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What is the relationship between relational security, attachment, ward incidents and treatment outcomes on forensic psychiatric wards?

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Abstract

Background: The past few decades have seen the application of Bowlby's attachment theory to the understanding of the impact of parenting on children's development and to the understanding of the development of mental health problems and personality difficulties and how these might present themselves in interpersonal relationships. It has been argued that forensic institutions need to become secure bases (Adshead, 2004), which promote the development of more secure therapeutic relationships, as these might help service users to heal past traumas and develop better ways to relate interpersonally to others. Establishing a secure base for forensic patients involves the maintenance of a physically safe environment with a consistent, predictable structure. It also involves a strong investment in relational security. The Department of Health (Appleby, 2010) has recently issued guidelines about how relational security might be strengthened in secure environments, in order to reduce the occurrence of risk incidents. Based on these guidelines, Tighe and Gudjonsson (2012) have developed the See Think Act Scale in order to measure relational security in forensic environments.

Method: In Chapter 1 of this thesis, a systematic literature review summarizes what is known about the relationships between attachment, relational security and therapeutic relationships. A paucity of research with forensic populations was noted. Consequently the empirical research paper in Chapter 2 explores more systematically the relationships between attachment, relational security, risk incidents and treatment outcomes on various forensic psychiatric wards, using several data collection methods. Chapter 3 provides a critique of the See Think Act Scale developed by Tighe and Gudjonsson (2012). Finally Chapter 4 discusses suggestions for staff and service development in the context of the results of the literature review and research study.

Results: Despite the Department of Health's drive to improve relational security in forensic institutions in order to reduce risk incidents, the systematic review highlights the lack of methodologically robust studies in this area. In addition, a paucity of research, using consistent designs, exploring the relationships between attachment representations, therapeutic relationships and treatment outcomes with this population is noted. Statistical analyses were not run to explore the relationship between staff's attachment representations and relational security because of the poor reliability of the

measure of staff's attachment. No relationship was found between relational security (as measured by staff) and service users' attachment to the service. In addition, no relationship was found between relational security and risk events on the wards and between relational security and treatment outcomes (as measured by changes in dynamic risk scores from baseline to follow up). Additional analyses revealed that relational security and ward atmosphere were moderately correlated with higher levels of relational security associated with more positive ward atmosphere. Further, a large positive correlation was found between patients' attachment to the service and ward atmosphere, with higher attachment to the service being associated with more positive ward atmosphere. Furthermore, a moderate, negative, relationship was found between patients' attachment to the service and risk incidents, with higher attachment to the service being associated with fewer risk incidents. Finally, standard multiple regression revealed that relational security and ward atmosphere significantly predicted patients' attachment to the service. Ward atmosphere was noted to make the stronger contribution compared to relational security, explaining 74% of the variance in service users' attachment to their treating teams, whereas relational security was found to explain 27% of the variance in the same variable. The critique of the STA Scale revealed that, despite the need for further studies to establish the psychometric properties of this instrument, the STA Scale is helpful in qualifying and measuring a concept that has been traditionally hard to define and measure.

Conclusions: More robust research is needed to investigate the relationships between attachment, relational security, risk incidents and treatment outcomes on forensic psychiatric wards. Suggestions for staff training and service developments are proposed in order to promote stronger therapeutic relationships between staff and service users in these settings so that forensic wards can become closer to secure bases which might help clients to overcome past interpersonal traumas and develop safer ways to relate interpersonally.

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I dedicate this thesis to my children Julia and Jack.

Contents

Introduction

This research topic has been chosen because, to date, there is scarce empirical research exploring systematically the relationships between attachment, relational security, risk incidents and treatment outcomes in forensic psychiatric units. This thesis hopes to add new insights to this under-researched area, in order to stimulate ideas for further research and practice / staff developments.

Evidence has been accumulating about the violent conduct of psychiatric in-patients in European and North American institutions (Novaco, 1994). For example, Fottrell (1980) found that around 10% of patients residing in three British hospitals had been assaultive towards nursing staff during his one-year study. In a more systematic investigation involving two American state hospitals, Tardiff (1983) found that 7.8% of male patients and 7.1% of females had been assaultive within three months prior to the survey. In addition, Larkin, Murtagh and Jones (1988) reported that 37% of patients residing in one of the British Special Hospitals had been assaultive during a six-month interval. The vast majority of assaults was on nursing staff. Specifically, it was found that staff were more than three times as likely to be assaulted than other patients. More recently, Kuivalainen, Vehvilainen-Julkunen, Putkonen, Louheranta, and Tiihonen (2014) found that a total of 840 physically violent incidents occurred in a Finnish forensic psychiatric hospital from 2007 to 2009. In 1997, a total of 405 aggressive incidents were recorded in an inpatient neuropsychiatric unit (Iverson & Hughes, 2000). These data seem to suggest that assaultive and violent behaviour in inpatient psychiatric settings is not that uncommon.

Threatening and assaultive behaviour can have negative consequences for staff and patients. For example, victims or witnesses of the incident may experience emotional and/or psychological distress; they may feel less safe on the wards; and they may suffer physical injuries of varying degrees. In addition staff might experience less job satisfaction, they may take time off work, with financial implication for the service, they may develop cynical attitudes towards patients and colleagues and ultimately quit their job (Rossberg, Eiring, & Friis, 2004). Therefore it is essential that threatening and assaultive incidents are prevented. This might be achieved by investing in relational security and supporting forensic staff to develop stronger working relationships with their patients.

Most forensic clients are detained in secure settings against their will and present with complex development histories. Many have experienced some form of abuse (emotional, physical, sexual and / or neglect) as children and have had problems at school. They have a long history of substance abuse; offending has begun in their adolescent years and at some point has escalated to violent behaviour (towards self and / or others). The most common diagnoses are personality disorder and / or psychotic illness. They may have had several admissions to hospital or have been previously known to community mental health services (Arsuffi, 2010; Dernevik, Grann, & Johansson, 2002; Dudek et al., 2007). Forensic patients present many challenges to clinicians trying to develop working alliances with them (Arsuffi, 2007). Because they have caused great suffering to others, they may raise negative feelings in professionals (fear, disgust, etc.) (Adshead, 2012); may be hard to motivate to engage or engage in treatment superficially for instrumental reasons (e.g., to get a good report and be discharged) (Arsuffi, 2007); they want help but at the same time can be hostile and undermine staff's attempts to help; they tend to be suspicious of staff's motives and test boundaries to find out how reliable and consistent staff are (Adshead, 2012). Many forensic patients do not want to be detained in hospital for treatment and as a result they are highly frustrated by their lack of freedom; they minimise their behaviours and show either little or overwhelmingly distressing emotions; some can display a sense of entitlement and verbal / physical abuse (Adshead, 2012).

Attachment Theory can be a useful tool for understanding interpersonal relationships and management problems in forensic institutions, where staff and residents are involved in long-term dependency relationships that involve both care and control (Adshead, 2004). Attachment Theory argues that individuals form mental representations of attachment (caring) figures from childhood – what Bowlby (1969) called 'internal working models'. These representations influence two significant interpersonal behavioural systems in adulthood: (1) caregiving behaviour on behalf of others; and (2) care-eliciting for the self at times of threat (Solomon & George, 1996). There are different ways of measuring these representations, including self-report measures, behavioural observations, interviews and linguistic discourse analysis. Most measures find a distinction between secure and insecure attachment representations or styles, and differentiate between several types of insecure

attachment. Three types of insecure attachment in childhood have been described: (a) avoidant, (b) ambivalent and (c) disorganised (Adshead, 2004).

Bowlby (1988) has argued that the essential task of parenting is to provide a 'secure base'. Ainsworth (1969) first used the term 'secure base' to describe the distance from the mother within which the child remains relaxed and confident to explore. A successful secure base allows the child to develop: psychosocial relationships with others; self-esteem, empathy and regard for the needs of others; the ability to self-soothe and modulate arousal; a capacity to hold others in mind and not feel entirely bereft in their absence; and the ability to stand back from difficult experiences and think about them (Aiyegbusi, 2004).

In other words, a 'secure' system makes it possible to process anxiety and arousal effectively, which includes being able to reach out to carers and being comfortable with vulnerability. An 'insecure' system can process neither anxiety nor arousal well enough at times of distress, and those with insecure attachment representations will struggle to form useful relationships with care providers (Henderson, 1974). These attachment representations include representations of groups, of which one is a member. Thus, group attachment systems may be secure or insecure in the same way as individual attachment systems (Adshead, 2012) and will affect how an individual relates to groups, both work and therapeutic groups (Marrone, 1998). In a forensic ward, there are potentially multiple groups, e.g., ward staff and patients; junior and senior staff; various professional groups (medical, psychology, nursing, occupational therapy, etc.).

Adshead (2012) reviews literature that highlights that many forensic psychiatric patients have insecure attachments, showing a range of abnormal behaviours when distressed (e.g., verbal or physical aggression, self-harm, isolation). She also cites evidence (Bowlby, 1998) that some insecurely attached children grow up to be 'compulsive caregivers' in adulthood, choosing professional caring as a career. Adshead (2012) proposes that staff with insecure attachment histories may be at risk of showing atypical or dysfunctional care behaviours, such as getting caught in toxic attachment relationships with their patients, or being vulnerable to lapses of professional care, such as boundaries violations. There have been repeated public inquiries into forensic residential care (e.g., Blom Cooper, 1992; Fallon, 1999; NCAS London, 2009). Attachment Theory has been used to hypothesise why these failures have occurred.

So how might forensic services respond creatively to the challenges of working with highly disturbed people and help both staff and systems to function better?

Adshead (2004) argues that forensic institutions need to become a 'secure base', which promotes more coherent attachment relationships, improved ability to regulate arousal and the development of the capacity to think not only about one's own subjective experiences, but also about the feelings of others. Adshead (2004) makes recommendations about how such secure base could be achieved, including developing and maintaining professional therapeutic relationships; monitoring, naming and regulating affect for both staff and patients; and understanding anger as the result of anxiety, lowered threat perception and failure to regulate arousal. Secure relationships help to contain unregulated affects and arousal, in conjunction with therapies and medication (Adshead, 2004). As well as the maintenance of interpersonal limits and boundaries, establishing a secure base for forensic patients involves the maintenance of a physically safe environment with a consistent, predictable structure. One important function of this would be to reduce the interpersonal chaos that often accompanies groups of forensic patients. Within this framework, clinical activity can take place (Aiyegbusi, 2004).

Alongside physical security (e.g., perimeter fences, alarms, locks, doors and CCTV cameras) and procedural security (e.g., the restriction of certain items within a unit, the searching of patients and the environment, frequency of patient observations, and supervision / restriction of visitor), a secure base is established by investing in relational security. Relational security has been defined as having an extensive knowledge of how a patient presents interpersonally, including his / her potential risk behaviours.

The Department of Health (DoH) recently issued practice guidelines on relational security entitled See, Think, Act (STA) (Appleby, 2010). This was based on an analysis of a series of reports on untoward incidents and near misses in medium-secure forensic services that found that most incidents involved a breakdown in the interpersonal and risk management aspects of care that would broadly come under relational security (Tighe & Gudjonsson, 2012). Other definitions of relational security focus more on the quality of the therapeutic relationship (or alternatively named working alliance) between clients and staff, examples include:

- The balance between intrusiveness and openness and the trust between patients and professionals' (Kennedy, 2002);
- '....detailed and specialist knowledge of each person at any time, in order that risk factors can be identified and management strategies implemented accordingly to prevent escalation of risk or harm occurring' (Welsh Assembly Government, 2009, p. 6);
- The knowledge and understanding staff have of a patient and of the environment, and the translation of that information into appropriate response and care (Appleby, 2010);
- The quality of the therapeutic relationship clinicians have with their patients and the way this relationship is used to maintain safety through the recovery process (Tighe & Gudjonsson, 2012).

It has been suggested that patient and staff attachment styles are important variables in the development of a working alliance and may have an impact on treatment outcome (Dolan, Arnkoff, & Glass, 1993). For example, Korfmacher, Adam, Ogawa and Egeland (1997) found that clients with more secure relationship representations were better able to engage in interventions than those with insecure styles. Further, Dozier, Cue and Barnette (1994) found that clinicians' attachment style had an impact on how much they attended to the dependency needs of clients with serious mental health problems. Clinicians with an ambivalent attachment intervened in greater depth with ambivalent clients than they did with avoidant clients, suggesting that the likelihood of all clinicians to provide a secure base for their insecure clients is questionable. The effects of clinical staff's attachment styles on treatment have only begun to be explored, but it is suggested that staff's own attachment issues do influence the therapeutic process and outcome (Goodwin, 2003).

In addition, the relationship between relational security and attachment has yet to be explored, as the concept of relational security is a relatively new one. Thus the need to research if more robust relational security in forensic psychiatric services is related to more secure therapeutic relationships in the clients using these services. The suggestion that a breakdown in relational security might be related to risk incidents in forensic psychiatric institutions has also not been researched. Hence the need to investigate formally how relational security and risk-related behaviours are associated.

Therefore, this study aims to explore the relationship between attachment and relational security in forensic psychiatric settings. This project also aims to explore if relational security can be used to predict risk incidents and treatment outcomes. If this is the case, an argument can be made for investing in improving relational security on forensic psychiatric wards, in order to enhance client recovery / progress and decrease risk incidents. Based on these aims the following hypotheses will be tested:

1. That there is a relationship between attachment and relational security in forensic psychiatric settings.

2. Relational security is related to problematic behaviour on the wards.

3. Relational security is related to treatment outcome.

With the above aims in mind this thesis is structured into four chapters.

Chapter 1 presented a literature review using a systematic approach exploring the relationship between attachment, therapeutic relationships and relational security in forensic patients and how these are linked to treatment outcomes. This systematic review considered fourteen papers. Only two studies exploring relational security were included in this review. Of the remaining twelve, only two looked at attachment representations. Despite literature (Adshead, 2012) highlighting that many forensic psychiatric patients have insecure attachments, this systematic review revealed that there is no published paper exploring the relationship between relational security and attachment in adult forensic psychiatric patients detained in secure institutions. This may be because relational security is a relatively new concept, difficult to define and difficult to measure. This systematic review seemed to suggest that more secure attachment representations appear to facilitate the development of therapeutic relationships between professionals and their clients, which in turn lead to better treatment outcomes, in samples with mental health problems of varying degrees. A lack of research into the relationship between attachment and therapeutic relationships in forensic psychiatric populations was noted.

Chapter 2 presented a research study exploring the relationships between attachment, relational security, risk incidents and treatment outcomes on various forensic psychiatric wards, including low secure and medium secure wards and an open rehabilitation unit. Questionnaires assessing relational security and attachment style were collected from both staff and patients. The relationships between relational security, risk incidents and treatment outcomes at 9-month follow up were explored.

