Understanding Staff-Level Factors and Patient Aggression in Psychiatric Hospitals

Louise Wade, BSc (Hons)

Student ID Number: 4191163

Thesis submitted to the University of Nottingham for the degree of Doctor of Forensic Psychology (DForenPsy)

Submitted for Examination: March 2017

Abstract

Background: The cause of patient aggression is a very complex question, and it continues to be a challenging phenomenon in psychiatric inpatient services. This thesis provides a broad investigation into nursing staff attitudes towards inpatient aggression. Individual factors such as the history of violence are well studied. However, staff-level factors have received less attention.

Aims and Objectives: The main purpose of this thesis was to explore and expand the knowledge base of nursing staff attitudes toward patient aggression in secure psychiatric hospitals. The four questions of this thesis were;

1. What does the literature suggest about the psychological and emotional effects of inpatient aggression on nurses working in psychiatric settings? (Chapter 2).
2. What are the factors associated with nurses' attitudes towards patient aggression in UK secure psychiatric hospitals? (Chapter 4).
3. Is the Attitude Toward Aggression Scale (ATAS; Jansen et al., 2006a; 1997; 2005b) a suitable measure for assessing nurses' attitudes towards patient aggression? (Chapter 3).
4. What are the benefits of using a direct staff-level intervention that utilises the positive behavioural support (PBS) philosophy when targeting attitudes towards patient aggression? (Chapter 5).

Method: To answer the first research question a systematic review was completed to explore current literature focusing on the psychological and emotional effects of patient aggression (Chapter 2). A critical review was then conducted to explore the psychometric properties of the ATAS, a tool commonly used within psychiatric services to help monitor and evaluate attitudes towards patient aggression (Chapter 3). An empirical research study using quantitative measures was developed to explore nursing staff attitudes towards patient aggression in UK secure psychiatric hospitals (Chapter 4). Finally, a case study presents the effectiveness of a direct staff-level intervention on nurses' attitudes and the management of patient aggression in a secure psychiatric hospital (Chapter 5).

Overall Findings:

1. The systematic review (Chapter 2) identified several psychological and emotional effects when exposed to inpatient aggression. Psychiatric nurses were found to suffer from occupational stress, psychological strain and post-traumatic stress disorder symptoms. State anxiety was found to be the main emotional effect.
2. The psychometric review of the ATAS (Chapter 3) raised questions regarding the face validity, content validity, predictive validity, concurrent validity, and construct validity. The internal reliability was deemed satisfactory, whereas the test-retest reliability is yet to be explored.
3. The results from the primary study (Chapter 4) showed that the respondents viewed patient aggression as destructive. Verbal

aggression was the most prevalent predictor for the communicative, protective, and intrusive attitude domains, whilst working with the female population was associated with having a destructive attitude.

4. This case study (Chapter 5) highlights the benefit of conducting a direct staff-level intervention when targeting attitudes towards patient aggression. There was a positive shift in how staff evaluated patient aggression following this intervention. The data also evidenced improvements in the patient's ability to cope with anger-provoking situations, along with a reduction in the frequency and intensity of aggressive incidents.

Conclusion: Nurses' attitudes towards patient aggression have been found to influence the type of management strategies used. A better understanding of the sources of them may provide a useful guide when designing and developing cost-effective organisational interventions aimed to reduce the need for restrictive interventions in inpatient settings. This can help promote positive and proactive care and create a safer environment for both patients and staff.

Acknowledgements

The author of this thesis would like to thank those individuals and organisations who have supported the completion of this thesis.

I would like to be begin by expressing my sincere gratitude to my supervisor Dr. Shihning Chou, who provided valuable support and guidance throughout the duration of the doctorate. Your patience, expertise, ideas, and guidance have been instrumental in the completion of this thesis. I would also like to thank Richard Jones (Trainee Forensic Psychologist) who kindly allocated time to be the second reviewer for the systematic review.

Appreciation goes to Rebecca Lawday, for helping me to gain the relevant permissions needed to conduct the primary research study at Arnold Lodge Hospital, and to St Andrew's Healthcare who helped make the data collection process a not too difficult task. Many thanks also goes to Dr. Gerard Jansen who gave me permission to use the Attitude Toward Aggression Scale (ATAS) for this thesis, and to Caroline Lovelock who oversaw the work completed with the research case study. Your support and guidance is greatly appreciated.

Finally, a heartfelt thanks to my family and friends for their support, patience, and motivation. I cannot thank you all enough for helping me through this very long but rewarding journey. A special thank you goes to

my loving parents who have always believed in me. There are not enough words in the world to express my appreciation and love for you both, but I think this is a good start. I owe you one!

Contents

List of Tables

List of Figures

List of Appendices

Preface

This topic was chosen as it is an understudied area, and because it is a personal interest of mine. Before pursuing a career in psychology, I worked as a healthcare worker (HCW) in a medium secure psychiatric hospital for five years. Through this experience, I developed a keen interest in this area, alongside a true appreciation of the nursing profession.

Psychiatric nurses constitute an around-the-clock surveillance system to help keep acutely ill and vulnerable individuals safe. Alongside other healthcare professionals, they are responsible for the care and treatment of the patients. The ward environment can at times be very chaotic, unpredictable, and dangerous, and the nursing staff must work together to keep everyone safe. Until recently, traditional techniques were commonly used to manage patient aggression, which included the use of seclusion and restraint. These restrictive measures are considered controversial practices, particularly within healthcare establishments. I witnessed a lot of good practice during my time as a HCW, however I also observed staff who were quick to apply restrictive interventions when dealing with an aggressive patient. These observations led me to think about clinical-reasoning and decision-making in nursing practice, and what factors influence this cognitive process. Interestingly, research conducted in generic inpatient

services suggest a link between staff attitudes and clinical decision-making. Therefore, I felt it would be beneficial to explore this further. Moreover, the Department of Health produced the *Positive and Proactive Care: Reducing the need for restrictive interventions* (DoH, 2014), a document aimed to help create a culture that is committed to developing practices where restrictive interventions are used only as a last resort. I was therefore interested in how service providers were going to embed this approach into nursing culture and practice.

Overview

The aim of this thesis is to explore and expand the knowledge base of nurses' attitudes towards patient aggression in secure psychiatric hospitals and how this may relate to clinical-decision making.

Chapter One provides an overview of patient aggression in psychiatric hospitals. Research proposes that the interactional styles between staff and patients and the prevention strategies used when dealing with an aggressive patient depends on how the behaviour is evaluated. This raises concerns as to whether all instances of restrictive and coercive interventions are unavoidable.

Chapter Two presents a review of the literature on the psychological and emotional effects of patient aggression on nursing staff working in psychiatric settings. A systematic approach was used to search and assess primary research studies. The data was then synthesised and discussed regarding the clinical implications and recommendations for further research. This review highlights the need for trauma-informed care and practice to ensure organisations are responsive to the impact of trauma. Applying this strength-based framework will support service providers in creating opportunities for victims to rebuild a sense of control and empowerment.

Chapter Three provides a critical appraisal of the Attitude Toward Aggression Scale (ATAS; Jansen, Dassen, Burgerhof & Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b). This assessment tool can be used to monitor attitudes towards patient aggression. This information provides a good indication of the type of aggression being displayed by patients and the management strategies utilised by staff. The psychometric properties were examined to see whether this tool was suitable for use in later chapters. The reliability and validity were explored, and the outcomes are discussed in terms of the tool's utility.

The ATAS was then used to explore psychiatric nurses' attitudes towards patient aggression (Chapter Four). The aim was to explore the predictors of attitudes in UK secure forensic hospitals. Previous chapters evidenced the importance of this type of research.

Chapter 5 reports on a case study which explored the benefit of delivering a direct staff-level intervention that incorporated the positive behaviour support philosophy. An array of direct and indirect assessment methods were used to gain an understanding of the factors that may have contributed to the patient's aggressive behaviour. These sources included staff observations, functional analysis, and psychometric assessments. The data evidenced a positive shift in staff attitudes towards patient aggression, a

reduction in the frequency and intensity of the aggressive incidents recorded, along with improvements in the patient's ability to cope with anger-provoking situations. The findings from this research provide further evidence-based data of the effectiveness of a coercive prevention method that can help reduce the need to use restrictive interventions when managing patient aggression.

The final chapter provides a summary of the preceding chapter's findings in order to address the overall aims of the thesis. Clinical implications and recommendations for future research are also discussed.

Chapter One

Introduction

1. Patient Aggression and Violence in Psychiatric Services

The cause of patient aggression and violence is a very complex question, and it continues to be a challenging phenomenon in psychiatric inpatient services. Accurate incident rates are hard to determine due to under-reporting and lack of consistency in the definition of aggression and violence (Irwin, 2006; Royal College of Psychiatrists, 2002). Post-incident reports are often used as a resource to collect data, which can present a distorted picture given the under-reporting of incidents. However, there is an international agreement that nurses who provide 24-hour care are at high risk of experiencing workplace violence during their career (Finnema, Dassen & Halfens, 1994; Jonker, Goossens, Steenhuis & Oud, 2008; Vanderslott, 1998). Healthcare workers, followed by qualified nurses, are at greater risk of being assaulted by patients compared to other healthcare professionals (Fottrell, 1980). Therefore, it is important that clinicians and researchers take the time to explore staff's personal experiences of inpatient aggression.

Managing patients who display aggressive or violent behaviours and coping with the aftermath is a difficult challenge for the nursing profession. The damaging consequences of inpatient aggression include physical, psychological, and emotional harm to staff and patients, along with high financial costs to the organisation. This

includes a high staff turnover, property damage, sick pay, compensation costs, and reduced levels of productivity (e.g. Chaloner, 1995; Happell, 2008; Hegney, Tuckett, Parker & Ekey, 2010). Consequently, it is essential for healthcare organisations to allocate time and resources to develop strategies that target the issues related to inpatient aggression to prevent further costs.

An awareness of the dynamics and problems related to inpatient aggression can help guide effective policy development and interventions to promote safety and stability in psychiatric hospitals. Previous government initiatives (e.g. legislation), organisational agendas (e.g. policies, procedures and staff training), and advice from industrial bodies (e.g. zero-tolerance attitude) were noted as being heavily focused on the individual, thus failing to consider the problem of violence in relation to interpersonal conflicts (Paterson, Leadbetter & Miller, 2005). Interestingly, the zero-tolerance policy was found to not reduce the level of violence across private and public sector non-forensic hospitals (Hegney et al., 2010), and this is probably due to being heavily focused on the individual. There is a need to consider environmental and contextual factors, along with perpetrator-specific and victim-specific factors when developing aggression management strategies.

The ecological model (Dahlberg & Krug, 2002) suggests that violence is a result of a combination of four influences: Individual (i.e. biological and personal history); relationships (i.e. peers, partners and other family members); community (i.e. social and physical environment); and societal factors (i.e. economy, education and social policies). Therefore, the interrelationships between these four factors make it difficult to understand the context of aggression and violence in terms of a singular cause. In addition, Duxbury (2002) identified three broad models of causation, which includes the internal model (i.e. patient factors), the external model (i.e. social environment) and the situational/ interactional model (i.e. factors in the immediate situation). Consequently, the origin of patient aggression is likely to be multifactorial.

2. Reducing the need for Restrictive Interventions

Following the recent critical appraisals of aggression management in services that care for vulnerable adults, several governmental reports were produced, including two by the Department of Health (DoH, 2012; 2014). The impetus for the *Positive and Proactive Care* document (DoH, 2012) was the abusive behaviour that was uncovered at Winterbourne View Hospital, and the Care Quality Commission's (CQC) concerns over the use of restrictive practices used across many services. Furthermore, the *Mental Health Crisis*

Care: Physical Restraint in Crisis (2013) report noted significant variations in the use of restrictive interventions implemented across the country. Restrictive interventions are defined as "deliberate acts on the part of other person(s) that restrict an individual's movement, liberty and/or freedom to act independently" (DoH, 2014, p.14). This includes the use of physical (e.g. restraint), mechanical (e.g. restraint devices), chemical (e.g. intramuscular injection), seclusion, and long-term segregation.

The DoH (2014) guidelines set a framework of best practice to create a culture that is committed to developing practices where physical interventions are only used as a last resort. It provides guidance to all organisations caring for vulnerable individuals who may be at risk of being subjected to restrictive interventions. The document also presents a set of mechanisms to ensure that services are being held accountable and enforcing these improvements, which includes effective governance, transparency, and monitoring. These guidelines have started to shape organisational policies and procedures. However, this transformational change in practice requires a radical cultural shift, which will require a great deal of time and resources.

Physical restraint should be used as the last resort, and this is in accordance to the DoH (2014) guidelines. The inclusion of

mandatory training is a requirement across healthcare settings where people may, on occasion, present with challenging behaviours (Lee, Wright, Sayer, Parr, Gray et al., 2001). However, the training packages, such as the *Prevention and Management of Violence and Aggression* course, heavily focuses on the individual, rather than including external and interactional factors.

Research suggests that the management of patient aggression requires an element of judgment (Irwin, 2006). The interpretation of the potential seriousness of the aggressive behaviour and the choice of management strategies used can differ significantly depending on the staff member (Collins, 1994; Hopton 1995; Whittington & Higgins, 2002). Also, individual perceptions of patient aggression can influence interaction styles (Duxbury, 2002). This suggests that attention should be targeted towards staff attitudes and their perceptions of patient aggression when attempting to create a collective culture that adheres to the least restrictive principles.

Direct staff-level interventions that utilise the positive behaviour support (PBS) philosophy are a way of promoting positive and proactive working in healthcare, and this approach features in the DoH (2014) document. However, more research is needed to develop and evaluate direct and indirect strategies that target

nursing attitudes and nursing practices. In response to the government agenda and the rise in patient empowerment, outcome data will help organisations to develop an evidence-based practice within their establishments to ensure the delivery of high-quality care.

3. Staff Attitudes and Aggression Management

The attitudes of health professionals toward patient aggression have been the focus of many research reports (e.g. Irwin, 2006; Jonker et al., 2008). The attitude concept has been defined in many ways, but the common theme is that an object can be evaluated based on cognitive, affective, and behavioural information (Maio & Haddock, 2015). Understanding nursing attitudes towards patient aggression are important because several theories suggest that attitudes influence behaviour. Theories include the social cognitive theory (Bandura, 1999) and the theory of planned behaviour (TPB; Ajzen, 1991).

4. The Theory of Planned Behaviour

The TPB is an extension of the theory of reasoned action (Fishbein & Ajzan, 1967), which was derived from previous research exploring attitudes and human behaviour. The TPB was designed to predict behaviours not completely under volitional control by including the importance of perception. According to this theory, three factors

underlie an individual's intention to behave in a certain way, and behaviour can be explained by the intention. These comprise of attitudes toward the behaviour, subjective norm, and perceived control.

When applying this theory to nursing practice, the subject norm relates to the work environment, for instance, the perceived social pressure to use a particular management technique when dealing with an aggressive patient. Perceived control refers to the individual's ability to perform a given behaviour within the ease of contextual constraints. Consequently, the TPB framework enables the consideration of the relationship between attitudes and the organisational culture in terms of the management strategies being applied when dealing with aggressive patients. This infers that to reduce the need to use restrictive interventions, there needs to be a shift in staff attitudes towards patient aggression and the subject norm in terms of positive and proactive practices. The allocation of resources that includes education and skill development will also help to enhance perceived control of a potentially risky situation within psychiatric hospitals.

Jansen, Dassen and Moorer (1997) applied the 'attitude' and 'subject norm' components of the TPB to address nursing attitudes towards patient aggression in institutional psychiatry. The Attitude

Toward Aggression Scale (ATAS; Jansen, Dassen, Burgerhof & Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b) was developed and is the first psychometric tool that assesses nurses' evaluations of patient aggression.

Despite research exploring the type of attitudes nursing staff have towards patient aggression in multiple countries, few researches have focused on what may influence the development of these attitudes in the United Kingdom (UK) psychiatric secure hospitals. This understanding is vital when attempting to design and develop cost-effective campaigns and interventions that aim to shift organisational culture and nursing practice to adopt the least restrictive principles. This relates nicely to the new governmental initiatives as outlined in DoH (2014).

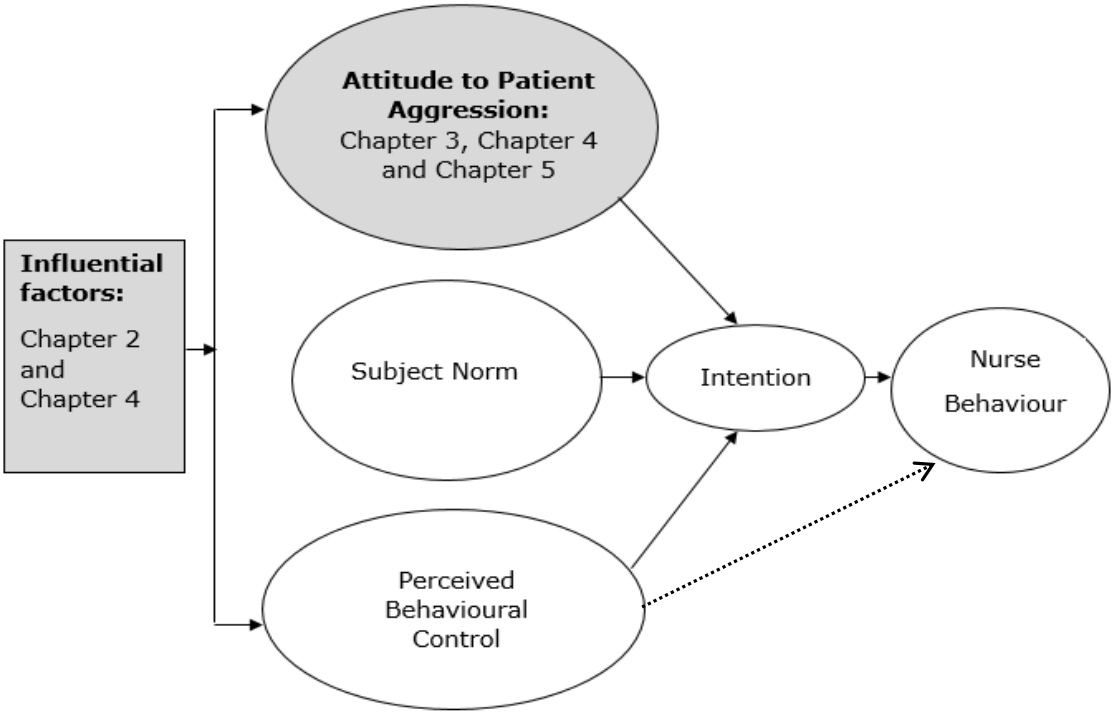
The purpose of this thesis is to add to the literature base to help develop a better understanding of nurses' attitudes towards patient aggression in psychiatric secure hospitals and to consider the practical and clinical implications.

5. Thesis Aim

The aim of this thesis is to explore and expand the knowledge base of nurses' attitudes toward patient aggression in psychiatric services. The TPB was the foundation for this investigation (see

Figure 1). Specifically, the elements of the TPB framework explored were the type of attitudes nurses have towards patient aggression, along with the development of these attitudes.

Figure 1. Thesis Structure using the Theory of Planned Behaviour Framework



This thesis is motivated by the UK government initiative to embed the positive and proactive recommendations outlined in the DoH (2014) document. It is hypothesised that adhering to these principles will reduce the need to use traditional restrictive and coercive practices, and instead utilise supportive person-centred management strategies. There is little research on what factors are associated with psychiatric nurses' attitudes towards patient aggression or the type of strategies that can help reduce the

pressure to use coercive methods. Though presented in sequence, the chapters can be viewed as independent studies due to the varied methods used.

Chapter One provides a brief overview of the literature on inpatient aggression in psychiatric settings and the impact of nursing staff attitudes on the management of patient aggression.

Chapter Two reports on a systematic review of the psychological and emotional effects of patient aggression on nursing staff in psychiatric settings. Following a review of the literature, it became apparent that there was a need to provide a more focused and comprehensive analysis concentrating on this area of research. Consequently, this systematic review was conducted.

Chapter Three aims to critically appraise the Attitude Toward Aggression Scale (ATAS; Jansen et al., 2006a; 1997; 2005b), in terms of the psychometric properties, which includes validity and reliability.

Chapter Four reports on a primary research study conducted to assess possible predictor variables of five attitudinal domains of patient aggression: Offensive, Destructive, Intrusive, Communicative and Protective. The aim was to explore staff factors

(e.g. attachment styles, the length of experience, job role and gender) and environmental factors (e.g. client population, client gender, and type of exposure), and whether any of these variables influenced the development of certain attitudinal domains.

In Chapter Five, an individual case study explored the benefit of a direct staff-level intervention that utilised the PBS philosophy. This study aimed to assess whether this type of intervention shifts psychiatric nurses' evaluations of patient aggression in a positive direction, and reduce the intensity and frequency of patient aggression. There is little research evaluating the effectiveness of using PBS principles in nursing practices.

Finally, Chapter Six brings together the findings of the main chapters and the clinical implications. Future research ideas are also discussed, which includes further adding to the evidence base, and how organisations can evaluate strategies that incorporate the philosophy of PBS and trauma-informed practice. It is vital for key stakeholders to start thinking about how they can support their staff to embed the positive and proactive principles into practice. Although this shift in nursing culture may take a great deal of time, adopting this new way of working can help reduce the pressures to use coercive methods when managing patient aggression in healthcare settings.

Chapter Two

A Systematic Review on the Psychological and Emotional Effects of Inpatient Aggression on Nurses in Psychiatric Settings

Abstract:

Background: Patient aggression within psychiatric settings affects staff in various ways. However, less emphasis is placed on the non-physical effects of inpatient aggression, despite the costs to the victims and the organisation.

Objectives: To examine the psychological and emotional effects of patient aggression on nursing staff in psychiatric settings.

Method: To identify primary studies, an electronic search of eight bibliographic database and grey literature sources was conducted, in addition to scanning the references of previous studies, contacting experts and hand-searching key journals. Exclusion and inclusion criteria were applied, yielding 17 papers that underwent quality assessment and data extraction.

Results: The full search yielded 39,489 hits. After excluding 83 irrelevant references, 135 duplicates and 65 references that did not meet the inclusion criteria, 17 papers were reviewed.

Conclusion: Exposure to inpatient aggression can have a detrimental effect on nurses' emotional and psychological well-being. More robust primary studies are needed. The data collected from these studies can guide the development of strategies that aim to help the victims of inpatient aggression manage the subsequent aversive effects.

6. Introduction

6.1. Background

Prevalence estimates of inpatient aggression in psychiatric hospitals vary significantly and are dependent on the definition and measures used. There has been some dispute regarding the conceptualisation of aggression and the terminology used. Aggression is viewed as a heterogeneous concept that includes different behaviours (Conner & Barkley, 2004). On an individual level, aggression may range from relatively mild expressions of dissatisfaction to more extreme acts of violence, whereas violence is considered as an 'extreme form of aggression' (Hills & Joyce, 2013). However, the terms 'violence' and 'aggression' have also been used interchangeably between studies. The confusion over the operational definitions reduces the efficiency of data collection, data recording, and consequently makes it hard to analyse and compare data (Needham, Abderhalden, Halfens, Fischer & Dassens, 2004). It is important to have a set of terms that distinguishes between mild and more serious behaviours as the management strategies are different.

Nevertheless, nursing staff's experience of patient aggression within psychiatric setting is prevalent. In particular, psychiatric nurses in public hospitals are three times more likely to suffer serious injuries caused by inpatient violence than other health care professionals

(Einsenstark, Lam, McDermott, Quanbeck, Scott et al., 2007; Del Bel, 2003). This occurrence may be explained by the fact that nursing staff have the closest proximity to patients compared to other professionals working within the psychiatric settings (Ernst, 1988). Therefore, it is not surprising that nurses are at greater risk of being victims of inpatient aggression.

6.2 The Impact of Patient Aggression

Patient aggression can have direct effects, which includes physical injuries and psychological damage, as well as indirect effects, such as impacting on staff morale, work performance, and the quality of care provided (Arnetz & Arnetz, 2001). The physical effects of aggression inflicted upon healthcare staff have been well researched (e.g. Bensley, Nelson, Kaufman, Silverstein, Kalat et al., 1997; Hanson & Balk, 1992; Lee, Gerberich, Waller, Anderson & McGovern, 1999; Noble & Rodger, 1989). However, less attention has focused on the non-physical effects even though researchers have found that 49% of nurses who were victims of assaults by psychiatric patient believed that it takes several months to recover emotionally (Baxter, Hafner & Holme, 1992).

A recent systematic review distinguished seven categories of consequences of workplace violence within the healthcare sector (Lanctôt & Guay, 2014). These included physical, psychological,

emotional, work functioning, relationship with patients/ quality of care, social/general, and financial. The most frequent and important effects identified included psychological consequences (e.g. post-traumatic stress, depression), emotional consequences (e.g. anger, fear) and the impact on work functioning (e.g. sick leave, job satisfaction). Also, a meta-analysis conducted by Needham et al. (2004) found that the most frequently reported non-somatic effects of patient aggression on nurses were anger, anxiety, post-traumatic stress disorder (PTSD) symptoms, and guilt (self-blame and shame). However, a more up to date and in-depth analysis was warranted.

6.3 Objectives

The primary objective is to examine the psychological and emotional effects of patient aggression on nursing staff in psychiatric hospital settings. For the purpose of this review, 'psychological effects' include consequences in relation to psychological distress, irrational thoughts, self-esteem, mental health and the development of disorders or related symptoms after being a victim of patient aggression. 'Emotional effects' encompass the emotional consequences not associated with psychological or psychiatric pathology, such as the development of a mental health condition, or altered cognitions. The term patient 'aggression' will be used throughout to refer to any non-physical or physical aggression. Examples include physical aggression, verbal aggression, aggression

towards objects, auto-aggression, and sexual aggression (Kay, Wolkenfeld, & Murrill, 1988).

7. Method

7.1 Search Methods

The search terms were entered, with appropriate truncation and adjacency modified accordingly. The following search terms were used to detect relevant studies;

1. 'Psycholog*' OR 'cogni*' OR 'emotion*' OR 'affect*' OR 'stress*' OR 'trauma*' OR 'PTSD'

   AND

2. 'aggress*' OR 'violen*' OR 'assault*' OR 'hostil*' OR 'attack*' OR 'fight' OR 'incident*' OR 'misconduct'

   AND

3. 'nurs*' OR 'healthcare worker*' OR 'healthcare assistant*' OR 'healthcare staff' OR 'support worker*' OR 'psychiatric hospital*' OR 'mental health hospital*' OR 'mental health unit' OR 'inpatient' OR 'institution' OR 'asylum'

The following bibliographic databases were searched; ASSIA, CINAHL, PsycINFO (OVID), Medline (OVID), Embase (OVID), Web of Science, BNI and Campbell Collection Library on/ between May-July 2015. Reference lists from the existing systematic reviews

(Chuan, 2011; Edward, Ousey, Warelow & Lu, 2014; Hallett, Huber & Dickens, 2014; Jacobowitz, 2013; Lanctot & Guay, 2014; Needham et al., 2004) were scanned. Reference lists from the included articles were also examined. Also, the University of Nottingham E-Thesis portal was searched in July 2015. Four experts were contacted to enquire about any on-going or unpublished primary research.

7.2 Study Selection

An initial screening of study titles and abstracts was conducted using the inclusion and exclusion criteria (see Appendix A). The objectives of this review are defined according to the Population, Intervention, Comparator, Outcome, and Context (PICO):

Population: Psychiatric nursing staff working in psychiatric settings. This included qualified nursing staff and healthcare workers (HCWs). Participants must have worked in a psychiatric hospital or a psychiatric-specific ward. Participants must be aged 18 over, which is in line with the requirements of employment in general or secure psychiatric settings. Participants included both male and female staff. The synthesis excluded any other healthcare professionals (over 5%), and data from nurses who work in other settings (e.g. non-psychiatric general hospitals or community care).

Exposure: Participants who have been exposed to any types of aggression from inpatients, including; physical, verbal, sexual emotional, and aggression towards objects. The synthesis excluded articles that did not include exposure to inpatient aggression.

Outcomes: Participants suffering from direct psychological effects and emotional effects were included. Physical injuries or indirect effects measured exclusively (e.g. absenteeism, finical costs, staff morale, ward atmosphere) were excluded from the synthesis.

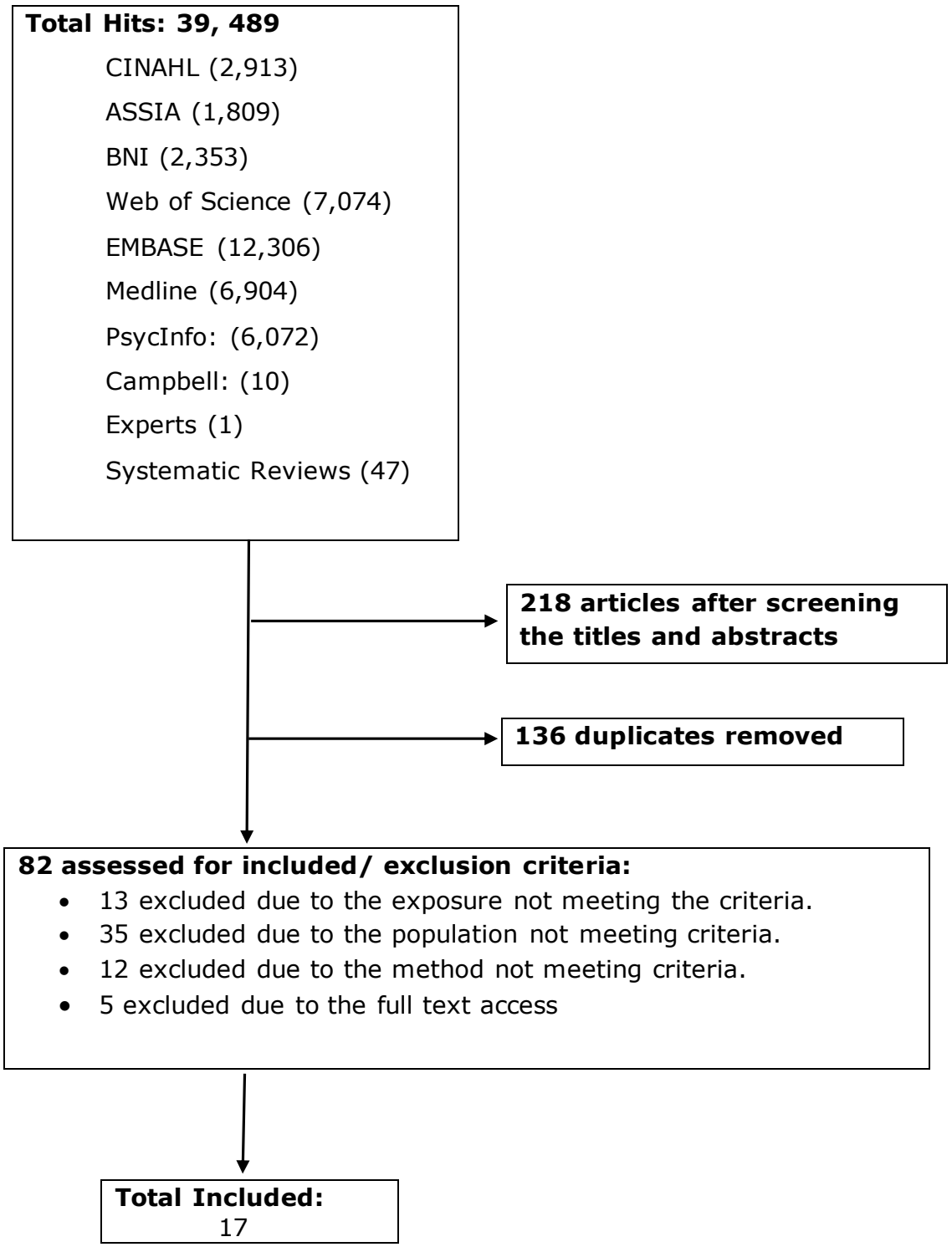
Study types: Cohort, case-control and cross-sectional were included in the review, whilst articles using solely qualitative methods were excluded.

