acute, intensive care and high dependency units • A cross-sectional comparative questionnaire survey	• Need for improved interactions with patients when managing aggression • Poor communication and ineffective listening skills

			• Ward atmosphere and culture contributor to reduction and escalation of aggression
Bowers, Allan, Simpson, Jones, Merwe & Jeffery, 2009, United Kingdom	Identifying key factors associated with aggression on acute inpatient psychiatric wards	• Staff + psychiatric patients • acute psychiatric units • Multivariate cross-sectional design	• Holding regular community (patient and staff) meetings • Planned ward activities • Better team functioning (communication, organisation, lower rates of burnout) reduce ward aggression
Spokes, Bond, Lowe, Jones, Ilingworth, Brimblecombe & Wellman, 2002, United Kingdom	HOVIS – the Hertfordshire/Oxfordshire violent incident study	• Nurses + HCA (n=108) • Acute, intensive care and low secure • Structured interviews	• Strengths in interpersonal skills – verbal skills, rapport, giving explanations, observational skills, rationalising, backing off • Weaknesses in interpersonal skills – poor communication, rude & patronising, non-verbal skills, listening skills • Nurse characteristics positives – self-awareness, being calm, self-controlled, confident, exerting control, not scared • Nursing characteristics weaknesses – confidence, fear, self-control, confrontational, physical avoidance, authorisation • Team Characteristics strengths – teamwork, knowledge, physical skills,

			length of service, experience of violence • Team characteristics weaknesses – training courses, physical skills, teamwork, lack of experience, practice, knowledge
Chou, Lu, & Mao, 2002, Taiwan	Factors relevant to patient assaultive behaviour and assault in acute inpatient psychiatric units in Taiwan	• Nurses (n=79) • Acute • Prospective survey design	• Assaulted staff – younger, had less experience and less training in identifying risk factors of assaultive patients and management techniques
Meehan, McIntosh, Bergen, 2006, Australia	Aggressive behaviour in a high-secure forensic setting: the perceptions of patients	• Psychiatric patients detained (n=27) • high secure forensic unit • Focus group discussions	• Staff lack of understanding/empathy • Staff readiness to help patients with requests • Inflexible/strict staff • Cancelled activities/lack of meaningful activities • Early intervention – proactive approach
Cookson, Daffern & Foley, 2012, Australia	Relationship between aggression, interpersonal style, and therapeutic alliance during short-term psychiatric hospitalisation	• Patients (n=79) • acute psychiatric unit • Semi-structured interviews	• Hypothesis of poor therapeutic relationship would predict aggression towards staff unsupported

Bond & Brimblecombe, 2003, United Kingdom	Violent incidents and staff views	• Nursing staff (n=102) • Unspecified • Semi-structured interviews	• Good communication, manner, human relation skills, decisiveness, diversional skills, assessment skills, experience and knowledge and non-threatening style all important when preventing/managing aggression • Poor communication, personality factors, rudeness/affront and placing self in positions of risk all contributors to aggression
Shephard & Lavender, 1999, United Kingdom	Putting aggression into context: an investigation into contextual factors influencing the rate of aggressive incidents in a psychiatric hospital	• Staff (n=130) • Range of inpatient units including forensic and general population • Semi-structured interviews	• Verbal strategies, patient centre focus • Nil incidents of aggression occurred during therapeutic context • Access to extra staff important
Bensley, Nelson, Kaufman, Silverstein & Shields, 1995, United states of America	Patient and staff views of factors influencing assaults on psychiatric hospital employees	• Staff + psychiatric patients (n=206) • range of psychiatric general population inpatient facilities • Semi-structured interviews	• Staff interpersonal skills • Perception of not being treated with respect • Poor explanation of ward rules • Staff training in management of aggression • Adequate staffing numbers

Appendix Five: Conclusion Drawing

Source	Therapeutic Relationships	Ward Climate	Team dynamics
Wright, Duxbury, Crumpton (2014) United Kingdom Qualitative study	Important factors in reducing aggression • Trust in staff • Staff receptiveness to patient needs to talk/support = important for diffusing • Staff lack of interest in patients	Important factors for reducing aggression • Staff availability • Strength base approach • Active sessions seen to de-stress (especially sporting activities) Perceptions that increase risk of aggression • 'Them and us' attitude • Patients' perception of being treated like children or seeing themselves as prisoners = increased frustration • Patient boredom	• Staff positivity – positive approach = protective against aggression; negative approach = increased aggression • Females = positive impact for reducing aggression, less incidents of violence when females are on the ward
Reade & Norse (2012) USA Retrospective Analysis	• Nurses providing patients opportunity to vent their feelings reduce incidents of aggression • Presenting patients with therapeutic choices for de-escalation to maintain patient autonomy	• Provision of individualised care plans – providing rewards, motivation and activity based on individual needs and interests • Limit setting provided by having one allocated nurse per shift for patients to approach for all requests • Agitated patients did not participate in groups if doing so was deemed to intimidate	• Security team always involved (came with a male presence) • Efficient communication between nursing staff and hospital security to ensure frequent, timely, professional and consistent presence of security when required • Limit setting provided by appropriate gender (i.e.