Chapter 3 presented a critique of the See, Think, Act Scale (Tighe & Gudjonsson, 2012), a recently developed measure of relational security in forensic psychiatric institutions, as this was one of the psychometric tools used in the research project, that was used to assess the relationships between relational security, risk incidents and treatment outcomes. A description of the scale and how it was developed was followed by an examination of its psychometric properties, including reliability, validity and limitations. The chapter ended with a list of recommendations on how to achieve further validation of the scale. It was hoped that this critique would be beneficial for the future use of this psychometric tool for clinical and research purposes, as it is a newly developed measure that needs to be further validated.

Chapter 4 proposed suggestions for staff training and service development which might support staff in overcoming the challenges of establishing and maintaining professional therapeutic relationships with forensic psychiatric patients, so that forensic wards might become more secure bases where affect regulation is promoted, stronger attachment relationships with caregivers are established, and clients are supported in developing more adaptive ways of interpersonal relating.

Chapter 1 - Literature Review

Abstract

Aim: To systematically review existing studies exploring the following questions: (1) What is known about the relationship between attachment and relational security in forensic psychiatric populations? (2) What is the relationship between attachment and therapeutic relationships in forensic psychiatric populations? (3) What is the connection between therapeutic relationships and treatment outcomes for forensic psychiatric patients?

Method: A scoping exercise was completed to assess the need for and originality of the current review. A systematic approach was then taken towards identifying and reviewing literature. Three database searches were completed and additional searches conducted by hand searching journals and reference lists of identified articles. Key researchers in the field were contacted. Articles were selected for the review through the application of set inclusion/exclusion criteria and were quality assessed. Data were extracted from all articles, results analysed and findings synthesised narratively.

Results: Fourteen studies met the inclusion criteria and were selected for the review. The very limited evidence base was reflected in the number of eligible studies published evaluating the relationship between relational security, attachment, therapeutic relationships and treatment outcomes in secure settings. Findings appear to suggest that attachment seems to facilitate the development of a therapeutic alliance. More 'securely' attached clients appear to develop better therapeutic relationships with their therapists. Similarly, higher attachment security in therapists has been suggested to be associated with better alliances in more complex clients. In addition, stronger therapeutic relationships between clients and their therapists seem to be associated with a more positive outcome during treatment. With regards to relational security, only two studies exploring relational security were included in this review. From these studies, no conclusion can be drawn about the impact of relational security on treatment outcomes, because relational security was not formally measured and because of the many limitations of these studies.

Conclusions: Despite some evidence suggesting that stronger therapeutic alliances and more secure attachment representations may be linked to better treatment outcomes, a need for further research in the field is evident because of the methodological limitations of the available literature. Alongside more methodologically robust trials, more research in this area is needed because most studies use non-forensic samples, limiting the applicability of their conclusions to forensic psychiatric populations.

Introduction

There has been considerable research interest in the relevance of attachment theory for therapeutic relationships (e.g., Dozier & Tyrrell, 1998; Rubino, Barker, Roth, & Fearon, 2000) but there is only limited support for the views that the success of therapeutic interventions is influenced by the therapist's own attachment representations (i.e., a more secure attachment style) (Adshead, 2002) or that improved relational security is related to better treatment outcomes or a decrease in risk incidents (Tighe & Gudjonsson, 2012). Thus a systematic review was conducted in order to establish more clearly what is currently known about the relationships between attachment, relational security, working alliance and treatment outcomes in forensic psychiatric populations.

The last 20 years have witnessed growing interest in Attachment Theory from within clinical, mental health settings (e.g., Fonagy, 2001; Holmes, 2001; Obegi & Berant, 2009; Wallin, 2007). Growing research links attachment to adult psychopathology and interpersonal problems (Beech & Mitchell, 2009; Levy, Meehan, & Temes, 2014; Liotti, 2014; Mikulincer & Shaver, 2007; Schwannauer & Gumley, 2014). At the same time, Attachment Theory has been used to understand management problems in forensic institutions (Adshead, 2004) and to provide a framework for interventions in mental health (Obegi & Berant, 2009).

Attachment Theory explains the tendency of human beings to develop emotional bonds to particular others (caregivers) and the various forms of distress (emotional and behavioural) that unwilling separation from or loss of these caregivers give rise to (Bowlby, 1977a). Attachment is defined as the affectional bond that a person develops with his / her caregiver(s) (or attachment figures), who is approached in times of distress (Bowlby, 1979). The attachment figure represents a secure base around which the individual feels safe to explore the world around him / her, developing and gaining independence (Ainsworth, Blehar, Salter, Waters, & Wall, 1978), and a safe heaven to which the individual can retreat to in case of actual danger or perceived threat (Bowlby, 1969). Attachment behaviours such as calling, crying, clinging, etc., are motivated by the urge to maintain contact with caregivers in the face of illness, distress, fatigue or threat. In evolutionary terms, proximity with caregivers increases the infant's chances of survival in case of danger. This explains

the ongoing importance of the development of attachments bonds not only during childhood, but also throughout the life cycle (Bowlby, 1980).

As a result of their interactions with caregivers during childhood, individuals form mental representations of the self in relation to significant others and expectations about how others will behave in interpersonal relationships (Bowlby, 1969; 1973; 1980). These internal working models reflect beliefs about whether the individual is worthy of attention and whether other people are dependable and reliable. These representations symbolise the quality of an individual's attachment and go on to influence two significant interpersonal behavioural systems in adulthood: caregiving behaviour on behalf of others and care-eliciting for the self at times of threat (Solomon & George, 1996). Laboratory-based observations of infants' behavioural responses to separation from caregivers (Ainsworth et al., 1978) highlighted three distinct forms of behavioural responses and methods of regulating distress. Infants were classified as secure and insecure, with the insecure category subdivided into ambivalent and avoidant (Ainsworth et al., 1978). Infants classified as secure are able to use the caregiver as a secure base, exploring the environment. They are distressed upon separation from the attachment figure but are easily comforted upon reunion. Ambivalent children do not use their caregiver as a secure base from which to explore, staying close to him / her. Upon separation they are greatly distressed; they are not easily comforted upon reunion, seeking contact with the caregiver whilst at the same time showing anger and upset. Infants classified as avoidant are unlikely to show affection to the attachment figure during exploration and to be distressed by separation. Upon reunion, despite some acknowledgement, they may ignore the caregiver or even move away from him / her (Ainsworth et al., 1978).

These attachment patterns largely arise in response to the nature of the caregiver's sensitivity to the infant's nonverbal cues (Weinfield, Sroufe, Egeland, & Carlson, 1999). Secure attachment is usually developed when caregivers are responsive to the child's needs. Secure attachment to caregivers has been linked to high self-esteem, empathy and regard for the needs of others; the ability to self-soothe and modulate arousal; and the ability to stand back from difficult experiences and think about them (Aiyegbusi, 2004). In addition, secure attachment is associated with a positive self-image, the capacity to manage distress appropriately, and comfort with autonomy and with forming relationships with others (Shaver & Mikulincer, 2002).

Conversely, when attachment figures are insensitive or unresponsive to the infant's nonverbal signals, he / she need to develop alternative means via which to elicit caregiving and manage distress. Children classified as ambivalent are usually raised by inconsistent caregivers, who sometimes attend to the infant's needs, but more often they do not. Hence infants adapt by escalating displays of distress. This is a defensive strategy called hyper-activation. An ambivalent attachment style is associated with a negative self-image, a fear of abandonment, an inhibition of autonomy and a tendency to be overwhelmed by emotions (Shaver & Mikulincer, 2002). Infants classified as avoidant have usually grown up with unresponsive, rejecting and / or controlling caregivers. These children learn to deactivate their attachment system to avoid the pain and disappointment that have come to be associated with their unsuccessful bids for physical and emotional closeness. This deactivating strategy is associated with compulsive self-reliance, estrangement from emotion and avoidance of close relationships (Shaver & Mikulincer, 2002). Individuals with insecure attachment representations can process neither anxiety nor arousal well at times of distress, will struggle to form useful relationships with care providers and will display maladaptive help-seeking behaviours (Henderson, 1974). This is because many forensic patients have history of abuse at the hands of carers; hence they are understandably suspicious of authority figures, or those who claim to be their carers. Thus they may repeat dysfunctional attachment behaviours as they relate to staff as they did to their dangerous carers from the past. For example, in some patients, the anxiety about asking for help may be so great that they become aroused, angry, hostile and aggressive, and may then act out in a threatening manner that can often alienate those who might be able to care (Adshead & Aiyegbusi, 2014). Subsequent to Ainsworth et al. (1978), a fourth pattern of attachment style has been identified – the disorganised style (Main & Solomon, 1986; 1990). Infants with this attachment style display behaviours in response to separation and reunion with caregivers that are bizarre, contradictory, and incomprehensible. These behaviours have come to be understood as expressions of fear, which seems to arise in response to maltreatment and neglect (Hesse & Main, 1999).

Building on literature on attachment development in childhood, subsequent research has led to the classification of attachment in adulthood. Adults' attachment representations have been named differently by different researchers, but the main categories seem to be: (1) secure-autonomous, (2) dismissing (or avoidant), (3)

preoccupied (or ambivalent / anxious) and (4) disorganised (or fearful) (Bartholomew, 1990, 1997; Hazan & Shaver, 1987; Main, Kaplan, & Cassidy, 1985).

In the clinical context, Attachment Theory contributes to the understanding of the development of psychopathology. According to Attachment Theory, insecure attachments are originally an adaptation to poor caregiving environments. Although insecure attachment is not pathological per se, it can have an adverse effect on adjustment in later relationships and can increase the risk of psychopathology by rendering the individual more vulnerable to stress (Goodwin, 2003). Literature has suggested that a high proportion of individuals coming into contact with mental health services are insecurely attached (Dozier, Stovall, & Albus, 1999; Goodwin, 2003). Research by Tyrell and Dozier (1997) has found that 83% of adults with serious psychiatric disorders could be classified as insecure. Similarly, Adshead (2012) reports that as many as 80% of forensic psychiatric patients have insecure attachments, showing a range of abnormal behaviours when distressed. For example, service users with insecure attachments might be suspicious of authority figures, difficult to engage and less likely to be treatment compliant; their attachment insecurities might present themselves as antisocial attitudes rather than as problems with trusting others; they may avoid acknowledging distress in themselves or others; and they might not know how to utilise staff care and therefore repeat dysfunctional attachment behaviours, e.g., they may behave in a 'disturbed' way rather than ask for help in appropriate ways, they may be unable to accept care when it is offered , or they may be so anxious when asking for help that they become aroused, angry, aggressive, they push boundaries and may then act out in a threatening manner (Adshead, 1998, 2012; Hunter & Maunder, 2016; Kraft-Goin, 2006). This approach tends to make it difficult for ward-based staff to provide help effectively.

Adshead (2012) also cites evidence (Bowlby, 1998) that some insecurely attached children grow up to be 'compulsive caregivers' in adulthood, choosing professional caring as a career. Other studies (Bakermans-Kranenburg & Van Ijzendoorn, 2009; Diamond, Stovall-McClough, Clarkin, & Levy, 2003) have found that a significant proportion of staff working in residential settings have insecure attachment styles. These insecure internal working models of attachment will affect staff care-giving and care-eliciting behaviour. For example, staff (without realising it) might become hyper-aroused and agitated when faced with threat or need; or they may become avoidant or hostile to patients. They may also be at increased risk of

stress reactions, burn out, sexual boundary violations and other types of inappropriate relationship (Adshead & Aiyegbusi, 2014).

There have been repeated public inquiries into forensic residential care (e.g., Blom Cooper, 1992; Fallon, 1999; NCAS, 2009). For example, in the two inquiries into Ashworth Hospital (Blom Cooper, 1992; Fallon, 1999), there was evidence that staff had been physically abusive to patients and that staff had either colluded with patients in rule-breaking behaviour, or turned a blind eye to it, or not noticed it. Attachment theory has been used to aid the understanding of these failures. It has been suggested (Adshead & Aiyegbusi, 2014) that the activation of insecure working models in staff might have resulted in emotional reactions towards the patients, such as hostility, rage, contempt and fear or panic, anxiety, disorganisation and helplessness. Staff might have perceived patients as especially provocative and threatening; hence using violence to manage them as opposed to organised restraint or some other socially sanctioned response. The set of incidents in the second inquiry (Fallon, 1999) have also been explained using attachment theory. It is proposed (Adshead & Aiyegbusi, 2014) that the attachment relationships between staff and patients had become so enmeshed, that there was an abolition of boundaries between staff and patients; hence staff lost their professional identities and lost sight of therapeutic goals, consequently failing to notice that some patients were victimising others, perhaps because they were overwhelmed by their own feelings of hopelessness and helplessness.

To respond creatively to the challenges of working with highly disturbed people and help both staff and systems to function better, Adshead (2004) argues that forensic institutions need to become a 'secure base', which promotes more coherent attachment relationships, improved ability to regulate arousal and the development of the capacity to think not only about one's own subjective experiences, but also about the feelings of others. Adshead (2004) makes recommendations about how such secure base could be achieved. First of all forensic staff need to have a thorough understanding of the following domains: (1) attachment theory and the development of personality and its disorders, (2) the significance of attachment insecurity to the risk of violence and to thinking about victims, and (3) the relevance of relational security and insecurity between staff and patients within residential care (Adshead & Aiyegbusi, 2014). Secondly, forensic staff need to be able to set and maintain therapeutic boundaries; monitor, name and regulate affect for both staff and patients;

and understand anger as the result of anxiety, lowered threat perception and failure to regulate arousal (Adshead, 2004). Secure boundaries help to contain unregulated affects and arousal, in conjunction with therapies and medication (Adshead, 2004). Boundary creation and maintenance are an ordinary part of health care relationships; the boundaries of professional identity help to create therapeutic spaces, and keep separate what belongs to staff from what belongs to patients. This is particularly important in forensic settings, because it helps to maintain safety for unregulated feelings, so that an individual session with a keyworker or therapist is a good place to express distressing feelings, which are then safely contained (Adshead, 2002).

Alongside the maintenance of interpersonal boundaries (i.e., relational security, discussed below), a secure base for forensic patients is established via the maintenance of a physically safe environment (physical security) with a consistent, predictable structure (procedural security).