Language: Translation achieved was included.

The studies that clearly did not meet the criteria and therefore did not explicitly address the subject area were discarded. A second reviewer independently screened the titles and abstracts to increase accuracy and reduce bias. Any disagreement was resolved through discussion. Figure 2 highlights the selection process. Those studies that met the inclusion criteria were obtained for the full review (see Table 1. for included articles).

The previous systematic review (Lanctot et al., 2014) mixed both qualitative and quantitative evidence in the synthesis which provided a useful overview. To have a more precise estimate of the psychological and emotional impacts of patient aggression in psychiatric services, this review included only quantitative evidence. Qualitative and quantitative studies answer different questions and serve different purposes.

Figure 3: The Selection Process



7.3 Risk of Bias

The aim of this stage was to assess the level of potential bias in the included studies. The Critical Appraisal Skills Programme (CASP, 2011) was adapted to produce the form (see Appendix B). The items addressed areas relating to sampling and selection bias, measurement bias, attrition bias, and reporting bias. The responses to each item were recorded as 'yes' (2), 'partial' (1), 'no' (0), or 'unclear'.

A priori analysis using GPower (version 3.0) software indicated a minimum sample size of 107 for a multiple regression analysis. This calculation was based on a medium effect size (0.15) and a power of 0.95. Regarding the ratings for a suitable effect size, an average response rate was calculated across the included papers (77%). All included papers were therefore compared to this percentage and were rated as either 'above', 'below', 'seriously below', or 'unclear'.

A second reviewer independently appraised 20% of the included studies. Any disagreement was resolved through discussion. The inter-rater reliability was calculated at .77 showing good-moderate reliability.

7.4 Data Extraction

The data was extracted from all the included articles by using a proforma (see Appendix C). The following information was extracted:

author(s), publication year, country of study, research aims, participant characteristics, type of patient aggression, psychological and emotional effects, and overall reporting.

The data extracted was then analysed using descriptive statistics to outline the study type, the methods used, the participants, the type of exposure, and the consequences. The results were synthesised as a narrative review, due to the heterogeneity of the selected studies, which meant a quantitative pooling of data could not be achieved. The outcomes were clustered into two separate categories; emotional effects and psychological effects.

7.5 Data Synthesis

All the included articles data were separately analysed using descriptive statistics. A stepwise approach was used due to the variety of methods used. A quantitative pooling of data was not feasible due to the heterogeneity of the selected studies and the different measures used. Consequently, a narrative review was used to report the analysis of the results.

Table 1: Characteristics of the Included Studies

Reference Information	Population	Aim(s)	Measures	Outcome	Significance
[1]Adams et al (1995)	N= 38 nurses from four inpatient services. N=30 Community Psychiatric Nurses (CPN; UK).	Investigate the extent and nature of verbal aggression directed at psychiatric nurses and the severity of psychological distress.	Impact of Event Scale-Revised (IES-R).	39% of inpatient nurses reported assaults vs. 15% CPN. CPNs (2.75) reported higher levels of anxiety than inpatient nurses (1.75).	 P<0.02
[2]Chen et al (2005)	N= 209 nurses from three psychiatric hospitals (Taiwan).	Explore anxiety, attitudes and cognition.	State-Trait Anxiety Inventory (STAI), Cognition of Aggression Management Scale (CAMS).	Type of aggression attributed to high levels of state anxiety. Trait anxiety and decreased positive attitudes. Perceived threat affects cognitive appraisals and judgments.	F(177)=4.2, p=.016 t(161.8)=-2.6, p=0.010
[3]Inoue et al (2006)	N= 232 nurses from two hospitals (Japan).	How nurses working in psychiatric	IES-R.	21.3% exposed experienced PTSD symptoms.	Non relevant.

		departments cope with verbal abuse.			
[4]Lauvrud et al (2009)	N= 70 nurses from a secure hospital (Norway).	Explore the occurrence of symptoms on post-traumatic stress and on professional quality of life.	PTSD Checklist (PCL), the Professional Quality of Life Scale (ProQOL).	95.7% met criterion for PTSD following exposure. The overall stress symptoms were 95%.	 F-Value= 6.03, p=.001
[5]Lee et al (2015)	N=196 mental health nurses from three general hospitals and one forensic hospital (Australia).	Examine exposure to inpatient aggression and work stress. Identify factors contributing to the development of PTSD.	Perception of Prevalence of Aggression Scale (POPAS), DeVilliers, Carson and Leary (DCL) Stress Scale, PCL, General Health Questionnaire-28 (GHQ-28).	17% nurses working in forensic hospital met the criteria for PTSD. Significant differences between mainstream (43%) and forensic (29%) nurses for the GHQ-28. Frequency of aggression predicted hyperarousal and anxiety	P=0.038 B=0.20, p<0.01 B=0.22, p< 0.01
[6]Lu et al (2007)	N=106 nurses in two mental hospitals (Taiwan).	Explore psychiatric nurses' reactions to assault upon them by inpatients.	Assault Response Questionnaire.	84% reported having being assaulted. Most common emotional reaction was anger.	None relevant.

				42% of the assaulted nurses expressed discomfort in caring for patients who had assaulted them.	
[7]Needham et al (2010)	N= 172 nurses from forensic hospitals. N=31 nurses from an acute psychiatric hospital. (Germany and Switzerland).	Determine psychiatric nurses' levels of stress associated with aggressive incidents.	The IES-R, the ProQOL.	Psychological stress was associated with patient aggression. 28% had PTSD.	U=155, p=.802
[8]Reininghaus et al (2007)	N= 363 nurses from high secure hospital (UK).	Explore the causal role of generalised and specific stress resistance resources in the stress process following physical assault.	Perceived Stress Scale (PSS), Self-Esteem Scale.	Physical assault was significantly associated with psychological distress.	P=0.004, B=0.181, 95% CI 0.060-0.303, R^2=0.014
[9]Shaher (2012)	N=181 nurses from Jordanian	Measure the levels of occupational stress and identify variables	The Short-Form (SF-36), Mental Health	47% experienced physical violence	

	mental health settings	that are associated with occupational stress.	Professionals Stress Scale (MHPSS).	76% experienced verbal violence. Occupational stress correlated positively with being verbally assaulted and physically assaulted.	25.5% of the variance. p<0.01 P<0.01
[10]Shen et al (2005)	N=408 nurses from five psychiatric institutions (Taiwan).	Explore work-related stress and risk factors.	Job Content Questionnaire (C-JCQ), National Crime Victimisation Survey (NCVS), SF-36.	40% experienced attacks or sexual harassment. 18.3% reported feeling threatened 60% of the time. Nurses who felt threatened by potential attack 60% of the time or more, and perceived occupational stress was higher.	(OR 2.7, 95% CI 1.4-5.1)
[11]Shiao et al (2010)	N= 467 nurses from psychiatric hospitals. N=375 nurses from general hospitals (Taiwan).	Explore the incidents of assaults and their effects.	NCVS, SF-36, C-JCQ.	36% psychiatric nurses experienced physical and/or verbal assaults, compared to 15.5% general nurses. 35.3% of psychiatric nurses felt	

				threatened of being attacked. Perceived threat was negatively associated with scores in mental health and vitality.	P<0.0001
[12]Tuvesson et al (2012)	N= 93 nurses from 12 psychiatric units (Sweden).	Investigate the relationship between environmental and individual factors and stress of conscience.	The Stress of Conscience Questionnaire (SCQ), The Ward Atmosphere Scale (WAS), PSS.	Angry and aggressive behaviour showed significant correlation with all three of the SCQ variables.	p<.05
[13]Whittington et al (1992)	N=23 nurses and 1 Doctor from a psychiatric hospital (UK).	Staff strain and social support in psychiatric hospital following assault by a patient.	Spielberger's Self-Evaluation Questionnaire, Strain Questionnaire.	Individual scores varied. Irritability and fatigue were most prominent at first interview.	None relevant.
[14]Wykes et al (1991)	N=23 nurses and 1 Doctor from a psychiatric hospital (UK).	Coping strategies used by staff following assault by a patient.	Maudsley Violent Incident Register, Anxiety Questionnaire, Maudsley Strain Questionnaire.	High levels of anxiety and strain following the assault. Individual symptoms showed idiosyncratic patterns. Levels of anxiety were above that expected.	Not reported.

				Two participants reported levels that are seen in less than 5% of the population. 85% showed reductions in levels of anxiety in the final interview.	
[15]Wykes et al (1998)	N= 39 in assaulted group. N=34 in control group (from six psychiatric wards; UK).	Explore the effects of workplace violence.	IES, PTSD Symptom Scale (PTSDSS), STAI, State-Trait Anger Expression Inventory (STAXI), GHQ-28, Beck Depression Inventory, Daily Hassle Questionnaire (DHQ).	5% met the criteria for PTSD. Assaulted staff reported poorer mental health and poorer anger control than at baseline. Psychological distress was higher following assaults.	 p<0.005 p<0.005
[16]Yarovitsky et al (2009)	N=90 nursing and support staff in three closed psychiatric wards (Israel).	Investigate in the Israeli context how patient violence towards staff members affect their mental state and professional performance.	Psychological Distress Questionnaire.	76% had experienced an attack. Positive correlation between the type of attack and psychological distress. Near-significant negative correlation between	 P<0.01 p=0.10

				frequency of attack and psychological distress.	
[17]Zerach et al (2015)	N=90 psychiatric nurses. N=106 CPNs (Israel).	Examine PTSD, secondary traumatization and vicarious post-traumatic growth among nurses'.	PTSD Inventory, Professional Quality of Life Scale (ProQOL-5), Multidimensional Health Exposure to Stress Questionnaire (ESQ), Post Traumatic Growth Inventory (PTGI).	High levels of exposure. Higher PTSD symptoms, avoidance, numbing and hyper-arousal symptoms. 6.7% met criteria for PTSD. 24% above the 75% percentile for secondary traumatisation. Exposure predicted nurses' vicarious posttraumatic growth.	P<0.001 F(1.191)=9.51, p<0.001 F(1.191)=8.06, p<0.00 F(1.191)=6.06, p<0.0011 P<0.001

8. Results

8.1 Characteristics of Included Studies

The search yielded 39,489 hits, of which 17 studies were included in the review. Please see Figure 2 for the selection process. In total, 2,971 psychiatric nurses included across the 17 included studies and the mean sample number is 175. The general information is displayed in Table 2.

.

Table 2. General Information of the Included Studies	
Country and the number of studies	**English-speaking** UK: N= (5) 29% Australia: N= (1) 6% **European** Germany, Switzerland, Sweden and Norway: N= (3) 18% **Asia** Japan, Jordan, Taiwan: N= (6) 35% Israel: N= (2) 12%
Study Design	Cross-sectional: N=13 (76%) Cohort (prospective): N=4 (24%)
Employment Sector	Psychiatric (only): N= 12 (71%) Psychiatric and Community: N= 2 (12%) Psychiatric and general hospital: N= 1 (6%) Mental Health units: N= 2 (12%)
Aggression: Measurement Tools used	Exposure to Stress questionnaire (ESQ; Zerach et al., 2015)[17]. Maudsley Violent Incident Register (Noble & Rodger, 1989)[14]. The Perception of Prevalence of Aggression Scale (POPAS; Nijman et al., 2005; Oud 2001)[5].

	The National Crime Victimization Survey (NCVS; 1988)[10,11]. The Ward Atmosphere Scale (WAS; Moos, 1997)[12].
Psychological effects: Measurement tool(s) used	Beck Depression Inventory (BDI; Beck, 1976)[15]. Cognition of Aggression Management Scale (CAMS; Chen, 1997)[2]. DeVilliers, Carson, and Leary (DCL) Stress Scale (Carson, 2005; Fagin et al., 1996)[5]. General Health Questionnaire-28 (GHQ-28; Goldberg & Williams, 1988)[5, 15]. Impact of Event Scale- Revised (IES-R; Weiss & Marmar, 1997)[1, 3, 7, 15]. Job Content Questionnaire (C-JCQ; Cheng et al., 2002)[10, 11]. Maudsley Stain Questionnaire (Whittington & Wykes, 1989)[14]. Mental Health Professionals Stress Scale (MHPSS; Cushway et al., 1996)[9]. Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983)[8, 12]. Psychological Distress Questionnaire (Toubiana, Milgrame & Falach, 1986)[16]. Post Traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996)[17]. Posttraumatic Stress Disorder Checklist (PCL; Weathers et al., 1993)[4]. PTSD Inventory (Solomon et al., 1993)[17]. PTSD Symptom Scale (PTSDSS; Foa et al., 1991)[15]. Self-Esteem Scale (Rosenberg, 1965; Wycherley, 1987)[8]. State-Trait Anxiety Inventory (STAI) Spielberger, Gorsuch & Lushenem, 1970) [2, 15].

	Strain Questionnaire (Whittington & Wykes, 1992)[13]. Stress of Conscience Questionnaire (Glasberg, Eriksson, Dahlqvist, Lindahl, Strandberg, Soderberg, Sørlie & Norberg, 2006)[12]. The International Quality of Life Assessment Short Form (SF-36; Ware & Sherbourne, 1992)[9, 10, 11.]
Emotional effects: Measurement tool(s) used	Assault Response Questionnaire (Lanza, 1988)[6] Professional Quality of Life Scale (ProQOL; Stamm, 2005)[4,7]. ProQOL-5 (Stamm, 2010)[17]. Spielberger's Self-Evaluation Questionnaire (Spielberger et al., 1983).[13] Spielberger's State Anxiety Questionnaire (Spielberger et al., 1970)[14]. State-Trait Anger Expression Inventory (STAXI; Speilberger, 1988)[15].

The reviewed studies were conducted across four continents. Participants were nursing staff who worked in mental health or psychiatric settings. Two studies (Whittington & Wykes, 1992; Wykes & Whittington, 1991) included doctors, but they constituted less than 5% of the sample. The papers were therefore included. Two studies included both CPN and inpatient nurses. However, the data was only collected from inpatient nurses (Adams & Whittington, 1995; Zerach & Shalev, 2015).

In total, 13 included papers utilised a cross-sectional design (Chen, Hwu & Williams, 2005; Inoue, Tsukano, Muraoka, Kaneko & Okamura, 2006;

Lauvrud, Nonstad & Palmstierna, 2009; Lee, Daffern, Ogloff & Martin, 2015; Lu & Wang, 2008; Needham, Frauenfelder, Gianni, Dinkel & Hatcher, 2010; Reininghaus, Craig, Gournay, Hopkinson & Carson, 2007; Shaher & Hamaideh, 2012; Shen, Cheng, Tsai, Lee & Guo, 2005; Shiao, Tseng, Hsieh, Hou, Cheng & Guo, 2010; Tuvesson, Eklund & Wann-Hansson, 2012; Yarovitsky & Tabak, 2009; Zerach et al., 2015), whilst the other four used a prospective cohort study design (Adams et al., 1995; Whittington et al., 1992; Wykes et al., 1991; Wykes & Whittington, 1998).

The most commonly used tool for the measure of patient aggression was the National Crime Victimisation Survey (NCVS; Warchol, 1998). Five tools were used across the 17 studies (see Table 2), whilst six studies developed their definition/ tool, or used definitions from other sources (Adams et al., 1995; Chen et al., 2005; Inoue et al., 2006; Whittington et al., 1992; Wykes et al., 1998; Yarovitsky et al., 2009). A definition was not used in six studies (Lauvrud et al., 2009; Lu et al., 2007; Needham et al., 2010; Reininghaus et al., 2007; Shaher et al., 2012; Zerach et al., 2015). Although these tools helped estimate the prevalence of patient aggression experience, the severity of the aggressive behaviour was not clearly reflected in these measures.

Four studies focused on physical aggression (Reininghaus et al., 2007; Whittington et al., 1992; Wykes et al., 1991; Wykes et al., 1998), six papers focused on verbal aggression and physical aggression (Adams et al.,

1995; Chen et al., 2005; Inoue et al., 2006; Lauvrud et al., 2009; Shaher et al., 2012; Zerach et al., 2015), and five papers focused on verbal aggression, physical aggression, and sexualised aggression (Lee et al., 2015; Shen et al., 2005; Shiao et al., 2010; Tuvesson et al., 2012; Yarovitsky et al., 2009). Two papers did not mention the type of aggression studied (Lu et al., 2007; Needham et al., 2010).

Psychiatric nurses reported higher levels of exposure to physical violence and verbal violence when compared to CPN (Adams et al., 1995; Zerach et al., 2015) and general nurses (Shiao et al., 2010). Moreover, CPNs reported higher levels of anxiety when compared to inpatient psychiatric nurses (Adams et al., 1995).

8.2 Psychological Effects

A diverse range of instruments were used to measure the psychological impacts of inpatient aggression. The most widely used tool was the Impact of Events Scale (IES-R; Weiss & Marmar, 1997). A total of four studies utilised this tool, which is a self-rating measure designed to assess psychological trauma and PTSD.

One of the most frequent psychological consequence of exposure to patient aggression was occupational stress. Stress elicited by institutional obstacles was measured in in five studies (Reininghaus et al., 2007; Shaher et al., 2012; Shen et al., 2005; Shiao et al., 2010; Tuvesson et al., 2012). A total

of five studies also noted effects relating to psychological strain and general distress (Lee et al., 2015; Shen et al., 2005; Whittington et al., 1992; Wykes et al., 1991; Wykes et al., 1998). These two concepts refer to disturbances in psychological and emotional processing in response to an event.

Assaulted nurses were found to regard their job as more stressful, and were less likely to seek support outside the work place, despite this reducing the subsequent effect (Reininghaus et al., 2007). A significant proportion of mental health nurses, both in mainstream and forensic hospital-based settings experienced clinical levels of distress and high organisational stress. Physical aggression was found to significantly correlate with occupational stress, but the verbal assault was found to be a predictor variable (Shaher et al., 2012). Angry and aggressive behaviour increased the nurses' vulnerability to stress of conscience and strain symptoms (Tuvesson et al., 2012; Whittington et al., 1992). Also, those who felt under threat of being assaulted experienced higher perceived stress, than those nurses who felt less threat (Shen et al., 2005). Interestingly, Wykes et al. (1998) identified two different response groups when nurses were exposed to multiple assaults; high and low distress responders. Staff either did significantly better, or significantly worse than those who were assaulted, for instance, either believing they cannot manage, or just carrying on.

Another frequent consequence was the development of PTSD, or PTSD symptoms (Inoue et al., 2006; Lauvrud et al., 2009; Lee et al., 2015; Needham et al., 2010; Wykes et al., 1991; Wykes et al., 1998; Zerach et al., 2015). Nursing staff who had been exposed to verbal aggression scored higher on the IES-R, indicating psychological trauma and PTSD (Inoue et al., 2006). As a group, 5-28% of assaulted nurses met the criteria for a diagnosis of PTSD (Lee et al., 2015; Needham et al., 2010; Wykes et al., 1998; Zerach et al., 2015). This large discrepancy could be a result of different organisational support, personal moderators, or level of reporting. In terms of PTSD symptoms (e.g. intrusiveness, avoidance and heightened arousal), a multitude of studies identified that nurses often experience at least one symptom (Lauvrud et al., 2009; Lee et al., 2015; Needham et al., 2010; Whittington et al., 1992; Wykes et al., 1998; Zerach et al., 2015). However, Lauvrud et al. (2009) noted that the prevalence of PTSD symptoms was low despite high exposure to patient aggression, and none of the respondents met the criteria for a PTSD diagnosis. This difference may be related to high sampling bias, avoidance issues related to PTSD, or organisational support. Moreover, low scores on compassion satisfaction and length of experience positively correlated with PTSD symptoms, thus emotional distance is a possible protective factor. Also, the PTSD scores of nurses who had been assaulted in a dangerous manner compared to those who reported less serious injury did not significantly differ, therefore suggesting that the level of impact is dependent on the individual (Needham et al., 2010).

The results of PTSD diagnosis and symptoms also did not differ significantly between mainstream nurses and forensic nurses (Lee et al., 2015), therefore suggesting a general psychological impact across the profession. However, Zerach et al. (2015) found a higher total number of PTSD symptoms, secondary traumatisation, and lower levels of vicarious posttraumatic growth (i.e. a positive outlook following a traumatic incident) in psychiatric nurses compared to community nurses.

Mental health was found to be significantly worse among psychiatric nurses who experienced patient aggression than those who did not. Those who were assaulted reported poorer mental health (Shaher et al., 2012), even when compared to the control group matched on age and job title (Wykes et al., 1998). These findings correspond to a study conducted by Shioa et al. (2010) who noted a negative connection between feeling threatened and scores in job stress and mental health.

Some authors found that exposure to patient aggression impacted the way participants perceived the patient and the organisation. Assaulted nurses were found to perceive the hospital as more dangerous (Reininghaus et al., 2007). Chen et al., (2005) also highlighted that aggressive incidents might influence cognitive appraisals and attitudes towards the management of the patient's behaviour. In addition, 42% of the assaulted nurses expressed

discomfort in caring for patients who had committed the assault (Lu et al., 2007).

8.3 Emotional Effects

Eight studies reported that victims of patient aggression experienced some emotional repercussions (Adams et al., 1995; Chen et al., 2005; Lee et al., 2015; Lu et al., 2008; Reininghaus et al., 2007; Whittington et al., 1992; Wykes et al., 1991; Wykes et al., 1998). The most widely used tool was the Professional Quality of Life Scale (ProQOL-5; Stamm, 2010), which measures compassion satisfaction (i.e. feelings of pleasure from helping), burnout (i.e. feelings related to hopelessness) and compassion fatigue (i.e. secondary traumatisation). The ProQOL-5 has been found to have good construct validity with some studies utilising the tool (Stamm, 2010).

State anxiety was the most frequently reported effect following exposure to inpatient aggression (Adams et al., 1995; Chen et al., 2005; Lee et al., 2015; Whittington et al., 1992; Wykes et al., 1991). State anxiety refers to an individual's emotional state that becomes temporarily unbalanced when confronted by a specific trigger, resulting in negative feelings and sensations.

Additional emotional effects included anger (Lu et al., 2008; Wykes et al., 1998) and irritability (Reininghaus et al., 2007). Wykes et al., (1998) found that non-exposed nurses were more capable of controlling their anger than

those who had been exposed to patient aggression. Irritation was also most prominent immediately after the incident when compared to months following exposure to patient aggression (Whittington et al., 1992).

Regarding the level of burnout and compassion fatigue, scores were noted as below average according to the normative data (Lauvrud et al., 2009). In comparison, Needham et al. (2010) did not find a high burnout level amongst psychiatric nurses exposed to patient aggression, but 70.4% showed low compassion satisfaction or a high compassion fatigue, and this was positively related to years of experience.

8.4 Risk of Bias of the Included Studies

The methodological quality was assessed for all the 17 included studies (see Appendix B; Appendix D). All the reviewed studies included a sample of the population they were said to be representing. Participants were recruited from multiple sites in twelve of the papers (Adams et al., 1995; Chen et al., 2005; Lee et al., 2015; Shaher et al., 2012; Inoue et al., 2006; Lu et al., 2007; Needham et al., 2010; Reininghaus et al., 2007; Shen et al.,2005; Shiao et al., 2010; Tuvesson et al., 2012; Zerach et al., 2015), whilst five papers only included one site (Lauvrud et al., 2009; Wykes et al., 1991; Wykes et al., 1998; Whittington et al., 1992; Yarovitsky et al., 2009). However, several studies did not obtain a similar sample in terms of gender (Adams et al., 1995; Chen et al., 2005; Inoue et al., 2006; Reininghaus et al., 2007; Zerach et al., 2015), two studies excluded male

nurses due to low numbers (Shen et al., 2005; Shiao et al., 2010), and four studies did not provide any data (Lauvrud et al., 2009; Lu et al., 2007; Needham et al., 2010; Whittington et al., 1992). Moreover, five papers did not record the age of the participants (Adams et al., 1995; Lauvrud et al., 2009; Needham et al., 2010; Whittington et al., 1992; Wykes et al., 1991). All of the included papers used a convenience sample as the participants were selected because of their accessibility and proximity to the researcher. This questions whether the sample is representative of the nursing population.

In terms of confounding factors, eleven papers considered the length of experience working in inpatient settings (Adams et al., 1995; Chen et al., 2005; Shaher et al., 2012; Inoue et al., 2006; Lauvrud et al., 2009; Lee et al., 2015; Lu et al., 2007; Reininghaus et al., 2007; Shen et al., 2005; Tuvesson et al., 2012; Yarovitsky et al., 2009), five papers accounted for other external life stressors (Shaher et al., 2012; Reininghaus et al., 2007; Shiao et al., 2010; Wykes et al., 1998; Zerach et al., 2015), one paper considered previous trauma (Lee et al., 2015), and six papers included the impact of social and organisational support (Shaher et al., 2012; Inoue et al., 2006; Shiao et al., 2010; Reininghaus et al., 2007; Tuvesson et al., 2012; Whittington et al., 1992). Therefore, the internal validity of the papers that did not consider the confounding variables should be assessed with caution. Many studies included the potential confounding variables to the analysis using statistical regression models. This enabled the researcher

to investigate the separate or joint effects of several risk factors (Pourhoseingholi, Baghestani & Vahedi, 2012).

None of the 17 papers reported a power analysis. Three studies had a low response rate (Lee et al., 2015; Reininghaus et al., 2007; Tuvesson et al., 2012), four papers were just below average calculated across the included papers (Lauvrud et al., 2009; Shiao et al., 2010; Wykes et al., 1998; Yarovitsky et al., 2009), whilst seven papers received response rates higher than the average (Chen et al., 2005; Inoue et al., 2006; Lu et al., 2007; Needham et al., 2010; Shaher, 2012; Shen et al., 2005; Wykes et al., 1991). Three papers were rated as 'unclear' as they did not provide any information regarding the responses (Adams et al., 1995; Whittington et al., 1992; Zerach et al., 2015).

Self-report measures were used to collect the data, therefore is subjected to possible recall bias and socially desirable responding. The sample may have minimised their experiences of being a victim of patient aggression and denied certain difficulties and associated consequences. Nursing staff may respond in a socially desirable manner for several reasons, such as conforming to socially acceptable values, avoiding criticism, or gaining social approval (Huang, Liao & Chang, 1998; King & Brunner, 2000). Van de Mortel (2008) found very few studies that controlled for social desirability bias, whilst those that did found social desirability influenced the outcome data.

The quality of the included studies in the review was variable, and there were limitations with regards to the sampling and selection and response rates.

9. Discussion

From an organisational perspective, the financial cost resulting from patient aggression in psychiatric settings is extremely high. In the UK, approximately 1.6 million working days are lost per year due to workplace stress, totalling a loss of £1.24 billion (Amble, 2005). Other costs include staff turnover, absenteeism, lawsuits and compensation claims (Hashemi & Webster, 1999; Verdugo & Vere, 2003). Research involving the examination of the consequences of patient aggression is still in its infancy, especially in psychiatric settings.

A previous review found that workplace violence was mostly associated with negative psychological and emotional consequences for staff working in different professions (Lanctot et al., 2014; Needham et al., 2005). The aim of this review was to explore the psychological and emotional effects of patient aggression towards psychiatric nurses in more depth. In this review, the countries represented in the evidence include the UK, the US, Australia, Germany, Switzerland, Sweden, Norway, Japan, Jordan, Taiwan and Israel. The findings from these papers were similar with regards to the type of aggression commonly experienced in psychiatric settings. Even though this

review showed that emotional effects were an important consequence of patient aggression, the most frequent consequences reported were psychological. However, there are variations noted in the way psychiatric nurses react to inpatient aggression.

9.1 Effects of Patient Aggression

Previous reviews that have focused on non-physical effects of patient aggression in the workplace identified a wider range of emotional and psychological effects when compared to this current review. However, their focus was a lot broader in terms of professions of the respondents and the setting.

There were several psychological and emotional effects reported in the included studies. Anxiety is considered as a relatively normal reaction following exposure to patient aggression, therefore should not be confused with pathology (Needham et al., 2005). Psychological strain may be associated with the psychiatric nurses' role in terms of adhering to one's morals and rights, while offering the best quality of care when having to manage an aggressive incident. It is also not surprising that assaulted nurses tend to perceive their work as more stressful.

The development of PTSD or PTSD symptoms following exposure to patient aggression were also noted. This finding indicates that trauma focused interventions may be effective in reducing PTSD in psychiatric nurses who

are exposed to inpatient aggression. Offering this to highly traumatised nurses may result in self-protective behaviours (i.e. avoidance), therefore leading to non-attendance when offered due to not wanting to recall the traumatic incident. An alternative strategy is shifting the organisational culture via promoting social support to help victims of patient aggression regulate and mediate associated negative effects.

Interestingly, some authors found that exposure to patient aggression impacted on the way they perceive the patient and the organisation. It has been suggested that negative attitudes may be a symptom of staff burnout following exposure to patient aggression (Goodykoontz & Hemck, 1990). However, the possible predictors of nurses' attitudes towards patient aggression require further exploration, especially within UK secure psychiatric hospitals (see Chapter Four and Chapter Five).

It is noteworthy that differences in the reactions following patient assault were identified by Whittington et al. (1992), which may be attributed to the differential use of coping strategies (Wykes & Whittington, 1991), or on external sources of support (Whittington et al., 1992). The level of impact of the negative effects of inpatient aggression could also depend on the staff members' resilience (Hart, Brannan & Chesnay, 2012). This finding highlights the need to develop supportive networks for staff following exposure to patient aggression that is person-centred and individualised. This might include offering individual support post-incident for the purpose

of providing psychological input, in addition to the mandatory organisational debriefing, along with routine supervision from line managers. Reflective practice could also provide a safe space for nurses to reflect, learn and gain support from colleagues who are likely to share similar experiences (James & Clarke, 1994). Having these supportive networks in place for victims of patient aggression can enhance organisational culture in terms of eliciting compassion, empathy and respect, leading to higher job satisfaction and general well-being.

9.2 Implications

This review highlights the importance of considering psychological and emotional repercussions following exposure to inpatient aggression in psychiatric workplace settings. Previous reviews (e.g. Jacobowitz, 2013; Lanctot et al., 2014; Needham et al., 2004) and the current review demonstrate an association between exposure to patient aggression and negative effects on the health and wellbeing of the victim. Therefore, nurses working in psychiatric settings are under significant risk, which warrants the introduction of trauma-informed practices and interventions to help improve psychological and emotional well-being. This can also prevent the formation of negative attitudes towards patient aggression and the organisation. Chen et al. (2005) noted the importance of offering support to prevent cognitive bias, for example offering training on effective intervening strategies. Staff who feel safe and satisfied with their job can lead to a positive and enthusiastic environment for self-development and

growth (Happell, 2009), thus lowering the negative effects of patient aggression.

The presence of occupational stress, PTSD symptoms, among other emotional effects, such as anger and irritation in psychiatric nurses appears to be well-substantiated. However, well-designed controlled studies are absent within the literature, and these types of studies can help control bias, as well as control for confounding variables.