		peers or if they were exceedingly labile or tended to become agitated in groups • Slow integration of patients onto main unit • Ward capacity reduced to manage ward acuity • Staff ratios increased to provide 1:1 or higher nursing of patients deemed to need same • Providing consistent care for the rest of the ward (i.e staff not removed/reduced from main ward during higher acuity) → activities, groups on main ward not cancelled due to high acuity	gender that the patient responded best to) • Strong communication amongst the MDT team throughout patient progress and integration on to main unit • Effective communication at handovers – highlighting effective and ineffective interventions, as well as problematic behaviours, triggers and safety concerns (communicated to greater MDT too)
Janssen, Noorthoorn, van Linge, Lendemeijer (2007) The Netherlands Retrospective Analysis			• Patients less likely to exhibit potentially dangerous behaviours in presence of permanent staff • High female ratios resulted in higher seclusion rates • Mixed team of experienced staff and newer staff associated with decreased seclusion rates • Increased patient:staff ratios = higher seclusion rates • Increased temporary staff = higher seclusion rates

Daffern, Mayer & Martin (2006) Australia Retrospective Analysis			• No significant relationship between gender of staff and aggression in regards to both severity and occurrence
Duxbury (2002) United Kingdom Pluralistic evaluation design	• Staff interactions	• Patients perception that they are victims of a controlling style of nursing in the context of a restricted environment • Nurses perception that they are victims of patient aggression and an inadequate organisation	
Dickens, Piccirillo, Alderman (2012) United Kingdom Cross-sectional comparative questionnaire survey	• Improved relationships between staff and patients reduce incidents of aggression • Negotiation effective in managing aggression • Not all expressions of anger require staff intervention • Poor communication trigger aggression	• Situations main contributor to expressions of anger by patients	
Bowers, Allan, Simpson, Jones, Merwe, Jeffery (2009) United Kingdom		• Holding of regular community (patient and staff) meetings • Increased number of planned patient activity sessions reduce aggression	• Better team functioning (MDT), lower burnout, order/organisation with unit associated with reduced aggression

Multivariate cross-sectional design			
Pulsford, Crumpton, Baker, Wilkins, Wright, Duxbury (2013) United Kingdom Survey Design	• Improved relationships between staff and patients reduce aggression • Aggression largely believed to be caused by expressions of frustration and anger – responses to these can cause or prevent escalation of aggression/violence • Communication issues direct cause of aggression – improvement of relationships can reduce incidents of these	• Cultural differences between staff and patients can lead to aggression	• Gender mix important
Duxbury & Whittington (2004) United Kingdom Survey design	• Need for improved interactions with patients when managing aggression • Poor communication and ineffective listening skills contribute to higher levels of aggression	• Ward atmosphere and regimes contribute to incidents of aggression • Culture – "we need to get away from the old culture"	
Bond & Brimblecombe (2003) United Kingdom Survey design	Skills seen to reduce violence • Good communication (body language, use of voice, active listening) • Calm manner (appearance of calm, confidence, not overreacting)		Skills seen to reduce violence: • Diversional skills (diffusion, distraction) • Assessment skills (knowledge of the client, reading the signs, knowing the cause) • Experience/knowledge

	• Human relation skills (likability, humour, courtesy, empathy, warmth) • Decisiveness (organisation skills, clear boundaries) • Diversional skills (diffusion, distraction) • Assessment skills (knowledge of client, reading the signs, knowing the cause) • Experience/Knowledge • Non-threatening style Skills likely to increase violence: • Poor communication (lack of understanding, not explaining, accidentally inattentive) • Personality factors (opinionated, controlling, over eager, shy, poor self-image) • Rudeness/affront (sarcasm, belittling, ignoring, arguing, "bad" attitude) • Fearful (anxious, frightened) • Racial motivation		• Non-threatening style Skills seen to increase violence: • Placing self in a position of risk (poor risk assessment, misinterpreting) • Inexperience • Position of authority • Poor timing (too quick to intervene)
Chou, Lu, & Mao (2002) Taiwan			Staff characteristics: • Assaulted staff – mean age 25.8yrs, work experience 23 months • Non-assaulted staff – 30yrs, 52 months

Prospective survey design			• Non-assaulted staff had received more training in identifying risk factors of assaultive patients and in management techniques
Cookson, Daffern, Foley (2012) Australia Semi-structured interviews	• Hypothesis of poor therapeutic relationship would predict aggression towards staff unsupported		
Meehan, McIntosh, Bergen (2006) Australia Semi-structured interviews	• Staff lack of understanding, empathy → perceived lack of caring gave rise to thoughts of harming staff and retaliatory aggression • Patients perception of staff ignoring frequent requests for assistance	• Inflexible and strict staff – frustration towards staff for appearing to override rules, withdraw patients' privileges for no apparent reason • Perceptions of staff adopting superior attitude, controlling behaviour, enforcing authority • Patients needing to que at office door (seen as demeaning, source of friction) • Staff attitudes requiring improvement – inflammatory comments, perceptions that the staff operate from a position of custody rather than care/therapy • Patient advocate to mediate through times of conflict	• Early intervention best way to manage aggression (prevent it before it starts – nursing team to take a more proactive approach)