Relational security

Relational security (also named as therapeutic security) has been defined as having a detailed knowledge of those receiving secure care and how to manage them. For example, a competent forensic nurse will have an extensive knowledge of a patient, including potential risk behaviours. He / she will also have a relationship with the patient which acknowledges openly the potential for dangerous behaviour and how to manage it. This level of knowledge allows staff to consistently assess behaviours and changes in mental state that may have a direct relationship to any immediate or potentially dangerous behaviour or similarity to offending patterns. This knowledge can enable care to be delivered in an environment where levels of restriction and supervision can be varied, according to the needs of the patient while maintaining the protection of others (Collins & Davies, 2005).

Relational security has been divided into quantitative and qualitative aspects (Kingsley, 1998). Quantitative relational security includes variables such as the staff-to-patient ratio, the number of bank or agency staff on a ward, and the amount of time spent in face-to-face contact. Qualitative relational security relates to the balance between intrusiveness and openness within staff-client relationships and the trust between patients and professionals. Relational security is closely linked to the therapeutic rapport between clients and staff and the quality of care provided to

patients (Kennedy, 2002). In an article published online (Nursing Times.net, 2007), it has been argued that relational security relies on staff developing constructive and professional working relationships with their colleagues and therapeutic relationships with their patients. It includes a commitment to the provision of therapeutic activities and the recognition of each patient's individual needs. Staff must be confident in each other's support in the event of a problem. Relational security is a continuous process through which staff can highlight any security threats and support each other at work. Thus, it is by far the most important element in maintaining the therapeutic progress of patients and in ensuring that the whole security systems works (Nursing Times.net, 2007).

The Department of Health (DoH) recently issued practice guidelines on relational security entitled See, Think, Act (STA) (Appleby, 2010). In these guidelines, Appleby (2010) describes the four key areas that help staff maintain relational security. Each of these areas comprises two dimensions. Figure 1 shows each of these areas and their dimensions.
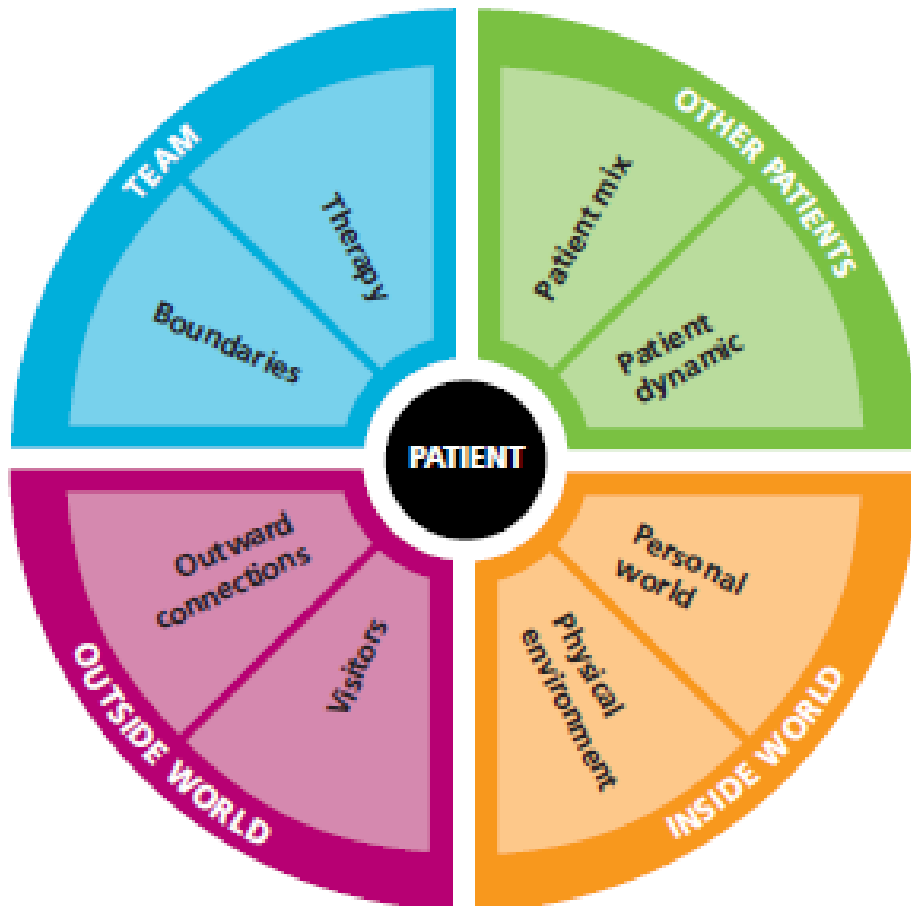
Figure 1. Graphic representing the various components of relational security (Appleby, 2010).

Appleby (2010) defines the team as every member of staff who has regular contact with patients, including domestic, catering and short-term staff. Two of the team's main responsibilities are to establish and maintain appropriate boundaries (relational, procedural and physical) and to engage proactively, positively and therapeutically with patients. Relational boundaries are important because they provide the basis for safe and effective therapeutic relationships with service users. Appleby (2010) argues that interpersonal boundaries must always be professional, respectful and have clear, understood limits; they cannot become personal (e.g., staff should not accept clients swearing at them; or staff should not talk about their private lives or their religious, political beliefs with service users). Despite caring for patients over a long period of time, staff cannot become too close to their patients, in order to

protect service users from misunderstanding the nature of the relationships they have with staff. Boundaries are also important because when patients see that boundaries are not consistently enforced, they might push the boundaries even more, which can lead to a chaotic ward environment and increase the risk of violence or self-harm. Encouraging patients to engage in various therapeutic activities is another major responsibility of the care team, as therapeutic activities ensure that patients receive the care they need in order to recover and develop the skills they need to function more adaptively in society. This does not only mean running groups and sessions. It means taking every opportunity to engage with service users, to encourage participation, to reinforce new skills on and off the ward and to be consistent and positive role models with patients and with colleagues alike (Appleby, 2010).

Another aspect of relational security described by Appleby (2010) relates to the patient mix and to the dynamics that exist on the ward. The patient mix is defined as the combined effect and potential risk of all the people that make up the ward community. Appleby (2010) argues that staff need to know the risks posed by each patient (past, current and future) alongside how this risk might overall change the risk profile of the ward. There might be circumstances when it is necessary to move a patient to another ward, in order to prevent escape, or allow this or other patients to disclose information without fear of intimidation, or provide respite to fatigued staff. The patient mix must be healthy in order to support the maintenance of a therapeutic ward environment. As well as knowing the risks posed by each patient and how these combine together, staff must observe carefully the dynamics between patients on the ward. Appleby (2010) suggests that a ward environment that is experienced as positive, safe, co-operative, with commonly shared values is more therapeutic, recovery-oriented and less risky that a ward where some patients victimise their peers or exert pressure on others to disengage from treatment or to undermine staff and security.

The third area of relational security described in the DoH guidelines (Appleby, 2010) relates to how patients are feeling within themselves and how the immediate physical environment might impact on them. It is argued that how service users feel inside makes a big difference to the risks they present. Some events (e.g., death of a relative, key anniversaries, not being discharged at a Tribunal) can trigger unpleasant feelings in service users. These in turn will influence their ability to cope with treatment or to use the skills they have leant to manage their mental well being and

behaviour. Knowing the histories of the patients, what might de-stabilise them and how they feel on a day-to-day basis is important so that staff can provide extra support and potentially prevent a serious risk incident. Alongside knowing service users' inner world experiences, staff must communicate during shifts and handovers what they have observed during each shift so that they can provide continuity of care and keep a patient's progress on track. The immediate physical environment also has great implications for relational security. Patients need their own private spaces, but at the same time they need areas where they can socialise and interact positively with others, peers and staff. Appleby (2010) argues that ward environments should not be too crowded or noisy but should feel comfortable and relaxed. Staff should take every opportunity to engage with patients as a group and individually. Sometimes some patients might try to establish authority over others by taking control over certain parts of the ward. This can lead to bullying and harassment. If this happens, staff need to talk as a team and agree what needs to change and a course of action.

Finally, the last area of relational security described by Appleby (2010) relates to how the outside world (visitors and outward connections) can impact on clients' recovery and risks. Most patients place a lot of value on the visits they receive from people such as family, friends, advocates and carers. These visits can play an important role in the stability and recovery of service users. Staff need to be aware when these visits are good and when they are unhelpful. Visitors need to know what rules and boundaries apply to them, the reasons behind these rules and what the consequences of breaking them might be. If visitors see that security or boundary violations go undetected, this might increase the risk to patients or the potential for contraband and illicit substances to enter the service. However, when visits are noted to have a positive influence on the client's recovery, they should be encouraged. Contact with the outside world is also an important part of treatment. Therefore, when safe and appropriate, staff should also encourage clients to use their leave and have contact with family and friends in the community. But, staff should make sure that this contact is carefully planned, based on examination of previous risk behaviours and current presentation, because if a patient absconds or fails to return from leave, they could be at risk from others or present a risk to the community. Failing to return from leave could also be a setback in a service user's recovery, increasing feelings of frustration and decreasing motivation to engage in treatment. Thus, it is important to

discuss with a patient the conditions of their leave arrangements and consequences for breaching these conditions.

In summary, relational security is not simply about having a good relationship with a patient, but it is about having safe and effective relationships, which are professional, therapeutic and purposeful, with understood limits. Boundaries are important because they enable professionals to maintain their professional integrity and say "No" when limits are being tested or potential risks have been observed (Appleby, 2010). The next section will review literature on therapeutic relationships.

Therapeutic relationships

The term 'therapeutic relationship' originated in the psychodynamic tradition (Horvath, 2007) and was further developed by many writers in the second part of the 20th century (e.g., Bordin, 1976; Luborsky, 1976). In "The Dynamics of Transference", Freud (1958) highlighted the importance of understanding the therapist's feelings towards the patient in order to facilitate the establishment of a positive alliance with the analyst and promote change. Bordin (1976, 1994) defined the alliance as the level of collaboration between client and therapist, identifying three components of this: (1) agreement on tasks; (2) a positive bond between client and therapist; and (3) agreement on goals. Slightly differently from Freud (1958), Bordin proposed that a positive alliance is not healing in itself but is an ingredient that facilitates acceptance of the therapeutic work and engagement in it.

Luborsky (1976) proposed a notion of the alliance closer to the psychodynamic one, suggesting that it is a dynamic entity that evolves along with the different phases of therapy (Horvath & Luborsky, 1993). Luborsky (1976) went on to describe two kinds of alliance depending on the therapeutic phase involved. A Type 1 alliance is typical of the first stages of therapy and is characterised by the client's perception of the support and help of the therapist. A Type 2 alliance is typical of later phases in the therapeutic process and consists of the feeling of joint work towards overcoming the client's problems and reducing distress.

Bowlby (1969, 1973, 1980) also proposed an understanding of the therapeutic alliance within an attachment framework. Although he initially proposed that internal working models and attachment patterns that develop in childhood tend to persist throughout the lifespan, he later proposed that these might be revised under certain

conditions (Bowlby, 1973). There is evidence that individuals may become more or less securely attached depending on life stressors and changes in their key relationships (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000; Weinfield, Sroufe, & Egeland, 2000). One such key relationship is the one that develops during psychotherapy. Bowlby held the view that the therapeutic relationship had the potential to function as a new attachment relationship that could repair earlier attachment failures. He identified the therapist as a caregiver that provides the patient with a secure base, from which to explore the world (Bowlby, 1988). For Bowlby, the aim of therapy was to foster the patient's ability to relate to others in more adaptive and meaningful ways, and to engender what he called 'earned security' (Bowlby, 1977b, 1988).

Holmes (2014) too has applied attachment theory to the understanding of the therapeutic relationship between therapists and their clients. He has argued that the basic interpersonal structure of therapy consists of: (1) a person in distress seeking a secure base, (2) a caregiver with the capacity to offer a secure base from which to explore previously warded-off emotions whilst reflecting on past experiences, and (3) the resulting relationship, which will be affected by (a) the client's expectations about how the caregiver will respond to his / her distress and (b) the therapist's own attachment style. Based on Shaver and Mikulincer's (2008) classification of attachment styles in adults[1], and his formulation of the therapeutic relationship, Holmes (2014) proposed that, during therapy, some clients appear to be 'switched-off' (deactivated), describing difficulties minimally and resisting the therapist's prompts to describe feelings; whilst other clients overwhelm the therapist with their emotional experiences (hyper-activated). At the same time, the therapist will respond to this transference based on his / her own attachment representations. Thus, from an attachment perspective, the therapeutic relationship can be conceptualised as the results of two opposing sets of forces. On the one hand, the analyst attempts, within the limited time of therapy, to provide a secure attachment experience from which to encourage exploration; on the other, the patient approaches the relationship with prior expectations of sub-optimal care-giving. Secure therapists are more likely to remedy

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[1] Shaver and Mikulincer (2008) see insecure attachments as a spectrum ranging from deactivation of attachment needs (corresponding to avoidance in children) at one end of the spectrum, to hyper-activation (corresponding to ambivalent attachment) at the other end of the spectrum.

their clients' attachment insecurities (e.g., managing more adaptively increasing levels of anxiety and distress); whereas insecure analysts are more likely to collude with and reinforce attachment insecurities (Holmes, 2014).

Other researchers (Najavits, Crits-Christoph, & Dierberger, 2000) have described the therapeutic alliance as a helping relationship based on trust and respect, along with a sense of faith and hope for recovery for the client. The therapeutic relationship requires one to be sensitive to their own emotions as well as those of others. Using their knowledge and skills, the therapist can assist clients with meeting their various needs, including physical, emotional and spiritual needs. The purpose of this relationship is to promote good health and well-being in the client. Studies have explored what therapist characteristics are linked to better treatment outcomes.

Some outcome differences between therapists have been reported in various patient populations and therapeutic settings (e.g., Dinger, Strack, Leichsenring, Wilmers, & Schauenburg, 2008; Elkin, Falconnier, Martinovich, & Mahoney, 2006; Kim, Wampold, & Bolt, 2006; Schauenburg, Dinger, & Strack, 2005) but the results are either non-significant or it remains difficult to conclude what specific ingredients are more likely to be associated with better outcomes or stronger therapeutic alliances between therapists and their patients. For example, Schauenburg et al. (2005), in their pilot study, found that therapist characteristics (age, gender, professional experience, therapeutic orientation) were not predictive of better outcomes or alliance ratings. The authors explained that the non-significant results might have been due to lack of power, due to the small sample size, and proposed the need to repeat the study within a larger inpatient setting. Consequently, Dinger et al. (2008) investigated whether therapists differed in their effectiveness and ability to establish a therapeutic alliance in a large inpatient psychotherapy sample (2554 inpatients who were treated by 50 psychotherapists). Multilevel regression analyses were used to explore if (1) there were significant therapist differences on patient rated impairment at discharge, therapist rated impairment at discharge and patient-rated alliance and (2) if the influence of the alliance on outcome varied between therapists. Unfortunately the authors did not include any therapist characteristics in their regression models. Nonetheless they found significant therapist differences on outcome (patient and therapist rated) and on alliance ratings. Specifically they found that some therapists were more successful with severely impaired patients, whereas others reached better outcomes with less complex clients. They also found large therapist differences on the

client-rated alliance measure. Furthermore, the authors found that the impact of the therapeutic relationship on outcome varied between therapists. Although these results do not clearly highlight what therapist characteristics are more likely to be related to better outcomes or more helpful therapeutic relationships, they overall argue for the importance of exploring more in depth which therapists have higher alliance-outcome correlations than their colleagues.