The studies included in the current review used a variety of questionnaires to collect data. It is difficult to systematically collect and synthesise data relating to the degree of inpatient aggression due to the varied measures used. Therefore, a reliable measure of aggressive behaviour is required if interventions aimed at reducing patient aggression are to be formally developed and evaluated. Using measures like the Overt Aggression Scale (Yudofsky, Silver, Jackson, Endicott & Williams, 1986) would identify the type, frequency and intensity of the aggression experienced. However, this tool is reliant on self-report and a consistent population of data, thus invariably impacting on its reliability.

Other limitations include sampling techniques (i.e. vulnerability to selection bias and sampling error), sample bias, and not considering possible confounding variables. For instance, several studies did not obtain a similar sample in terms of gender (Chen et al., 2005; Inoue et al., 2006;

Reininghaus et al., 2007; Zerach et al., 2015), two studies excluded male nurses (Shen et al., 2005; Shiao et al., 2010), and three studies did not provide any data relating to gender (Lauvrud et al., 2009; Needham et al., 2010; Whittington et al., 1992). This raises questions regarding generalisability. Although this finding may reflect the composition of gender in the nursing field, future research should explore male nurses' experiences of patient aggression.

Further research is still needed to better understand the short-term effects, but also the long-term effects of exposure to inpatient aggression in psychiatric settings. Many of the studies included in this review did not separate different types of aggression or did not consider when different types of aggression occur within the same incident. The level of severity of the aggressive experience was also ignored in the majority of studies. The intensity of the assaults or threats of violence may influence the severity of the associated emotional and psychological effect experienced. Furthermore, research could also explore gender differences regarding the perpetrators gender. Moreover, a number of studies used a cross-sectional design, which does not establish causation. It will be useful if future studies adopt a longitudinal cohort design.

10. Conclusion

This review illustrates the psychological and emotional impact of patient aggression in psychiatric and mental health settings. Although gaps still

exist in our understanding of the consequences of patient aggression, this review presents evidence that suggest the outcomes are profound. In spite of individual variability in the impact of patient aggression, the effects appear to be consistency between countries. The use of standardised instruments measuring patient aggression and larger representative samples would be helpful to obtain suitable data for comparison and meta-analysis. Given the detrimental effects of patient aggression on nurses, further research is warranted to help support staff to prepare for the psychological and emotional consequences of being assaulted. The studies featured in the current review were heavily reliant on retrospective and self-reported data. Therefore, there is a need for well-controlled longitudinal cohort studies to help highlight the detrimental effects of patient aggression on the psychological and emotional wellbeing of psychiatric nursing staff.

Chapter Three

The Attitude Toward Aggression Scale: A Critique

The previous chapter reviewed a number of primary studies that explored the psychological and emotional effects of inpatient aggression in psychiatric settings. These findings highlight that patient aggression is a pervasive problem that constitutes an occupational hazard, which requires further attention from researchers and clinicians.

Interestingly, some authors found that exposure to patient aggression iinfluenced the nurses' attitudes toward patients and the service provider. These findings suggest that exposure to aggression may influence the development of unhelpful attitudes. Considering the assumption of the theory of planned behaviour (TPB; Ajzen, 1991) that attitudes and behaviours are linked, this warranted further investigation. This is because knowledge about the associated factors of unhelpful attitudes is a prerequisite for the prediction of how staff respond when managing an aggressive patient.

To begin exploring the development of nurses' attitudes towards patient aggression, a decision was needed regarding an appropriate assessment tool that met the thesis objectives. Various instruments have been developed to measure attitudes towards patient aggression, which includes the Attitude Toward Aggression Scale (ATAS; Jansen, Dassen, Burgerhof &

Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b). This tool was appraised for three reasons. Firstly, the ATAS is a widely-used tool in the field of nursing, and secondly because the ATAS was developed using the TPB framework. Finally, it was necessary to examine the tool's appropriateness and suitability to be used in later chapters. Practical and research considerations are also discussed.

Abstract:

Background: The critical appraisal explores the reliability and validity of the Attitude Toward Aggression Scale (ATAS; Jansen et al., 2006a; 1997; 2005b). This tool is frequently used within psychiatric services to help monitor nurses' attitudes toward patient aggression. This data provides an indication of the type of patient aggression being displayed, along with the type of management strategies being used.

Aims: The aim of this critique was to review the relevance, validity, and reliability of the ATAS.

Results: This review raised questions regarding face validity, content validity, predictive validity, concurrent validity and construct validity. The internal reliability was deemed satisfactory, whereas the test-retest reliability is yet to be explored. The ATAS limitations and future research are discussed.

Conclusion: This paper proposes that the ATAS requires further exploration regarding the tool's psychometric properties. Despite the limitations, the ATAS is a unique instrument that has been deemed valuable for the exploration of attitudes towards patient aggression.

11. Introduction

11.1 Background

Nurses working in hospitals are at a higher risk of being subjected to violence when compared to other healthcare professionals (Del Bel, 2003; Einsenstark, Lam, McDermott, Quanbeck, Scott et al., 2007). As noted in Chapter Two, some authors found exposure to patient aggression impacted on the way nursing staff perceived the patient and the organisation (Chen, Hwu & Williams, 2005; Lu & Wang, 2007; Reininghaus, Craig, Gournay, Hopkinson & Carson, 2007). The type of attitude towards patient aggression has been found to increase the risk of restrictive practices being used by staff (Bowers, Alexander, Simpson, Ryan & Carr-Walker, 2007; Broers & De Lange, 1997). Although it is deemed mandatory for psychiatric services to deliver training in the management of patient aggression, nurses' attitudes have been noted to influence the clinical decisions made (Jansen, Dassen, Burgerhof & Middel, 2006a). Consequently, nursing attitudes warrant further attention, especially with the Department of Health (DoH, 2012; 2014) encouraging a shift in practice that adopts a least restrictive approach.

Fishbein and Ajzen's (1975) model of reasoned action (RA) infers that an individual's attitude towards a person, or event, predicts behaviour. The attitude component of the model is defined as "a function of the beliefs or cognitions held about the specific behaviour, as well as the evaluation of

the likely outcomes" (Jansen & Moorer, 1997; p. 39). This theoretical model was then extended and renamed the theory of planned behaviour (TPB; Ajzen's, 1991), which included the importance of social pressures and perceived control. The TPB was developed to provide a conceptual framework to predict those behaviours, which are not entirely under the power of willing.

The ATAS (Jansen et al., 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b) is a standardised instrument that was developed from using the TPB assumptions. This provides a way to monitor and evaluate nurses' attitudes towards patient aggression, which can then reflect the type of management strategies being used.

A literature review conducted by Jansen, Dassen and Jebbink (2005) identified three self-report instruments specifically design to measure attitudes. However, they were found to lack validity testing and had a diverse set of items. These tools were the Attitudes Toward Physical Assault Questionnaire (Poster & Ryan, 1989), the Management of Aggression and Violence Attitude Scale (MAVAS; Duxbury 2002), and the Attitude Towards Aggressive Behaviour Questionnaire (Collins, 1994). Moreover, the items primarily focused on staffs' cognitions about the aggressive behaviour, rather than addressing evaluations. As the TPB defines attitudes as a set of evaluations, rather than cognitions (i.e. perceptions, beliefs, experience and opinion), these three assessments were rejected, and the ATAS was

deemed the most suitable measure for this thesis. However, a critique examining the tool's psychometric properties was warranted

11.2. Aims

Although the ATAS has featured in numerous studies (e.g. Al-Awawdeh, Russo & Alkaissi, 2016; Jonker, Goossens, Steenhuis & Oud, 2008; Lsiho, Linberg, Joffe, Putkonen, Hottinen et al., 2015), no psychometric critique exists. Therefore, this chapter explores the use of the ATAS within settings where patient aggression is prevalent, through providing an overview and exploring the instruments psychometric properties, i.e. the validity and reliability concepts. The limitations and further research are also considered.

11.3. ATAS Overview

Jansen and colleagues developed the ATAS to better define psychiatric nurses' attitudes towards patient aggression. It was recognised that a clinical tool that specifically measured how the behaviour is evaluated did not exist (see Jansen et al., 2006a; 1997; 2005b). The authors propose that the information obtained from using the ATAS can help predict how the staff are responding to patient aggression.

As noted in previous chapters, to reduce the pressure of using restrictive interventions to manage patient aggression in psychiatric settings, there needs to be a shift in the way staff evaluate patient aggression and the

subject norm in terms of acceptable nursing practices. The ATAS has been standardised on nursing staff, including psychiatric and non-psychiatric groups. The tool has been translated into different languages because of the limited knowledge of staff attitudes across a number of counties.

11.4. Development of the ATAS

The draft version of the tool was developed using a survey sample approach (Jansen et al., 1997). The sample consisted of psychiatric nurses working across five Dutch hospitals. A convenience sample of 274 nurses was asked to complete the questionnaire. The questionnaire asked 60 statements on aggression and demographic data; 46 statements were taken from a study that addressed psychiatric nurses definition of aggression (Finnema, Dassen & Halfens, 1994), while the other 14 statements were selected from reviewed literature (Jansen et al., 1997). The statements were rated using a five-point Likert-type scale, ranging from strongly agree (value five) to strongly disagree (value one). Three subscales representing separate perceptions of patient aggression were identified; aggression as a 'violent and threatening reaction', aggression as a 'normal' reaction, and aggression as a 'functional' reaction. This initial instrument was named the Perception of Aggression Scale (POAS) because the focus was on the concept of perception.

The development of the ATAS (32-items) is presented in Janson et al. (2006a), which used a cross-sectional approach. The name POAS was

changed to ATAS because the concept of 'attitude' replaced 'perception' to ensure the tool reflected what it claimed to measure. A convenience sample of Dutch psychiatric nurses working across psychiatric institutions and psycho-geriatric homes were asked to participate. The items consisted of statements related to each attitude domain. Participants responses were measured using a five-point Likert scale; from 'totally agree' (value five) to 'totally disagree' (value one). The scores were then recorded on a scoring sheet, where an average was calculated for each of the five dimensions. These scores indicated the type of attitudes held by the nursing team (i.e. the larger the average, the more prominent the attitude). A factor analysis identified three attitudes towards aggression; a 'harming' reaction, a 'normal' reaction and a 'functional' reaction. The description of the three domains was not based on theory, but on the semantic analysis of the item's correlation (i.e. the items loadings). This type of analysis was used because of the limited literature and research available on the attitudes of healthcare professionals toward patient aggression. Following this development, the authors recognised that further psychometric testing was required in relation to the ATAS's internal validity and reliability.

To make the tool more accessible for a busy profession, the 32-item version of the ATAS was reduced to 18-items following a study that evaluated the tool's construct validity (Jansen et al., 2005b). A total of 1769 nurses from various psychiatric hospitals from different geographical locations (Germany, Switzerland, UK, the Republic of Ireland, Norway and China)

took part in the study. Following data collection and analysis, five domains were identified (see Table 3 for a summary of what each attitude domain represent). Three additional scales replaced the original 'harming' domain. These included the 'offensive,' 'destructive', and 'intrusive' attitude domains. In addition, the 'normal,' and 'functional' domains were rephrased 'protective' and 'communicative'. This revised tool focuses on the functional evaluations of patient aggression, rather than ideas relating to the causes, frequency, nature, and management of the behaviour.

Therefore, the development of the ATAS highlighted the importance of considering the relationship between staff attitudes, the clinical decisions made regarding the management of patient aggression and staff's behaviour. The authors concluded that this instrument can help monitor the management of patient aggression within clinical practice.

Table 3. Attitude Domain Descriptions

Attitude Domain	Description
Offensive	Viewing aggression as insulting, hurtful, unpleasant and unacceptable; seven-items.
Destructive	Viewing aggression as a threat of, or an actual act of physical harm or violence; three-items.
Intrusive	Viewing aggression as an expression of the intention to damage or injure others; three-items.

Communicative	Viewing aggression as a signal resulting from the patient's powerlessness aimed at enhancing the therapeutic relationship; three-items.
Protective	Viewing aggression as the shielding or defending of physical and emotional space; two-items.

**see Jansen et al. 2005b*

12. Psychometric Properties

12.1 Validity Concepts

12.1.1 Face Validity

Nevo (1985) states that instruments wherein the purpose is clear, and measures what it purports to measure, even to inexperienced respondents, are said to have high face validity. The items featured in both versions of the ATAS are clearly for occupational use in that it attempts to explore nurses' evaluations of patient aggression. Consequently, the candidate can infer what the ATAS measures from reading the items and the instructional statement, therefore increasing the chance of co-operation. However, little attention was paid to the aspect of face validity in all the studies that explained the development of the ATAS. Face validity can be assessed by asking a large sample of respondents to rate the tool regarding whether it appears to measure what it purports to measure (Bornstein, 2004). Therefore, despite the ATAS being regarded as a theoretically conclusive scale that can be used to ascertain attitudes towards patient aggression (Laiho et al., 2014), it is recommended that the face validly of the scale is

explored systematically. This can be done through cursory discussions amongst psychiatric nurses who are vulnerable to patient aggression, across numerous sites.

It is important to note that high face validity has been found to increase the risk of bias, in relation to social desirability responding (Bornstein, Rossner, Hill & Stepanian, 1994). In addition, the ATAS is a self-report measure, therefore it is already subjected to possible recall bias, and socially desirable responding (Jonker et al., 2008). Therefore, data obtained from this instrument should be interpreted with caution. Nursing staff may be motivated to bias their responding due to the nature of the instrument for several reasons; conform to socially acceptable values, avoid criticism, or gain social approval (Huang, Liao & Chang, 1998; King & Brunner, 2000). Research conducted in healthcare settings often covers socially sensitive topics. Therefore, it would be beneficial to implement the most appropriate methods of control to avoid bias (King & Brunner, 2000).

Van de Mortel (2008) systematic review on the use of social desirability responding scales used in nursing related research found that very few studies controlled for this type of bias. Those that did found social desirability influenced the data. Interestingly, the TPB relied on self-report, and this has largely been ignored in the literature (Armitage & Conner, 2001). Furthermore, evidence suggests that individuals may provide socially desirable answers regarding their attitudes and intentions (Beck &

Ajzen, 1991). Based on these findings, using a social desirability tool in conjunction with the ATAS may help lower the likelihood of social desirability responding in a sample of psychiatric nurses. Also, it is recommended that additional information, such as observational data, clinical reports, and interviews are obtained to lower the likelihood of biased responding. This type of information will provide a more robust clinical picture of the type of attitudes nurses have towards patient aggression.

12.1.2 Content Validity

The level of content validity refers to the degree to which the elements of an assessment tool (i.e. items, response formats, and instructions) are relevant to, and representative of, the construct that is being measured (Haynes et al., 1995). For the ATAS, this leads to question how well the items featured within the scale relates to nurses' attitudes toward patient aggression. The term 'aggression' is operationalised in different ways in the research literature, and definitions are rather vague. Consequently, defining aggression is difficult and this makes it hard comparing studies that focus on inpatient aggression (Davis, 1991; Jansen et al., 1997).

The TPB was incorporated into the development of the ATAS, and it can be used as a conceptual framework for explaining nurses' behaviour. This theory suggests that human behaviours are a result of 'attitudes', together with 'subjective norm' and 'perceived sense of control' (Ajzen & Fishbein, 1980; Ajzen, 1991). 'Attitudes' and 'subject norm' components of the TPB

underlie the development of the ATAS alongside personal characteristics, such as age, gender, years of experience, the level of qualification etc. Therefore, the ATAS is based on theory that attempts to explain nurses' behavioural responses to patient aggression.

The statements that formed the items for the ATAS were taken from a qualitative study that addressed psychiatric nurses' definition of aggression (Finnema et al., 1994) and a review of the literature (Jansen et al., 1997). Also, clear definitions are given for the different attitude domains, which offered support for content validity. Despite this, it was noted that the 32-item version primarily focused on cognitive aspects. Therefore, the emotional aspects of the perception of aggression are not included by the items (Abderhalden, Needham Friedli, Poelmans & Dassen, 2002). Therefore, these authors recommend using a tool that considers emotional aspects to get a true perception of aggression.

The level of content validity for the ATAS has received little attention in all the previous studies that explained the development of the ATAS. There are likely to be additional factors linked to nurses' attitudes towards aggression. Therefore, empirical support is required for the individual items featured in both versions of the ATAS. This can be done by recruiting an independent panel of psychiatric nurses to ascertain the relevance of the content of the ATAS. However, it is important to note that if additional items

are added to the 18-item version of the ATAS, this will go against the reason as to why this tool was designed.

12.1.3. Predictive Validity

There have been relatively few studies commenting on the predictive validity of the ATAS, for both the 32-item version and the 18-item version. However, the TPB that informed the theoretical underpinnings of the ATAS has received a lot of attention and has been widely researched. A review of the literature provided support for the theoretical model regarding the efficacy as a predictor of intentions and behaviour (Armitage et al., 2001). However, in terms of the ATAS, Abderhaden et al. (2002) argue that the 32-item instrument does not account for concrete clinical situations, such as staff's experiences of being attacked or being threatened by a patient. Further research was also recommended to examine the correlation between the attitude towards patient aggression and the actual behaviour of nurses in clinical situations (Abderhaden et al., 2002). This recommendation can be explored by using an instrument that measures attitudes towards specific type of containment methods, such as the Attitudes Towards Containment Measures Questionnaire (Bowers, Alexander, Simpson, Ryan, & Carr-Walker, 2004), or the Management of Aggression and Violence Attitude Scale (MAVAS; Duxbury, 2003)

The ATAS statements refer to patient aggression in general. Therefore, the instrument does not consider attitudes towards different subtypes of

aggression, such as verbal aggression, physical aggression towards others, physical aggression towards objects and aggression towards self. It is recommended for future research to examine this further as it can be inferred that staff may evaluate the subtypes of aggressive behaviour differently. It would also be interesting to apply the ATAS to different patient populations, as this has not yet been considered.

Based on the information featured in this section, further empirical research is needed to detect the level of predictive validity of attitudes and behaviour within clinical settings when using the ATAS.

12.1.4. Concurrent Validity

Very few existing studies commented on the concurrent validity of the ATAS. The MAVAS aims to explore perceptions of the causes of patient aggression and management approaches. This instrument was designed to help improve professional working and training in services where aggressive behaviours occur. The reliability of the MAVAS was 0.89, and the item loading subscales were ≥ .80, thus highlighting its credibility as a tool (Duxbury, 2003). Despite the MAVAS focusing mainly on cognitions of staff about patient aggression rather than evaluating the functions of the aggressive behaviour, it would be interesting to explore the associations between these two instruments.

In addition, Laiho et al., (2014) found that more information from the interactional point of view is needed and this can be explored by combining the ATAS with the Ward Atmosphere Scale (WAS; Moos, 1974; Rossberg & Friis, 2003). The WAS measures psychosocial factors of patients and staff, specifically the interactions as perceived by the participants. Therefore, it would be useful to report the significant associations between these two tools to see if there is an overlap between nurses' attitudes towards patient aggression and the ward's milieu.

12.1.5. Construct Validity

The factor structure of the 32-item version has been supported. A Turkish study yielded a similar factor solution and identified two factors (i.e. aggression is a dysfunctional/ functional phenomenon (Bilgin, Tulek & Ozcan, 2011). However, the sample consisted only of female students from two nursing schools, therefore preventing an analysis of a gender effect and poor generalisation.

The components of the 32-item version were explored in an international multi-centre study (Jansen et al., 2005b). A total of 1769 psychiatric nurses working in hospitals, and student nurses were recruited from seven countries: Germany (n=253), England (n=154), Republic of Ireland (n=41), the Netherlands (n=566), Switzerland (n=725), Norway (n=104) and China (n=103). Data from China and the Republic of Ireland were not included in the analysis because the distributions of scores were skewed

and the correlation coefficients of items were lower compared to samples from the other countries. Items were removed from the original 32-items because of the factor loading scores. This shortened 18-item version made the instrument more accessible and easier to administer to the nursing population. The configuration of correlations between the components of 18-item ATAS identified two underlying domains; the 'communication' and 'protection' scale components (the positive perspective of patient aggression), and 'offence', 'destruction', and 'intrusion' components (the negative perspective of patient aggression). Noteworthy, the study used non-random selection. There was also no stratification on the characteristics of the sample and the context of actual clinical situations (Palmstierna & Barredal, 2006). Therefore, the representativeness can be questioned, and overestimation or underestimation may have occurred.

The ATAS construct validity warrants further exploration, and those who use the instrument should also consider demographic factors, as well as the clinical picture regarding the frequency of inpatient aggression. Jansen et al. (2005b) recognised the need for alternative approaches to collect further data. Consequently, further research is recommended using robust measures to explore the construct validity of the ATAS.

12.2. Reliability

Reliability refers to the consistency of scores and the assessments reproducibility. It is worth mentioning that the reliability of the tool is assessed before administration to avoid invalid interpretations.

12.2.1. Internal Reliability

Good internal reliability is noted as an alpha coefficient of .70 or above, and acceptable ranges from .60 to .70 (Kline, 2000). Jansen et al. (2005b) conducted an international comparative study of the reliability of the 32-item version. Following analysis, 15-items were removed for the following reasons; the loading for one item deviated in more than one country from the expected factor, 12-items had a factor loading <.50, or a factor loading >.50, but were correlated inconsistently, and one item only correlated with the expected factor in the Dutch sample. The five-component structure of the 18-item ATAS Cronbach's α was deemed satisfactory, but it was considered as good for all the countries for the 'offensive' scale (.86) and somewhat less good for the other four scales (about .60). The 18-item version of the ATAS noted a Cronbach's alpha of 0.70 in a study measuring mental health institution in the Netherlands (Jonker et al., 2008). Subsequently, the scale was rated as good overall, but further research is recommended.

12.2.2. Test-Retest Reliability

The test-retest reliability of the ATAS in secure psychiatric hospitals within the UK is yet to be explored as transcultural differences may be an influential factor. Janson et al. (2005b) noted that the test–retest reliability of the five ATAS scales in the 18-item version would be evaluated in a follow-up study, but this has not yet been conducted.

13. Discussion

The ATAS has been considered as a valuable measure of nurses' attitudes toward patient aggression (Jonker, Goossens, Steenhuis & Oud, 2008). It was developed due to there not being a tool available that measures nurses' evaluations of patient aggression, therefore highlighting its unique qualities. To understand patient aggression further, it is important that attitudes are considered. This information can help inform and evaluate interventions that can promote the transition to least restrictive practices in services where patient aggression is prevalent. The ATAS has been translated into several languages, and the 18-item version is very easy to administer to a demanding population.

The psychometric critique provides satisfactory support for the need of further research that explores the validity and reliability of the ATAS. Further studies could explore the link between attitudes towards patient aggression and the management strategies used in psychiatric hospital settings.

The ATAS is at risk of obtaining high levels of socially desirable responding due to the instrument being a self-report measure. This bias can give a false picture of the type of attitudes nursing staff have towards patient aggression, which can have large implications for the organisation. To prevent obtaining a bias result, collecting evidence from multiple sources is recommended to support the validity of the inferences drawn. Consequently, to obtain a comprehensive understanding of the attitudes towards patient aggression, it is recommended that data collected from the ATAS is used in combination with other data.

14. Conclusion

Identifying the different types of nursing attitudes is useful when attempting to understand the kind of aggression management techniques being used on a ward. To help organisations obtain a useful picture of the types of attitudes held by their nursing team, further exploration of the psychometric properties of the ATAS is required. In the interim, it is recommended that multiple sources are used along with the ATAS to further validate any inferences drawn.

Chapter Four

Psychosocial Factors, Attachment and Nurses Attitudes towards Patient Aggression

The previous chapter critically appraised the Attitude Toward Aggression Scale (ATAS; Jansen, Dassen, Burgerhof & Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b). Several flaws were identified, mainly due to the face validity, content validity, predictive validity, concurrent validity and construct validity. The internal reliability was deemed satisfactory, whereas the test-retest reliability is yet to be explored. Despite these limitations of the ATAS, several strengths were recognised in terms of the tool being used internationally.

Attitudes summarise information and produce an overall evaluative summary. Many tools measuring attitudes focus on perceptions of patient aggression rather than how the behaviour is evaluated. The theory of planned behaviour (TPB, Ajzen, 1991) was used as the foundation for the development of the ATAS, therefore this tool is deemed suitable for the purpose of this thesis. The ATAS has also been deemed a useful instrument in clinical practice and research for the assessment of nurses' attitudes towards patient aggression. Consequently, the 18-item version was chosen to be used for the next two chapters.

Abstract:

Objectives: To explore the general attitudes of psychiatric nursing staff and their predictors.

Background: Existing research demonstrates that attitudes influence nurses' responses to patient aggression. Psychosocial confounders have been identified as possibly influencing how nurses evaluate patient aggression, which warrants further exploration. Adult attachment styles have also been applied to attitudinal research.

Method: A convenience sample was used for the purpose of this study. A total of 141 participants were recruited from four private secure psychiatric hospitals and one National Health Service (NHS) hospital. An online survey featuring the Attitude Toward Aggression Scale (ATAS; Jansen et al., 2006a; 1997; 2005b), the Experience of Close Relationships Scale-Revised (ECR-R; Fraley et al., 2009) and the Modified Overt Aggression Scale (MOAS; Kay et al., 1988) was distributed.

Results: Staff mainly perceived patient aggression as destructive, and the significant predictor was found to be working with the female client group. The most common predictor was verbal aggression. Nursing staff had low-anxious attachment style and low-avoidance attachment style, and these styles did not predict attitudes towards patient aggression.

Conclusion: There is a lack of research that focuses specifically on the development of nursing attitudes towards patient aggression within UK psychiatric secure hospitals. Understanding nursing attitudes may provide

a useful guide when designing and developing cost-effective interventions aimed at reducing the need for restrictive interventions in settings where patient aggression is prevalent.

15. Introduction

15.1. Patient Aggression in Psychiatric Settings

Aggression in psychiatric settings continues to be a significant workplace hazard for nurses. A study conducted by Eisenstark et al. (2007) found that 25% of psychiatric nurses in public sector hospitals were subjected to violence causing serious injury, a prevalence rate that is three times higher compared to other healthcare professionals (Del Bel, 2003). A great deal of research has been conducted regarding patient aggression within mental health services; however, the problem continues to persist worldwide (Jonker, Goossens, Steenhuis & Oud, 2008). This ongoing organisational issue requires further research to help enhance understanding and develop strategies to tackle this international problem.

15.2. Definitions and Classifications of Aggression

The difficulty in defining and categorising aggressive acts in psychiatric settings is noted throughout the literature (e.g. Spencer & Stone, 2010). This is partly due to the vague definitions used for aggression and violence, as well as their interchangeable use between studies. Consequently, it is difficult to draw comprehensive conclusions in relation to the level and severity of aggressive and violent acts that take place in psychiatric settings. This confusion surrounding the multiplicity of definitions also impacts on the quality of clinical reporting and documentation by nursing staff (Morrison, 1993). Identifying the frequency, type, and intensity of

aggressive behaviour in hospital settings is difficult, and there is a risk of underreporting the problem.

The term patient aggression will be used throughout to refer to any non-physical or physical aggression. Examples include physical aggression, verbal aggression, aggression towards objects, auto-aggression and sexual aggression (Kay, Wolkenfeld, & Murrill, 1988).

15.3. Psychosocial Factors

There is variability in how patient aggression is managed in different cultures; for instance, mechanical restraint is used throughout Europe, but not in the Republic of Ireland (Bowers, Alexander, Simpson, Ryan & Carr-Walker, 2007). This discrepancy implies that the types of containment methods used are likely to be driven by psychosocial factors observed in staff rather than the patient's behaviour.

Existing research demonstrates that nurses' responses to patient aggression are influenced by their attitudes (Whittington, 2002). There are many definitions for the attitude construct, including 'the categorisations of a stimulus object along an evaluative dimension' (Zanna & Rempel, 1988, p. 319). Attitudes summarise information and produce an overall evaluative summary. The theory of planned behaviour (TPB; Ajzen's, 1991) proposes a link between attitudes and behaviour, social pressures and perceived control. This association suggests that attitudes can influence how

individuals interpret other's intentions and behaviours, and how they subsequently react (Assael, 1995). Consequently, nurses' attitudes may affect their willingness to use methods of restraint to manage aggressive patients (Bowers et al., 2007). It was found that only 7% of nurses believed that aggressive incidents could be prevented, even though aggression management strategies are enforced by organisations to help contain the rate, and severity, of aggressive incidents (Stone, 2009). Consequently, staff-level factors should be considered when targeting patient aggression.

Additional psychosocial factors have been identified as possibly influencing how nurses perceive and react to patient aggression. For instance, a study conducted in Turkey found that the duration of employment within psychiatric settings affected the type of attitudes towards patient aggression (Hula & Sevism, 2006). It is worth noting that a Dutch study found that female nurses adopted a more positive attitude than male nurses, and the more experienced staff agreed less often that aggression was a functional behaviour (Jansen et al., 2006a). Interestingly, research suggests that nurses do not share attitudes on aggression; therefore, the variance might be due to differences between individuals (Laiho et al., 2014). Therefore, nurses' attitudes towards aggression may be related to life experiences.

15.4. Attachment Styles and Attitudes

Recently, attachment theory has been applied to attitudinal research in relation to sexual attitudes (Feeney, 2000), depression (Reinecke & Roger, 2001), and right wing ideology (Weber & Federico, 2007). This evolutionary-developmental theory proposes that individuals seek proximity to others during times of perceived threat (Bowlby, 1969; 1982). Early experience establishes the individual's attachment style and creates a model for living (Ainsworth, Blehar, Waters & Wall, 1978).

Research suggests that individuals with high anxiety in their attachment styles are easily threatened and view security as a primary relationship goal (Berant, Milkulincer & Florian, 2001). They also tend to see the worst in a situation (Mikulincer & Florian, 1998), as well as show a heightened vigilance to threat and a lowered threshold for detecting threats (Shaver & Mikulincer, 2002). Therefore, it can be inferred that anxiously attached people may have harsher attitudes towards patient aggression and view more stringent containment methods as more effective than more lenient measures. Individuals with high levels of attachment avoidance tend to lack interpersonal warmth and trust, and are more prone to adopt attitudes relating to distrust and cynicism (Mikulincer et al., 1998). Secure people tend to see themselves as more positive and coherent, compared to insecure people, and can, therefore, formulate effective strategies to cope with distress (Mikulincer, 1995).

It appears that adult attachment styles can be linked to punitive attitudes. Evidence also suggests that there is a moderate degree of stability of attachment security in relationships over time (Fraley, 2002), which indicates that attachment styles may have a continuous impact on attitudes. To date, no research has addressed the relationship between adult styles of attachment and nurses' attitudes toward patient aggression. Such research could provide further insight into the development of attitudes and subsequent behavioural responses, which can inform staff-level interventions that aim to reduce the use of restrictive measures for aggression management.

15.5. Study Objects

Nurses' attitudes can either improve or magnify a breakdown of patient-nurse therapeutic relationships (Abderhalden et al., 2006; Jones et al., 1998; Pryor, as cited in Spencer & Stone, 2010). Attitudes can determine the type of management strategies and clinical planning used when dealing with an aggressive situation, which can have positive or negative consequences on the patient (Irwin, 2006). To develop models for the management of aggression, it is important to understand the significant domains of psychiatric nurses' attitudes towards patient aggression (Jansen, Middel & Dassen, 2005b). Therefore, this type of research is highly relevant to clinical practice. The aims of the current study were as follows:

1. To explore the general attitudes of psychiatric nursing staff towards patient aggression.
2. To examine the relationship between psychiatric nurses' attitudes towards patient aggression and styles of adult attachment.