		• Cancelled activities, lack of meaningful activities → cause of increased aggression	
Hinsby & Baker (2004) United Kingdom Semi-structured interviews		• Staff and patients equally involved in striving to exert control over ever shrinking domains • Patients saw management of violence as punishment and the punitive part of ward life • Flexibility from rules depended on nurses' experience and increasing sense of autonomy but also carried greater potential risk of blame resulting in more restrictive option	• Nurses saw it as 'an out-of-control behaviour' and felt a need to control the situation rather than understand the function/meaning • Policy and procedure featured heavily in driving responses to violence and provision of security • Both care and control roles considered part of the nursing job, though maintaining safety took precedence – less equipped nurses felt more restrictive measures were employed to enhance safety • Surveillance emphasised and importance placed on restrictive strategy rather than prediction and prevention of aggression • Controlling the situation more valued skill rather than understanding the meaning of it • Nurses seen as a bridge between doctors and patients (doctor = dominant, person

			with knowledge, decision maker; nurses = implementer) • Incidences not considered individually but met with consequential set of responses – nurse felt powerless to change policy
Spokes, Bond, Lowe, Jones, Illingworth, Brimblecombe, & Wellman (2002) United Kingdom Semi-structured interviews	• Strengths in interpersonal skills – verbal skills, rapport, giving explanations, observational skills, rationalising, backing off • Weakness in interpersonal skills – poor communication, rude & patronising, non-verbal skills, listening skills Nurse characteristics: • Positives – self-awareness, being calm, self-controlled, confident, exerting control, not scared • Weaknesses – confidence, fear, self-control, confrontational, physical avoidance, authorisation		Team characteristics: • Strengths – teamwork, knowledge, physical skills, length of service, experience of violence • Weakness – training courses, physical skills, teamwork, lack of experience, practice, knowledge
Shepherd & Lavender (1999) United Kingdom	• Management of aggression – verbal strategies, patient centred focus	• Nil incidents of aggression occurred during therapeutic contexts (e.g. individualised or group therapy, day centre, 1:1 with staff)	• Management of aggression – access to extra staff

Semi-structured interviews			
Bensley, Nelson, Kaufman, Silverstein, & Shields (1995) USA Semi-structured interviews	• Not being treated with respect • Staff interpersonal skills	• Poor explanation of ward rules	• Staff training in management of aggression • Adequate staff numbers

Appendix Six: Measures utilised in the primary data

Management of Aggression and Violence Attitude Scale (MAVAS)	- Attitude scale developed to assess staff and patient attitudes towards aggression and the subsequent management of interpersonal violence (Duxbury, 2003)
Overt Aggression Scale (OAS)	- A measure of inpatient aggression. It classifies aggression by type. (Cookson et al, 2012)
Impact Message Inventory - Circumplex (IMI-C)	- Observer-rated inventory that measures eight categories of interpersonal behaviour (Cookson et al, 2012)
Working Alliance Inventory-Short Form (WAI-S)	- A 12-item questionnaire that assesses the working alliance between patients and staff by measuring the perceptions of negotiated tasks and the strength of the emotional bonds (Cookson et al, 2012)

Macarthur Admission Experience Survey: Short Form 1 (MAES:SF)	- An interview of 16 questions that assesses patients' perceptions of:
	  - Coercion in the admission decision
	  - Any pressures on the patient to be hospitalised
	  - How the patient was treated by others during the process of coming to hospital and being admitted (Cookson et al, 2012)

Brief Psychiatric Rating Scale (BPRS-18)	- 18-item semi-structured interview used to support the assessment of positive, negative and affective symptoms of a psychotic disorder (Cookson et al, 2012)
Modified Staff Observation Aggression Scale (MSOAS)	- A tool used to record day-to-day incidents of aggression and violence, incorporating features of both the Overt Aggression Scale and the Staff Observation of Aggression Scale (Duxbury, 2002)
Patient-staff Conflict Checklist (PCC-SR)	- End of shift completed by nurses on the frequency of containment and conflict events (Bowers et al, 2009)
Attitudes to Containment	- Self-rating questionnaire regarding patients' attitudes towards coercive measures (for example, seclusion)

Measures Questionnaire (ACMQ)	(Reisch et al., 2018)
Attitude to Personality Disorders Questionnaire (APDQ)	- Self-rating questionnaire assessing staffs' attitude to patient with personality disorders (Bowers & Allan, 2006)
Ward Atmosphere Scale (WAS)	- Measures psychosocial climate of inpatient units (Røssberg & Friis, 2003)
Team Climate Inventory (TCI)	- Use to measure group climate dimensions. For example, relationships at work. (Agrell & Gustafson, 1994)
Multifactor Leadership Questionnaire (MLQ)	- Measurement of assessing leadership behaviours (Rowold, 2005)
Maslach Burnout Inventory (MBI)	- Measurement of three components of burnout: emotional exhaustion, depersonalisation, and reduced personal accomplishment (Maslach et al., 1986)