Similarly, Elkin et al. (2006) reported an analysis of therapist effects in the National Institute of Mental Health Treatment of Depression Collaborative Research Programme (TDCRP) using hierarchical linear modelling. The TDCRP was a multisite study in which 239 clients with major depressive disorder were randomly assigned to four treatment conditions: cognitive-behavioural therapy, interpersonal psychotherapy, medication and clinical management, and a placebo pill and clinical management. In addition to testing for general differences in outcome resulting from the therapists, the authors also investigated the possible differential effectiveness of therapists with different types of patients. The analyses found no overall significant effects resulting from therapists, after controlling for patient initial symptom severity and treatment condition. It was, however, noted that there were some therapists (outliers) who had especially good or poor rates of patient retention and recovery. Although acknowledging that these results might have been due to power limitations (the therapist sample was comprised of only 17 professionals), in their conclusion the authors suggested that, in future research, it might be more fruitful to focus on patient-therapist interaction early on in treatment and explore if this is a more powerful predictor of therapist effectiveness on treatment outcomes.

Somewhat contradicting the above results, another study (Kim et al., 2006) re-examined the same data[2] in order to determine the variability in outcome due to therapists. Three samples were used: (1) completers, (2) intent-to-treat sample, and (3) completers entering the trial with severe depression. No attempt was made to examine therapist characteristics or actions that might account for the variability among therapists. The results revealed that about 8% of the variance in treatment outcome was attributable to therapists, whereas 0% of the variance was due to the particular treatment delivered. Variability in treatment effectiveness was greater in the

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[2] With the exclusion of two conditions: medication and clinical management and placebo pill and clinical management.

more severely depressed client group. Based on these results, the authors concluded that future research should focus on exploring which therapist characteristics and actions are more likely to impact positively client progress in treatment.

Based on these suggestions, other research has tried to explore more specifically which therapist and client characteristics might have an impact on the development of therapeutic relationships. For example, Petrowski, Nowacki, Pokorny, and Buchheim (2011) have explored the impact of attachment style on the development of a working alliance. In this study, anxiety patients with a more insecure attachment with highly preoccupied and disorganised features were found to evaluate the relationship with a more dismissing therapist as more helpful than that with a more preoccupied therapist. Based on these results, the authors argue the importance of matching attachment status between clients and the professionals they work with, in order to support the development of a more fruitful helping alliance. In another study (Tyrrell, Dozier, Teague, & Fallot, 1999), clients who were more dismissive (deactivating) were found to work better and have better outcomes (higher self-reported general life satisfaction and higher overall functioning as reported by their case managers) with case managers who were less avoidant. In contrast, clients who were less deactivating tended to work better with case managers who were more deactivating.

In addition to overall outcome differences between therapists and the importance of matching clients and therapists' attachment styles, other research (Baldwin, Wampold, & Imed, 2007; Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996) has suggested that therapists who form better alliances with their clients also reach better outcomes. There has been considerable research interest in the relevance of attachment theory for therapeutic relationships (e.g., Dozier & Tyrrell, 1998; Rubino, Barker, Roth, & Fearon, 2000) but there is only limited support for the views that the success of therapeutic interventions is influenced by the therapist's own attachment representations (i.e., a more secure attachment style) (Adshead, 2002) or that improved relational security is related to better treatment outcomes or a decrease in risk incidents (Tighe & Gudjonsson, 2012). Thus a systematic review was conducted in order to establish more clearly what is currently known about the relationships between attachment, relational security, working alliance and treatment outcomes in forensic psychiatric populations. Initially a scoping search was conducted looking at reviews exploring the relationships between relational security and

attachment in forensic patients and the impact on treatment outcomes. As this scoping exercise did not highlight any systematic review that looked at all these elements combined, no other scoping search was conducted. Instead search terms were broadened to include other definitions of relational security and a systematic review was conducted to explore the current knowledge in these areas. The approach that was taken to achieve this will be described next.

The current review - Aims and objectives

In order to assess the need for the current review, a search was completed to identify relevant literature and existing reviews in the areas discussed above. Searches were completed during April 2014 of the following:

     (1) Cochrane library,

     (2) Centre for Reviews and Disseminations,

     (3) Campbell Library.

     No systematic reviews were identified that explored the relationship between attachment, therapeutic relationships and relational security in forensic patients, and how these are linked to treatment outcomes. Thus, the aim of the current review was to take a systematic approach to identify all available studies that explored relational security, attachment and therapeutic relationships and their relations to treatment effectiveness based on the following questions:

     (1) What is known about the relationship between attachment and relational security in forensic psychiatric populations?

     (2) What is the relationship between attachment and therapeutic relationships in forensic psychiatric populations?

     (3) What is the connection between therapeutic relationships and treatment outcomes for forensic psychiatric patients?

Method

Search strategy

A scoping search was conducted to identify the existing literature base for the relationships between relational security, attachment and therapeutic relationships and their links with treatment outcomes. This search provided a basis for the review, helped to define the research questions and review parameters, and identify a review plan and generate key search terms. A search of three electronic databases was conducted on 30th April 2014 to identify potential studies to be included in the review;

(a) Embase 1996 to 2014 Week 17
(b) Ovid Medline without Revisions 1996 to 2014 Week 4
(c) PsychInfo 1987 to 2014 Week 4.

Databases were selected as being most relevant for the search topic, informed by the scoping exercise and by existing reviews in similar areas. Initially, as relational security is a relatively new concept, only papers that discussed relational security were included. The search terms used in the electronic databases were:

'relational security'
"relat* secur*"

Only 14 articles which included "relational security" as a term within the full text were found. These were published between 2001 and 2013. Of these many articles were opinion pieces (e.g., Kennedy, 2002) or commentaries on serious incident inquiry reports (e.g., Exworthy & Gunn, 2003). One was the paper See, Think, Act (STA) published by the DoH (Appleby, 2010) described in the introduction of this review, which details practice guidelines on relational security. Two others (Chester, 2012; Tighe & Gudjonsson, 2012) were papers evaluating the psychometric properties of the See, Think, Act Scale designed by Tighe and Gudjonsson (2012) to measure relational security in forensic settings. Only two articles met the inclusion criteria of this review and were therefore retained. These are described later in the 'Descriptive data synthesis' section of this review. Due to the

limited number of hits produced when using relational security as search terms, the search was broadened and studies which explored the relationship between attachment and therapeutic relationships (between staff and adult forensic psychiatric patients) and treatment outcomes were included.

The search was limited to English or Italian[3] language papers, due to time and financial implications involved with the translation of studies, and included peer-reviewed articles, editorials, commentaries, secondary studies and unpublished dissertations. Search terms were identified and adapted accordingly for each database. All articles were downloaded from the online databases cited above. Those papers unavailable electronically, were requested and collected from the Berrywood Library, Berrywood Hospital (NHS), Northampton. The search terms used in the electronic databases were:

attachment

(emotion* adj3 (connect* or tie or bond or relat*))

emotional attachment

"secure base"

(secur* adj3 (relat* or therap* or dynam* or boundar*))

(therap* adj3 (relat* or alliance or boundar*))

(mental* adj3 (ill or unwell or disorder*))

(patient* or client*)

"service user"

(inmate* or criminal* or forensic or offend* or prison* or detain*)

Following application of search terms to the databases, the total number of initial hits was 265. Removal of duplicates left a remainder of 256 publications. Initial sifting by reviewing the title and abstract, or full text where required, resulted in the removal of a further 243 articles. Reasons for removal of studies included: they were deemed not relevant because they were medical / pharmaceutical articles; or did not meet the inclusion / exclusion criteria, for example they were case studies or qualitative studies; they did not explore the relationship between therapeutic relationships / relational security and treatment outcomes; they used children / young

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[3] The author of this review speaks fluent Italian as well as English.

people as participants. This left thirteen studies, of which two were not included because they did not evaluate the relationship between therapeutic alliance and treatment outcomes. Of the remaining 11 studies, it was noted that one was a meta-analysis of 11 articles. Therefore all these articles were included in this systematic review, adding up to 21 studies in total. Of these, seven were excluded because they did not meet the quality threshold (score of 13-20). Therefore, 14 studies were included in the review. The flowchart of what was achieved is shown in Figure 2 on page 38.

In order to attempt to widen the search area and limit potential effects of publication bias the following additional searches were undertaken:

- Contacting four key experts in the field via email. Two articles were supplied but were not included in the current review because one (Tighe & Gudjonsson, 2012) was a duplicate article, and the other one (Browne, 1995) was not relevant because it was about attachment problems in couples. Details of experts contacted and a copy of the email sent can be found in Appendix 1.

- Conducting a search using the Google search engine. No additional articles were sourced using this search method.

Inclusion/exclusion criteria

The titles and abstracts identified through the various searches were scanned for relevance. Duplicates were removed at this stage. The remaining studies were reviewed using the following inclusion and exclusion criteria based on the SPIDER framework (Cooke, Smith, & Booth, 2012).

- Sample: Adult (aged 18 and over) psychiatric patients or forensic populations because this research focuses on adult forensic psychiatric populations.

- Phenomenon of interest: The relationships between attachment, therapeutic (professional) relationships, and / or relational security.

- Inclusion: Studies that looked at the interpersonal relating between staff and clients.

- Design: Exploratory, empirical, quantitative analyses because this research uses quantitative statistical analyses.

- Evaluation of outcome of treatment.

- Research: Any paper meeting the above inclusion criteria.

Quality assessment

Formal assessment of the quality of included articles impacts positively on reliability of results and conclusions of a review (Centre for Reviews and Dissemination, 2009). The author developed a quality checklist for the quantitative studies included in this review based on a variety of sources, including quality assessment forms used by previous doctorate students for their theses and the QUADAS tool (Whiting, Rutjes, Reitsma, Bossuyt & Kleijnen, 2003. See Appendix 2 for full checklist details. A total of ten items were included in the quantitative quality checklist. Individual items assessed within the checklist covered broader areas of sample selection, study design, outcome measures, data collection and analysis, and study findings to incorporate the major areas of potential research bias (Deeks et al., 2003).

In order to be included in the review, a study was required to satisfy minimum quality criteria. These criteria were: (1) addressing a clearly focused issue and (2) using appropriate methodology to answer the research questions. All included papers met this minimum criteria specification. Articles were then quality assessed against a number of items with the following scoring system:

Criteria fully met = 2

Criteria partially met = 1

Criteria not met = 0

Unclear / insufficient information.

The overall score for each paper was calculated by summing the scores for each of the ten items (highest possible score 20). Higher scores reflected a better quality article. Once total quality scores had been calculated for each study, scores were converted into percentages. Studies that obtained a score of 13-20 (65% +) were included in the review, similarly to systematic reviews generally and to previous doctorate students' theses, and were viewed as high quality. Papers below this score (60% or less) were viewed as poor quality and were not included in the review.

In terms of inter-rater reliability, in order to try to minimise bias in quality assessment of the studies, a random sample ($n = 5$) of the included studies were quality scored by a second assessor, a work colleague of the author (a Consultant Forensic Psychiatrist). Results of double scoring were within 1 and 2 points, which was considered acceptable to indicate reliability of scoring.

Data extraction

Data were extracted from all studies through the use of a data extraction form which can be found in Appendix 3. The data extraction form was constructed by the author and quality scorings were recorded on the form. The following data were extracted for each study:

- General article details – author, title, journal, year, volume, page numbers and location
- Aims of the study
- Measures –measures used, validity of measures
- Participants – sample size, gender, age, ethnic background, setting, diagnoses, forensic history, recruitment method
- Outcomes - statistical analysis used, findings
- Limitations
- Quality score.

The same form was used to extract data from all studies included in the review with data extracted by the author.

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┌─────────────────────────────────┐
│ Total number of studies identified │
│ 265                             │
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          │        ╲
          │         ╲        ┌─────────────────────────────────┐
          │          ╲       │ 243 irrelevant articles removed  │
          │           ╲      │ (title and abstract reviewed)    │
          │            ╲     │                                  │
          │             ➘    │ 9 duplicates removed             │
          │                  └─────────────────────────────────┘
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│ 13 studies   │
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          │          ╲       │  2 studies further removed for not │
          │           ╲      │ meeting inclusion criteria       │
          │            ➘     │ (after reading all text)         │
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│ 11 studies, of which one was │
│ meta-analysis of 11 studies  │
│ Total of 21 studies          │
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          │          ╲       │ 7 studies were excluded for not meeting │
          │           ➘      │ the quality threshold criteria   │
          │                  │ (score of 13 or above)           │
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│ 14 publications reviewed     │
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Figure 2. Search results of systematic review.

Results

A total of 21 publications met the inclusion criteria and were included in the review. Seven studies were removed on the basis of poor quality. Figure 2 provides details of the study selection process followed within the current review.   Summary of individual article information as obtained from the quality assessment and data extraction process is detailed in Table 1.

Table 1. Overview and critique of the research studies included in the systematic review.