Relevant psychosocial factors, such as gender, age, job role, the length of experience working in psychiatric settings, the patient group, and the intensity and the type of patient aggression experienced, were also considered and included in the analysis.

16. Method

16.1 Data Collection Procedure

A convenience sample was used. The ATAS measures nurses' attitudes towards patient aggression. The tool's development has been described in previous studies (Jansen, Dassen, Burgerhof & Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen et al., 2005b). The ATAS measures five types of attitudes: offensive attitude; communicative attitude; destructive attitude; protective attitude; and intrusive attitude (see Chapter Three for the descriptions). The 18-item version was used as it has been deemed more convenient for the nursing profession (Janson et al., 2005b). Nurses are asked to appraise the definitions of aggression on a 5-point Likert scale ranging from 1-5 (totally disagree to totally agree).

Adult attachment styles were measured by the ECR-R (Fraley et al., 2009). The ECR-R is a revised version of Brennan, Clark and Shaver's (1998) Experiences in Close Relationships (ECR) questionnaire. It is a 36-item scale that measures individual differences for two attachment style scales: attachment-related anxiety and attachment-related avoidance. The response options range 1-7 (totally agree to totally disagree). It has been noted that the ECR-R provides a reliable and replicable dual factor self-report measure of adult romantic attachment (Sibley & Lu, 2004).

The experience of patient aggression was measured by the Modified Overt Aggression Scale (MOAS; Kay et al., 1988). The MOAS is an adapted version of the Overt Aggression Scale (Ratey & Gutheil, 1991). This scale includes four subscales: verbal aggression; aggression against property; auto-aggression; and physical aggression. The intensity of the aggression experienced is rated on a 4-point scale. The informant rates the acts of aggression they have seen during a particular period (i.e. over the past week). For this study, however, the specific period was the whole time the respondent had worked within inpatient settings to determine the type and intensity of the aggression experienced. The reliability of the MOAS for measuring aggression amongst and learning disability populations was rated as good to moderate (Oliver, Crawford, Reece & Tyrer, 2007).

The Bristol Online Survey (BOS) tool was used to obtain data. This type of survey is convenient for the participants because it can be administered to

many participants across multiple sites. It also minimises research bias. The BOS enables real-time analysis, the collection of large amounts of data, question response filtering, the ability to cross-tabulate results, and comparison of results across surveys. Pilot studies of the tools were conducted with three staff members to help identify the optimal layout of the online survey. It took approximately ten minutes to complete the main questionnaire and five minutes to obtain consent.

An email was sent to potential participants, which included a summary explaining aspects of the study and a hyperlink to the BOS. Before accessing the survey, participants were asked to provide consent to participate in the study. It was expected that all participants would be capable of providing their informed consent online by submitting their responses.

16.2. Participants

The participants included psychiatric nurses and healthcare workers (HCWs) from five sites (n= 141); one medium secure psychiatric NHS hospital (n= 18) and four psychiatric independent hospitals (n= 123). The hospital comprised of low secure, medium secure, and rehabilitation wards. All of the hospitals had a national patient intake for people who are detained under the Mental Health Act (1983). This included those who are detained under the Ministry of Justice restrictions or those without offending histories who need a secure placement. To ensure that only nursing staff completed

the online survey, instructions were provided for the participants to read. The inclusion criteria were:

- The nursing profession; HCWs, qualified nurses, and student nurses
- Male and female staff
- Over one month's experience
- Full-time, part-time, and Bureau/Bank staff aged 18-65
- The ability to understand an online survey written in English

Individuals who worked outside the nursing profession, staff who had not worked in the setting for over one month, and staff who did not understand English were excluded from participating in the study. As quantitative methods were used, a power analysis was conducted to obtain the sample size needed. A priori analysis using GPower software (version 3.0) indicated a minimum sample size of 153 for multiple linear regression, effect size 0.15, power 0.95, and seven predictors (gender, age, experience, type and the intensity of aggression, job role, client population, and styles of attachment).

Participants originated from a range of heritages and a variety of countries (see Table 4 for the frequencies for each characteristic included in the analysis). More females (60%) than males (40%) participated, and the majority of the respondents were HCWs (71%) working within the personality disorder directorate (32%). The age range was 21-30 (49%), and many of the respondents had been employed for over ten years (18%).

There was a difference in attrition rates between the NHS staff population (32%) and the private sector population (49%).

Table 4. Sample Characteristics

Characteristic	Frequency (%)
Age	18-20: 2 (1%)
	21-30: 69 (49%)
	31-40: 24 (17%)
	41-50: 26 (18%)
	51-60: 20 (14%)
Gender	Female: 84 (60%)
	Male: 57 (40%)
Ethnicity	English (British): 113 (80%)
	African: 17 (12%)
	Indian: 3 (2%)
	Irish: 3 (2%)
	African American: 2 (1%)
	Chinese, Hispanic, Eastern European: 1 (2%)
Nationality	UK: 127 (90%)
	Zimbabwe: 4 (3%)
	Northern Ireland: 2 (1%)
	Nigeria: 2 (2%)
	Argentina, Ghana, Romania, Sierra Leone, South Africa: 1 (4%)
Job title	Mental Health Nurse: 34 (24%)
	Learning Disability Nurse: 4 (3%)
	Student Nurse: 3 (2%)
	Healthcare worker: 100 (71%)
Years of Experience	Under 6 months: 9 (6%)
	6 months- 1 year: 16 (11%)

	1-2 years: 25 (18%)
	2-3 years: 14 (10%)
	3-4 years: 11 (8%)
	4-5 years: 11 (8%)
	5 plus years: 55 (39%)
Client group	Personality Disorder: 45 (32%)
	Mental Illness: 35 (25%)
	Autism Spectrum Disorder: 30 (21%)
	Learning Disability: 13 (9%)
	Brain Injury: 12 (9%)
	Adolescent: 6 (4%)
Client gender	Male: 82 (58%)
	Female: 40 (28%)
	Both: 19 (13%)

The type and intensity of patient aggression experienced were in the high-level category (level 4, see Table 5). The respondents had been exposed to different types of aggression, the most common of which was verbal aggression (100%). This was closely followed by physical aggression towards others (99%) and aggression towards property (99%). The level of intensity for each type of aggression was high, especially for verbal aggression (67%).

Table 5. Type of Patient Aggression

Type of Patient Aggression	Frequency (%)
Verbal Aggression	None: 0 Level 1: 6 (4%) Level 2: 10 (7%) Level 3: 31 (22%) Level 4: 94 (67%)
Physical Aggression towards others	None: 1 (0.7%) Level 1: 4 (3%) Level 2: 12 (9%) Level 3: 54 (38%) Level 4: 70 (50%)
Aggression Against Property	None: 2 (1%) Level 1: 10 (7%) Level 2: 34 (24%) Level 3: 41 (29%) Level 4: 54 (38%)
Autoaggression	None: 5 (4%) Level 1: 4 (3%) Level 2: 17 (12%) Level 3: 23 (16%) Level 4: 92 (65%)

16.3. Data Analysis

The data was analysed using the Statistical Package for the Social Sciences (SPSS 14.0 for Windows). A data screen was conducted to check for any obvious errors in the data and to check for normality. Descriptive analysis was conducted to obtain the percentages, means and standard deviations

to characterise the respondents and to determine the scores of the ATAS and ECR-R.

An independent t-test enabled further exploration of the difference between the attitude domains and the means of two unrelated groups, the staff's gender, mean age, job role, work experience, and the client's gender.

Finally, a multiple linear regression analysis was used to identify possible predictors of nursing attitudes towards aggression. Attitudes as the dependent variable, and the staff's gender, age, job role, the length of experience, attachment styles, exposure to patient aggression, and the client group type and gender as the possible predictor variables. This analysis was chosen due to the multiple possible predictor values being explored. It was unclear which predictor variables would contribute the most to the regression model; therefore, the hierarchical approach was rejected, and a block approach used. Variables found to be significant were then entered into a second regression analysis to produce the final model. Following an inspection of the data, all the assumptions for regression were met, including multicollinearity (<03.0).

17. Results

The quantitative analysis of this paper is separated into three parts:

1. An analysis of nurses' attitudes towards patient aggression using descriptive statistics. A between-group analysis was completed to

determine whether there were significant differences between staff working in NHS hospitals and those working in private hospitals.

2. Between-group analyses were completed to determine whether there were significant differences between a variety of groups (e.g. gender, age, job role, experience and attachment styles).
3. Multiple regression analysis was conducted to identify significant predictors of the five different attitudes. For example, an analysis was completed for exposure type (independent variables, e.g. physical and verbal aggression) and offensive attitude (dependent variable), and then a separate analysis was performed for the other four attitude domains. Each analysis addresses the relationship between the types of attitude and the psychosocial factors, and adult attachment tendencies.

A Log10 analysis was completed on the two attachment variables due to the data being positively skewed. Following this, a test of multicollinearity indicated that none of the independent variables was closely linked.

17.1. Nursing Attitudes towards Patient Aggression

The destructive attitude received the highest score, followed by offensive and intrusive domains (see Table 6). The lowest scores were found for the evaluation that patient aggression is for protection and communication purposes. There was no significant difference between NHS staff and private sector staff in relation to evaluating patient aggression as intrusive

(t(16): -.454, p=.656), or offensive (t(16): -.048, p=.962), and for communicative (t(16): .811, p=.429), and protective purposes (t(16): -.232, p=.819). The only significant difference was in relation to staff evaluating aggression as destructive (t(16):-3.577, p=.003).

Table 6. Attitude Domains

Attitude Type	Mean (SD)
Offensive	3.16 (0.64)
Intrusive	3.07 (0.82)
Destructive	3.47 (0.87)
Protective	2.57 (0.81)
Communicative	2.89 (0.94)

As presented in Table 7, an independent t-test indicated a significant difference in the scores for males and females for the offensive domain (t(139): 3.341, p=.001) and the communication domain (t(139): 2.557, p=.012). Age was also found to have a significant effect on the way staff perceive aggression, as those aged over 30 years perceived aggression as more intrusive (t(139): -2.673, p=.008), offensive (t(139): -2.386, p=.018), and self-protective (t(139): -2.216, p=.028), and for communication purposes (t(139): -2.984, p=.003).

There was no significant difference for length of experience and client gender. Furthermore, there was no significant difference between the way the regular nurses and bank nurses perceived patient aggression: offensive domain (t(36): .740, p=.464), intrusive domain (t(36): .573, p=.570), destructive domain (t(36): .718, p=.477), protective domain (t(36): -.627, p=.535), or communicative domain (t(36): .294, p=.770). A similar result was also found for bank HCWs and regular HCWs (t(98): -.494, p=.623).

Table 7. Difference between Psychosocial Factors and Attitudes (Independent t-test)

N=141	Intrusive M (SD)	Destructive M (SD)	Offensive M (SD)	Protective M (SD)	Communicative M (SD)
Gender:					
Female (n= 84)	2.960 (.832)	3.449 (.903)	**3.019 (.647)****	2.494 (.087)	**2.772 (.096)***
Male (n= 57)	3.222 (.777)	3.497 (.831)	**3.371 (.647)****	2.684 (.822)	**3.129 (.996)***
Mean Age:					
<30 years (n= 71)	**2.888 (.762)***	3.352 (.914)	**3.036 (.662)***	**2.423 (.778)***	**2.657 (.914)***
>30 years (n= 70)	**3.248 (.837)***	3.586 (.817)	**3.288 (.588)***	**2.721 (.824)***	**3.112 (.924)***
Job Role:					
Regular Nurse (n= 34)	2.892 (.764)	3.333 (.914)	3.042 (.671)	2..485 (.821)	2.902 (1.013)
Bank Nurse (n= 4)	2.667 (.471)	3.000 (.272)	2.786 (.444)	2.750 (.500)	2.750 (.419)
Regular HCW (n= 58)	3.115 (.750)	3.517 (.824)	3.178 (.562)	2.560 (.772)	2.850 (.859)
Bank HCW (n= 42)	3.206 (.948)	3.556 (.962)	3.316 (.696)	2.642 (.982)	3.008 (1.040)
Work experience:					
<5 years (n=86)	3.031 (.790)	3.457 (.889)	3.145 (.647)	2.581 (.840)	2.859 (.963)
> 5 years (n= 55)	3.121 (.864)	3.485 (.853)	3.187 (.624)	2.555 (.774)	2.946 (.920)
Patient gender:					
Male (n= 82)	3.118 (.785)	3.459 (.787)	3.169 (.622)	2.506 (.807)	2.931 (.907)
Female (n= 40)	3.083 (.833)	3.633 (.972)	3.150 (.630)	2.625 (.815)	2.933 (.982)

*The Mean Score is significant (<0.05) **The Mean Score is significant (<0.01)

17.2. Adult Attachment Styles and Attitudes

The second research question was answered by conducting linear multiple regression. Respondents appeared to have low attachment-related anxiety (M: 2.68; SD: 1.127) and low attachment-related avoidance (M: 2.75; SD: 1.30). The results from multiple linear regression indicated that these styles of attachments do not predict how nursing staff evaluated patient aggression ($p>0.05$). This is presented in the scatter plots (see Appendix F) and Tables 8-12. It is worth noting that a close relationship was found between anxious attachment tendencies and the communicative attitude domain, however, the association was not significant (Beta= .190, p=.057).

17.3. Attitudes and Psychosocial Factors

The first step in exploring possible confounding variables is presented in Tables 8-12. In the following order, multiple linear regression was conducted, which involved entering a related set of variables separately:

- Block 1: Staff factors
- Block 2: Patient factors
- Block 3: Exposure type

This order was selected in accordance with the literature, which separates patient-specific factors and situational factors. Moreover, the ecological model (Dahlberg & Krug, 2002) suggests that violence is a result of a combination of four influences: individual (i.e. biological and personal history), relationships (i.e. peers, partners and other family members),

community (i.e. social and physical environment) and societal (i.e. economy, education and social policies). This model informed the regression model used.

The first analysis used the enter method for the first step of the model. The following variables were excluded from the analysis: UK, HCWs, males, more than five years experience, more than 30-years of experience, and the Developmental Disorder population. The psychosocial factors found to be a significant predictor of attitudes towards patient aggression included female staff, qualified nurses, the female client group, staff from non-UK countries and verbal aggression.

The variables found to be significant for each of the five attitude domains were then re-entered to produce a final regression model. Variables also found to be common predictors in the existing research were included in the analysis. These included the staff's gender (Jansen et al., 2006a), the length of experience (e.g. Hula & Sevism, 2006) and the type of exposure to patient aggression (see Chapter One).

Predictors entered for the offensive domain explained 11.3% of the variance (p=.024), and female staff (Beta= .269; p=.002) were found to evaluate aggression as offensive.

Regarding the intrusive domain, the predictors explain 13.4% of the variance (p=.013) in the data, and the qualified nursing staff was found to be the significant predictor (Beta= .178; p=.035).

Exposure to levels of verbal aggression was significantly associated with a protective attitude (Beta= -.312, p=.004), and a communicative attitude (Beta=-.284, p=.008). Being male was also significantly associated with a communicative attitude (Beta=-.176, p=.034). The predictors entered for the protective attitude explained 11.3% of the variance (p=.012) and 14.1% of the variance (p=.002) for the communicative attitude.

No variables were found to be a significant predictor of the destructive attitude (R^2=.048, p=.468) in the second regression model. However, as shown in Table 9, the first analysis found a significant association between working in the female directorate and this attitude domain (R^2=.041, p=.047).

Table 8. Multiple Linear Regression Predictors of Offensive Attitude towards Aggression

Variables (N= 141)	**Regression coefficient *B* (95% confidence interval)**	**Beta**	***P***	***R^2***
Adult Attachment Style:				
Anxious Attachment tendency	.061 (-.051-.174)	.109	.282	.009
Avoidant Attachment tendency	-.018 (-.115-.080)	-.036	.720	
Staff Factors:				
>30 years old	-.161 (-.425-.104)	-.127	.232	.143
Female	.257 (.029-.485)	.199	**.028***	
Non-UK	-.218 (-.575-.140)	-.103	.230	
>5 years experience	-.015 (-.249-.218)	-.012	.896	
Qualified Nurse	.290 (.054-.527)	.203	**.017***	
Student Nurses	.580 (-.127-1.288)	.132	.107	
Patient Factors:				
Non-developmental Disability	.062 (-.193-.316)	.045	.632	.002
Female client group	.104 (-.342-.550)	.058	.645	
Male client group	.323 (-.100-.746)	.197	.134	
Exposure:				
Physical aggression	.044 (-.121- .209)	**.**055	.602	
Aggression towards Property	-.018 (-.161-.125)	-.028	.807	.020
Verbal Aggression	-.106 (-.274-0.62)	-.135	.212	
Autoaggression	-.012 (-.142-.119)	-.019	.860	

*The Mean Score is significant (<0.05)

Table 9. Multiple Linear Regression Predictors of Destructive Attitude towards Aggression

Variables (N=141)	**Regression coefficient *B* (95% confidence interval)**	**Beta**	***P***	***R^2***
Adult Attachment Style*:*				
Anxious Attachment tendency	.057 (-.097-.211)	.074	.465	.009
Avoidant Attachment tendency	-.073 (-.207-.061	-.108	.283	
Staff Factors:				
>30 years old	-.373 (-.755-.009)	-.215	.056	
Female	-.099 (-.429-.230)	-.056	.553	
Non-UK	-.044 (-.561-.472)	-.015	.866	.048
>5 years experience	.083 (-.254-.420)	.083	.626	
Qualified Nurse	.330 (-.012-.671)	.168	.059	
Student Nurse	.066 (-.956-1.087)	.011	.899	
Patient Factors:				
Non-developmental Disability	.240 (-.101-.582)	.127	.167	
Female client group	-.483 (-.958- -.007)	-.250	**.047***	.041
Male client group	-.215 (-.667-.236)	-.122	.347	
Exposure:				
Physical aggression	-.218 (-.185-.265)	.037	.727	
Aggression towards Property	-.020 (-.214-.175)	-.023	.842	.033
Verbal Aggression	-.218 (-.447-.011)	-.202	.062	
Autoaggression	.099 (-.078-.277)	.118	.271	

*The Mean Score is significant (<0.05)

Table 10. Multiple Linear Regression Predictors of Intrusive Attitude towards Aggression

Variables (N= 141)	**Regression coefficient *B* (95% confidence interval)**	**Beta**	***P***	***R^2***
Adult Attachment Style*:*				
Anxious attachment tendency	.057 (-.087-.202)	.079	.433	.006
Avoidant attachment tendency	-.003 (-.128-.123)	-.004	.965	
Staff Factors:				
>30 years Old	-.317 (-.660-.025)	.173	.069	.130
Female	.095 (-.201-.390)	.057	.527	
Non-UK	-.483 (-.946- -.020)	-.177	**.041***	
>5 years experience	-.001 (-.303-.302)	.000	.997	
Qualified Nurse	.416 (.110-.722)	.226	**.008****	
Student Nurse	.382 (-.534-1.297)	.069	.411	
Patient Factors:				
Non-developmental Disability	.293 (-.027-.614)	.166	.073	.039
Female client group	-.285 (-.732-.161)	-.158	.209	
Male client group	-.206 (-.630-.218)	-.125	.339	
Exposure:				
Physical aggression	.014 (-.193-.221)	.014	.896	
Aggression towards Property	-.053 (-.233-.126)	-.067	.556	.067
Verbal Aggression	-.232 (-.443- -.021)	-.229	**.031***	
Autoaggression	.013 (-.151-.176)	.016	.879	

*The Mean Score is significant (<0.05) **The Mean Score is significant (<0.01)

Table 11. Multiple Linear Regression Predictors of Protective Attitude towards Aggression

Variables (N=141)	**Regression coefficient *B* (95% confidence interval)**	**Beta**	***P***	***R^2***
Adult Attachment Style*:*				
Anxious attachment tendency	-.009 (-.152- .134)	-.013	.901	.014
Avoidant attachment tendency	.079 (-.045-.203)	.126	.211	
Staff Factors:				
>30 years old	-.298 (-.649-.053)	-.184	.095	.076
Female	.048 (-.254-.351)	.029	.753	
Non-UK	-.430 (-.904-.044)	-.159	.075	
>5 years experience	.153 (-.157-.462)	.093	.331	
Qualified Nurse	.173 (-.141-.486)	.173	.279	
Student Nurse	-.036 (-.973-.901)	-.006	.939	
Patient Factors:				
Non-developmental Disability	.257 (-.063-.577)	.257	.114	.029
Female client group	.104 (-.342-.550)	.104	.645	
Male client group	.323 (-.100- .746)	.197	.134	
Exposure:				
Physical aggression	-.084 (-.285-.118)	-.083	.414	
Aggression towards Property	.240 (.065-.415)	.301	.007	.103
Verbal Aggression	-.314 (-.519- -.109)	-.312	**.003***	
Autoaggression	.129 (-.031-.288)	.164	.113	

*The Mean Score is significant (<0.05)

Table 12. Multiple Linear Regression Predictors of Communicative Attitude towards Aggression

Variables (N=141)	**Regression coefficient *B* (95% confidence interval)**	**Beta**	***P***	***R^2***
Adult Attachment Style*:*				
Anxious attachment tendency	.159 (-.005-.323)	.190	.057	.040
Avoidant attachment tendency	.014 (-.129-.156)	.019	.848	
Staff Factors:				
>30 years old	-.336 (-.736-.064)	-.178	.099	.111
Female	.217 (-.128-.562)	.217	.216	
Non-UK	-.384 (-.924-.156)	-.122	.162	
>5 years experience	.028 (-.325-.380)	.014	.877	
Qualified Nurse	.155 (-.203-.513)	.073	.392	
Student Nurses	.870 (-.199-1.938)	.133	.110	
Patient Factors:				
Non-developmental Disability	.257 (-.063-.577)	.146	.114	.029
Female client group	.104 (-.342-.550)	.058	.645	
Male client group	.323 (-.100-.746)	.197	.134	
Exposure:				
Physical aggression	.100 (-.134-.333)	.085	.401	.110
Aggression towards Property	-.082 (-.284-.121)	-.088	.426	
Verbal Aggression	-.395 (-.633- -.157)	-.338	**.001****	
Autoaggression	.070 (-.115-.254)	.077	.456	

**The Mean Score is significant (<0.01)

18. Discussion

18.1. Attitudes towards Aggression

The aim of this study was to explore nurses' attitudes toward patient aggression in UK psychiatric secure hospitals and to explore factors that may influence the development of these attitudes. It is well known that nursing staff working in psychiatric hospitals are regularly confronted with patient aggression, and this was confirmed in the present study. The majority of respondents had experienced patient aggression at some point during their career working as a nurse or an HCW. The most prevalent type was verbal aggression, with 100% of the respondents reporting that they had been exposed to this. Consequently, nursing staff are at high risk of suffering physical and psychological harm as a result of high exposure to patient aggression, and this is also evident in Chapter One. Further research exploring how nursing staff cope following aggressive incidents would be useful in determining whether patient aggression is considered part of the job, or whether a zero-tolerance attitude is taken.

Nursing staff are required to manage patient aggression that not only places themselves, but also others at risk, it is perhaps unsurprising that the respondents mainly perceived patient aggression as negative, and particularly destructive. There is a lack of comparable studies using the ATAS within secure psychiatric UK hospitals; however, these findings are consistent with studies conducted in non-forensic psychiatric services

(Jonker et al., 2008). Furthermore, a study conducted by James, Isa and Oud (2011) found that nurses tended to view aggression as offensive, destructive and intrusive, and were less likely to evaluate the behaviour as a means of communication or serving a protective function.

Interestingly, there was no a significant difference between NHS staff and private sector staff in relation to the intrusive attitude, offensive attitude, communicative attitude and protective attitude. However, there was a significant difference found for the destructive attitude. This disparity might be due to variation in workload distribution, employment conditions, management styles, and organisational culture.

Significant differences were found between offensive and communicative attitudes towards aggression and gender. The reason for this result requires further exploration. Moreover, significant differences were found for age (above and below 30 years) in relation to the offensive, intrusive, communicative and protective attitude domains. Similar to what was mentioned above, attitudes towards patient aggression are likely to shift over time, due to the different government initiatives and training developments.

The most influential variable in was verbal aggression. Experiencing high levels of verbal aggression reduces the likelihood of staff evaluating patient aggression as communicative, protective and intrusive. This indicates that

staff perceive lower-intensity verbal aggression as serving more of a communicative, protective and intrusive function. However, this reduces as the verbal aggression increases in intensity. This finding implies that a cycle of behaviour could be happening in psychiatric services, which can explain why patient aggression continues to be an organisational issue. High exposure to verbal aggression, negative evaluations of the behaviour, and ineffective aggression management interventions result in escalations of patient aggression and the need to use restrictive practices. This highlights the need for services to support staff following exposure to patient aggression to break this destructive cycle.

Although previous studies have suggested that experience might influence attitudes (Exworthy et al., 2001; Jansen et al., 2006a; Klinge, 1994), no significant associations were found in this study. This lack of significant findings may be due to the relatively small sample size. Furthermore, it could be suggested that nurses' evaluations of patient aggression are more related to the wards influences than individual staff variables and exposure to patient aggression. Interestingly, the destructive attitude was significantly associated with working in the female directorate. Likewise, Hui (2015) found a stark difference between nursing staff attitudes towards patient aggression and noted possible influences that included the type of patients, the ward function, or staff's perceptions of their role. This suggests that attention needs to be given to the external environment,

alongside offering support following exposure to patient aggression when attempting to shift nurses' negative attitudes towards patient aggression.

18.2. Attachment Styles

The results indicate that staff had low-anxious and low- avoidance attachment styles and that these styles did not predict any attitudes towards patient aggression. This suggests that nursing staff working in secure psychiatric hospital settings are confident in their capacity and ability to manage patients who seek help from staff to contain their anxiety and personal needs. It is worth noting that a self-report measure was used to explore a very personal part of the self-construct; therefore, staff responses should be treated with caution as there is a risk of socially desirable responding.

It is interesting to note that even though it was not considered a significant result, the anxious attachment style and the communicative attitude were found to have a close interaction. Activation of the internal working model (IWM) may lead to an unconscious reaction of projecting their insecurities onto the patients, therefore perceiving their aggressive behaviours as a way of communicating stress to others. This is an interesting finding, as the literature suggests that increased anxiety can result in a dismissive style resulting in rejecting the needs of others and derogatory responses (Adshead & Aiyegbusi, 2014). Consequently, it is important that organisations encourage staff to consider their personal attachment styles,

as those working in the care service will have their IWM of attachment that can affect their caregiving behaviour.

Institutional failings have been linked to the IWM of attachment theory that is present in staff and patients (Adshead & Aiyegbusi, 2014). Berry et al. (2008) highlighted the importance of increasing nurses' awareness of their attachment styles and the way in which their IWM might influence their interaction styles with patients. Therefore, having an awareness of attachment issues can help staff establish therapeutic relationships that can act as a secure base for the patient.

18.3. Clinical Importance

The findings of this study have contributed to the exploration of nurses' attitudes toward patient aggression. There is little research that focuses specifically on attitudes within UK secure psychiatric hospitals (Winship, 2014).

For services to embed the new positive and proactive philosophy, it is vital for organisations to develop interventions targeting nurses' attitudes toward patient aggression. For instance, high exposure to verbal aggression was found to predict the perception that patient aggression does not serve a communicative, protective or intrusive function. It is therefore proposed that nursing staff should be encouraged to reflect on their personal evaluations of patient behaviour, along with receiving emotional and

psychological support following exposure to an aggressive incident. Embedding regular supervision (i.e. clinical, management and professional) and reflective practice in the organisational culture would provide a safe environment for nurses to develop their understanding and explore ward issues, interpersonal difficulties, their practice, and self-development.

It is often the case that traditional training programs do not consider the interpersonal aspects of the job role, and tends to focus on patient disorders (Adshead et al., 2014; Bowers, 2002). Therefore, it is recommended for staff to be encouraged to reflect on their personal evaluations of patient aggression, along with enhancing knowledge and understanding about the typical functions of the behaviour. This will in theory help embed positive and proactive working, thus reducing the need to use restrictive interventions to prevent further escalation of risk behaviour.

It is important to note that patient aggression is not a phenomenon exclusive to psychiatric staff or mental health care. Even though the study population was limited to qualified psychiatric nurses and HCW, the authors of the ATAS believe the tool can be used in a professional capacity with other healthcare professionals who deal with aggression, and in general healthcare settings.

18.4 Limitations

Although there are many significant findings in this study, it is important to consider the limitations to the methodology used. Firstly, obtaining a large sample size from a population of nursing staff was problematic given the busy and demanding work environment. The participant sample size was smaller than what was recommended by the power analysis calculated using the GPower software. The limitations to using a smaller sample when conducting a multiple regression analysis include Type II errors, which can yield misleading results. Therefore, some caution is advised when interpreting the results, particularly regarding the limits on generalisability.

The present study's findings relied on self-selecting respondents; choosing whether or not to participate. The possible reasons for staff deciding not to take part in this study, as well as their experiences and evaluations were not captured and this could have been useful information. Moreover, many of the respondents came from independent hospitals. Independent private hospitals and NHS hospitals have different policies and procedures and use different training providers that educate staff in the management of patient aggression. These organisational provisions may influence how patient aggression is evaluated, however, this requires further exploration. It is acknowledged that findings from this study may not be generalisable, particularly due to the specificity of the context and sampled used.

The results obtained are based solely on self-reported histories of patient aggression and attachment styles; therefore, there is a risk of recall bias and socially desirable responding. As previously outlined in Chapter two, nursing staff are at heightened risk of socially desirable responding to conform to socially acceptable values, avoid criticism or gain social approval (Huang, Liao & Chang, 1998; King & Brunner, 2000). Therefore, some caution is advised when interesting the results of this study.

Despite the limitations of this study, the findings add to the limited research base on staff attitudes towards patient aggression within secure psychiatric hospitals. This study provides an insight into the possible factors that may influence the development of certain attitudes towards patient aggression. Such a study is novel and is viewed as being a vital component towards the contribution of knowledge within this area.

18.5. Future Research

This study has generated new insights, however further research is required. Research exploring nurses' attitudes toward patient aggression in UK psychiatric secure hospitals and the use of coercive management strategies would be a useful extension of the present study. Also, the effectiveness of tailoring training packages to include staff-level factors also requires further evaluation in relation to shifting negative attitudes in a positive direction. Moreover, what methods of support can be put in place

for staff following exposure to patient aggression and whether this influences attitudes warrants further attention.

Event-related potential could offer a way to measure nurses' attitudes to explore at which point in time attitudinal judgments are made. This data could provide a useful insight into attitudinal development.

19. Conclusion

To date, there is limited published research that explores the possible predictors of nurses' attitudes towards patient aggression within UK psychiatric secure hospitals. As outlined in the TPB model, attitudes influence behaviour, therefore, how nurses evaluate patient aggression can influence how they subsequently react to the aggressive behaviour. Consequently, developing cost-effective organisational strategies that promote positive and proactive attitudes would help shape nursing practice and ward culture to adopt the least restrictive principles. Altering nursing practice will take time, but due to the ongoing problem of patient aggression in psychiatric and general hospital settings, there is an urgent need for practitioners and researchers to further explore this area.