Authors and year	Aims of the study	Measures used	Sample population And setting	Main findings	Quality score (for individual item and total)
Botella et al., (2008) (Spain)	To explore the relationship between client-assessed therapeutic alliance and therapy outcome. To explore the relationship between client-assessed therapeutic alliance and premature termination of treatment.	Clinical Outcome in Routine Evaluation – Outcome Measure (CORE-OM) Working Alliance Inventory – short version (WAI-S) After therapy had begun, participants were asked to complete the measures at regular intervals.	$N = 239$ clients who received outpatient psychotherapeutic treatment in a university-based clinic. 191 women (79.9%) and 48 (20.1%) men. Age ranged from 14 to 70, with a mean of 25.7 (*SD* 8.7). 69.75% of the sample was within the age range of 18 to 25 years. Diagnoses not specified.	Correlation analyses revealed that the correlation between alliance and symptomatic level was statistically significant in each of the sessions during which data were collected, with higher alliance ratings being negatively correlated with symptomathology. T tests revealed that therapeutic alliance was significantly lower in the drop out cases than the successful ones.	Participants recruitment = 2 Representativeness of sample = 1 Ethical issues = 0 Research design = 2 Appropriateness of measures = 2 Confounding variables = 0 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 2 Limitations = 1 Total = 14/20

Schauenburg et al., (2010) (Germany)	To investigate the influence of therapists' attachment representations on alliance and outcome in inpatient psychotherapy.	Adult Attachment Interview (AAI) Helping Alliance Questionnaire (HAQ) Symptom Checklist-90-Revised (SCL-90-R) Inventory of Interpersonal Problems (IIP) Impairment Score (IP)	$N = 31$ psychotherapists who treated 1,381 patients in an inpatient setting. Patients' diagnoses included affective disorders, anxiety disorders, adjustment / stress disorders, psychotic disorders, etc. Age ranged from 18 to 71, with a mean of 34.58 (*SD* 11.3). 66.4% of participants were females.	Multilevel regression analyses revealed that when therapists were treating interpersonally more distressed patients, higher attachment security of the therapist was significantly associated with better alliances. No significant results were found in relation to outcome.	Participants recruitment = 2 Representativeness of sample = 2 Ethical issues = 2 Research design = 2 Appropriateness of measures = 2 Confounding variables = 2 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 2 Limitations = 2 Total = 20/20
Birch, Cole, Hunt, Edwards, & Reaney (2011) (UK)	To explore patterns and frequency of self-harm across three units within a women's service. In this service	Data were collected using incidents forms. Data were divided into 90-day periods over 6	45 women who resided at the units for at least six months before data	Frequency graphs were used to show trends in the data over time and by unit. Given that the	Participants recruitment = 2 Representativeness of sample = 2

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women were not physically prevented from self-harming. Instead they were provided with an environment which provided them with relational security, in the hope that this would mean that the women's need to self-harm would diminish.	years.	collection started. Average length of stay for participants was 1 year and 1 month. Data were only collected while women were in the service. Medical diagnosis for participants was borderline personality disorder. But the women also attracted diagnoses such as schizophrenia, anxiety and depression. In some cases, women had a forensic background. Age ranged from 20 to 58, with a mean of 34 (*SD*	women stayed on the units differing lengths of time, with less women remaining in the service for long periods of time, the frequency of self-harm was presented as a function of the number of women present in each data set. It was observed that levels of self-harm diminished over time. Parametric statistics were used to compare the levels of self-harm during the first 90 days after admission and the last 90 days before discharge. There was a strong significant difference in rates of self-harm on admission and self-harm upon discharge.	Ethical issues = 2 Research design = 2 Appropriateness of measures = 0 Confounding variables = 1 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 2 Total = 16/20

unspecified).

| Byrd, Patterson, & Turchik (2010) (USA) | To explore the impact of attachment style on the psychotherapy process and outcome. Further, to examine the role of the working alliance as a mediator of the influence of attachment on treatment outcome. | Archival data.

Adult Attachment Scale – revised (AAS)

Working Alliance Inventory – Short Form Revised (WAI-SR)

Outcome Questionnaire -45 (OQ-45) | 66 psychotherapy clients treated at an outpatient university graduate programme training clinic. 39 females 27 males 75.8% were Caucasian Age ranged from 18 to 55, with a mean of 22.66 (*SD* = 6.41).

86.4% of the participants were university students.

Presenting problems included college adjustment issues, family issues, mood disorders and anxiety. | Multiple regressions were conducted to construct mediation models.

Some attachment patterns predicted the quality and strength of the alliance and the alliance predicted therapeutic outcome.

More specifically, clients who felt comfortable with interpersonal closeness were more likely to show symptom reduction during psychotherapy. This effect was partially mediated by the therapeutic alliance.

Rejection anxiety had no appreciable influence on either the alliance or | Participants recruitment = 2 Representativeness of sample = 0 Ethical issues = 1 Research design = 2 Appropriateness of measures = 2 Confounding variables = 0 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 2 Limitations = 1

Total = 14/20 |

				therapy outcome.	
Pulido, Monari, & Rossi (2008) (Italy)	To explore the relationship between institutional therapeutic alliance (ITA), i.e., the alliance formed by patients and all members of their treating team, and treatment outcome.	Institutional Working Alliance Inventory (IWAI). Patients completed this instrument twice, after one week of treatment and at the end of treatment. Symptom Checklist-90-Revised (SCL-90-R) Multidimensional Scale of Perceived Social Support (MSPSS) Subjective Distance Scale (SDS) Global Assessment Scale (GAS)	55 patients with various psychiatric disorders (schizophrenia, personality disorder with concomitant depression or anxiety), in partial hospitalisation, i.e., attending a day hospital Monday to Saturday from 9 am to 5 pm. Age ranged from 21 to 65, with a mean of 44 ($SD =$ 12.2). 36 (65.5%) were women.	The alliance assessed after one week of treatment did not predict symptomatic reduction. A significant correlation was found between the change in patients' perceptions of the institutional therapeutic alliance (shortly after and at the end of treatment) and their symptomatic reduction, suggesting that alliance increasing during the hospitalisation and psychopathological improvements might be an interdependent process.	Participants recruitment = 2 Representativeness of sample = 1 Ethical issues = 2 Research design = 2 Appropriateness of measures = 2 Confounding variables = 0 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 2 Total = 16/20
Frank & Gunderson (1990) (USA)	To examine the relationship of the therapeutic alliance to the treatment course and	Psychotherapy Status Report	$N = 143$ adults admitted to hopital during a 7-year	By the 12-month follow up, half of the original sample had dropped out	Participants recruitment = 2 Representativeness

outcome of patients with non-chronic schizophrenia.	Therapist reports Patient reports Medical records Psychiatric Status Schedule Inpatient Multidimensional Psychiatric Scales Menninger Health-Sickness Rating Scales Camarillo Dynamic Assessment Scales Wechsler Adult Intelligence Scale Rorschach Test Thematic Apperception Test Katz Adjustment Scales	period with a diagnosis of non-chronic schizophrenia. Age ranged from 18 to 35 years. $N = 81$ therapists.	of treatment. Patients with good or fair therapeutic alliances with their therapists in the first 6 months continued in therapy past this point and a large number stayed for the full 2 years of the study. Patients who formed stronger alliances in the first 6 months of treatment made more gains in more areas during the 2-year study period.	of sample = 1 Ethical issues = 1 Research design = 2 Appropriateness of measures = 1 Confounding variables = 2 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 2 Limitations = 2 Total = 17/20

		Soskis Attitudes Towards Illness Questionnaire			
Barr et al., (2013) (UK)	To establish if women placed in step-down services in the community showed marked improvements in functioning compared to similar women who remained in secure institutional care. Step down was thought to have greater relational security.	Security Needs Assessment Profile (SNAP) Historical Clinical Risk 20 (HCR20) Clinical Outcome in Routine Evaluation – Outcome Measure (CORE-OM) Symptom Checklist-90-Revised (SCL-90-R) Liverpool Violence Assessment Interview (LiVA) Social Behaviour Schedule (SBS) Personal and Social	$N = 37$ adult women with various Axis I or Axis II diagnoses. 9 residing in community-based services. 28 on the waiting list, residing in secure institutional care. Age ranged from 18 to 67, with a mean of 37 (SD unreported). 90% of the women were of white UK ethnic background. 30 women had a	Mann-Whitney U-tests revealed that the only statistically significant difference was in the CORE-OM total score at T3 assessment, which indicated higher psychological well-being in the intervention (community) group. Higher HCR20 scores were noted in the control group.	Participants recruitment = 2 Representativeness of sample = 1 Ethical issues = 2 Research design = 1 Appropriateness of measures = 2 Confounding variables = 1 Relation of results to aims = 1 Statistical tests = 2 Reporting of results = 1 Limitations = 1 Total = 14/20

		Performance Scale (PSP) Measures were administered at 3 points in time, over a period of 12 months: at baseline in month one (T1), during treatment in month six (T2) and finally in month 12 (T3).	known history of violence.		
Piper et al., (1999) (Canada)	To investigate the predictors of dropping out of therapy for patients who participated in time-limited, interpretive individual psychotherapy, in a randomised clinical trial.	Vanderbilt Psychotherapy Process Scale Various demographic variables The therapeutic alliance was rated by the patients and by the therapists after each therapy session, by means of six, 7-point Likert-type items that ranged from "very little" to "very much".	$N = 44$, psychiatric outpatients referred for psychotherapy, with various diagnoses, e.g., depression, anxiety, low self-esteem and interpersonal problems. 22 drop outs and 22 matched completers. The average age of	There were no significant differences between the drop outs and the completers on various pre-therapy variables, which included demographic, diagnostic, and initial disturbance variables. In contrast, several of the therapy process variables, including a weaker therapeutic alliance, less work, patient less exploration,	Participants recruitment = 1 Representativeness of sample = 1 Ethical issues = 1 Research design = 2 Appropriateness of measures = 1 Confounding variables = 2 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1

Principal components analyses revealed that one factor accounted for 87% of the variance for the patient-rated items, and one factor accounted for 83% of the variance for the therapist-rated items. Coefficient alphas were respectively .97 for patient-rated items and .96 for therapist-rated items. Thus the average of the six items was used as the alliance score for each source.	the patients was 33 years, 59% were women, 61% were educated behind high school, and 77% were employed. Most (95%) were white. Only a few (9%) had a history of psychiatric hospitalisation. 82% received an Axis I diagnosis. The most frequent disorders were: current major depression (45%), dysthymia (10%), alcohol abuse (9%), anxiety disorder (5%) and adjustment disorder (5%). In addition, 45% of the sample received an Axis II	and greater focus on transference, significantly differentiated dropouts from completers.	Limitations = 1 Total = 14/20

| | | | diagnosis. The most frequent Axis II diagnoses were: avoidant (25%), borderline (25%), paranoid (23%) and obsessive-compulsive (18%). A total of 39% of the cases received both Axis I and II diagnoses. Patients with primary problems related to psychosis, substance abuse, or psychopathic behaviour were been excluded from the trial. | | |
| Wallner-Samstag et al., (1998) (USA) | To determine predictive validity of measures of therapeutic alliance and interpersonal behaviour. | Symptom Checklist-90-Revised (SCL-90-R)

Inventory of Interpersonal Problems (IIP-127) | $N = 73$ patients (59% women).

Patients were between the ages of 18 and 65, with a mean age was 40.71 ($SD = 9.36$). | Univariate tests demonstrated that each of the WAI-12 Bond, Goal, Task and Total scores were significantly different among the three outcome groups, with dropout patients | Participants recruitment = 2
Representativeness of sample = 1
Ethical issues = 2
Research design = 2
Appropriateness of |

| | Post session questionnaire (PSQ), completed by patients and therapists independently after each therapy session. This questionnaire is made up of a number of different scales measuring aspects of the therapeutic alliance, including the Bond, Task and Goal dimensions of the WAI-12, Depth and Smoothness Indices of the Session Evaluation Questionnaire (SEQ), and Friendliness and Hostility subscales of the Interpersonal Adjective Scale (IAS-S) | Most (93%) had a college degree; 90% were white; and 74% were either single or divorced.

Patients were allocated randomly to 40 sessions of one of four types of therapeutic intervention: dynamic, cognitive-behavioural, supportive or interpersonal-experiential treatment.

Exclusion criteria included: current substance abuse, use of psychotropic medications within the past year, a | consistently rating the lower alliance scores, poor outcome patients rating moderate scores, and good outcome patients rating the highest scores. | measures = 2 Confounding variables = 1 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 1

Total = 16/20 |

significant physical health diagnosis, history of recurring psychotic or manic episodes, and a history of suicidal or violent problems.

62% of the sample received a diagnosis of depression, 25% of anxiety, 12% reported interpersonal problems and 1% received an eating disorder diagnosis.

37% received a Cluster C (Axis II) diagnosis, 42% received a diagnosis of personality disorder not otherwise specified

| | | | (NOS), 4% received a Cluster A diagnosis and 1% a Cluster B diagnosis. 15% of the sample presented with no Axis II pathology.

The sample of 73 patients were divided into three groups: dropout ($N = 25$), completed treatment with good outcome ($N = 28$) and completed treatment with poor outcome ($N = 20$). | | |
| Shick-Tryon & Kane (1993) (USA) | To examine the relationship between strength of working alliance after the 3rd session and unilateral client termination. It was hypothesised that the stronger the alliance, the less likely the client would terminate | Working Alliance Inventory – short version (WAI-S) | $N = 103$ college students (65 women) who came to a university counselling centre for help with personal concerns. | 41% of the clients who returned the WAI-S terminated therapy against the therapist recommendations.

Multivariate analyses revealed that there was a | Participants recruitment = 2 Representativeness of sample = 0 Ethical issues = 2 Research design = 2 Appropriateness of |

	therapy without the therapist agreement.		No race or age data available.	significant main effect for type of termination. Therapists gave lower ratings of the alliance to clients who would later terminate therapy unilaterally. Client ratings of the therapeutic relationship did not discriminate between types of termination.	measures = 2 Confounding variables = 0 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 1 Total = 14/20
Johansson & Eklund (2006) (Sweden)	To explore client factors of relevance in the establishment of a helping alliance and in the prediction of dropout from therapy. In this study the cut-off point for early dropout was set at three scheduled sessions, so if a patient did not attend the second or third scheduled session, he / she was regarded as an early dropout.	Revised Helping Alliance Questionnaire (HAq-II) Brief Symptom Inventory (BSI) Inventory of Interpersonal Problems (IIP) Motivation questionnaire	Patients ($N = 122$) referred to a psychiatric outpatient unit over a period of 5 months were asked to take part in this study. Exclusion criteria included: actively psychotic, had been in contact with the unit within the past 18 months, could not understand Swedish, suffering from dementia,	Out of the whole sample 15.6% patients were early dropouts. Independent sample t tests revealed a significant difference between early dropouts and non-dropouts with respect to the patients' assessment of the initial helping alliance, i.e., early dropouts had significantly lower levels of helping alliance.	Participants recruitment = 2 Representativeness of sample = 1 Ethical issues = 1 Research design = 2 Appropriateness of measures = 1 Confounding variables = 2 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 2

| | mental retardation or brain damage, or had been referred for a one off consultation only. | No significant difference was found on staff-assessed helping alliance between early dropouts and non-dropouts. | Total = 16/20 |
| | | | |

mental retardation
or brain damage,
or had been
referred for a one
off consultation
only.

Age range 18-76
years, mean =
36.9, $SD = 14.5$.

84 females

ICD-10 diagnoses:
3% mental and
behavioural
disorder due to
psychoactive
substance abuse;
3% psychotic
disorder; 32%
mood disorder;
52% neurotic,
stress-related and
somatoform
disorders; 7%
eating disorder;
and 3% disorder of
adult personality

No significant difference
was found on staff-
assessed helping alliance
between early dropouts
and non-dropouts.