Chapter Five

Research Case Study on the Effectiveness of a Multi-System Intervention on the Management of Patient Aggression

The previous chapters have explored the development of nurses' attitudes toward patient aggression in UK psychiatric hospitals. The respondents commonly perceived patient aggression as a threat of, or an actual act of physical harm or violence. These findings are in support of the studies in non-forensic psychiatric services. Interestingly, the primary study found that high levels of verbal aggression reduced staffs' perceptions of patient aggression serving as a communicative, intrusive and protective function. This is similar to what was found in some of the included studies in Chapter Two, which noted a shift in attitudes following high exposure to verbal aggression (Chen et al., 2005; Reininghaus et al., 2007).

These findings suggest an unhealthy cycle of behaviour, which may explain why patient aggression continues to be an organisational issue. Exposure to patient aggression can negatively impact on how the behaviour is evaluated by staff, which can subsequently influence the management strategies used to help contain the aggression. This supports the theory of planned behaviour (Ajzen, 1991) which was designed to predict behaviours not entirely under volitional control. It is therefore proposed that a direct staff-level intervention would help break this damaging cycle. As mentioned

in Chapter One, more research is needed to evaluate strategies that aim to create a positive and proactive culture that will enable healthcare organisations to move away from traditional and coercive practices.

Abstract:

Background: Nursing staff have been noted to feel safer and more confident following training courses on the management of inpatient aggression and violence. However, this does not suggest that incidents of patient aggression are being managed better in psychiatric services. These training events rarely encourage staff to think about their attitudes and subsequent behavioural responses to patient aggression.

Aim: To explore the benefits of conducting a direct staff-level intervention that utilises the positive behavioural support (PBS) philosophy when targeting psychiatric nurses' attitude towards patient aggression.

Method: Pre-and post-assessments included the State-Trait Anger Expression Inventory-2 (STAXI-II; Spielberger, 1999), the Novaco Anger Scale and Provocation Inventory (NAS-PI; Novaco, 2003), and the Attitudes Towards Aggression Scale (ATAS; Jansen et al., 1997; 2006b; 2005a). There were two stages to the treatment process; Stage one involved individual sessions with Patient A, whereas stage two involved meeting with two members of the nursing team and Patient A.

Results: There was a shift in the staff's attitudes of Patient A's aggression. There was a reduction in the intensity of physical aggression towards others following the staff intervention. The data also highlighted dramatic improvements in Patient A's ability to cope with anger-provoking situations following the staff-level intervention.

Conclusion: This study highlights the importance of taking a multi-systems approach when addressing patient aggression in psychiatric settings. This

case study is reported with the permission of Patient A's responsible clinician due to capacity to consent.

20. Introduction

20.1. Aggression in Developmentally Disordered Individuals

Autism Spectrum Disorder (ASD) and Intellectual Disability (ID) both come under the umbrella term of Developmental Disabilities due to the conditions originating in childhood. Anger is saliently associated with aggressive behaviours and is a common element of personal distress (Doyle & Dolan, 2006; Novaco, 1986; Novaco, 1994). Aggression is a form of challenging behaviour, which is socially unacceptable and can cause serious harm to the persons, others, and their environment (Matson, Kozlowski, Worley, Shoemaker, Sipes et al., 2011). Aggressive challenging behaviours have been identified as a clinical concern for individuals with Developmental Disabilities in the community and in institutional settings (Novaco & Taylor, 2004), especially those with a dual diagnosis of ASD and ID (Brosnan & Healy, 2011; Hill & Furnis, 2006; McClintock, Hall & Oliver, 2003). Aggressive behaviours cause frequent problems within psychiatric inpatient settings (Daffern & Howlls, 2002; Daffern, Mayer & Martin, 2004), therefore warrants further study.

20.2. Models of Aggression

There are many aetiological models developed to help explain aggression (e.g. see Dickens, Piccirilli & Alderman, 2013). The internal model states that patient-related factors primarily relate to aggressive behaviour, such as an individual's personality, sex, age, socio-economic status and mental health. This suggests that certain individuals may be genetically

predisposed to act aggressively (Maxon, 1998). The external model focuses on the role of the environment, such as the ward layout, the behaviour of the staff, and how these factors contribute to the development of patient aggression within psychiatric care (Duxbury, 2002; Nijman, áCampo, Ravelli & Merckelbach, 1999). The situational model infers that factors related to the environment influences and maintains aggressive behaviour. Social learning theory (Bandura, 1973; 2001) suggests that aggression is learnt and preserved due to operant conditioning, social referencing, and reinforcement. Howells and Hollin (1989) argue that some theories only focus on either patient-specific factors or the influence of the environment. Patient-specific factors cannot be ignored when addressing inpatient aggression according to the literature, but these behaviour(s) is unlikely to occur in a vacuum of internal drives and motivations. Therefore, environmental and situational factors must also be considered.

20.3. Prevention and Management of Patient Aggression

Nurses receive training in the prevention and management of challenging behaviour, such as patient aggression. These courses combine theoretical material and practical techniques, such as restraint techniques and breakaway.

Staff have been noted to feel safer and more confident in managing aggression following these training courses (Bowers, Nijman, Allan, Simpson, Warren et al., 2006; Gertz, 1980; Rixtel, Nijman & Janson, 1997).

However, this does not suggest that incidents of patient aggression are being managed better. These training events rarely encourage staff to think about their attitudes and subjective experiences, and how this can influence behavioural responses.

Staff's beliefs have been noted to influence the containment methods used (Dickens et al., 2013). Attitude types have also been found to influence the application of unnecessary and restrictive strategies (Bowers, Alexander, Simpson, Ryan & Carr-Walker, 2007; Jansen, Dassen, Burgerhof, & Middel, 2005b; Jansen, Dassen, & Moorer, 1997; Jansen, Middel, & Dassen, 2005a). Moreover, nurses rarely see their behaviour as a contributing factor to patient aggression and violence (Duxbury, 1999; Duxbury, 2002; Duxbury & Whittington, 2005). This suggests the need to consider nursing staffs' attitudes regarding the functions of patients' aggression to move towards positive and proactive working.

The inclusion of the positive behavioural support (PBS) principles in services caring for vulnerable people is featured within the Department of Health (DOH; 2014) guidelines. The PBS framework endorses the use of positive and proactive approaches, whilst rejecting the application of aversive behavioural interventions. The PBS philosophy emerged in response to the high rates of punitive behavioural interventions and the lack of guidance for the intervention strategies of Applied Behaviour Analysis (Allen, 2009; Emerson & McGill, 1989). It is a conceptual framework that integrates behavioural,

educational and ecological practices, as well as considers the gene-behaviour relationships and the influence of psychological states on behaviour (Allen, 2009). There is little research examining the benefits of implementing the PBS framework in nursing practice.

20.4. Patient Information

Patient A is a service user detained under Section 3 of the Mental Health Act (MHA; 1983), who has a diagnosis of ASD and ID (full-scale Intelligence Quotient of 64). Patient A has significant deficits in behavioural, emotional and social functioning, and requires treatment within a medium secure specialist service.

Patient A has resided in institutional settings for most of his life, and in 1981 he was admitted informally to a low secure ward. The patient has been in and out of institutions since this date due to his challenging behaviours. However, during that period he was very violent and aggressive, and the incidents of these escalated until he was moved to a more secure environment in 1994.

20.5. Patient Referral

Patient A was referred by his clinical team following increased frequency of verbal aggression and physical aggression towards others. Patient A was originally referred to complete a Cognitive Behavioural Therapy (CBT) skills group but was deemed unsuitable because of his low level of cognitive

functioning and poor interpersonal skills. Therefore, Patient A was recommended to complete an individualised programme aimed to increase his understanding of the basic principles of CBT, before commencing treatment for his anger and aggression. Following this preparatory work, Patient A displayed higher motivation to engage in the core therapy stage, and he exhibited a greater insight into CBT based skills.

20.6. Aims

This case study aimed to explore the benefits of conducting a direct staff-level intervention that utilises the PBS philosophy when targeting psychiatric nurses' attitudes towards patient aggression. It was hypothesised that supporting the nursing staff in using proactive and preventative approaches would have a positive impact on how staff evaluate patient aggression, along with marked reductions in the frequency and intensity of patient aggression.

21. Methods

21.1. Sample

21.1.1. Patient A

Patient A resided on a ward with 14 other patients, all who have ASD as the primary diagnosis. The intervention described in this report was done directly with Patient A.

21.1.2. Staff

Two staff members consented to take part in the study. Mr N (Healthcare Worker) was selected because Patient A mentioned strained interactions. Ms S was chosen because she was Patient A's Named Nurse. To protect staff identity, no further demographic data were collected.

21.2 Measures

An array of indirect and direct assessment methods was used. These sources included;

- Observation
- Functional analysis
- Pre-and Post-assessments

21.2.1. Observation

A structured assessment approach was used to systematically collect and synthesise data relating to the degree of Patient A's aggression. As stated in Chapter Two, reliable measures of aggressive challenging behaviour are required if interventions aimed at reducing presenting difficulties are to be formally evaluated.

The Modified Overt Aggression Scale (MOAS; Sorgi, Ratey, Knoedler Markert & Reichman, 1991) was used to identify patterns in overt behaviour; the severity, frequency and duration and of the aggressive acts. This scale was completed three months before the intervention (April to June 2014) and

during the intervention (July 2014 to April 2015). This scale measures four types of patient aggression: verbal aggression; physical aggression towards others; physical aggression towards objects; and physical aggression towards self. There are four levels for each type of aggression, which represents the severity. For instance, aggression against objects ranged from zero 'absent' to 'setting fires and throwing objects dangerously' in level four. The inter-rater reliability of the MOAS was found to be moderate (0.58) in a study assessing aggressive incidents in psychiatric hospitals (Kho, Sensky, Mortimer & Corcos, 1998). The MOAS has been found to be useful when measuring challenging behaviours in patients with ASD and ID (Ratey & Gutheil, 1991). The reliability of the MOAS for people with ID and aggressive challenging behaviour was high for verbal aggression (ICC= 0.90), physical aggression against others (ICC= 0.90), and for the total MOAS score (ICC=0.93). The other two subscales were rated as good to moderate range (Oliver, Crawford, Reece & Tyrer, 2007). Consequently, this scale has been considered a useful measure to evaluate the effectiveness of interventions aimed at reducing aggressive behaviours (Oliver et al., 2007) and was therefore used in this study.

Patient A's presenting problems largely consisted of impulsive outbursts of verbal aggression (Level 1: shouts angrily, curses mildly, or makes personal insults) and physical aggression towards others (Level 2: strikes, pushes, scratches, pulls the hair of others without injury). Patient A's aggressive behaviour seemed to be relatively short lived.

21.2.2. Functional Analysis

A semi-structured interview was conducted with Patient A to identify the functional link between proximal antecedent conditions, problematic and non-problematic behaviour, and the consequence within the social context. Other members of the multi-disciplinary team (MDT) and nursing team were also consulted.

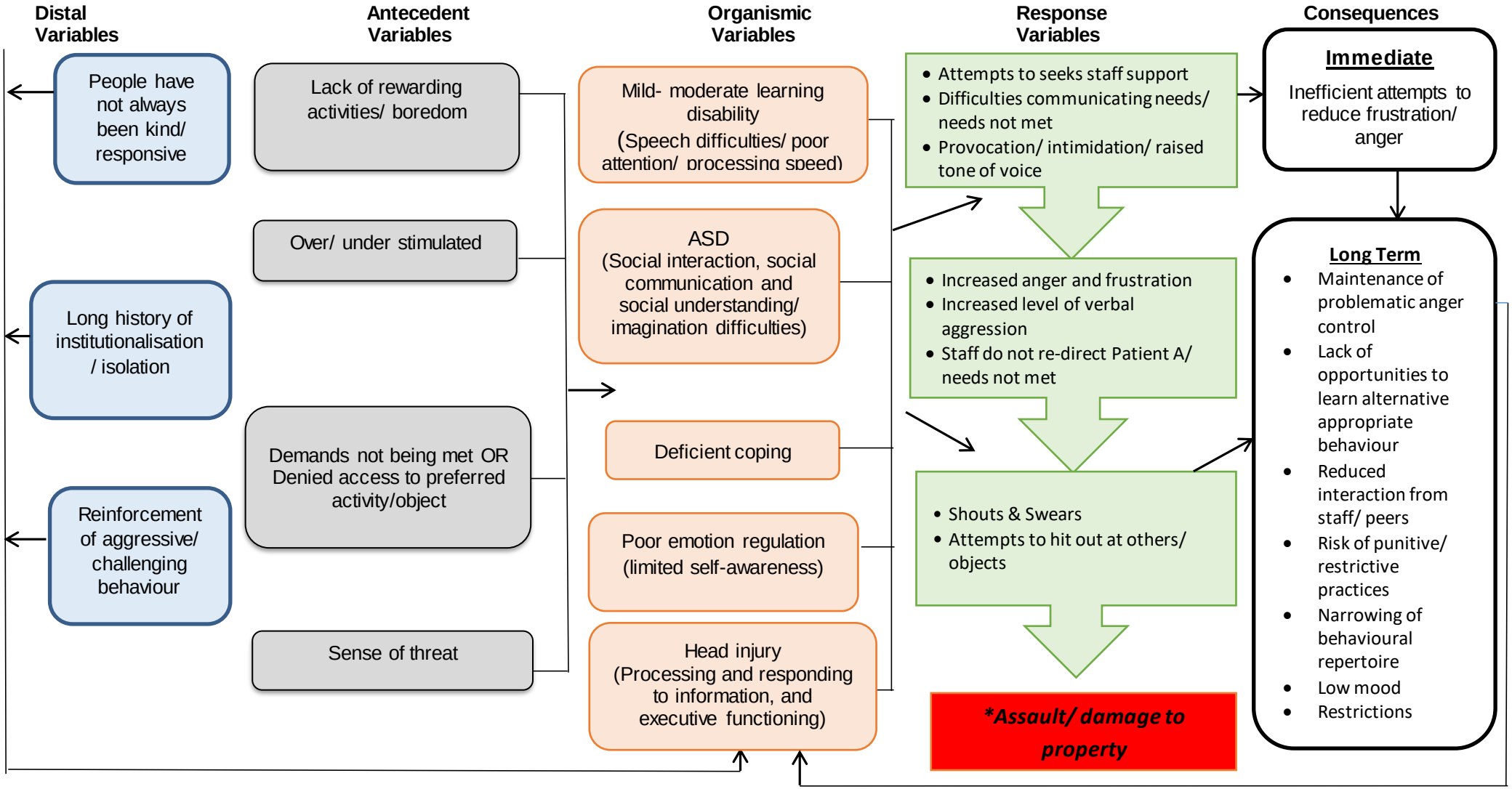
A number hypotheses related to possible functions of Patient A's aggressive behaviour were identified (see Figure 3). These factors included;

- Avoidance; needing to escape an aversive situation (e.g. perceived confrontation from peers and staff)
- Revenge seeking
- Obtaining a tangible object when denied (e.g. contraband)
- Stimulation (e.g. when Patient A is not engaged in rewarding or meaningful activities or interactions, or when he becomes over-stimulated)

Noteworthy, some of the clinical decisions made by some of the nursing staff often exacerbated Patient A's aggression, i.e. raised tone of voice, closed body language, and the management strategies used. This appeared to perpetuate Patient A's threat perception, which subsequently increased the risk of aggression and the use of restrictive interventions. Lack of consistency between staff was also causing Patient A some difficulties.

Each of these themes demonstrates shared properties; Patient A was using his behaviour to influence his environment in functional ways.

Figure 4: A Clinical Pathogenesis map for Patient A's Challenging Aggressive Behaviour adapted from: Sturmey, P., (2008)



Protective Factors: Good language skills, family support, seeks staff support, values independence, engages positively in therapies, and has a number of hobbies.

21.2.3. Psychometric Assessment

Following the functional analysis interview, three psychometric assessments were administered. These included;

- The State-Trait Anger Expression Inventory-2 (STAXI-II; Spielberger, 1999)
- Novaco Anger Scale and Provocation Inventory (NAS-PI; Novaco, 2003)
- The Attitude Toward Aggression Scale (ATAS; Jansen, Dassen, Burgerhof & Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b)

Patient Assessments

The batch of assessments outlined below was used to examine anger-regulatory problems. Anger is a subjectively experienced emotion, therefore self-report measures are deemed an appropriate method of assessment (Eckhardt, Norlander, & Deffenbacher, 2004; Novaco, 1994). However, self-report measures are at risk of obtaining socially desirable responding, therefore multiple sources were used to support the validity of the inferences made.

STAXI-II

The STAXI-II was administered to measure the intensity of Patient A's anger and his disposition to experience anger. This scale contains 57-items, which are rated on a four-point Likert scale and

are categorised into six scales; five subscales and an Expression Index. This STAXI-II has been deemed one of the most widely used tool in research and clinical settings (Culhane & Morera, 2010; Novaco & Taylor, 2004). The STAXI-II has been found to have good validity and reliability (Schamborg, Tully & Browne, 2015). Normative data for the STAXI-II include males and females in a hospitalised psychiatric population (n = 276; 105 women, 171 men), but it has not been validated in respect of the Developmental Disabilities population.

It was indicative that Patient A was experiencing intense feelings to express his anger verbally and physically, and he frequently experienced angry feelings. He also perceived to be treated unfairly by others. Patient A scored high for directly expressing his angry feelings towards others' or objects, he was quick-tempered, and he readily expressed his anger with little provocation.

NAS-PI

The NAS-PI is an 85-item assessment that is divided into two parts; part A and part B. Part A contains 60-items to assess the individual's experience of anger. Part B is 25-items and examines the types of situations that may arouse an anger response. It also provides an inconsistent responding index which shows if the participant is responding falsely. Independent studies have confirmed the validity

of this assessment with a variety of populations, including those individuals with Developmental Disabilities (e.g., Baker, Van Hasselt & Sellers, 2008; Moeller, Novaco, Heinola-Nielsen & Hougaard, 2015; Novaco & Taylor, 2003; Novaco & Taylor, 2004).

This NAS assessment indicated that Patient A was suffering from significant distress. The scores suggested that Patient A was sensitive to the threat of mistreatment by others and this may be associated with feelings of vulnerability. Once activated, his aggression was prolonged and revivified by rumination about the provocation. Patient A's capacity to process information efficiently and act prudently may be diminished under conditions of high arousal. Also, Patient A's behaviour was likely to be impulsive because the high emotional arousal overrode any inhibitory control, along with poor problem-solving skills.

The PI assessment gave little indication of what made Patient A angry, so the information obtained from the functional analysis was used. This outcome may have been related to Patient A's ASD-specific impairments, as he may have found talking about hypothetical anger difficult, and would have related more to real life situations. Novaco (2003) noted the importance of considering all available information about the individual when verifying self-reported test scores.

Nursing Assessment

Nursing staff management techniques often exacerbated Patient A's aggression. Consequently, the ATAS was administered to access their evaluations of the function of Patient A's aggression. See Chapter Three for information on the psychometric properties of the ATAS. The 18-item version of the ATAS (Jansen et al., 2005b) was utilised which measures five types of attitudes;

1. Offensive: Viewing patient aggression as insulting, harmful, unpleasant, and unacceptable
2. Communicative: Viewing aggression as a signal resulting from the patient's powerlessness and them attempting to enhance the therapeutic relationship
3. Destructive: Viewing aggression as a sign of threat or an actual act of physical harm
4. Protective: Viewing patient aggression as protecting self, or territory
5. Intrusive: Viewing patient aggression as the expression of an intention to hurt others

Results from this assessment showed that both Ms S and Mr N perceived Patient A's aggression as destructive and less as a communicative component.

22. Intervention

The intervention was divided into two distinct stages. The first stage involved Patient A identifying effective emotion management skills to help regulate emotional arousal, and to replace challenging behaviours with alternative pro-social strategies. The second stage involved Patient A and two staff members that explored the benefit of incorporating staff-level intervention.

22.1. Stage One: Individual Work with Patient A

The first stage was loosely based on Taylor and Novaco (2005) anger treatment manual, which utilise the CBT principles. The aim was to help Patient A regulate and manage his anger arousal. The cognitive behavioural framework is deemed an effective approach when working with individuals with ASD (Attwood, 1998, 2003; Heflin & Simpson, 1998; Paxton et al., 2007). Modifications can be made to meet the cognitive needs of individuals to increase responsivity (Kellner & Tutin, 1995).

Patient A completed 13 individual sessions (July 2014 to December 2014), which consisted of cognitive re-structuring, anger arousal reduction, behavioural skill acquisition, and behavioural modification (see Appendix F). We then actively developed a set of coping strategies that Patient A could use when angered. This provided Patient A with the tools to arrange the environment to help

increase positive mood and to modify the situations associated with negative mood.

Generalisation training was done by conducting scenario tasks, as well as on-going encouragement to apply his skills to his living environment. The sequential modification approach was also used, which involved the author observing evidence of generalisation on the ward and applying further intervention when needed.

22.2. Stage Two: Integration with Patient A, Ms S and Mr N

The second stage of treatment involved Ms S and Mr N attending sessions with Patient A. These sessions ran from January to April 2015 and were largely based on the PBS philosophy. Patient A's staff team were not sufficiently trained in functional analysis or PBS; therefore, it is doubtful that they felt confident in implementing a support approach based on the philosophy of prevention, deceleration and avoidance of harm.

Within these sessions, Ms S and Mr N were invited to discuss key ideas that promote the use of positive and proactive strategies when dealing with an aggressive patient (see Appendix G). The staff were encouraged to reflect on how their attitudes may influence their clinical decision-making and judgement. This led to the development of a PBS plan (see Appendix H; see Appendix I), which

alludes to examples of how Patient A's behaviour appeared to be maintained and reinforced by how staff were responding. In addition, preventative strategies were identified to reduce the need to use restrictive interventions to manage Patient A's challenging behaviour.

The importance of generalisation was also discussed in terms of maintaining behavioural change. Two strategies were taken from Stokes and Baers (1977), which were 'program common stimuli' (i.e. adding a common stimulus into the initial training stage that will be present in the generalised setting) and 'introducing natural contingencies of reinforcement' (i.e. applying reinforcement following effective behavioural management). Staff were also advised to use verbal prompts to encourage Patient A to apply his coping strategies when emotionally aroused, and to apply intermittent reinforcement to strengthen behavioural change.

23. Results

The assessments used at the pre-intervention stage were re-administered with the participants. The available information from Patient A's electronic records was also analysed to identify any change in behaviour.

23.1. Patient Assessments

23.1.1. Post-assessment following Stage One

Both the STAXI-II and the NAS-PI were re-administrated following stage one.

STAXI-II

The difference between the pre-assessment scores (M= 72.420, SD= 21.151) and post-assessment scores (M= 50.000, SD= 15.374) were statistically significant (t(11)=3.781, p=.003, RCI=>1.96). As displayed in Table 13, Patient A's scores continued to fall within the normal range for State Anger (S-Ang). This result indicates no significant problems with annoyance, irritation, anger, or fury.

There was a significant reduction in Patient A's inclination to be physically aggressive (S-Ang/P) and to express his anger verbally. Patient A had learnt alternative ways to manage his anger arousal in a pro-social way following stage one**.**

Scores indicated no significant change in Patient A's angry temperament (T-Ang/T), or his perception of being treated unfairly (T-Ang). This outcome suggested that Patient A continued to express his angry feelings with little provocation.

NAS-PI

There were no clinically significant high scores (see Table 14). The difference between the pre-assessment scores (M=67.500, =10.445) and post-assessment scores (M=56.167, SD=2.639) was not statistically significant (t(5)=2.153, p=.084). There were no inconsistencies in item responding, according to the Inconsistency Responding Index.

23.1.2. Post-assessment following Stage Two

The STAXI-II and NAS-PI assessments were re-administered following stage two to see if the changes had been maintained.

STAXI-II

The difference between the post-assessment scores following stage one (M= 50.000, SD= 15.374) and following stage two (M= 52.916, SD= 22.908) were not statistically significant (t(11)=-.430, p=.675). As presented in Table 13, Patient A's scores continued to fall within the normal range for State Anger (S-Ang), and he readily expressed his angry feelings (T-Ang/ T) and perceived others to be treating him unfairly (T-Ang). Also, there were elevated scores in his expression of anger (AX-0).

NAS-PI

Scores were between the average range to high; there were no clinically significant high scores (see Table 14). The difference between the post-assessment scores following stage one (M=56.167, =2.639) and stage two (M=60.167, SD=7.278) were not statistically significant (t(5)=-1.178, p=.292). There was no inconsistency in responses.

Table 13. Patient A's STAXI-II Pre-and Post-Intervention Scores

Subscale	**Pre-Treatment %ile scores (T-Score)**	**Post-Treatment %ile scores (T-Score)**	**Post- Treatment with nursing staff %ile scores (T-Score)**
State Anger			
S-Ang	70 (52)	35 (44)	30 (420
S-Ang/F	35 (44)	25 (42)	35 (44)
S-Ang/V	**90* (60)**	55 (46)	35 (40)
S-Ang/P	**75* (48)**	50 (42)	50 (42)
Trait Anger			
T-Ang	**95* (66)**	**75* (56)**	**75* (56)**
T-Ang/ T	**95* (70)**	**75* (56)**	**85* (62)**
T-Ang/ R	55 (50)	45 (46)	30 (44)

Anger Expression and Anger Control			
AX-0	**>99* (76)**	35	**85* (62)**
AX-I	65 (54)	55	55 (50)
AC-O	40 (46)	60	25 (42)
AC-I	70 (58)	50	50 (48)
AX Index	**80* (40)**	40	**80* (40)**

**significant high score (≥75th %ile for Male Psychiatric Patients Ages 18 years and Older)*

Table 14. Patient A's NAS-PI Pre-and Post-Intervention Scores

Subscale	**Pre-Treatment %ile scores (T-Score)**	**Post-Treatment %ile scores (T-Score)**	**Post- Treatment with nursing staff %ile scores (T-Score)**
Total NAS	**>99* (75)**	70 (55)	88 (62)
COG	96 (68)	67 (54)	88 (62)
ARO	**>99* (76)**	70 (55)	92 (64)
BEH	**>99* (76)**	67 (54)	73 (56)
REG	81 (59)	50 (59)	97 (69)
Total PI	55 (51)	67 (60)	40 (48)

* Clinically *significant high score (T-score ≥70)*

MOAS

The data evidenced a significant reduction in the frequency and intensity of verbal aggression and physical aggression following

stage two. This result suggests that the staff-focused intervention that utilised the PBS philosophy had a positive effect on Patient A's behaviour (see Figure 4; Figure 5; Figure 6). There were no periods of seclusion or restraint techniques used to manage Patient A's aggression during the test period.

Figure 5. MOAS for Verbal Aggression

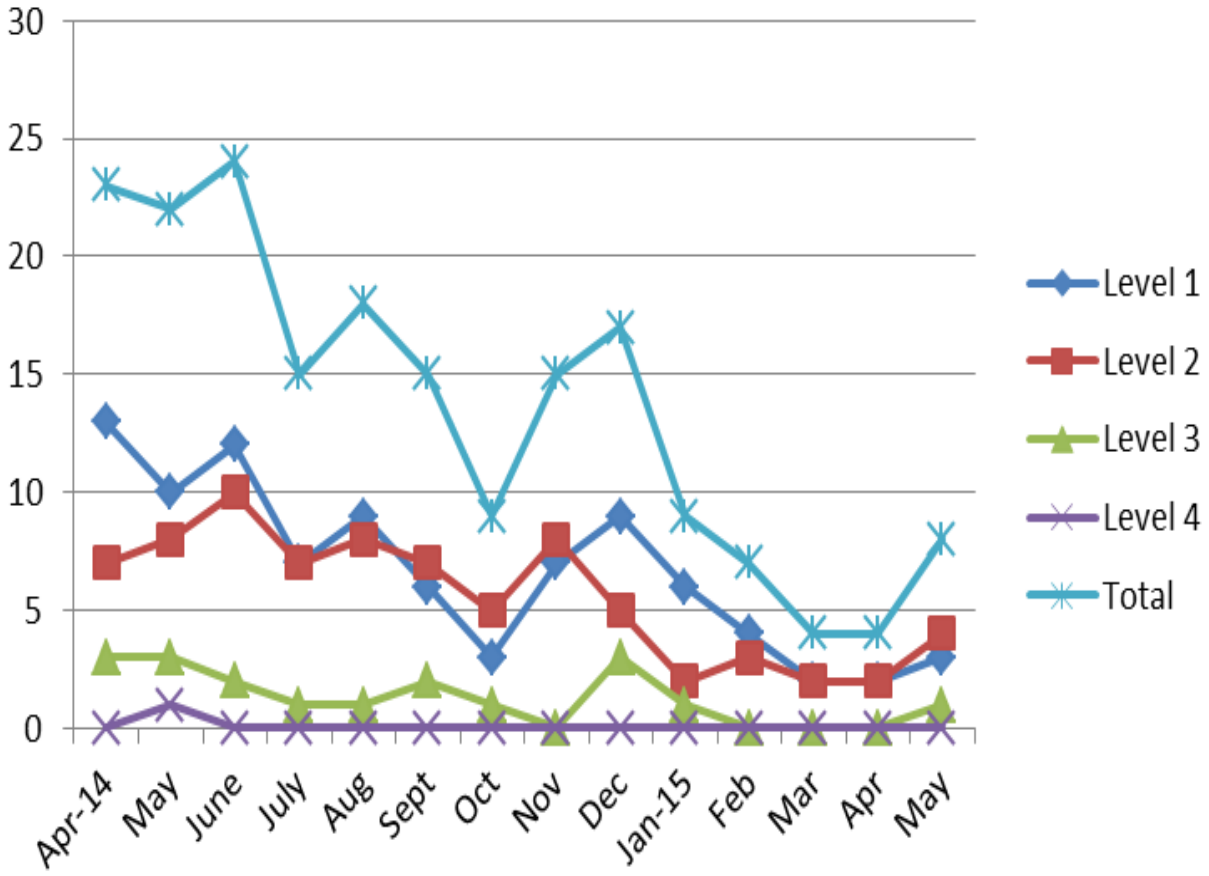


Figure 6. MOAS for Physical Aggression towards Others

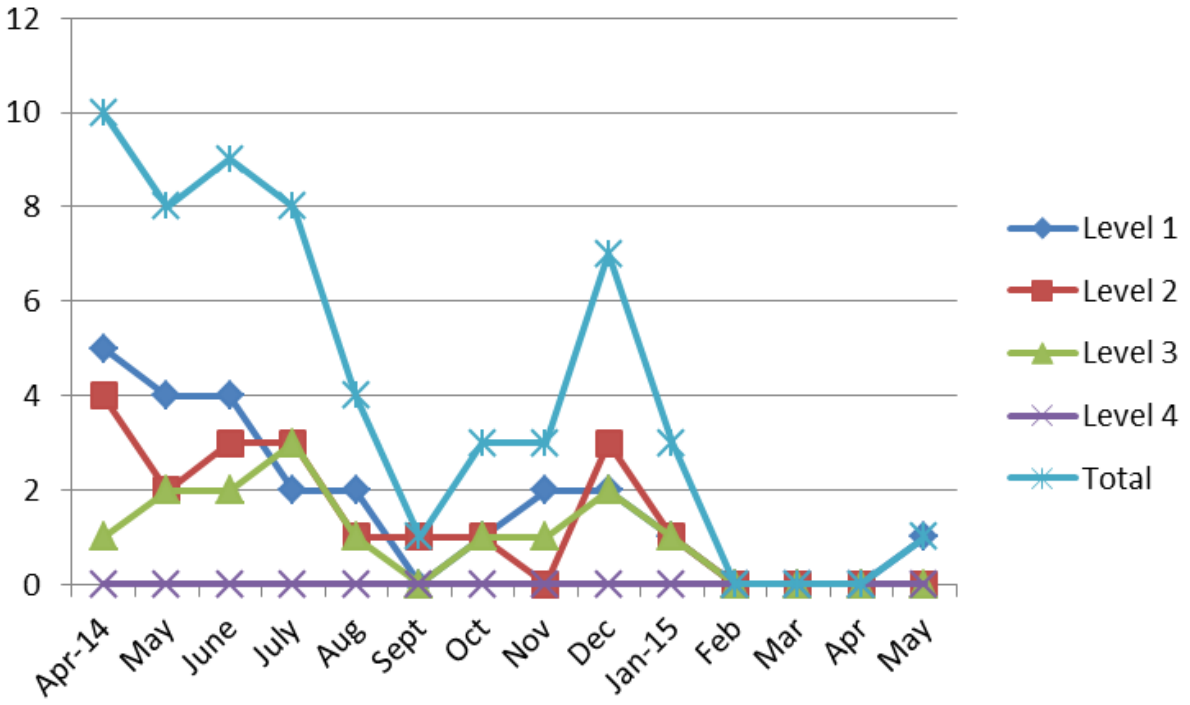
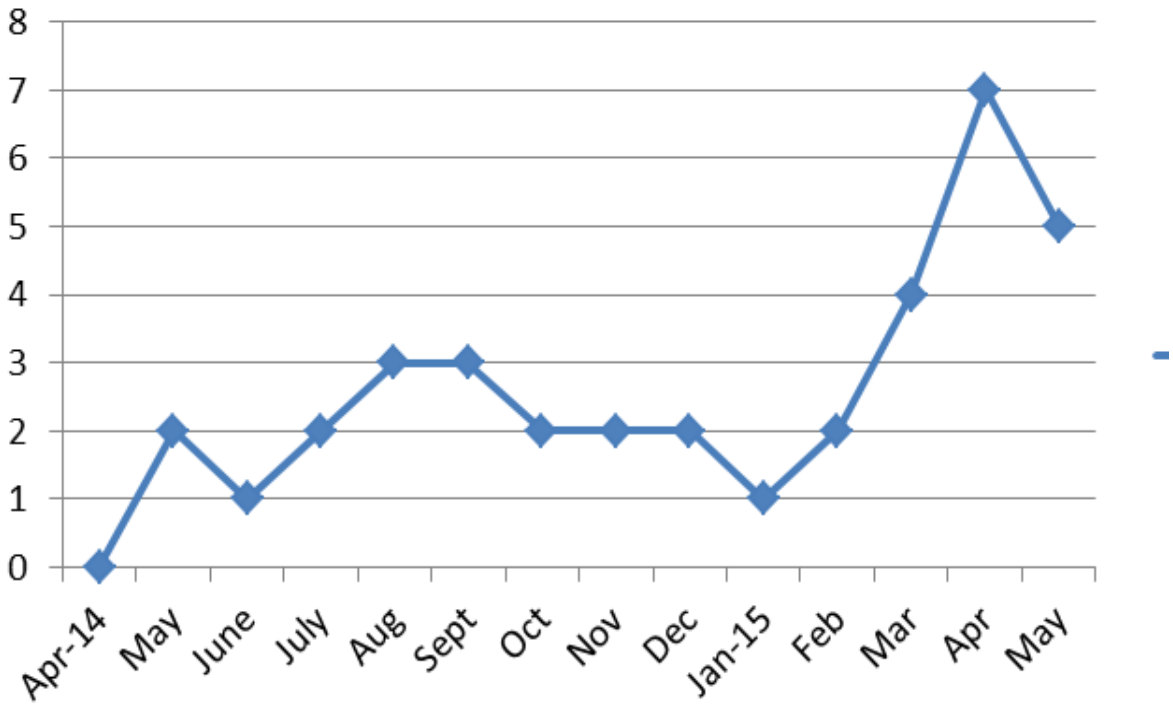


Figure 7. Electronic Entries of Patient A's Ability to Cope



22.2. Staff Assessment

The ATAS was re-administered following stage two (see Table 15).