The results also showed
that the early dropouts
differed from the non-
dropouts on age, i.e.,
they were significantly
younger.

Total = 16/20

and behaviour.

| Connors et al., (1997) (USA) | To evaluate the relationship between the therapeutic alliance and treatment participation and drinking outcomes during and after treatment among alcoholic outpatients and after hospital care clients. | Working Alliance Inventory (WAI)

Drinking history as measured by the SCID and the Alcohol Use Inventory

Alcohol consumption for the 90-day pre-treatment period, for the 12-week treatment period and for the 12-month post-treatment period. Alcohol consumption was assessed via self-report and by examining gamma glutamyl transpeptidase (GGTP) values at the 12-month post-treatment follow-up | 698 (71% men) outpatients and 498 (80% men) after hospital care clients. All met the DSM-III diagnosis for alcohol abuse or dependence. Exclusion criteria: acute psychosis and current drug abuse.

Mean age of the total sample = 42.6, *SD* = 11. 82% were white; 48% were employed; 63% were single; and 60% had had prior treatment in relation to their alcohol abuse. | Hierarchical multiple regression analyses were used to evaluate the contribution of the therapeutic alliance to treatment participation and drinking behaviour. In the outpatient sample, ratings of the working alliance, whether provided by the client or therapist, were significant predictors of treatment participation and treatment behaviour during treatment and at 12-month post-treatment period. Ratings of the alliance by the after hospital care clients did not predict treatment participation or drinking outcomes. | Participants recruitment = 2 Representativeness of sample = 1 Ethical issues = 1 Research design = 2 Appropriateness of measures = 2 Confounding variables = 2 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 1

Total = 16/20 |

| Startup et al., (2006) (Australia) | To investigate the role of patients' recovery style and the therapeutic alliance in provoking or forestalling patient drop-out from cognitive-behavioural therapy (CBT) for psychosis. | Active Engagement Scale

Working Alliance Inventory – observer rating (WAI-O)

Integration / Sealing Over Scale (ISOS) | Participants (*N*= 47) all met criteria for a diagnosis of a psychotic-type illness, and all had been admitted to a psychiatric hospital within the previous 28 days as a result of suffering from acute psychotic episodes.

Participants agreed to attend at least 12 sessions of CBT. Anyone dropping out before session 12 was considered a drop out. | 45% of participants dropped out of treatment before session 12.

T test revealed that the dropouts and the stay-ins showed significant differences in recovery, and on the Goal and Task subscales of the WAI. The dropouts were less engaged, showed less agreement with their therapists and had a sealing-over recovery style before they dropped out. However, the groups did not differ significantly on the Bond subscale of the WAI. | Participants recruitment = 2
Representativeness of sample = 2
Ethical issues = 1
Research design = 2
Appropriateness of measures = 2
Confounding variables = 0
Relation of results to aims = 2
Statistical tests = 2
Reporting of results = 1
Limitations = 1

Total = 15/20 |
| Meier et al., (2006) (UK) | To investigate the role of the therapeutic alliance in predicting length of retention in residential drug treatment. | Recent drug use

Relationship Questionnaire (RQ)

Coping Behaviours Inventory | N = 187 clients starting residential rehabilitation treatment for drug misuse in three UK services. | Of the 187 clients, 100 (53.5%) remained in treatment beyond 90 days and were classified as completers. The remaining 87 clients left | Participants recruitment = 2
Representativeness of sample = 2
Ethical issues = 1
Research design = 2 |

Treatment confidence	Clients were predominantly males (69.5%), with a median age 29.6, range 18 to 52 years. The majority of them had been using heroin on a daily basis and were injecting drug users. A quarter were involved in problematic alcohol use. 27% were either homeless or in unstable living arrangements, over 40% had no school qualifications, and 75% had committed crimes in the three months before treatment entry. The levels of psychological problems were	treatment prematurely. Cox proportional hazard regression models were fitted to predict the length of retention from early alliance scores (therapeutic alliance was assessed between weeks 1 and 3 of treatment). Clients with weak therapist-rated alliance dropped out of treatment significantly sooner than clients with strong therapist-rated therapeutic alliances. The client-rated alliance did not predict length of retention.	Appropriateness of measures = 2 Confounding variables = 2 Relation of results to aims = 2 Statistical tests = 2 Reporting of results = 1 Limitations = 2 Total = 18/20
Addiction Severity Index Psychiatric Score			
Texan Christian University Client Evaluation of Self and Treatment Scales			
Treatment Expectations Questionnaire			
WAI-S			
Length of retention and treatment completion			

high, and over half
had been
prescribed
medications for
psychological
problems.

Descriptive data synthesis

The data from the fourteen studies meeting the inclusion criteria and quality assessment threshold for the review were synthesised taking a narrative approach. Quality percentage scores ranged from 70% to 100%.

Aims of the studies

Table 1 shows studies had various aims. Because of the recent growing emphasis on relational security (Long, Fulton, & Hollin, 2008; Royal College of Psychiatrists, 2007), Barr et al. (2013) evaluated the relative benefit of supportive accommodation, comparing female patients in step-down housing and a control group in secure hospital who were on the waiting list for a place in supported accommodation. They argued that these step-down, 24-hour units in the community would offer improved relational security and encourage the growth of independence and empowerment in service users. The specific hypothesis tested was that women placed in the community would, over time, showed marked improvements in functioning compared to those deemed appropriate for this service who remained in secure institutional care. Birch et al. (2011) explored the frequency of self-harming behaviour across three women's units over a period of six years. All three units used a positive risk-taking approach to self-harm whereby women were not physically prevented from self-harming. Instead women were provided with relational security in the hope that their urge of self-harming would diminish.

Nine papers focused on the alliance between clients and their individual therapists. Botella et al. (2008) explored if the therapeutic alliance or its temporary weakening were correlated with outcome variables such as symptomatic improvement or relapse and premature termination of treatment. They hypothesised that: (1) there would be a significant positive correlation between client-assessed therapeutic alliance and therapy outcome in terms of symptomatic improvement and (2) the strength of the therapeutic alliance in patients who terminated treatment prematurely would be less than that in patients who ended treatment successfully. Eight studies examined the relationship between psychotherapy dropout and therapeutic alliance in adult individual psychotherapy (Frank & Gunderson, 1990; Johansson & Eklund, 2006; Piper, Ogrodniczuk, Joyce et al., 1999; Startup, Wilding, & Startup, 2006;

Tryon & Kane, 1993; Wallner-Samstag, Batchelder, Muran, Safran, & Winston, 1998); or drug and alcohol rehabilitation centers (Connors, Carroll, DiClemente, Longabaugh, & Donovan, 1997; Meier, Donmall, McElduff, Barrowclough, & Heller, 2006).

Only two papers looked at attachment styles, one focusing on the therapists' attachment styles and the other on the clients' attachment representations. Schauenburg et al. (2010) investigated the influence of therapists' attachment representations on alliance and treatment outcome in inpatient psychotherapy. The authors hypothesized that patients treated by therapists with secure attachments would report better therapeutic alliances with their individual therapist and would profit more from therapy as evidenced by a reduction in their symptoms. Whereas Byrd et al. (2010) examined the relationship between clients' attachment tendencies and therapy outcome, as well as assessing the degree to which the working alliance mediated clients' attachment representations and outcome. The authors hypothesized that clients' working alliance ratings would mediate the relationship between their attachment style and psychotherapy outcome.

Contrary to the studies cited above, Pulido et al. (2008) looked at the Institutional Therapeutic Alliance (ITA), that is the alliance developed by a patient and the whole staff team involved in his or her care, rather than looking at the "classical" alliance between a client and a single therapist. The authors proposed that ITA was more relevant in inpatient settings where a multi-disciplinary team, including nurses, social workers, psychiatrists, as well as psychotherapists, is more likely to be involved in the provision of treatment. The authors paraphrased Bordin's formulation (Bordin, 1994) of the alliance, and defined the ITA as a mutual understanding and agreement about change goals and the necessary tasks of moving towards these goals, along with the establishment of bonds to maintain the collaborative work between the patient and the therapeutic staff as a whole. This definition emphasizes the relational and reciprocal character of the phenomenon and implicates that patient and staff have to negotiate and re-negotiate many aspects of treatment, from expectations, specific therapies, setting issues, and the rules and norms of the institution (Monari, et al., 2005; Monari, 2004). In their study Pulido et al. (2008) aimed to explore the relationship between ITA and treatment outcome.

Participants

A total of 3738 participants were included in the studies, 1706 of which were male (45%), 1842 female (49%) and 190 of unknown gender (6%). Studies used predominantly adult samples (18+ years). Only one study used some participants below the age of 18 years (Botella et al., 2008). This paper was still included in the review due to a lack of published literature in this area. Participant ages ranged from 14 years to 71 years, with a mean age of 34.6 years. Five studies (Barr et al., 2013; Byrd et al., 2010; Connors et al., 1997; Piper et al., 1999; Wallner-Samstag et al., 1998) reported the ethnic composition of their samples. In these studies, 1416 (82.5% of the participants in the studies where ethnicity was reported) participants were of white Caucasian origins. The countries in which the studies were published were primarily in North America (6 studies) and Western Europe (3 studies published in the UK and 4 in other European countries).

1345 (35%) participants were treated as outpatients at university-based clinics. 1813 (48.5%) participants received treatment in an inpatient setting, 73 (1.9%) lived in secure institutions, and 507 (13.5%) lived in the community (no further details provided). 3143 (84%) of participants were diagnosed with various Axis I and II mental health problems, 356 with various adjustment issues (9%) and for 239 (6%) participants diagnoses were not specified. Only three studies (Barr et al., 2013; Birch et al., 2011; Meier et al., 2006), with relatively small samples (total $N = 269$) compared to the other studies, reported that participants had a known offending history. In summary, approximately half of the participants included in these studies were receiving treatment in an inpatient setting (level of security not specified), over one third were treated as outpatients at university based clinics and a minority (1.9%) lived in secure settings. A few (7%) had a recorded offending history.

Methodological design and outcome measurement

Methodological designs and outcome measurements for studies included in the review are summarised in Table 1. Two studies were randomised control trials (Piper et al., 1999; Wallner-Samstag et al., 1999) and two other studies used a comparison group (Barr et al., 2013; Connors et al., 1997). One study (Byrd et al., 2010) used a retrospective design. Studies used different instruments to measure participants'

functioning, progress in therapy and the therapeutic alliance between therapists and their clients. The most common tools used to evaluate functioning were the Clinical Outcome in Routine Evaluation – Outcome Measure (CORE-OM; used by two studies – Barr et al., 2013; Botella et al., 2008) and the Symptom Checklist-90-Revised (SCL-90-R; used by four studies – Barr et al., 2013; Pulido et al., 2008; Schauenburg et al., 2010; Wallner-Samstag et al., 1998). The most common instrument used to assess the therapeutic relationship was the Working Alliance Inventory (WAI; used by six studies – Botella et al., 2008; Byrd et al., 2010; Connors et al., 1997; Meier et al., 2006; Shick-Tryon & Kane, 1993; Startup et al., 2006).

More details about the designs of the studies included in this review will be described next. Barr et al.'s (2013) study was approved by the Local Ethics Committee. The authors themselves identified that non-random allocation to the two conditions of the study would have weakened their results. Seven well-validated instruments were used for data collection but no formal measure of inter-rater reliability was made for those assessments that were completed by clinicians (e.g., SNAP, HCR20). To overcome this potential source of bias, research team members initially undertook joint assessments with another team member to ensure consistency in assessments. When a level of agreement acceptable to both was reached, team members were allowed to complete the assessments on their own.

At the start of the study, 131 women lived in a range of psychiatric facilities. Of these, 13 were placed in step-down houses, whilst the rest resided in institutional care. Within this latter group, 29 met the criteria for a community placement and were thus placed in the waiting list control group. All 42 women were invited to take part in the study. Of these, 9 in the community group gave consent (69%) and 28 on the waiting list agreed to take part in the research (97%), giving an overall sample of 37 women. The two groups varied on legal status, with 88% of the intervention group being either informal or subject to a community treatment order and 97% of the control group being detained under section. The intervention (i.e., move to the community) group was also noted to have lower security needs (as measured by the SNAP) at baseline assessment, whilst the control group was noted to have higher HCR20 scores. It is unclear in the article if these differences were controlled for in subsequent analyses. For each woman in the sample, a range of assessments was conducted on three separate occasions over a 12-month period: at T1 baseline, T2 6 months into the study, and T3 in month 12.

Birch et al.'s (2011) participants consisted of 45 women residing in three female units for at least 6 months at the start of the study. The average length of stay for these women was 1 year and 1 month. All women were diagnosed with borderline personality disorder, co-morbid with a long history of substance or alcohol misuse. In some cases the women had a forensic background. Incidents of self-harm (recorded in incident forms) were collated for each 3-month period that the participants were in the service. This gave a single figure of self-harm for each trimester during each woman's stay.

In their paper, Botella et al. (2008) stated that they recruited a clinical sample for their study, in order to maximise generalisability of the results, but, apart from reporting that their sample displayed equivalent symptomatology as other clinical samples (e.g., Barkham, et al., 2001; Evans, et al., 2002), they did not list what mental health diagnoses or psychological difficulties their participants were suffering from. The sample consisted of 239 clients who received outpatient psychotherapeutic treatment (one weekly session) in a university-based psychotherapeutic clinic. Although not reported, because of their outpatient status, it is assumed that participants did not have a significant offending history, which required them to access compulsory treatment against their will. Two validated instruments were used for data collection (cited in Table 1). These were translated in Spanish and validated for a Spanish speaking population (Corbella & Botella, 2004). Once therapy had begun, outcome and alliance were monitored by periodically asking clients to complete the CORE-OM and the WAI-S. Follow up interventions were conducted at 6 and 12 months after the end of therapy.

Schauenburg et al. (2010) investigated the influence of therapists' attachment representations on alliance and treatment outcome in inpatient psychotherapy. The authors hypothesised that patients treated by therapists with secure attachments would report better therapeutic alliances with their individual therapist and would profit more from therapy as evidenced by a reduction in their symptoms. The sample consisted of 31 psychotherapists who treated 1,381 patients in an inpatient setting. The patients' ages varied from 18 to 71 years old ($M = 34.58$, $SD = 11.30$). Sixty-six percent of the patients were females. Diagnoses included affective disorders, anxiety disorders, eating disorders, psychotic disorders, stress disorders, obsessive-compulsive disorders. A substantial percentage (41.1%) had a co-morbid personality disorder and most patients received more than one diagnosis. Five well-validated

instruments were used for data collection (cited in Table 1). Patients completed routine assessments of symptomatology at the beginning and end of treatment and retrospectively evaluated the therapeutic relationship with their individual therapist at the end of therapy.

Byrd et al. (2010) examined the relationship between clients' attachment tendencies and therapy outcome, as well as assessing the degree to which the working alliance mediated clients' attachment representations and outcome. The authors hypothesised that clients' working alliance ratings would mediate the relationship between their attachment style and psychotherapy outcome. This study used archival data from clients seen in a university-based clinic that routinely collected data for training and research purposes. The sample consisted of 66 outpatients who consented to their data being used for this research. Most participants were females (39), university students (86.4%) and Caucasian (75.8%). Clients ranged in age from 18 to 55, with a mean age of 22.66 ($SD = 6.41$). Typical presenting problems included college adjustment issues, family issues, mood disorders and anxiety / worry.

Pulido et al. (2008) explored the relationship between ITA (Institutional Therapeutic Alliance) and treatment outcome. Their sample consisted of 45 patients with various psychiatric disorders (schizophrenia, personality disorder with concomitant depression or anxiety) attending for treatment in a day-time hospital, Monday to Saturday, from 9 am to 5 pm. The sample mean age was 44 years old ($SD = 12.2$; range = 21-65 years). Most were women (65.5%). Treatment consisted of pharmacotherapy and engagement in structured activities, such as patients-staff meetings, socio-recreational activities and clinical interviews. It did not include any kind of psychotherapy. The mean length of the hospitalization was 5 weeks ($SD = 2.89$). In order to measure the ITA, the authors adapted the client version of the Working Alliance Inventory short form (WAI) (Tracey & Kokotovic, 1989) by using the Italian translation of the instrument (Lingiardi, 2002). The new scale was called the Institutional Working Alliance Inventory (IWAI). The other measurements used were well validated measured (cited in Table 1). Participants who gave consent completed measures evaluating their symptomatology before they began their partial hospitalisation. After one week and at the end of treatment, they completed the IWAI.

A group of eight studies examined the relationship between psychotherapy dropout and therapeutic alliance in adult individual psychotherapy (Frank & Gunderson, 1990; Johansson & Eklund, 2006; Piper et al., 1999; Startup et al., 2006;

Tryon & Kane, 1993; Wallner-Samstag, et al., 1998) or drug and alcohol rehabilitation centers (Connors, et al., 1997; Meier, et al., 2006). The design of these studies will be described next. Meier et al. (2006) investigated the role of the therapeutic alliance in predicting length of retention in residential drug treatment. Participants were 187 clients starting residential rehabilitation treatment for drug misuse in three UK services. Of these (100) 53.5% remained in treatment beyond 90 days and were classified as completers. The others were classified as non completers. Clients were predominantly males, median age 29.6 years. The level of psychological problems was high and half had been prescribed medication for psychological problems. The therapeutic alliance was measured with the WAI between weeks 1 and 3 of treatment. Similarly, Connors et al. (1997) explored the relationship between the therapeutic alliance and treatment participation and drinking outcomes in two groups: 689 outpatients and 498 after hospital care clients. Mean age of the sample was 42.6 years; most (82%) were white, almost half were in employment. Treatment consisted of 12 weeks. Follow up assessments were scheduled at post-treatment and at follow-ups 3, 6, 9 and 12 months after the end of treatment. Physical measures of drinking behaviour were used to overcome the limitations associated with self-report measures of substance abuse. The working alliance was again measured with the WAI. Parallel forms of the WAI for rating by both the client and therapist were used. Clients completed the WAI after the 2nd treatment session, and therapists completed the measure after the 2nd, 6th, and 10th treatment sessions.

The remaining six studies examined the relationship between psychotherapy dropout and therapeutic alliance in adult individual psychotherapy. The studies hypothesised that the stronger the alliance, the less likely clients would be to terminate therapy without the therapist's recommendation. In Startup et al. (2006), 47 participants with psychosis agreed to attend at least 12 sessions of CBT. Anyone dropping out before session 12 was considered a drop out. Two measures were used to measure the therapeutic alliance. The Active Engagement Scale was completed by the therapist at the end of each session and the WAI (observer version) was used to measure the therapeutic alliance. The latter was rated independently by two raters from session recordings (session number not specified). Johansson and Eklund (2006) invited 122 patients referred to a psychiatric outpatient unit over a period of five months to take part in their study. Average age was 36.9 years and 84 patients were women. The cut off for drop out, in this study, was set at three scheduled sessions.

The alliance was measured using the Revised Helping Alliance Questionnaire. This was completed by staff and patients after the first meeting. Shick-Tryon and Kane (1993) examined the relationship between the strength of the therapeutic relationship measured after session three and dropping out in 103 college students who came to an university counseling centre for help with personal concerns. Both clients and counselors completed the short form of the WAI after the third session.

Frank and Gunderson (1990) examined the relationship between the therapeutic alliance and treatment course and outcome in 143 adults admitted to hospital during a 7-year period with a diagnosis of non-chronic schizophrenia. The therapeutic alliance was measured with the Psychotherapy Status Report, a 15-item questionnaire that therapists completed monthly. Treatment course and outcome were measured using a combination of reports, including therapist reports (collected monthly), patient reports (collected every 6 months) and medical records (reviewed on an ongoing basis). Psychotherapy utilisation was evaluated by measuring the length of stay in therapy and the reasons for termination. Patients were considered to be treatment dropout if they discontinued therapy unilaterally (i.e., without the therapist's agreement). Assessment of change in patient functioning was obtained from seven instruments that were administered to patients by trained, blind raters (these are listed in Table 1). These tests were administered semiannually. By contrast Piper et al. (1999) investigated the predictors of dropping out of therapy for patients who participated in time-limited, individual psychotherapy in 171 psychiatric outpatients referred for psychotherapy for various problems, including depression, anxiety, low self-esteem and interpersonal problems. Patients agreed to attend 20, once weekly, sessions. Those clients who attended 14 or more sessions were defined as completers. Those who attended 13 or fewer sessions were defined as dropouts. Overall there were 144 therapy completers and 27 dropouts. In this study, 22 dropouts were matched with 22 completers on a number of demographic and personality variables. The therapeutic alliance was measured by the patient and by the therapist after each therapy session with a six-item questionnaire, which focused on whether the client had talked about private important material, felt understood by the therapist, understood and worked with what the therapist said, felt that the session enhanced understanding, felt that the therapist was helpful, and whether the therapist and patient worked well together. Finally, Wallner-Samstag et al. (1998) tried to determine the predictive validity of in-session measures of therapeutic alliance and interpersonal

behaviour in a sample comparing two distinct types of treatment failure conditions (premature termination and poor outcome) and a good outcome condition. Seventy-tree patients were referred to a 40-session psychotherapy protocol. Primary diagnoses included depression, anxiety, and interpersonal problems. Patients were considered dropouts if they ended therapy within the first third of the protocol. Progress was evaluated using the Symptoms Checklist 90 – Revised and the Inventory of Interpersonal Problems. The therapeutic alliance was measured using the Post Session Questionnaire, completed by patients and therapists independently after each therapy session.

Study outcomes

Because the various studies had different aims and used different methods, it is difficult to draw overall conclusions from them. The majority of the studies seems to suggest that there is a positive correlation between therapeutic alliance and treatment outcome, that is, the higher the alliance ratings the more successful psychotherapy is in reducing symptoms of mental illness. Higher alliance ratings seem also to be positively correlated with higher retention in treatment. The following section will present findings as suggested in included articles and will critically evaluate these findings in the context of the limitations of the studies.

With regards to mental health, the only statistical significant difference between the experimental and control groups in Barr et al. (2013) was found on the CORE-OM total score at T3 assessment, suggesting higher psychological well-being in the intervention group, with a median score of 3.00 compared with 27.00 in the control group ($p < .05$). Unfortunately, due the low sample numbers and the difference between the groups at baseline assessment (in security needs and risk level), it is difficult to generalise these results and to propose that the higher psychological well-being in the intervention group was purely due to characteristics of the environment such as higher relational security and lower physical security. Random allocation to groups or statistically controlling for these differences would have been useful in order to overcome these confounding variables.

Botella et al. (2008) used correlation analyses to explore the relationship between client-assessed therapeutic alliance and (1) therapy outcome and (2) premature termination of treatment. These analyses indicated that the correlations

between alliance and symptomatic level were statistically significant in each of the sessions for which data were collected, from session 3 to session 36 (correlations ranging from -.302 to - .822; $p < .001$). A t test also revealed that alliance ratings were significantly lower in the drop-out cases than in the successful ones ($p < .05$, two tailed). Based on these results, the authors argued that the therapeutic alliance plays a crucial role in predicting psychotherapy outcome. However, this conclusion is not warranted because a correlation does not clearly specify the underlying causes of a relationship. In fact there can be several explanations for a significant correlation, e.g., highly motivated sample, highly motivated therapists, researcher bias (especially if the researchers were part of the clinical team and not blind to data collection).

Schauenburg et al. (2010) ran regression analyses to investigate the influence of therapists' attachment representations on alliance and outcome in inpatient psychotherapy. These analyses revealed that when therapists were treating interpersonally more distressed patients, higher attachment security of the therapist was associated with better alliances. In other words, attachment security in therapists was associated with better alliances but only for patients who self-reported high levels of interpersonal problems. No significant associations were found between therapists' attachment representations and treatment outcome. The authors explained these results by arguing that, in an inpatient setting, clients establish relationships with several people on their ward (e.g., other staff or co-patients), which can confound therapists' outcome effects.

Birch et al. (2011) used frequency graphs to show trends in the incidents of self-harm in three units where residents were provided with relational security. Incidents of self-harm were collated for each 3-month period that the participants were in the service. This gave a single figure of self-harm for each trimester during each participant's stay. Parametric statistics were use to compare the levels of self-harm during the first months after admission and the last 3 months before discharge. In the graphs it was observed that levels of self-harm were diminishing over time. A paired sample t-test found a significant difference between the mean rates of deliberate self-harm on admission ($M = 4.97$, $SD = 6.49$) and discharge ($M = 1.63$, $SD = 2.86$; $t = 3.467$, df = 40, $p < .001$). However, despite these promising results, it was not possible to infer that the overall reduction in frequency of self-harm was due to the positive risk taking / relational security approach used towards self-harm, as there

was no control group in this study. The reduction in self-harm might in fact have occurred naturally over time in the absence of treatment.

Byrd et al. (2010) conducted a series of multiple regressions in order to construct mediation models to explore the impact of attachment style and therapeutic alliance on psychotherapy outcome. They found that clients who felt comfortable with interpersonal closeness were more likely to show a reduction in their symptoms during psychotherapy ($r = -.37$, $p < .001$). This effect appeared partially mediated ($r = -.39$, $p < .001$) by the alliance, which, according to the authors, fostered therapeutic change. In other words, clients' capacity to form emotional bonds appeared to determine some aspects of the therapeutic relationship that facilitated positive treatment outcome. Interestingly, the insecure attachment styles were found to have no appreciable influence on either the alliance or therapy outcome. The authors noted that this finding was consistent with previous research (Kivligham et al., 1998; Satterfield & Lyddon, 1995). They explained that insecure attachments had no impact on alliance or outcome because most therapists provided therapy conditions based on unconditional acceptance. This fostered a therapeutic environment, which alleviated clients' fears of rejection. This explanation, although perfectly reasonable with college students whose primary presenting problems included college adjustment issues, family issues, mood disorders and anxiety / worry, might not be applicable to forensic populations who might have committed serious crimes and may be defending from strong feelings such as guilt, shame or embarrassment. Not only is a much more emotionally demanding task for therapists to provide forensic clients with unconditional positive regard, forensic clients themselves might not believe that they are entitled to unconditional positive regard due to the nature of their serious offences. In addition, the generalisability of these results is further limited by the relatively small sample size, the use of therapists in training, and restrictions in terms of diversity.

Regarding the relationship between ITA and treatment outcome, Pulido et al. (2008) found that the alliance assessed after one week of treatment did not predict symptomatic reduction in clients. Only the patients' perception of the alliance at discharge appeared modestly correlated with symptomatic reduction ($r = .34$, $p < .05$). The authors themselves argued that this association was of little clinical relevance because it probably reflected the tendency of the patients, who benefitted the most from treatment, to judge more positively relationships with staff. An interesting

correlation was noted between change in patients' perception of the ITA and their symptomatic reduction ($r = .62$, $p < .01$), which, according to the authors, suggested that psychopathological improvements and alliance increasing during hospitalisation might be an interdependent process. In other words the process of developing an alliance was linked to better outcomes, rather than the initial alliance scoring. This formulation is consistent with other studies (Allen, Tarnoff, & Coyne, 1985; Klee, Abeles, & Muller, 1990) that also have found that patients' improvements are associated with an increase in the alliance during treatment and not to its initial status. Along these lines, Piper, Boroto, Joyce, McCallum and Azim (1995) suggest that for patients who are severely disturbed it is the development of the alliance that helps the patients' improvement.

The group of eight studies examining the relationship between psychotherapy dropout and therapeutic alliance in adult individual psychotherapy (Frank & Gunderson, 1990; Johansson & Eklund, 2006; Piper et al., 1999; Startup, et al., 2006; Tryon & Kane, 1993; Wallner-Samstag, et al., 1998) or in drug and alcohol rehabilitation centers (Connors et al., 1997; Meier, et al., 2006) continue to highlight mixed results. For example, Piper et al. (1999) found that dropouts had significantly lower alliance ratings (as measured by the therapists) than matched completers: $t(42) = 3.18$, $p = .003$, but the authors did not report the results for patient-rated alliance despite having collected these data. Similarly, Shick-Tryon and Kane (1993) found that counselor ratings of the working alliances after the 3rd week of counseling were positively associated with mutual termination: $r(89) = .34$, $p < .01$; but client working alliance ratings did not relate to termination type. Thus the authors concluded that the hypothesised relationship between working alliance and type of termination was only partially supported. The finding that client alliance ratings were not related to drop out is surprising as one might expect that the client is the one who would be more sensitive to / affected by the strength (or lack of) of the therapeutic relationship. The authors proposed that if a counselor perceives a weaker bond and less agreement on tasks and goals with a particular client, he / she may behave differently towards this client compared with another service user. Thus it is possible that a counselor might lose motivation to work with this client, and the service user might eventually leave counseling without the therapist's recommendation.