Table 15. Attitude Toward Aggression Scale scores

Subscale	Pre-Treatment Scores Average	Post-Treatment Scores Average
Ms S		
Offensive	2.57 (uncertain)	2.29 (disagree)
Communication	1.67 (disagree)	2.66 (uncertain)
Destructive	4.00 (agree)	2.33 (disagree)
Protective	2.50 (uncertain)	2.00 (disagree)
Intrusive	3.33 (uncertain)	2.00 (disagree)
Mr. N		
Offensive	2.00 (disagree)	2.43 (disagree)
Communication	1.33 (strongly disagree)	2.33 (disagree)
Destructive	4.33 (agree)	2.67 (uncertain)
Protective	2.00 (disagree)	3.00 (uncertain)
Intrusive	2.00 (disagree)	2.00 (disagree)

The pre-assessment indicated that both Ms S and Mr N perceived patient aggression as destructive, and less as a communicative component. No significant differences were found between pre- and

post-scores for Ms S (t(4)= 1.202, p=.296) and Mr N (t(4)=-.314, p=.769).

Following stage two, Ms S perceived patient aggression as possibly having a communication function (M=2.66). Ms S no longer perceived patient aggression as offensive (M= 2.29), intrusive (M= 2.00), or having a protective function (M= 2.00).

Post-stage two scores indicate that Mr N continued to perceived patient aggression as possibly having a destructive (M=2.67) function and not for communication purposes (M= 2.33). There was not change in the intrusive domain or the offensive domain.

The evaluation form (see Appendix J) completed by Mr N and Ms S indicated that the stage two intervention increased their awareness of the factors maintaining Patient A's aggression. They also noted feeling better equipped to help alter the environment to prevent Patient A's emotional arousal escalating, therefore using positive and proactive approaches.

24. Discussion

24.1. Summary of Work

This case study combined patient-specific factors and staff-level factors related to Patient A's aggressive behaviour. The aim was to

enhance Patient A's ability to manage during anger-provoking situations and to support staff in using proactive approaches that are most likely to result in marked reductions in the use of restrictive interventions.

The intervention involved two distinct stages; stage one and stage two. The first stage utilised the CBT model, which aimed to increase Patient A's insight into his aggression and develop strategies to help him regulate his anger arousal. The second stage invited two members of the nursing team. These sessions utilised the PBS philosophy, along with consideration of how attitudes can influence clinical decision making.

Quantitative psychometric data and staff observations were used to measure change. There was a significant difference between pre- and post-scores for the STAXI-II assessment after stage one, which indicated the intervention was having a positive effect. There was also a reduction in aggressive incidents following stage one. However, there was a slight increase during December. Seasonal change is a situational variable found to be related to violence (Paavola & Tiihonen, 2010). Patient A also struggled to generalise his coping skills to the ward environment and he tended to attribute the cause of his anger to the faults of others.

MOAS data following stage two evidenced a further reduction in the frequency and intensity of physical aggression towards others and reductions in the frequency of verbal aggression. There was also a dramatic increase in Patient A's ability to cope with anger-provoking situations.

Despite no significant results in the pre- and post-ATAS scores, Ms S no longer perceived patient aggression as destructive, and that Patient A's behaviour may have a communication purposes. There was a slight change in how Mr N perceived patient aggression. The differences between Ms S and Mr N scores may be due psychosocial confounders. For instance, a study found that the most experienced staff agreed less often that aggression was a functional behaviour (Janson et al., 2006a), and that female staff view patient aggression differently to male staff (Crouch & Alpert, 1982). However, possible predictors of patient aggression go beyond the aims of this case study.

These results imply that the stage two intervention had a positive impact overall. The remaining treatment needs include further training to help staff gain a better understanding of patient aggression, and promoting the use of the PBS philosophy. It was hoped that Mr S and Mr N could model the supportive strategies identified during stage two to their colleagues.

24.2. Practical Implications

Given that patient aggression is a common problem within psychiatric inpatient settings (Daffern & Howells, 2002; Daffern, Mayer & Martin, 2004) and it is highly prevalent in those with Developmental Disorders (Novaco et al., 2004), designing effective management interventions is crucial. Assessment and treatment of aggression should go beyond the manifestation of underlying pathology and consider factors related to the environment and ward staff (James, Fineberg, Shah & Priest, 1990). Both patients and staff behave in relation to their psychological system within the collective social system, which both requires an equal amount of attention when exploring behaviour.

According to the DoH (2014) guidelines, the philosophy of the PBS should be embedded across services where there is a risk of restrictive practices being used. Therefore, it is recommended that training in PBS is incorporated into the management of patient aggression training, in addition to organisations policies and procedures. It is also recommended that nursing staff should be provided with a space to reflect on their attitudes, cognitions, emotions and behaviours. Clinical supervision and reflective practice sessions could also encourage this to happen.

24.3. Strengths and Limitations

This case study presents key ideas that consider the importance of developing a less restrictive future for patients living in psychiatric services. The main strength of this case study is the various methodologies used to evaluate change. It also incorporated a formulation driven approach, which has been identified as a key component to anger and aggression treatment (Howells, 1998).

The main limitation was the lack of available assessments and anger-specific interventions that have been standardised on the ASD population. Adaptions were made to ensure the session content was suitable for Patient A. Consequently, caution was applied when the results were interpreted. More research is needed to develop clinical resources that have been normed on the ASD population to provide more accurate and valid comparisons and evaluations of intervention methods. This, in turn, will provide clinicians with the scope to alter areas of treatment which are not benefiting from the current methods being applied.

There was a risk of socially desirable responding as both Patient A and the staff members were fully aware of the nature of the research. Other information was used when interpreting the results from the psychometric assessments, which included electronic entries completed by nursing staff. However, this method relies on

the quality of documentation, and this has consistently been found to be failing to meet recommended standards (Prideaux, 2012). Incidents of aggression and violence are underreported in health institutions, and the reasons for this is possibly due to the dearth of accurate recording systems, or nurses viewing the behaviour as 'part of the job' (Bilgin, 2009). Therefore, the results from the MOAS may be an underrepresentation of Patient A's behaviour.

There are additional situational variables that have been found to have an impact on patient aggression. Even though such changes in physical health and medication were not known, they cannot be ruled out. Also, research has identified the prevalence rates of violence within different environmental settings, and the prevalence was found to be higher among institutionalised individuals (Sigafoos, Elkins, Kerr & Attwood, 1994). This infers that there may be something about residing in institutional services that make patient aggression more likely.

24.4. Future Research

Designing randomised controlled trials to evaluate the efficacy of organisational led strategies promoting the PBS framework is difficult due to the variability in the organisational culture and inpatient and staff behaviour (Gaskin, Elsom & Happell, 2007). Therefore, a large-scale version of this pragmatic approach would

enable care services to assess the clinical utility of incorporating the PBS philosophy into care provisions. A time-wise analysis could be used to explore the difference between pre- and post-PBS implementation on staff and patients' behaviour, staff attitudes, and the use of restrictive interventions.

It may also be beneficial for future research to look at staff attitudes towards individual types of patient aggression and violence, for example, physical harm to staff, objects, peers, or self, rather than generalising them into one category. It may be that staff perceive subtypes of aggression differently, therefore managing the behaviour differently. This knowledge could further inform staff-level interventions, such as training and supervision.

24.5. Conclusion

The aim of this case study was to explore the benefits of conducting a direct staff-level intervention that utilises the PBS philosophy when targeting psychiatric nurses' attitudes toward patient aggression. Key ideas that consider the importance of developing a less restrictive future for patients are presented. A focus on staff-level factors in addition to other situation variables and patient factors may provide an additional means for managing patient aggression in psychiatric settings.

Chapter Six

Discussion and Conclusion

25. Discussion

25.1. Thesis Summary

The main purpose of this thesis was to explore and expand the knowledge base of nurses' attitudes toward patient aggression in secure psychiatric hospitals. Patient-staff interactions provide a complex set of circumstances that can lead to patient aggression, and these interactions are associated with 39% of violent and aggressive incidents in psychiatric facilities (Renwick, Stewart, Richardson, Lavelle, James et al., 2016; Swain & Gale, 2014). Therefore, understanding nurses' attitudes is important when designing strategies that aim to improve the management of patient aggression.

Traditionally, patient aggression has been managed by using traditional methods that include physical restraint, seclusion and rapid tranquilisation. Confinement of psychiatric patients has been described as a form of social control over vulnerable individuals who are already excluded from society (Morrall & Muir-Cochrane, 2002). Recently, the Department of Health (DoH) produced a set of key recommendations, which incorporate the positive behaviour support (PBS) philosophy. The current government agenda is to reduce the

pressure of using restrictive interventions in settings where aggression occurs. For organisations to embed this approach into practice, a shift in the nursing culture is required.

This thesis has targeted nurses' attitudes in psychiatric secure hospital settings. It has examined the detrimental effects that patient aggression can have on nurses' psychological and emotional well-being. The development of the different types of attitudes towards patient aggression has also been explored, along with strategies that can help encourage nurses to adopt the least restrictive principles when managing patient conflict. The four questions of this thesis are:

1. What does the literature suggest about the psychological and emotional effects of inpatient aggression on nurses working in psychiatric settings?
2. What factors are associated with nursing staff's attitudes towards patient aggression in UK psychiatric secure hospitals?
3. Is the Attitude Toward Aggression Scale (ATAS; Jansen, Dassen, Burgerhof & Middel, 2006a; Jansen, Dassen & Moorer, 1997; Jansen, Middel & Dassen, 2005b) a suitable measure for the primary study in terms of assessing nurses' attitudes towards patient aggression?

4. What are the benefits of using a staff-level intervention that utilises the PBS philosophy when targeting psychiatric nurses' attitudes towards patient aggression?

   A recent review distinguished seven categories of consequences related to workplace violence within the healthcare sector (Lanctôt & Guay, 2014). Likewise, a meta-analysis explored the non-somatic effects of patient aggression on nurses (Needham, Abderhalden, Halfens, Fischer & Dassens, 2004). However, A more up-to-date and in-depth analysis was needed to review the psychological and emotional effects of inpatient aggression on psychiatric nurses. Exposure to patient aggression was found to have detrimental effects on nursing staff in terms of their psychological and emotional wellbeing. Exploring nurses' experiences of patient aggression is important when considering how organisations are to embed the recommendations featured in the DoH (2014) guidelines into nursing practice. Of particular interest was the finding that exposure to patient aggression impacted staffs' attitudes towards the patient and the organisation (Chen et al., 2005; Reininghaus et al., 2007). Following this review, it was proposed that further research is needed to explore nurses' attitudes towards patient aggression in UK secure psychiatric hospitals (see Chapter Four and Chapter Five).

The quality of the included studies in the review was variable, and there were limitations with regards to the sampling and response rates. The main reflection from the systematic review was the variety of instruments used to measure patient aggression. This variation questions the predictive validity of the measurement of patient aggression in psychiatric hospitals. This reflects the complexity in the area of patient aggression, which makes designing research difficult. It is also important to note that the majority of psychometrics available to measure patient aggression are primarily based on nursing observations. Nursing staff may be motivated to bias their response to conform to socially acceptable values, avoid criticism or gain social approval (Huang, Liao & Chang, 1998; King & Brunner, 2000), which is likely to be dependent on their attitudes and intentions (Beck & Ajzen, 1991). Consequently, methods based solely on self-report measures should be treated with caution, and it would be beneficial to implement the most appropriate methods of control to avoid bias (King & Brunner, 2000). This reflection was considered in subsequent chapters.

The ATAS (Jansen et al., 2006a; Jansen et al., 1997; Jansen et al., 2005b) was examined in Chapter Two in preparation for the following two chapters. The ATAS was developed for use with healthcare professionals who are exposed to patient aggression. This tool has been applied to staff working in the UK (Hui, 2015;

Jansen et al., 1997; Jansen et al., 2005b; Jansen et al., 2006a; Jansen et al., 2006b; Jonker et al., 2008). The validity and reliability of the ATAS were critically reviewed, and questions were raised regarding the face validity, content validity, predictive validity, concurrent validity and construct validity. The internal reliability was deemed satisfactory, whereas the test-retest reliability is yet to be explored. Moreover, the ATAS is at risk of obtaining high levels of socially desirable responding due to the instrument being a self-report measure. To prevent this from happening, it is recommended that evidence from multiple sources is obtained to support the inferences drawn. Furthermore, the ATAS was developed using a psychiatric non-forensic sample, although it has recently been used in research exploring nurses' attitudes in a high secure forensic hospital (Hui, 2015). Therefore, validation within forensic sample may be beneficial.

Despite the limitations, the ATAS is recognised as a valuable instrument to measure nurses' attitudes towards patient aggression in healthcare settings (Jonker et al., 2008). The ATAS was deemed suitable in this thesis as it specifically focuses on the overall evaluations of the behaviour, rather than staffs' cognitions about the causes of patient aggression. Moreover, the ATAS was developed using the assumptions made by the theory of planned behaviour (TPB; Ajzen, 1991). This model is referred to throughout

this thesis as it considers the relations among beliefs, attitudes, behavioural intentions and behaviours, and has been applied to the field of nursing.

The empirical research discussed in Chapter Four was conducted to explore nurses' attitudes towards patient aggression in UK secure psychiatric hospitals. The previous chapters guided the design of this study in many ways. As explained above, the systematic review identified that exposure to patient aggression influenced staffs' attitudes towards the patient and the organisation. Furthermore, the psychometric critique identified a suitable instrument that can be used to examine nurses' attitudes in settings where patient aggression occurs. Staff's evaluations of the behaviour can provide a good indication of the type of management strategies being applied to contain the aggression, an assumption that is in line with the TPB model.

A convenience sample was used for this primary study. Participants (qualified nurses and healthcare workers) were recruited from four private hospitals and one NHS hospital. The quantitative analysis identified that staff mainly perceived patient aggression as destructive. The significant predictor of the destructive attitude domain was found to be working with the female client group. The most prevalent predictor was verbal aggression; experiencing high

levels of verbal aggression reduced the likelihood of staff perceiving aggression as communicative, protective, and intrusive. There is a lack of comparable studies using the ATAS within secure psychiatric hospitals. However, these findings supported the results obtained from studies conducted in non-forensic psychiatric services (Jonker et al., 2008). Similarly, nurses working in a Nigerian psychiatric hospital tended to view patient aggression as offensive, destructive, and intrusive, and they were less likely to view the behaviour as a means of communication, or as serving a protective function (James, Isa & Oud, 2011). As already noted, the view that patient aggression is offensive, destructive, or intrusive can impact on how staff respond to patient aggression (Irwin, 2006; Jansen et al., 2006a). Viewing patient aggression in this way increases the likelihood of staff reacting to the aggressive behaviour, rather than developing healthy systems of support to prevent further escalation of risk.

The limitations of the primary study included over-reliance on the use of self-report measures and social desirability responding. This was difficult to control for because of the research design used. Therefore, caution was applied when interpreting the results. Despite these flaws, the study provides useful information regarding the types of nursing attitudes in UK secure psychiatric hospitals and

the predictors of the types of attitude domains. Therefore, the findings from this study adds to the current literature.

A case study design was used to explore the benefits of including a staff-focused intervention, following a tailored anger treatment programme for a male patient residing in a medium secure psychiatric hospital. Patient A was referred by the multi-disciplinary team (MDT) due to an escalation in risk behaviours. An array of indirect and direct assessment methods were used, and a detailed functional analysis was developed. The themes obtained from this analysis indicated shared properties; Patient A was using his behaviour to influence his environment and treatment in functional ways.

There were two stages to the intervention. Stage One involved individual work with Patient A, which was loosely based on Taylor and Novaco's (2005) anger treatment manual. The sessions consisted of cognitive re-structuring, anger arousal reduction, behavioural skill acquisition, and behavioural modification. Post-assessments identified changes in Patient A's experiences of anger, and his use of aggression. However, Patient A continued to believe he was being treated unfairly, and he continued to express his angry feelings readily with little provocation.

Stage Two involved sessions with Patient A and two members of the nursing team. Patient A's staff team was not sufficiently trained in PBS; therefore, it was unlikely that they felt confident in implementing a supportive approach based on the philosophy of prevention, de-escalation and avoidance of harm. Patient A's behaviour should be understood as having a communicative intent (LaVinga & Willis, 1996); however this concept appeared to have been overlooked. Therefore, Mr N and Ms S were invited to discuss key ideas to promote the least restrictive options. For instance, the staff were encouraged to reflect on their evaluations of Patient A's aggression, the functions of Patient A's aggression, and their typical aggression management strategies used. A collaborative PBS plan was then developed that highlighted a number of supportive and effective preventative strategies to mitigate further escalation of risk. This plan was disseminated to all healthcare staff involved in Patient A's care.

The data evidenced improvements in Patient A's ability to cope with anger-provoking situations following the staff-level intervention. There was also a reduction in the intensity of his physical aggression towards others. The case study highlighted the importance of taking a multi-system approach when targeting patient aggression and embedding the PBS philosophy into nursing practice.

The general aggression model (GAM; Bushman & Anderson, 2002; De Wall, Anderson & Bushman, 2011) can be applied to the results of this case study. This integrative social-cognitive framework for understanding aggression incorporates three factors: person and situation inputs, present internal states (e.g. personality, attitudes, arousal and beliefs), and outcomes of appraisal and decision-making. The GAM suggests a feedback loop that can influence future episodes of aggression (Anderson, Buckley & Carnagey, 2008; DeWall & Anderson, 2011). Therefore, to help break this cycle, increasing insight into the factors that perpetuate patient aggression and developing a set of tailored preventative strategies for each patient can alter how staff appraise and manage the situation. This can help reduce the need to use restrictive and coercive strategies when dealing with conflict. This understanding can also increase group cohesion and provide a consistent care approach, which may lead to increased feelings of safety and support amongst staff and patients.

25.2 Practical Implications

An important aspect for nursing staff is to develop a good understanding of their patients' needs to help form positive therapeutic relationships (Berghofer, Schmidl, Rudas, Steiner & Schmitz, 2002). Training courses that include the PBS philosophy

can provide the knowledge, skills and motivation needed to embed the least restrictive principles into nursing culture and practices.

Interestingly, a study conducted in Switzerland found no change in nurses' perceptions of patient aggression following a training package and hypothesised that attitudes only change after implementing the techniques (Needham et al., 2005). Offering regular PBS-informed workshop would enable staff to receive ongoing evaluation and support in terms of embedding the principles of PBS into their work. It is suspected that a greater shift in nursing attitudes will occur once the staff begin to observe the benefits of incorporating the PBS framework into practice.

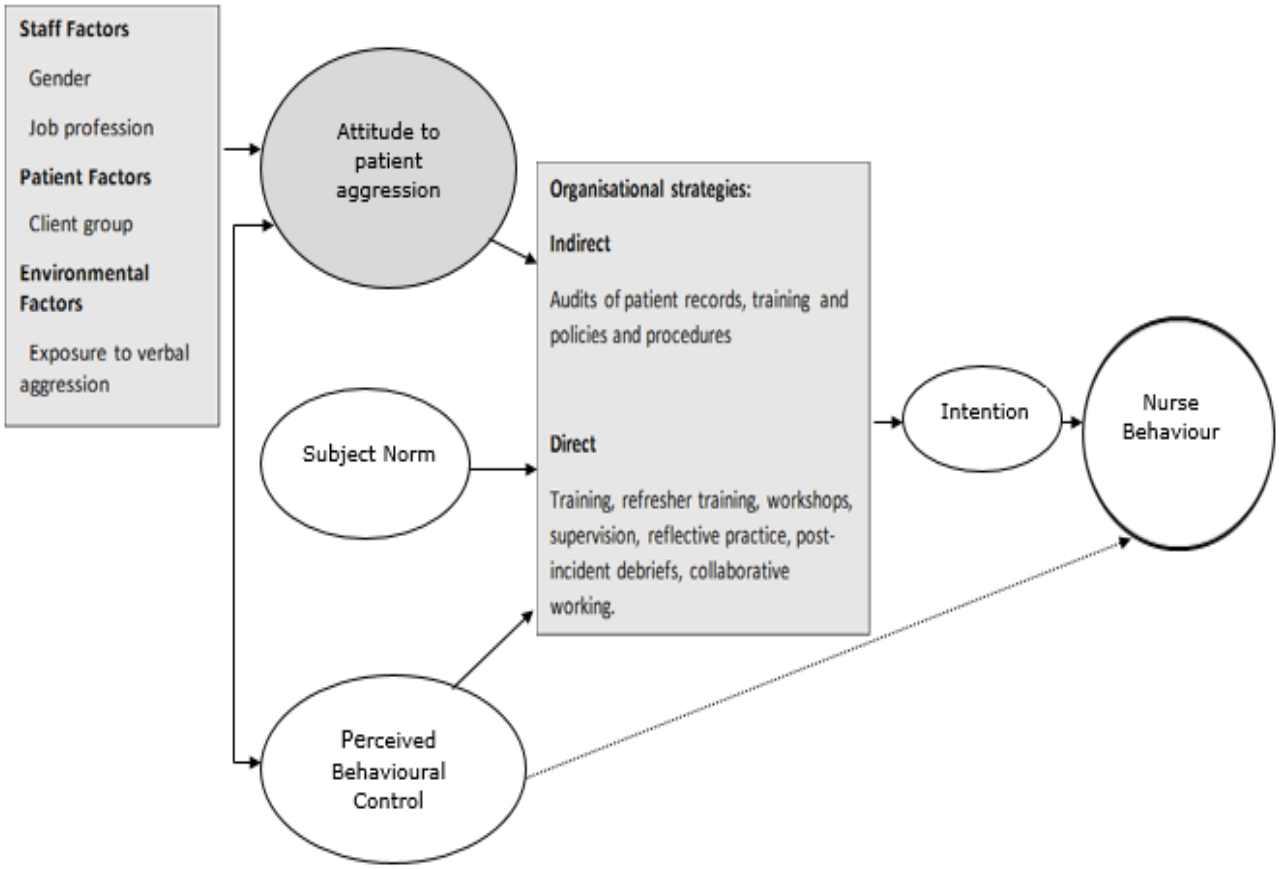
Additional direct strategies such as reflective practice and ongoing supervision may also be useful in encouraging staff to reflect on their internal processes (thoughts and feelings) and interpersonal experiences with patients. This forum would provide a safe space to challenge individual perceptions of patient aggression whilst also enabling nurses to evaluate their practices and gain support from colleagues. This could also reduce the psychological and emotional consequences following exposure to patient aggression.

Indirect organisational strategies include embedding the recommendations featured in the DoH (2014) framework into

organisation's policies and procedures. For instance, an autism spectrum disorder specialist forensic hospital produced a set of standards based on the key recommendations contained in the DoH (2014) guidance document. These standards were then used to audit patient records within the hospital settings (Bush, Whitaker & Aston, 2014). The recommendations from this audit included; ensuring greater collaboration with patients when developing individualised care plans, incorporating the patients' formulation, and making these documents more accessible to the MDT. An example of this was the PBS plan presented in Chapter Five. Bush et al. (2014) recommend that all services conduct a similar audit to ensure that patient documents are person-centred and that they adhere to the DoH (2014) guidelines.

The information obtained from this thesis has been added to the TPB model (see Figure 8), which provides further understanding of the development of nurses' attitudes towards patient aggression in psychiatric secure hospitals. The different types of organisational strategies that could help create a least restrictive culture are also included.

Figure 8. Adapted Theory of Planned Behaviour



25.3 Future Research

Future research could further evaluate the implementation of the PBS philosophy into nursing practice, through using pre-and post-comparisons. This data will help determine whether improvements have been made in terms of reducing restrictive practices in healthcare, along with reducing the frequency and intensity of patient aggression. Designing randomised controlled trials to evaluate the efficacy of these strategies is difficult due to the variability in the organisational culture and inpatient and staff behaviour (Gaskin, Elsom & Happell, 2007). Therefore, a pragmatic

approach would enable care services to assess the clinical utility of incorporating the PBS philosophy into care provisions. Ongoing long-term, systematic data collection is needed. This would provide reliable data to track and study the problem of institutional aggression and violence in psychiatric hospitals. Without this epidemiological data, the true economic and emotional costs remain elusive.

The outcomes in Chapter Five may also have an implication for how clinicians develop interventions focused on reducing patient aggression in healthcare. Developing a detailed functional analysis and using indirect and direct data before considering a multi-system approach appears to be a useful method when targeting patient aggression. Further evaluations of pilot studies will further add to the research and inform future cost-effective interventions that promotes a supportive approach based on the philosophy of prevention.

The implications of the results for psychological theory are difficult to establish, except that current theories focusing on the developmental history of the patient may not provide an adequate explanation of institutional aggression and violence. A multiple-factor approach must be considered when exploring patient aggression as this behaviour does not occur in a vacuum.

26. Conclusion

Patient aggression continues to be a challenge in psychiatric services. The DoH (2014) document has presented a framework that aims to create a culture that is committed to developing practices where physical interventions are used as a last resort. This includes promoting the PBS philosophy to develop preventative strategies that reduce the need for restrictive interventions. The PBS framework provides a voice for the patients to develop helpful strategies at a time when their anger arousal is not at crisis point. Questions remain, however, about how services are to embed these guidelines within the different organisational systems.

Patient-staff interactions lead to a sizeable portion of aggression and violence in inpatient services. Therefore, it is important that consideration is given to conflicts and containment measures used before, during, and after the aggressive incident. Research suggests that nurses' attitudes towards patient aggression can influence behavioural responses when faced with an aggressive patient. Nursing behaviours and ineffectual interactions can contribute to creating intolerable environments, which can increase a patient's risk of acting aggressively. Clearly, there are situations and circumstances that require the use of restrictive measures due to the risks that some patients present. However, nurses' actions

during these crisis moments determine the therapeutic value of the intervention. It is vital for clinicians working in psychiatric settings to consider the empirical research base on nurses' attitudes, patient aggression and conflict management.

To ensure that the care provided by psychiatric nurses is based on the philosophy of prevention, there is a need for organisations to develop strategies to achieve a collective acceptance of the PBS philosophy and least restrictive principles. Consequently, obtaining a better understanding of nurses' attitudes toward patient aggression may provide a useful guide when attempting to reduce the need to use restrictive interventions in psychiatric settings. This can be done by conducting regular audits of clinical documents, education, skill monitoring, and self-reflection. Organisations caring for vulnerable and mentally ill individuals have a duty to provide high-quality and supportive care to enhance the feelings of safety and security for patients and staff. Therefore, further research is required to evaluate the benefit of implementing these direct and indirect strategies within psychiatric services. Even though the focus has primarily been on psychiatric nurses working in secure hospitals, it is likely that the findings and recommendations noted in this thesis can also be applied to general healthcare settings.

27. References

Abderhalden, C., Needham I., Friedli, T.K., Poelmans J., & Dassen, T. (2002). Perception of aggression among psychiatric nurses in Switzerland. *Acta Psychiatrica Scandinavica*, 106(412), 110–117. DOI: 10.1034/j.1600-0447.106.s412.24.x

Adams, J. & Whittington, R. (1995). Verbal aggression to psychiatric staff: traumatic stressor or part of the job*. Psychiatric Care*, 2(5), 171-174. DOI: Unknown.

Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of Attachment: A Psychological Study of the Strange Situation*. Lawrence Erlbaum Associates, Publishers. Hillsdale, New Jersey.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organisational behavior and human decision processes*, 50(2), 179-211. DOI: 10.1016/0749-5978(91)90020-T

Allen, D. (2009). Positive behavioural support as a service system for people with challenging behaviour. *Psychiatry*, 8(10), 408- 412. DOI: 10.1016/j.mppsy.2009.07.001

Armitage, C.J. & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40(4), 471-99. DOI: 10.1348/014466601164939

Arnetz, J.E. & Arnetz, B.B. (2001). Violence towards health care staff and possible effects on the quality of patient care. *Social Science and Medicine*, 52, 417-427. DOI:10.1016/S0277-9536(00)00146-5

Baker, M.T., Van Hasselt, V.B., & Sellers, A.H. (2008). Validation of the Novaco Anger Scale in an incarcerated offender population. *Criminal Justice and Behavior*, 35, 741-754. doi:10.1177/0093854808316275

Bandura, A. (1977). Social Learning Theory. New York: Prentice-Hall.

Baxter, E., Hafner, R.J., & Holme, G. (1992). Assaults by patients: The experience and attitudes of psychiatric hospital nurses. *Journal of Psychiatry*, 26, 567– 573. DOI:10.3109/00048679209072090

Beck, I. & Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behaviour. *Journal of Research in Personality*, 25, 285- 301. DOI:10.1016/0092-6566(91)90021-H

Bensley L., Nelson N., Kaufman J., Silverstein B., Kalat J., & Shields J. (1997). Injuries due to assaults on psychiatric hospital employees in Washington State. *American Journal of Industrial Medicine*, 1, 92–99. DOI: 10.1002/(SICI)1097-0274(199701)

Benson, B.A., & Ivins, J. (1992). Anger, depression and self-concept in adults with mental retardation. *Journal of Intellectual Disability Research*, 36, 169–175. DOI:10.1111/j.1365-2788.1992.tb00492.x

Berant, E., Mikulincer, M., & Florian, V. (2001). Attachment Style and Mental Health: A 1-Tear Follow-Up Study of Mothers of Infants with Congenital Heart Disease. *Personality and Social Psychology Bulletin*. 27 (8), 956-968. DOI: 10.1177/0146167201278004

Berghofer, G., Schmidl, F., Rudas, S., Steiner, E., & Schmitz, M. (2002). Predictors of treatment discontinuity in outpatient mental health care. *Social Psychiatry and Psychiatric Epidemiolog*y, 37(6), 276-282. DOI: 10.1007/s001270200020

Bilgin, H. (2009). An Evaluation of Nurses' Interpersonal Styles and their Experiences of Violence. *Issues in Mental Health Nursing*, 30, 252–259. DOI: 10.1080/01612840802710464

Bilgin, H. & Buzlu, S. (2006). A study of psychiatric nurses' beliefs and attitudes about work safety and assaults in Turkey. *Issues in Mental Health Nursing*, 27(1), 75-90. DOI: 10.1080/01612840500312894

Bilgin, H., Tulek, Z., & Ozcan, N. (2011). Psychometric properties of the Turkish version of the Perception of Aggression Scale. *Journal of Psychiatric and Mental Health Nursing*, 2011, 18, 878–883. DOI: 10.1111/j.1365-2850.2011.01742.x

Bornstein, M., Leach, D., & Haynes, O. (2004). Vocabulary competence in first and second born siblings of the same chronological age. *Journal of Child Language*, 31(4), 855-873. DOI: 10.1017/S0305000904006518

Bowers, L., Alexander, J., Simpson, A., Ryan, C., & Carr-Walker, P. (2004). Cultures of psychiatry and the professional socialization process: the case of containment methods for disturbed patients. *Nurse Education Today*, 24(6), 435- 442. DOI: http://dx.doi.org/10.1016/j.nedt.2004.04.008

Bowers, L., Alexander, J., Simpson, A., Ryan, C., & Carr-Walker, P. (2007). Student psychiatric nurses' approval of containment

measures: Relationship to perception of aggression and attitudes to personality disorder. *International Journal of Nursing Studies*, 44, 349–356. DOI: 10.1016/j.ijnurstu.2005.03.002

Bowers, L., Nijman, H., Allan, T., Simpson, A., Warren, J., & Turner, L. (2006). Prevention and management of aggression training and violent incidents on U.K. Acute psychiatric wards. *Psychiatric Services*, 57(7), 1022- 1026. DOI: 10.1176/appi.ps.57.7.1022

Brennan, K.A., Clark, C.L., & Shaver, P.R. (1998). Self-report measurement of adult attachment: An integrative overview. In A. Simpson & W. S. Rholes, (Eds.), *Attachment theory and close relationships* (pp. 46–76). London: Guilford Press.

Brosnan, J. & Healy, O. (2011). A review of behavioral interventions for the treatment of aggression in individuals with developmental disabilities. *Research in Developmental Disabilities*, 32, 437–446. DOI: 10.1016/j.ridd.2010.12.023.

Carr, E.G., Dunlsp, G., Horner, R.H., Koegel, R.L., Turnbul, A.P., Sailor, W., Anderson, J.L., Albin, R.W., Koegel, L.K., & Fox, L. (2002). Positive Behaiour Support: Evolution of applied science. *Journal of Positive Behaviour Interventions*, 4(1), 4-16. DOI: 10.1177/109830070200400102

Carr, E.G., Horner, R.H., Turnball, A.P., McLaughlin, D.M., McAtee, M.L., Smith, C.E., Ryan, K., Ruef, M., Doolabh, A., & Braddoch, D. (1999). *Positive behaviour support for people with developmental disabilities: A research synthesis*. American Association of Mental Retardation: Washington, DC.

Chen, S.C., Hwu, H.G., & Williams, R.A. (2005). Psychiatric Nurses' Anxiety and Cognition in Managing Psychiatric Patients' Aggression. *Archives of Psychiatric Nursing*, 19(3), 141-149. DOI: http://dx.doi.org/10.1016/j.apnu.2005.04.006

Collins, J. (1994). Nurses' attitudes towards aggressive behaviour, following attendance at "The prevention and management of aggressive behaviour programme". *Journal of Advanced Nursing*, 20, 117–131. DOI: 10.1046/j.1365-2648.1994.20010117.x

Conner, D.F., & Barkley, R.A. (2004). *Aggression and antisocial behavior in children and adolescents: Research and treatment*. New York: The Guilford Press.

Daffern, M. & Howells, K. (2002). Psychiatric inpatient aggression: A review of structural and functional assessment approaches.

Aggression and Violent Behavior, 7, 477–497. DOI:10.1016/S1359-1789(01)00073-8

Daffern, M., Mayer, M., & Martin, T. (2004). Environment contributors to aggression in two forensic psychiatric hospitals. *International Journal of Forensic Mental Health*, 3, 105–114. DOI:10.1080/14999013.2004.10471200

Dallos, R., Wright, J., Stedmon, J., & Johnstone, L. (2006). Integrative Formulation, In L. Johnstone & R. Dallos (Eds.), *Formulation in psychology and psychotherapy: Making sense of peoples problems* (pp.154-181). Hove: Routledge.

Del Bel, J.C. (2003). Workplace aggression. *Nursing Management*, 34 (9), 30-34. DOI: Unknown.

Dickens, G., Piccirilli, M., & Alderman, N. (2013). Causes and management of aggression and violence in a forensic mental health service: Perspectives of nurses and patients. *International Journal of Mental Health Nursing*, 22, 532–544. DOI: 10.1111/j.1447-0349.2012.00888.x

Doyle, M. & Dolan, M. (2006). Evaluating the validity of anger regulation problems, interpersonal style, and disturbed mental state

for predicting inpatient violence. *Behavioral Sciences and the Law*, 24, 783–98. DOI: 10.1002/bsl.739

Duxbury, J. (1999). An exploratory account of registered nurses' experience of patient aggression in both mental health and general nursing settings. *Journal of Psychiatric and Mental Health Nursing*, 6, 107-114. DOI: 10.1046/j.1365-2850.1999.620107

Duxbury, J.A. (2002). An evaluation of staff and patients' views of and strategies employed to manage patient aggression and violence on one mental health unit. *Journal of Psychiatric and Mental Health Nursing*, 9(3), 325–337. DOI: 10.1046/j.1365-2850.2002.00497.x

Duxbury, J. (2003). Testing a new tool: the management of aggression and violence attitude scale (MAVAS). *Nurse Researcher,* 10(4), 39-52. DOI:10.7748/nr2003.07.10.4.39.c5906

Duxbury, J., Hahn, S., Needham, I., & Pulsford, D. (2008). The Management of Aggression and Violence Attitude Scale (MAVAS): A cross-national comparative study. *Journal of Advanced Nursing*, 62, 596–606. DOI: 10.1111/j.1365-2648.2008.04629

Duxbury, J. & Whittington, R. (2005). Causes and management of patient aggression and violence: Staff and patient perspectives.

Journal of Advanced Nursing, 50, 469-478. DOI: 10.1111/j.1365-2648.2005.03426

Eckhardt, C., Norlander, B., & Deffenbacher, J. (2004). The assessment of anger and hostility: A critical review. *Aggression and Violent Behavior*, 9, 17-43. DOI:10.1016/S1359-1789(02)00116-7

Edward, K.L., Ousey, K., Warelow, P., & Lui, S. (2014). Nursing and aggression in the workplace: a systematic review. *British Journal of Nursing*, 23(12), 653- 659, DOI: 10.12968/bjon.2014.23.12.653

Eiser, J.R. (1994). *Attitudes, chaos and the connectionist mind*. Oxford (UK): Blackwell.

Emerson, E. & McGill, P. (1989). Normalisation and applied behaviour analysis: values and technology in services for people with learning difficulties. *Behavioural Psychotherapy*, 17(2), 101-117. DOI:10.1017/S0141347300016086.

Exworthy, T., Mohan, D., Hindley, N., & Basson, J. (2001). 'Seclusion: Punitive or Protective?'. *Journal of Forensic Psychiatry*, 12(2), 423- 433. DOI: http://dx.doi.org/10.1080/09585180110056803

Feeney, J. A., Peterson, C., Gallois, C., & Terry, D. J. (2000). Attachment style as a predictor of sexual attitudes and behavior in late Adolescence. *Psychology & Health*, 14 (6), 1105-22. DOi:10.1080/08870440008407370

Finnema, E., Dassen, T., & Halfens, R. (1994). Aggression in psychiatry: a qualitative study focusing on the characterization and perception of patient aggression by nurses working on psychiatric wards. *Journal of Advanced Nursing*, 19(6), 1088-1095. DOI: 10.1111/j.1365-2648.1994.tb01192.x

Fottrell, E. (1980). A study of violent behaviour among patients in psychiatric hospitals. *British Journal of Psychiatry*, 136(3), 216-221. DOI: 10.1192/bjp.136.3.216

Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modelling of developmental mechanisms. *Personality and Social Psychology Review*. 6, 123–151. DOI: 10.1207/S15327957PSPR0602_03

Gadon, L., Johnstone, L., & Cooke, D. (2006). Situational variables and institutional violence: A systematic review of the literature. *Clinical Psychology Review*, 26(5), 515-534. DOI:10.1016/j.cpr.2006.02.002

Gaskin, C.J., Elsom, S.J., & Happell, B. (2007). Interventions for reducing the use of seclusion in psychiatric facilities. *The British Journal of Psychiatry,* 191(4), 298-303. DOI: 10.1192/bjp.bp.106.034538

Gertz, B. (1980). Training for prevention of assaultive behaviour in a psychiatric setting. *Hospital and Community Psychiatry*, 31, 628-630. DOI: http://dx.doi.org/10.1176/ps.31.9.628

Glasberg, A.L., Eriksson S., Dahlqvist V., Lindahl E., Strandberg G., Soderberg A., Sørlie V., & Norberg A. (2006). Development and Initial Validation of the Stress of Conscience Questionnaire. *Nursing Ethics,* 13, 633–648. DOI: 10.1177/0969733006069698

Goodykoontz, L. & Hemck, C.A. (1990) Evaluation of an inservice education program regarding aggressive behavior on a psychiatric unit. *Journal of Continuing Education in Nursing*, 21(3), 129-133. DOI: Unknown

Hallett, N., Huber, J.W., & Dickens, G.L. (2014). Violence prevention in inpatient psychiatric settings: Systematic review of studies about the perceptions of care staff and patients. *Aggression*

and Violent Behavior, 19, 502–514. DOI: 10.1016/j.avb.2014.07.009

Hanson, R. & Balk, J. (1992). A replication study of staff injuries in a state hospital. *Hospital and Community Psychiatry*, 43, DOI: 836–837. DOI: http://dx.doi.org/10.1176/ps.43.8.836

Happell, B. (2008). Putting all the pieces together: Exploring workforce issues in mental health nursing. *Contemporary Nurse,* 29(1), 43–52. DOI: 10.5172/conu.673.29.1.43

Hart, P.L., Brannan, J.D. & Chesnay, M.C. (2012). Resilience in nurses: an integrative review. *Journal of Nursing Management*, 22(6), 720-734. DOI: 10.1111/j.1365-2834.2012.01485.x

Hegney, D., Tuckett, A., Parker, D., & Eley, R. (2010). Workplace violence: Differences in perceptions of nursing work between those exposed and those not exposed: A cross-sector analysis. *International Journal of Nursing Practice*, 16(2), 188–202. DOI: 10.1111/j.1440-172X.2010.01829.x

Hill, J. & Furnis, F. (2006). Patterns of emotional and behavioural disturbance with autistic traits in young people with severe intellectual disabilities and challenging behaviors. *Research in*

Developmental Disabilities, 27, 517- 528. DOI:10.1016/j.ridd.2005.07.001

Hills, D. & Joyce, C. (2013). A review of research on the prevalence, antecedents, consequences and prevention of workplace aggression in clinical medical practice. *Aggression and Violent Behavior*, 18, 554–569. DOI:10.1016/j.avb.2013.07.014

Howells, K. (1998). Cognitive Behavioural Interventions for Anger, Aggression and Violence. In N. Tarrier, A. Wells & G. Haddock (Eds.), *Treating Complex Cases; the cognitive behavioural therapy approach* (pp. 295- 318). Chichester, UK: Wiley & Sons Ltd.

Howlells, K. & Hollin, C.R. (1989). *Clinical approaches to violence*. New York: John Wiley & Sons.

Inoue, M., Tsukano, K., Muraoka, M., Kaneko, F., & Okamura, H. (2006). Psychological impact of verbal abuse and violence by patients on nurses working in psychiatric departments. *Psychiatry Clinical Neuroscience*, 60, 29–36. DOI: 10.1111/j.1440-1819.2006.01457.x

Irwin, A. (2006). The nurse's role in the management of aggression. *Journal of Psychiatric and Mental Health Nursing*, 13, 309-318. DOI: 10.1111/j.1365-2850.2006.00957.X

Jacobowitz, W. (2013). PTSD in Psychiatric Nurses and Other Mental Health Providers: A Review of the Literature*. Issues in Mental Health Nursing*, 34, 787–795. DOI: 10.3109/01612840.2013.824053

James, C.R. & Clarke, B.A. (1994). Reflective Practice in Nursing: Issues and Implications for nurse education. *New Education Today*, 14(2), 82-90. DOI:10.1016/0260-6917(94)90109-0

James, B., Isa, E., & Oud, N. (2011). Patient aggression in psychiatric services: the experience of a sample of nurses at two psychiatric facilities in Nigeria. *African Journal of Psychology*, 14(2), 130-133. DOI: 10.4314/ajpsy.v14i2.4

James, D.V., Fineberg, N.A., Shah, A.K., & Priest, R.G., (1990). An increase in violence on an acute psychiatric ward: A study of associated factors*. British Journal of Psychiatry*, 156, 846–852. DOI: 10.1192/bjp.156.6.846

Jansen, G.J., Dassen, T.W., & Groot Jebbink, G. (2005a). Staff attitudes towards aggression in health care: A review of the

literature. *Journal of Psychiatric and Mental Health Nursing*, 12(1), 3-13. DOI: http://dx.doi.org/10.1111/j.1365-2850.2004.00772.x

Jansen, G.J., Dassen, T.W., & Moorer, P. (1997). The perception of aggression. *Scandinavian Journal of Caring Sciences*, 119(1), 51-55. DOI: 10.1111/j.1471-6712.1997.tb00430.x

Jansen, G.J., Dassen, T.W., Burgerhof, J., & Middel, B. (2006a). Psychiatric nurses' attitude towards inpatient aggression: Preliminary report of the development of attitude towards aggression scale (ATAS). *Aggressive Behavior*, 32(1), 44–53. DOI: 10.1002/ab.20106

Jansen, G.J., Middel, B. & Dassen, T.W. (2005b). An international comparative study on the reliability and validity of the attitudes towards aggression scale. International *Journal of Nursing Studies*, 42(4), 467– 477. DOI: http://dx.doi.org/10.1016/j.ijnurstu.2004.09.007

Jansen, G.J., Middel, B., Dassen, T.W. et al., (2006b). Cross-cultural differences in psychiatric nurses: Attitude to inpatient aggression. *Archives of Psychiatric Nursing,* 20(2), 82–93. DOI: http://dx.doi.org/10.1016/j.apnu.2005.08.012

Jonker, E., Goossens, P., Steenhuis, I., & Oud, N. (2008). Patient aggression in clinical psychiatry: perceptions of mental health nurses. *Journal of Psychiatric and Mental Health Nursing*, 15(6), 492-499. DOI: 10.1111/j.1365-2850.2008.01261.x

Kay, S.R., Wolkenfelf, F., & Murrill, L.M. (1988). Profiles of aggression among psychiatric patients: Nature and prevalence. *Journal of Nervous and Mental Disease,* 176, 539-546. DOI: Unavailable

Kho, K., Sensky, T., Mortimer, A., & Corcos, C. (1998). Prospective study into factors associated with aggressive incidents in psychiatric acute admission wards. *British Journal of Psychiatry*, 172, 38–43. DOI: 10.1192/bjp.172.1.38

King, M. & Bruner, G. (2000). Social desirability bias: A neglected aspect of validity testing. *Psychology and Marketing*, 17(2), 79–103. DOI: 10.1002/(SICI)1520-6793(200002)

Klinge, V. (1994). 'Staff Opinions about Seclusion and Restraint at a State Forensic Hospital'. *Hospital and Community Psychiatry*, 45(2), 138-141. DOI: http://dx.doi.org/10.1176/ps.45.2.138

Laiho, T., Lindberge, N., Joffe, G., & Sailas, L.E. (2014). Psychiatric staff on the wards does not share attitudes on aggression. *International Journal of Mental Health Systems,* 8(1),14, 1-7. DOI: 10.1186/1752-4458-8-14

Lanctot, N. & Guay, S. (2014). The aftermath of workplace violence among healthcare workers: A systematic literature review of the consequences. *Aggression and Violent Behavior*, 19, 492-501. DOI:10.1016/j.avb.2014.07.010

Lanza, M.L. (1983). The reactions of nursing staff to physical assault by a patient. *Hospital & community psychiatry*, 34(1), 44–47. DOI: 10.1176/ps.34.1.44

Lauvrud, C., Nonstad, K., & Palmstierna, T. (2009). Occurrence of post-traumatic stress symptoms and their relationship to professional quality of life (ProQoL) in nursing staff at a forensic psychiatric security unit: a cross-sectional study. *Health and Quality of Life Outcomes*, 16, 1-6. DOI: 10.1186/1477-7525-7-31.

Lee, S.S., Gerberich, S.G., Waller, L.A., Anderson, A., & McGovern, P. (1999). Work-related assault injuries among nurses. *Epidemiology*, 10, 685–691. DOI: Unavailable.

Lee, S., Wright, S., Sayer, J., Parr, A., Gray, R., & Gournay, K. (2001). Physical restraint training in English and Welsh psychiatric intensive care and regional secure units. *Journal of Mental Health*, 10, 151-162. DOI: 10.1080/09638230124438

Lu, C.H. & Wang, T.F. (2007). Psychiatric nurses' reactions to assault upon them by inpatients: A survey in Taiwan. *Psychological Reports,* 100(3), 777-782. DOI: 10.2466/PR0.100.3.777-782

Matson, J.L., Kozlowski, A.M., Worley, J.A., Shoemaker, M.E., Sipes, M., & Horovitzz, M. (2011). What is the evidence for environmental causes of challenging behaviours in persons with intellectual disabilities and autism spectrum disorders? *Research Developmental Disabilities*, 32(2), 693- 698. DOI: 10.1016/j.ridd.2010.11.012

Maxon, S.C. (1998). Homologous Genes, Aggression, and Animal Models. *Developmental Neuropsychology*, 14(1), 143– 56. DOI:10.1080/87565649809540704

McClintock, K., Hall, S., & Oliver, C. (2003). Risk Markers associated with challenging behaviors in people with intellectual disabilities: A meta-analytic study. *Journal of Intellectual Disability Research*, 47, 405- 416. DOI: 10.1046/j.1365-2788.2003.00517

Mikulincer, M. (1998). Adult attachment Stlyle and Individual Differences in functional Versus Dysfunctional Experiences of anger. *Journal of personality and Social Psychology*, 74 (2), 513-524. DOI: 10.1037//0022-3514.74.2.513

Mikulincer, M. & Florian, V. (1998). The relationship between adult attachment styles and emotional cognitive reactions to stressful events. In J. A. Simpson & W. S. Rholes (Eds.) *Attachment theory and close relationships*. New York: Guilford.

Moeller, S.B., Novaco, R.W., Heinola-Nielsen, V., & Hougaard, H. (2016). Validation of the Novaco Anger Scale–Provocation Inventory (Danish) With Nonclinical, Clinical, and Offender Samples. *Assessment*, 23(5), 624-636. DOI: 1073191115583713.

Morrison, E.F. (1993). A comparison of perceptions of aggression and violence by psychiatric nurses. *International Journal of Nursing Studies*, 30, 261–268. DOI:10.1016/0020-7489(93)90036-T

Morrall, P. & Muir-Cochrane, E. (2002). Naked social control: seclusion and psychiatric nursing in post-liberal society. *Advances in Mental Health,* 1(2), 1-12. DOI: DOI: 10.5172/jamh.1.2.101

Needham, I., Abderhalden, C., Halfens, R., Dassen, T., Haug, H., & Fischer, J. (2005). The effect of a training course in aggression management on mental health nurses' perceptions of aggression: a cluster randomised controlled trial. *International Journal of Nursing Studies*, 42(6), 649-655.

Needham, I., Abderhalden, C., Halfens, R., Fischer, J., & Dassen, T. (2004). Non-somatic effects of patient aggression on nurses: a systematic review. *Journal of Advanced Nursing*, 49(3), 283–296. DOI: 10.1111/j.1365-2648.2004.03286.

Needham, I., Frauenfelder, F., Gianni, C., Dinkel, J., & Hatcher, R. (2010). The psychological impact of aggression on a sample of psychiatric nurses in Germany and Switzerland. In I. Needham, K. McKenna, M. Kingma & N. Oud (Eds.), *Violence in the Health Sector* (pp. 107-110), Kavanah, Netherlands.

Nijman, H., á Campo, J., Ravelli, D., & Merckelbach, H. (1999). A Tentative Model of Aggression on Inpatient Psychiatric Wards. *PS*, 50(6), 832-834. DOI: http://dx.doi.org/10.1176/ps.50.6.832

Noble, P. & Rodger S. (1989). Violence by psychiatric in-patients. *British Journal of Psychiatry*, 155, 384–390. DOI: 10.1192/bjp.155.3.384

Novaco, R. W. (1986). Anger as a clinical and social problem. In R. Blanchard & C. Blanchard (Eds.), *Advances in the study of aggression* (pp. 1–86). New York: Academic Press.

Novaco, R. W. (1994). Anger as a risk factor for violence among the mentally disordered. In J. Monahan & H. J. Steadman (Eds.), *Violence and mental disorder: Developments in risk assessments* (pp. 21-60). Chicago, IL: University of Chicago Press.

Novaco, R.W., & Taylor, J.L. (2004). Assessment of anger and aggression in male offenders with developmental disabilities. *Psychological Assessment*, 16, 42- 50. DOI: 10.1037/10403590.16.1.42

Oliver, P.C., Crawford, M., Rao, B., & Tyrer, P. (2007). Modified Overt Aggression Scale (MOAS) for People with Intellectual Disability and Aggressive Challenging Behaviour: A Reliability Study. *Journal of Applied Research in Intellectual Disabilities*, 20(4), 368-372. DOI: 10.1111/j.1468-3148.2006.00346.x

Palmstierna, T. & Barredal, E. (2006). Evaluation of the Perception of Aggression Scale (POAS) in Swedish nurses. *Nordic Journal of Psychiatry*, 60(6), 447-51. DOI: 10.1080/08039480601021803

Paterson, B., Leadbetter, D., & Miller, G. (2005). Beyond zero tolerance: A varied approach to workplace violence. *British Journal of Nursing*, 14(15), 810–815. DOI: 10.12968/bjon.2005.14.15.18598

Pourhoseingholi, M.A., Baghestani A.R., & Vahedi, M. (2012). How to control confounding effects by statistical analysis. *Gastroenterol Hepatol Bed Bench*, 5(2), 79–83. DOI: Unavailable

Prideaux, A. (2012). Issues in nursing documentation and record-keeping practice. *British Journal of Nursing*. 11;20(22),1450-1454. DOI: http://dx.doi.org/10.12968/bjon.2011.20.22.1450

Reinecke, M.A. & Rogers, G.M. (2001). Dysfunctional attitudes and attachment style among clinically depressed adults. *Behavioural and Cognitive Psychotherapy*, 29(2), 129-141. DOI: 10.1017/S1352465801002016

Reininghaus, U., Craig, T., Gournay, K., Hopkinson, P., & Carson, J. (2007). The high secure psychiatric hospitals nursing staff stress survey 3: Identifying stress resistance resources in the stress process of physical assault. *Personality and Individual Differences*, 42, 397-408. Doi: 10.1016/j.paid.2006.07.013

Renwick, L., Stewart, D., Richardson, M., Lavelle, M., James, K., Hardy, C., Price, O., & Bowers, L. (2016). Aggression on inpatient units: clinical characteristics and consequences. *International Journal of Mental Health Nursing*, 25(4), 308-318. DOI: 10.1111/inm.12191.

Schamborg, S., Tully, R.J., & Browne, K.D. (2015). The Use of the State–Trait Anger Expression Inventory–II with Forensic Populations: A Psychometric Critique. *International Journal of Offender Therapy and Comparative Criminology*, 1 –18. DOI: 10.1177/0306624X15577932

Shaher, H. & Hamaideh, S.H. (2012). Occupational Stress, Social Support, and Quality of Life among Jordanian Mental Health Nurses. *Issues in Mental Health Nursing*, 33(1),15-23. DOI: 10.3109/01612840.2011.605211

Shaver, P.R. & Mikuincer, M. (2002). Attachment-related Psychodynamics, *Attachment and Human Development*, 4(2), 133-161. DOI: http://dx.doi.org/10.1080/14616730210154171

Shen H.C., Cheng, Y., Tsai, P.J., Lee, S.H.S., & Guo, Y.L. (2005). Occupational stress in nurses in psychiatric institutions in Taiwan.

Journal of Occupational Health, 47(3), 218-25. DOI: http://doi.org/10.1539/joh.47.218

Shiao, J.S., Tseng, Y., Hsieh, Y.T., Hou, J.Y., Cheng, Y., & Guo, Y.L. (2010). Assaults against nurses of general and psychiatric hospitals in Taiwan. *International Archives of Occupational and Environmental Health*, 83(7), 823-832. DOI: 10.1007/s00420-009-0501-y

Sibley, C.G. & Liu, J.H. (2004). Short-term temporal stability and factor structure of the revised experiences in close relationships (ECR-R) measure of adult attachment. *Personality and Individual Differences*, 36(4), 969–975. DOI: http://dx.doi.org/10.1016/S0191-8869(03)00165-X

Sigafoos, J., Elkins, J., Kerr, M., & Attwood, T. (1994). A survey of aggressive behaviour among a population of persons with intellectual disability in Queensland. *Journal of Intellectual Disability Research*, 38(4), 369- 81. DOI: 10.1111/j.1365-2788.1994.tb00417.x

Smith, R.G (2011). Developing antecedent interventions for problem behaviour. In W.W. Fisher, C.C. Piazza, & H.S. Roane

(Eds.), *Handbook of Applied Behavior Analysis (*pp. 297-316). The Guilford Press: New York.

Sorgi, P., Ratey, J., Knoedler, D. W., Markert, R. J., & Reichman M. (1991). Rating aggression in the clinical setting a retrospective adaptation of the Overt Aggression Scale: preliminary results. *Journal of Neuropsychiatry,* 3, 552–556. DOI: Unavailable.

Stamm, B.H. (2010). *The Concise ProQOL Manual*, 22nd Ed. Pocatello.

Sturmey, P., (2008) *Behavioural Case Formulation and Intervention: A functional Analytic Approach*. West Sussex: John Wiley & Sons Ltd.

Swain, N. & Gale, C. (2014). A communication skills intervention for community healthcare workers reduces perceived patient aggression: A pretest-postest study. *International Journal of Nursing Studies*, 51(9), 1241-1245. DOI: http://dx.doi.org/10.1016/j.ijnurstu.2014.01.016

Tuvesson, H., Eklund, M., & Wann-Hansson, C. (2012). Stress of Conscience among psychiatric nursing staff in relation to

environmental and individual factors. *Nursing Ethics*, 19(2), 208-219. DOI: 10.1177/0969733011419239

Van de Mortel, T. (2008). Faking it: Social desirability response bias in self-report research. *Australian Journal of Advanced Nursing*, 25(4), 40- 48. DOI: http://hdl.handle.net/10072/56416

Vanderslott, J. (1998). A study of incidents of violence towards staff by patients in an NHS Trust hospital. *Journal of Psychiatric and Mental Health Nursing*, 5(4), 291–298. DOI: 10.1046/j.1365-2850.1998.00113.x

Weber, C. & Federico, C. M. (2007). Interpersonal attachment and patterns of ideological belief. *Political Psychology*, 28(4), 389-416. DOI: 10.1111/j.1467-9221.2007.00579

Whittington, R. (2002). Attitudes toward patient aggression amongst mental health nurses in the 'zero tolerance' era: Associations with burnout and length of experience. *Journal of Clinical Nursing*, 11(6), 819-825. DOI: 10.1046/j.1365-2702.2002.00659.X

Whittington, R. & Higgins, L. (2002). More than zero tolerance? Burnout and tolerance for patient aggression amongst mental

health nurses in China and the UK. *Acta Psychiatrica Scandinavica,* 106(s412), 37-40. DOI: 10.1034/j.1600-0447.106.s412.8.x

Whittington, R. & Wykes, T. (1992). Staff strain and social support in a psychiatric hospital following assault. *Journal of Advanced Nursing*, 17(4), 480–486. DOI: 10.1111/j.1365-2648.1992.tb01933.x

Wykes, T. & Whittington, R. (1991). Coping strategies used by staff following assault by a patient: A exploratory study*. Work & Stress: An International Journal of Work, Health & Organisations,* 5(1), 37-48. DOI: 10.1080/02678379108257001

Wykes, T. & Whittington, R. (1998). Prevalence and predictors of early traumatic stress reactions in assaulted psychiatric nurses. *The Journal of Forensic Psychiatric*, 9(3), 643-658. DOI: 10.1080/09585189808405379

Yarovitsky, Y. & Tabak, N. (2009). Patient violence towards nursing staff in closed psychiatric wards: it's long-term effects on staff's mental state and behaviour. *Med Law*, 28(4), 705-724. DOI: Unknown.

Yudofsky, S.C., Silver, J.M., Jackson,W., Endicott, J., & Williams, D. (1986) The Overt Aggression Scale for the objective rating of verbal and physical aggression. *American Journal of Psychiatry* 143, 35–39. DOI: 10.1176/ajp.143.1.35

Zerach, G. & Shalev, T.B. (2015). The relations between violence exposure, posttraumatic stress symptoms, secondary traumatization, vicarious post traumatic growth and illness attribution among psychiatric nurses. *Archives of Psychiatric Nursing,* 29(3), 135- 142. DOI: 10.1016/j.apnu.2015.01.002.

Appendix A: Inclusion/ Exclusion Criteria

	Inclusion	Exclusion
Population	Staff of all sexes and ages in general in general or secure psychiatric settings.	Any other healthcare professional (over 5%). Other settings, e.g. non-psychiatric general hospitals, community care.
Exposure	Any types of aggression from inpatients, including; physical, verbal, sexual emotional, and aggression towards objects	No experience of patient aggression
Outcome	Direct psychological effects and emotional effects	Physical injuries measured exclusively Indirect effects measured exclusively, including; absenteeism, finical costs, staff morale, ward atmosphere.
Study types	Cohort, case-control and cross-sectional	Qualitative methods.
Language	Translation achieved.	Translation not achieved.

Appendix B: Qualitative Assessment Form

Name and Date					
Sample and Selection COMMENTS Bias	**YES (2)**	**PARTIAL (1)**	**NO (0)**	**UNCLEAR**	
1. Was there a suitable sample size? - A priori analysis indicated a minimum sample size of 107 for a multiple regression analysis. This calculation was based on a medium effect size (0.15) and a power of 0.95					
2. Were the methods of sampling used appropriately for the exposure group? - Appropriately representative ? - Recruited from multiple sources?					
3. Was the sample randomly selected? - Exposure group - Non-exposure group - Control group					
(If applicable) 4. Were the methods of sampling					

used appropriately for the comparison group/ control group					
(If applicable) 5. If there ae two different groups, are they comparable?					
6. Are confounding variables accounted for, i.e. matching or controlled for; - Age? - Gender? - Experience? - Level of patient aggression? - Other stressors (e.g. home life)?					
Risk of selection bias?	*L*	*P*	*H*	*U*	
Measurement Bias COMMENTS	**YES (2)**	**PARTIAL (1)**	**NO (0)**	**UNCLEAR**	
7. Was the exposure measured objectively, i.e. standardisation. - Patient aggression					
8. Was the exposure measured objectively, i.e. reliability. - Patient aggression					
9. Was the exposure measured objectively, i.e. validity? - Patient aggression					
10. Was the outcome measured objectively, i.e. standardisation?					

- Psychological effects					
11. Was the outcome measured objectively, i.e. reliability? - Psychological effects					
12. Was the outcome measured objectively, i.e. validity? - Psychological effects					
(if applicable) 13. Was the outcome measured objectively, i.e. standardisation? - Emotional effects					
(if applicable) 14. Was the outcome measured objectively, i.e. reliability? - Emotional effects					
(if applicable) 15. Was the outcome measured objectively, i.e. validity? - Emotional effects					
16. Is there consistency (inter-rater reliability)? - as the setting and assessor consistent?					
17. Assessors trained to conduct					

the above assessments?					
Risk of measurement bias?	*L*	*P*	*H*	*U*	
Measurement Bias COMMENTS	**ABOVE (2)**	**BELOW (1)**	**SERIOUSLY BELOW (0)**	**UNCLEAR**	
18. Is the response rate acceptable? – Average response rate across l papers (77%)					
Risk of measurement bias?	*L*	*P*	*H*	*U*	
Attrition Bias COMMENTS	**YES (2)**	**PARTIAL (1)**	**NO (0)**	**UNCLEAR**	
19. Was the drop-out acceptable? - Were at least 80% of the sample followed up? - Is this discussed in terms of how it may affect the outcome?					
20. Were those who completed similar to those who dropped out?					
21. Was the follow-up time consistent across all participants?					
Risk of attrition bias?	*L*	*P*	*H*	*U*	
Reporting Bias COMMENTS	**YES (2)**	**PARTIAL (1)**	**NO (0)**	**UNCLEAR**	
22. Are both significant and non-significant results reported?					
23. Are the results reported in a precise manner?					

- Effect size - P-values					
Risk of reporting bias?	*L*	*P*	*H*	*U*	
Other COMMENTS	**YES (2)**	**PARTIAL (1)**	**NO (0)**	**UNCLEAR**	
24. Was the appropriate statistical test used?					
25. Was appropriate ethics approval obtained?					
Total for risk of bias: **Overall quality of journal:**					

Appendix C: Data Extraction Form

General Information	
Date of extraction	
Author	
Title	
Citation	
County of origin	
Study Characteristics	
Study aim(s)	
Study design	
Study setting	
Population type	
Inclusion/ exclusion criteria	Yes No
Recruitment procedures used	
Participant Data	
Sample Size	
Gender	
Mean age	
Number of participants in each category (i.e. exposure and control group)	
Exposure	
Patient aggression: - Physical - Verbal	

- Sexual	
Outcomes	
Tool(s) used?	
The validity/ reliability of the tool?	
Definitions - Patient aggression	
Follow- up conducted?	
Length of follow-up?	
Number of participants exposed?	
Number of drop-outs?	
Statistical measure(s) used?	
Statistical results? - Means - Standard Deviations - P-values - Confidence intervals	

Appendix D: Overview of Bias

Reference	Sample and Selection Bias	Measurement Bias	Response Rate	Attrition Bias	Reporting Bias
1. **	High	Partial	Unclear	-	Partial
2.	Partial	Low	Low	-	Low
3.	Partial	Unclear	Low	-	Low
4.	High	Low	Partial	-	Partial
5.	Low	Low	High	-	Low
6.	Partial	Unclear	High	-	Low
7.	Partial	Unclear	Unclear	-	Low
8.	Low	Unclear	High	-	Low
9.	Partial	Unclear	Low	-	Low
10.	Low	Low	Low	-	Low
11.	Partial	Low	Partial	-	Low
12.	Partial	Partial	High	-	Low
13. .	High	Unclear	Unclear	Partial	Partial

14.	High	Low	Low	Low	Partial
15.	Partial	Unclear	Partial	Partial	Low
16.	Partial	Unclear	Partial	-	Low
17.	Partial	Low	Unclear	-	Low

Appendix E: Attitudes toward Aggression Scale

Attitudes Toward Aggression Scale (ATAS) ©

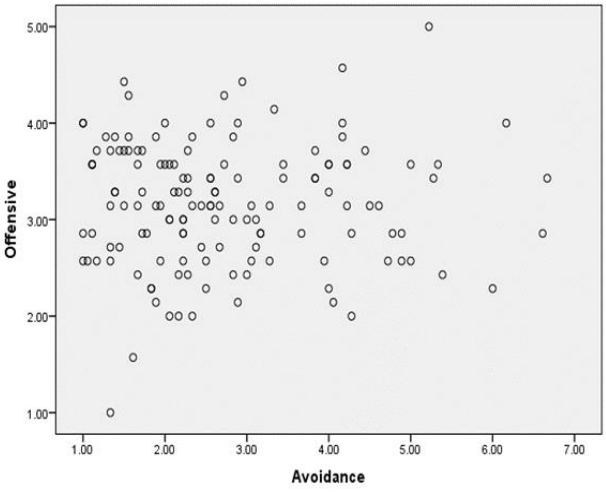
Instruction:

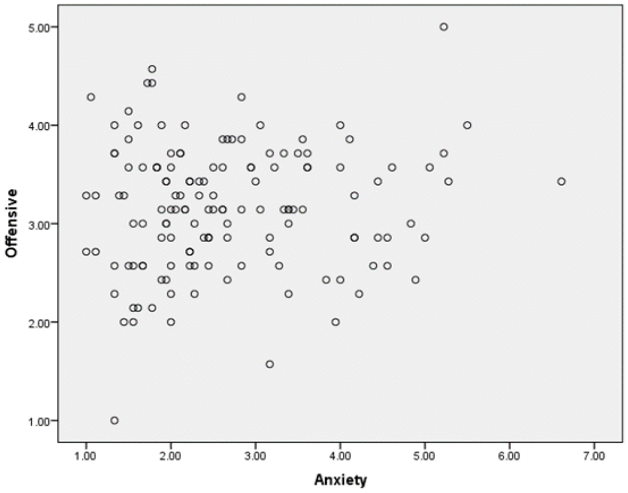
You are asked to rate how much you agree with each statement. Please base your opinion on your experience with aggressive patients of the ward you work on at the moment. You can give your opinion by circling the number that corresponds with your judgment.

Aggression.....		strongly agree	agree	uncertain	disagree	strongly disagree
1	is an example of a non-cooperative attitude	5	4	3	2	1
2	is the start of a more positive nurse patient relationship	5	4	3	2	1
3	Is unpleasant and repulsive behaviour	5	4	3	2	1
4	is an impulse to disturb and interfere in order to dominate or harm others	5	4	3	2	1
5	cannot be tolerated	5	4	3	2	1
6	offers new possibilities in nursing care	5	4	3	2	1
7	is a powerful, mistaken, non-adaptive, verbal and/or physical action done out of self-interest	5	4	3	2	1
8	is unnecessary and unacceptable behaviour	5	4	3	2	1
9	is when a patient has feelings that will result in physical harm to self or to others	5	4	3	2	1
10	is to protect oneself	5	4	3	2	1
11	in any form is always negative and unacceptable	5	4	3	2	1
12	is violent behaviour to others or self	5	4	3	2	1
13	is threatening to damage others or objects	5	4	3	2	1
14	is destructive behaviour and therefore unwanted	5	4	3	2	1
15	is expressed deliberately, with the exception of aggressive behaviour of someone who is psychotic	5	4	3	2	1
16	poisons the atmosphere on the ward and obstructs treatment	5	4	3	2	1
17	helps the nurse to see the patient from another point of view	5	4	3	2	1
18	is the protection of one's own territory and privacy	5	4	3	2	1

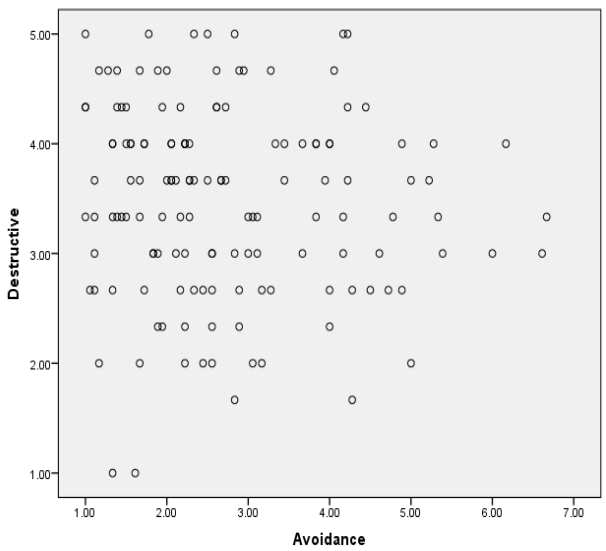
Appendix F: Scatter Plot for Attitude Domains and Attachment Styles

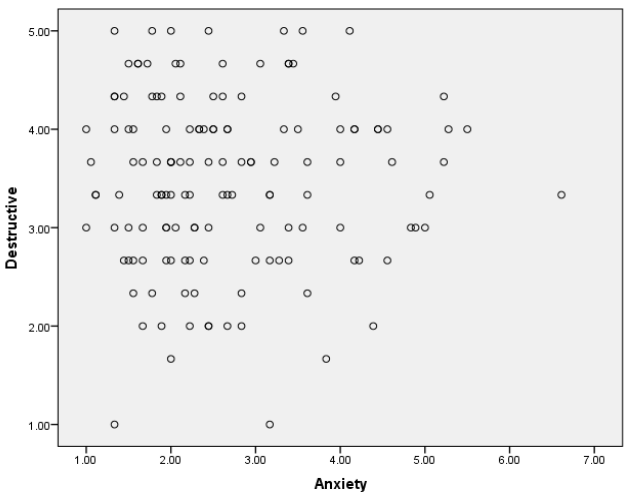
Offensive Attitude



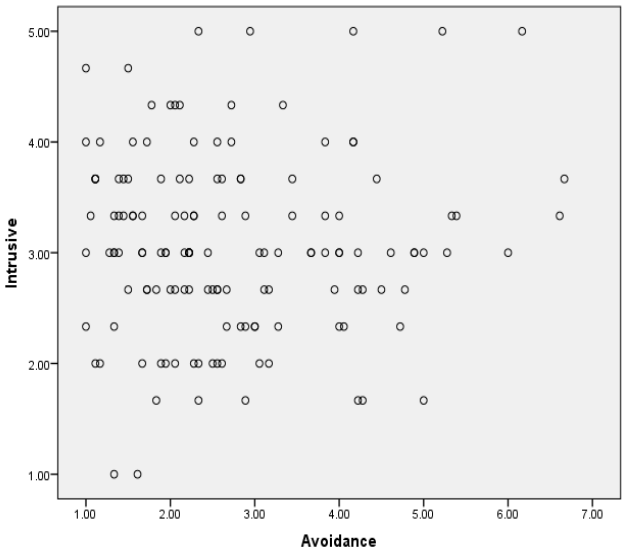


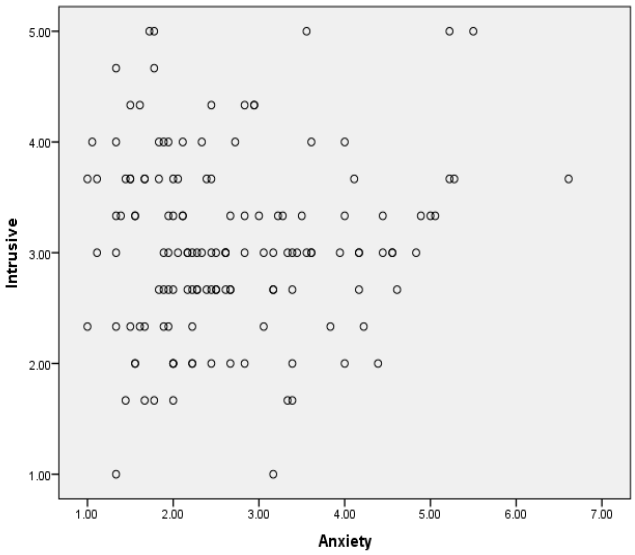
Destructive Attitude



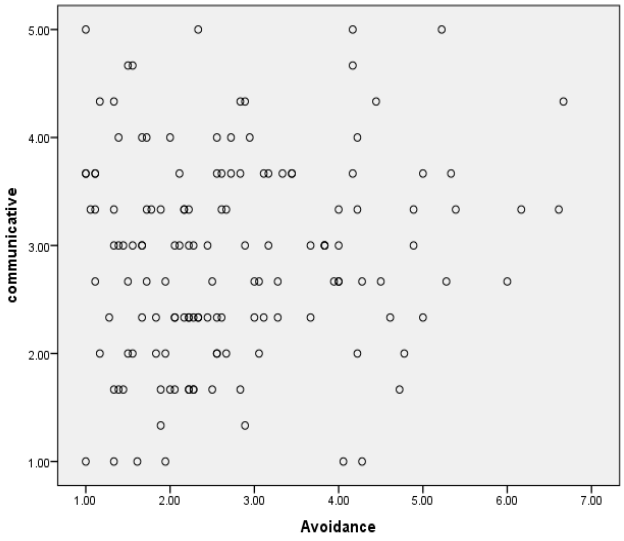


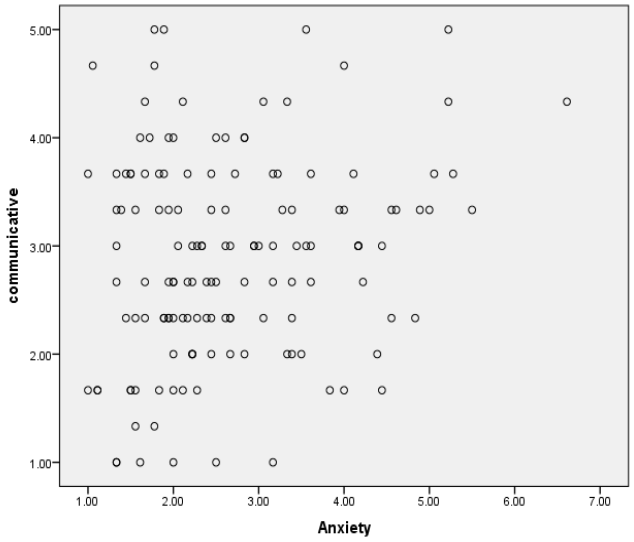
Intrusive Attitude



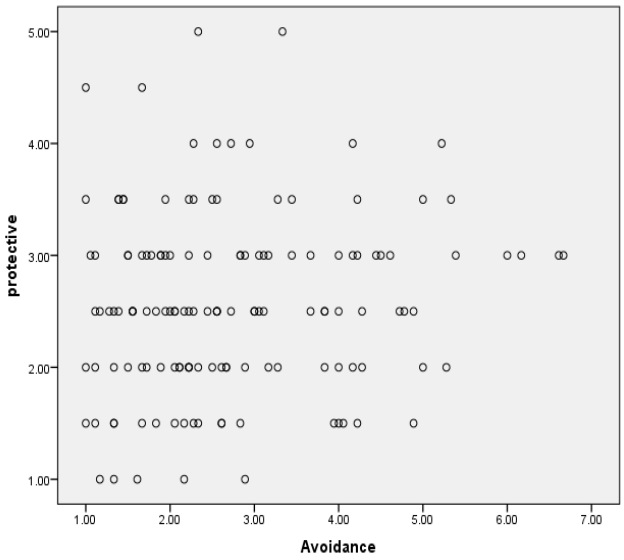


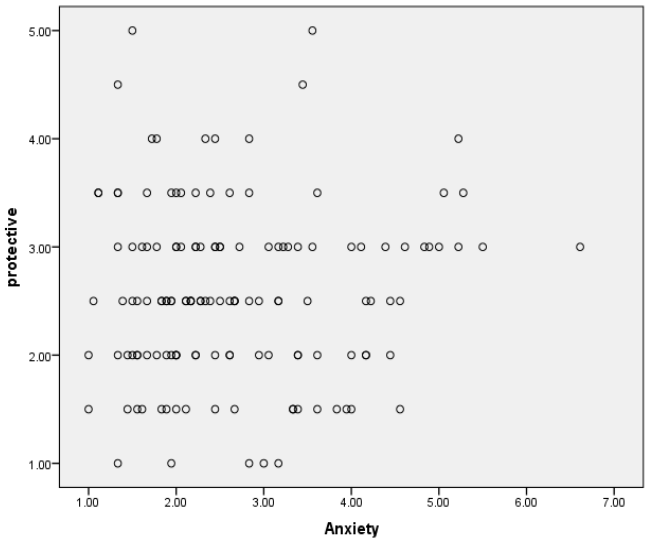
Communicative Attitude





Protective Attitude





Appendix G: Stage One Session Aim

Session	Aims
Session 1	• Recap; preparatory stage. • Identify the treatment targets. • Discuss functional analysis. • Identifying strengths (Skinner, 1953). • Relaxation exercise; imagery (Novaco et al., 2004).
Session 2	• Assess current coping strategies. • Cost and benefit analysis. • Relaxation exercise; imagery.
Session 3	• The links between thoughts, emotions and behaviours. • Role-play the scenarios. • Relaxation; identifying a self-instruction statement.
Session 4	• Reviewed anger provoking events and identified alternative pro-active behavioural responses. • Thought processes during anger provoking events. • Identified 'hot thoughts' and 'cool thoughts'. • Relaxation exercise; imagery
Session 5	• Reviewed anger provoking events and identified alternative pro-active behavioural responses. • Identified 'hot thoughts' from the incidents outlined above. • Produced a list of 'cool thoughts' to replace the 'hot thoughts'. • Relaxation exercise; imagery.
Session 6	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Cognitive re-structuring. • Relaxation exercise; static stretches.
Session 7	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Develop coping skills; role play.

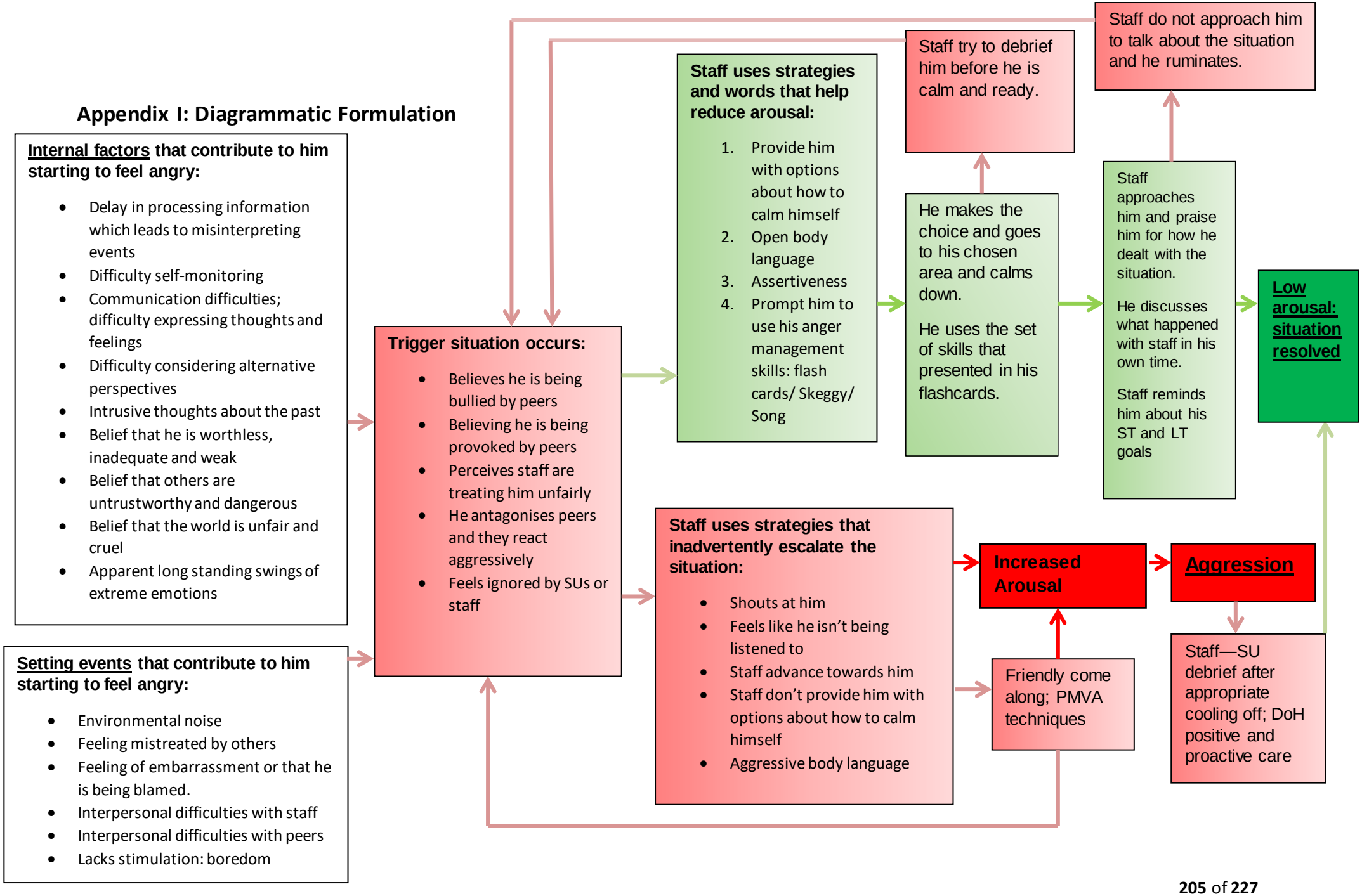
	• Relaxation; breathing.
Session 8	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Discuss thought, feeling and behaviour link. • Develop coping skills; role play. • Provide a set of flash cards.
Session 9	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Introducing self-soothing techniques. • Self-soothing exercise; taste.
Session 10	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Self -soothing exercise; hearing.
Session 11	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Antagonistic behaviours towards others (on-going problem for Patient A); scenario tasks. • Review long-term and short-terms goals. • Review coping skills; add new ones to flash card set.
Session 12	• Reviewed anger provoking events and identified alternative. thoughts and pro-active behavioural responses. • Review coping skills; role-play
Session 13	• Reviewed anger provoking events and identified alternative thoughts and pro-active behavioural responses. • Review coping skills; role-play. • Discuss the introduction of nursing staff; preparation

Appendix H: Stage Two Session Aims

Session	Aims
Session 1 (Ms S)	• Recap core therapy stage. • Review session aims. • Explain PBS framework. • Review Patient A's progress in managing his anger arousal.
Session 2 (Ms S)	• Reviewed incidents. • Model positive reinforcement. • Discus Ms S's behavioural responses to Patient A's aggression- Patient A's account. • Explore Ms S's subjective experiences. • Discuss the influence of attitudes on clinical decision making. • Review coping skills; enforce generalisation.
Session 3 (Mr. N)	• Recap stage one. • Review session aims. • Explain PBS framework. • Review Patient A's progress in managing his anger arousal.
Session 4 (Ms S)	• Review incidents. • Model positive reinforcement. • Review Patient A's coping techniques. • Emphasise the importance of generalisation.
Session 5 (Ms S)	• Review incidents. • Model positive reinforcement. • Collaboratively developed a PBS formulation.
Session 6 (Mr. N)	• Review incidents. • Model positive reinforcement. • Discus Ms N's typical behavioural responses to Patient A's aggression- Patient A's account. • Explore Ms N's subjective experiences. • Discuss the influence of attitudes on clinical decision making.
Session 7 (Mr. N)	• Reflect on incidents and Ms N perception of the aggression and subsequent behavioural responses. • Model positive reinforcement. • Review and add to the PBS formulation.

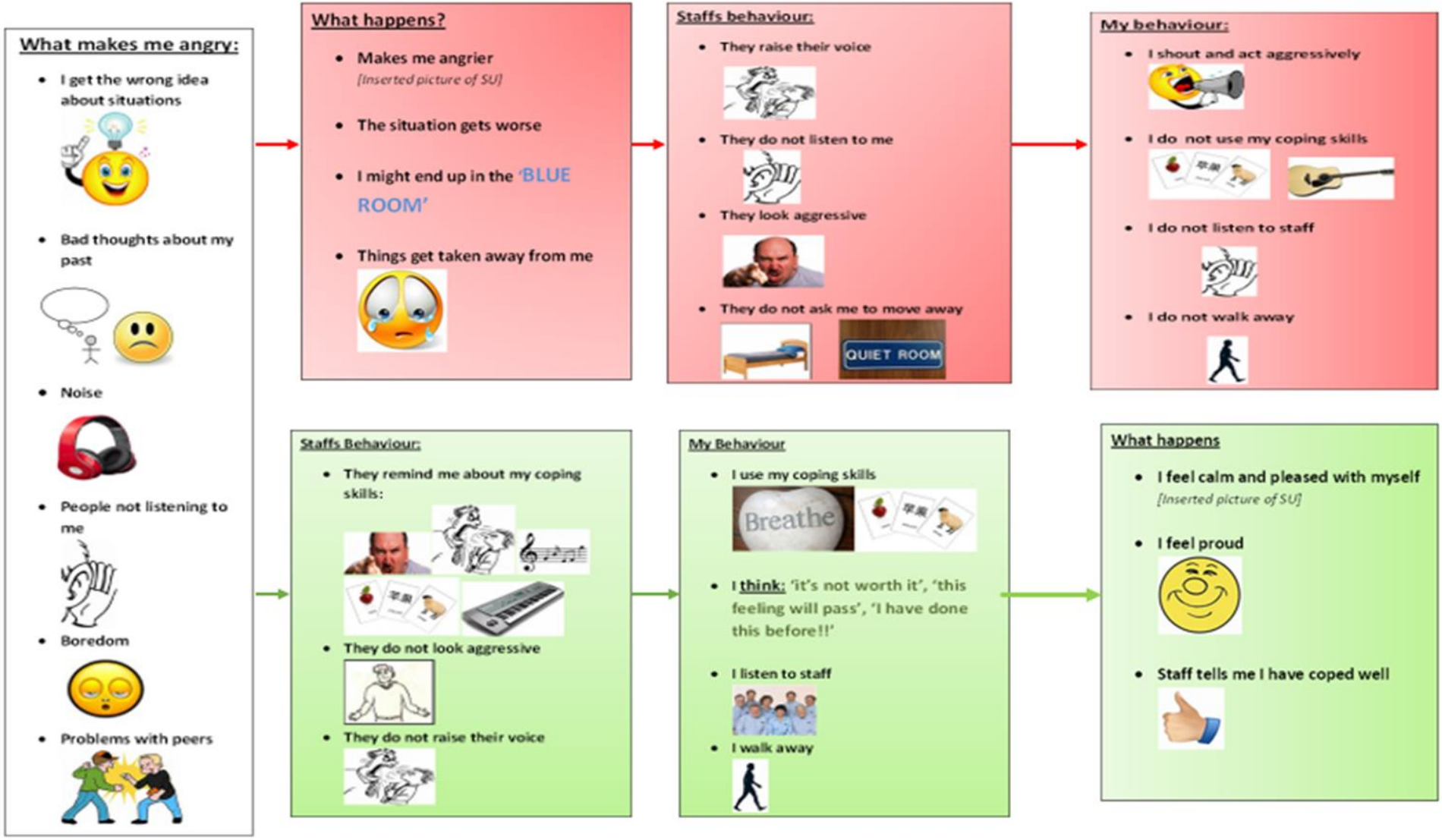
Session 8 (Ms S)	• Reflect on incidents and Ms S perception of the aggression and subsequent behavioural responses. • Model positive reinforcement. • Discuss PBS formulation.
Session 9 (Ms S)	• Reflect on incidents and Ms S perception of the aggression and subsequent behavioural responses. • Model positive reinforcement. • Discuss whether the PBS plan is being adhered to.
Session 10 (Mr. N)	• Reflect on incidents and Ms N perception of the aggression and subsequent behavioural responses. • Model positive reinforcement. • Discuss whether the PBS plan is being adhered to. • Enforce the importance of generalisation.
Session 11 (Mr. N and Ms S)	• Reflect on incidents and staff's perception of the aggression and subsequent behavioural responses. • Model positive reinforcement. • Final review of the PBS plan. • Emphasise the importance of modelling the techniques.

Appendix I: Diagrammatic Formulation



*It is unrealistic to think that we will stop [NAME] becoming angry. However, our aim is to help him manage his anger in ways that do not include aggression. There are a number of strategies we can use in order to reduce the likelihood of further aggressive incidents.

Appendix J: Diagrammatic Formulation (Adapted)



Appendix K: Evaluation Questions

1. Have you found the 2-way sessions useful?

Very Somewhat not sure not really no

Comments:

---

2. Has the information learnt from the 2-way sessions impacted upon your practice?

Very Somewhat not sure not really no

Comments:

---

3. How confident do you feel in managing the Service Users aggression?

Very Somewhat not sure not really no

Comments:

---

4. How would you describe your therapeutic relationship woth the Service User?

Very Somewhat not sure not really no

Comments:

_____

_____

_____