By contrast, Johansson and Eklund (2006) found a significant difference between early dropouts and non-dropouts with respect to the patients' assessment of

the initial helping alliance, i.e., early dropouts had significantly weaker therapeutic alliances with their therapists ($p = .034$). No significant difference was found on staff-assessed helping alliance between the two groups ($p = .079$). However, the results of this study need to be interpreted with caution because of its limitations. For example, the sample of early dropouts was quite small (15.6% of the whole sample) compared to the non-dropouts, consequently lowering statistical power. In addition, early dropouts had a significantly lower age ($p = .011$) than the non-dropouts, thus potentially confounding the impact of the therapeutic alliance on dropout rate. To confuse understanding further, Startup et al. (2006) used observers' ratings of the working alliance (rather than therapists or clients' ratings) to investigate the role of patients' recovery style and the therapeutic alliance in provoking or forestalling drop-out from CBT for psychosis. T tests revealed that the dropouts and the stay-ins showed significant differences on the Goal ($p = .05$) and on Task ($p = .04$) subscales of the WAI (observer version), but the groups did not differ significantly on the Bond subscale of the WAI ($p = .08$). Again, drawing firm conclusions from this study should be done with caution, because of the limited statistical power, and because the identified differences on the Goal and Task subscales of the WAI barely met the significance threshold.

Wallner-Samstag et al. (1998) divided their sample of 73 patients into three groups: (1) dropouts ($n = 25$), (2) completed treatment with good outcome ($n = 28$), and (3) completed treatment with poor outcome ($n = 20$). Univariate tests demonstrated that, for both patient-rated and therapist-rated alliance, each of the WAI subscales (Bond, Task and Goals) and its Total score were significantly different among the three outcome groups, with dropouts patients consistently rating the lowest alliance scores, poor outcome patients rating moderate scores, and good outcome patients rating the highest scores. Similarly, to evaluate the relationship between alliance ratings and measures of treatment course and outcome, Frank and Gunderson (1990) conducted two sets of analyses. First, alliance ratings were correlated (by using two-tailed tests) with the length of stay in psychotherapy by mutual agreement, the degree of medication compliance, and the ratings of functioning in a given area at 2 years, adjusted for ratings of functioning in the same area at baseline. Second, the patients were classified into one of three alliance groups (good, fair and poor), and the groups were compared in terms of their dropout and noncompliance rates, by using chi-square analyses, and their two-year outcome, by using analyses of covariance to

partial out the effects of the baseline level of functioning in the area being assessed at 2 years. Frank and Gunderson (1990) found that patients who formed good alliances with their therapists within the first 6 months of treatment were significantly more likely to remain in psychotherapy, comply with their prescribed medications, and achieved better outcomes after 2 years, with less medications, than the patients who did not form strong therapeutic relationships. Despite these positive results, this study highlighted the difficulties in developing robust therapeutic alliances with schizophrenic clients. In fact, less than half of the patients formed good alliances with their therapists, despite the alliance being measured significantly later (i.e., at 6 months) than the studies discussed above. One of the limitations of this research is that the alliance ratings reflected only the viewpoints of the therapists, as captured by the monthly questionnaires. Another limitation derives from the fact that this was primarily a correlational study. Despite the significant positive relationship between alliance ratings at 6 months and outcome at 2 years, the majority of the variance in outcome ratings was left unexplained. Without minimizing the prognostic value of developing a therapeutic relationship, this finding suggests that other variables may be better predictors of treatment outcome with schizophrenic patients.

Finally two studies examined the relationship between dropout and therapeutic alliance in drug and alcohol rehabilitation centers (Connors et al., 1997; Meier, et al., 2006). Connor et al. (1997) evaluated the relationship between the working alliance, treatment participation and drinking outcomes in two groups: alcoholic outpatient and patients recently discharged from hospital (aftercare patients). The results of the multiple regression analyses revealed that, in the outpatient sample, ratings of the working alliance, whether provided by the client or therapist, were significant predictors of treatment participation and drinking behaviour during treatment and at 12-month follow up, after various other variables were controlled for (e.g., pretreatment history). By contrast, ratings of the alliance by the aftercare clients did not predict treatment participation or drinking outcomes. Therapists' ratings of the alliance in the aftercare sample only predicted number of days abstinent during treatment and at follow up. Despite the mixed results, these findings are likely to be quite robust, as the study included a large sample size, and its design controlled for a number of variables, which may have confounded the results. However, despite this robust design, it was noted that the unique proportion of variance explained by the therapeutic alliance in relation to treatment participation and drinking behaviour in the

outpatient sample was quite modest (i.e., never exceeding 3.5%). The author argued that this was the result of their robust study design, which controlled for a variety of other sources of variance, some of which may have effects mediated by the therapeutic alliance, before evaluating the unique contribution of the working relationship. Meir et al. (2006) also found mixed results in their study, that looked at the role of the therapeutic alliance in predicting length of retention in residential drug treatment. Cox proportional hazard regression models were fitted to predict the length of retention from early alliance scores. They found that the counselor rated alliance ($p < .01$) but not the client rated alliance ($p > .05$) significantly predicted length of retention, after controlling for several potential confounders.

Further methodological considerations

Studies included within the current review achieved quality ratings ranging between 70% to 100%. A number of research limitations were identified both within individual studies (discussed above) and in the body of research as a whole. At the time of the current review, no randomised studies could be found evaluating the relationships between attachment, therapeutic alliance, relational security and treatment outcomes in the secure forensic environment. As such, twelve of the studies included in the review were non-randomised in design, increasing the risk of systematic bias confounding the findings. Non-randomised studies have a higher risk of selection bias, attrition bias, detection bias and performance bias (Deeks et al., 2003).

Only two studies (Piper et al., 1999; Wallner-Samstag et al., 1998) randomly allocated participants to different therapeutic interventions. For the remaining twelve studies, selection was not randomised. All participants were either referred to intervention by their clinical team or self-referred to treatment with associated implications for selection bias. In ten out of the fourteen included studies, participants were allocated to the intervention being evaluated with no comparison group treatment available. Further, in one of the studies that used a control group (Barr et al., 2013), experimental and control groups were different at baseline assessment on several variables, further limiting any generalisation from the results. Approximately half of the participants included in this review were receiving treatment in an inpatient setting (level of security not specified), just over one third were treated as outpatients at university based clinics and a minority (1.9%) lived in

secure settings. A few (7%) were reported as having a recorded offending history, therefore, limiting generalisability of findings to forensic populations.

With regards to detection bias, a number of different outcome measures were used to assess similar constructs between studies. These can be seen in Table 1. For example, to measure the therapeutic alliance the following measures were used: Working Alliance Inventory – long version (Connors et al., 1997), Working Alliance Inventory – short version (Botella et al., 2008; Meier et al., 2006; Shick-Tryon & Kane, 1993), Working Alliance Inventory – short form revised (Byrd et al., 2010), Working Alliance Inventory – observer version (Startup et al., 2006), Helping Alliance Questionnaire (HAQ) (Schauenburg et al., 2010), Revised Helping Alliance Questionnaire (HAq-II) (Johansson & Eklund, 2006), Institutional Working Alliance Inventory (IWAI) (Pulido et al., 2008), Psychotherapy Status Report (PSR) (Frank & Gunderson, 1990), Post Session Questionnaire (PSQ) (Wallner-Samstag, 1998), and a six item questionnaire (Piper et al., 1999). No formal measure was used to measure relational security in the two studies, which looked into this construct (Barr et al., 2013; Birch et al., 2011).

Table 2. Measures of therapeutic alliance used in the studies included in the review.

Studies	Measures of alliance used									
	WAI	WAI-S	WAI-SR	WAI-O	HAQ	HAq-II	IWAI	PSR	PSQ	Six item quest.
Connors et al. (1997)	x									
Botella et al. (2008)		x								
Meier et al. (2006)		x								
Shick-Tryon & Kane (2003)		x								
Byrd et al. (2010)			x							
Startup et al. (2006)				x						
Schauenburg et al. (2010)					x					
Johansson & Eklund (2006)						x				
Pulido et al. (2008)							x			
Frank & Gunderson (1990)								x		
Wallner-Samstag (1998)									x	
Piper et al. (1999)										x

Likewise, patient symptomatology was also measured using various scales, including the Clinical Outcome in Routine Evaluation – Outcome Measure (CORE-OM) (Barr et al., 2013; Botella et al., 2008), the Symptom Checklist 90 – Revised (SCL-90-R) (Barr et al., 2013; Pulido et al., 2008; Schauenburg et el., 2010; Wallner-Samstag et al., 1998), the Social Behaviour Schedule (SBS) (Barr et al., 2013), the Personal and Social Performance Scale (PSP) (Barr et al., 2013), the Inventory of Interpersonal Problems (IIP) (Schauenburg et el., 2010), the Global Assessment Scale (GAS) (Pulido et al., 2008), the Brief Symptom Inventory (BSI) (Johansson & Eklund,

2006), the Coping Behaviours Inventory (CBI) (Meier et al., 2006) and the Outcome Questionnaire (OQ-45) (Schauenburg et al., 2010). Attachment representations were measured only in two studies that used different measures, the Adult Attachment Scale (Byrd et al., 2010) and the Adult Attachment Interview (Schauenburg et el., 2010). The most common measures used to assess clients' baseline functioning and progress in therapy can be found in Table 5.

Table 3. Measures used to assess clients' progress.

Studies	Measures used to assess client functioning								
	CORE-OM	SCL-90-R	SBS	PSP	IIP	GAS	OQ-45	BSI	CBI
Botella et al. (2008)	x								
Barr et al. (2013)	x	x	x	x					
Meier et al. (2006)									x
Byrd et al. (2010)							x		
Schauenburg et al. (2010)		x			x				
Johansson & Eklund (2006)					x			x	
Pulido et al. (2008)		x				x			
Wallner-Samstag et al. (1998)		x			x				

Although details are provided within studies as to the established validity and reliability of scales measuring constructs, different measures may have produced different results. A lack of standardised measures used within studies creates difficulties in comparing results across studies.

A lack of information relating to normative samples for measure development was evident in all studies. Without the provision of this information, assessment of whether the measures used within studies are appropriate for the population in question is problematic. Additionally, studies did not clearly describe the method of measure administration during interventions. There is a lack of details in all studies

as to whether measures were administered by researchers or staff independent of intervention delivery and research. Neither were details provided regarding whether measures were administered individually or in a group environment and the time scale over which they were completed.   This lack of clarification makes assessment of the appropriateness of administration challenging, with potential implications of researcher bias. A further methodological limitation in the studies included in the current review is the paucity of follow-up data. An advantage of follow-up data is the opportunity to assess change over time, therefore, exploring longer-term effects of intervention. Only two studies (Connors et al., 1997; Frank & Gunderson, 1990) provided follow up data after intervention had ended.

Performance bias relates to non-standardisation of intervention, assessments and the recording of data. All studies included in the review used individualised interventions based on clients' presenting problems. Although these interventions followed a set structure, the absence of a consistent approach might have contributed to variance in intervention delivery between psychotherapists / treating teams thus biasing treatment outcomes, as interventions may have been influenced by the treatment style of individual psychotherapists. A complete absence in all included studies of details regarding previous associated treatments completed by study participants was noted. Thus, additional confounding factors potentially impacting upon study findings are the effects of previous interventions completed and co-occurring interventions alongside the interventions currently been assessed.

Discussion

The current review aimed to explore the relationship between attachment, therapeutic relationships and relational security in forensic patients, and how these are linked to treatment outcomes. Fourteen studies were included in the review, thirteen of which were prospective in design, and one used archival data. The findings of the review reveal the paucity of research investigating the impact of relational security and therapeutic relationships on treatment outcomes in the secure forensic environment. Because the various studies had different aims, it is difficult to draw overall conclusions from them.

Twelve papers focused on the alliance between clients and their individual therapists. A study (Botella et al., 2008) explored the relationship between therapeutic

alliance and therapy outcome and drop out. Two studies (Connors et al., 1997; Meier et al., 2006) investigated the role of the therapeutic alliance in predicting length of retention in substance abuse treatment. A further six papers (Frank & Gunderson, 1990; Johansson & Eklund, 2006; Piper et al., 1999; Startup et al., 2006; Tryon & Kane, 1993; Wallner-Samstag et al., 1998) explored the relationship between alliance and drop out rates. Results from these nine papers seem to suggest that higher alliance ratings are positively correlated with improvements in therapy and with higher retention rates.

Only two of these twelve papers looked at attachment styles, one focusing on the therapists' attachment styles and the other on the clients' attachment representations. Schauenburg et al. (2010) looked at the relationship between therapists' attachment representations on alliance and outcome, whereas Byrd et al. (2010) explored the impact of clients' attachment styles on psychotherapeutic process and outcome and the role of the alliance as a mediator of impact on outcome. With regards to the relationship between attachment and therapeutic relationships, Schauenburg et al. (2010) found that higher attachment security in therapists was significantly associated with better alliances, but only with highly distressed patients. No significant results were found in relation to outcome. Byrd et al. (2010) found that clients who felt more comfortable with interpersonal closeness were more likely to improve during psychotherapy. This effect appeared to be partially mediated by the therapeutic alliance.

In contrast, Pulido et al. (2008) investigated the relationship between Institutional Therapeutic Alliance, ITA, and treatment outcome. No significant correlations were found between alliance ratings after one week of treatment and symptomatic reduction, but a significant relationship was found between changes in patients' perceptions of the ITA, after the end of treatment, and improvements in functioning, suggesting that alliance and progress / recovery might be an interdependent process.

Overall, the majority of the studies seem to suggest that there is a positive correlation between therapeutic alliance and treatment outcome, that is, the higher the alliance ratings the more successful psychotherapy is in improving client functioning. Higher alliance ratings seem also to be positively correlated with higher retention in treatment.

With regards to relational security, only two studies exploring relational security were included in this review. Birch et al. (2011) explored the frequency of self-harm in a setting in which women were not physically prevented from self-harming. Instead they were provided with an environment which provided them with relational security. Barr et al. (2013) were trying to establish if women placed in step-down services in the community showed marked improvements in functioning compared to similar women who remained in secure institutional care. From these studies no conclusion can be drawn about the impact of relational security on treatment outcomes because relational security was not formally measured and because of the many limitations of these studies.

Approximately half of the participants included in studies in this review were receiving treatment in an inpatient setting (level of security not specified), just over one third were treated as outpatients at university based clinics, and a minority (1.9% of the total sample) lived in secure settings. In only two publications (Birch, et al., 2011; Meier et al., 2006) the authors reported that some of the participants had forensic histories; thus it is assumed that the majority of participants had no significant, recorded, forensic history. These demographic characteristics make the sample biased, significantly different from the population this systematic review aims to investigate. In terms of quality assessment, the scores of the studies that were retained, ranged from 14-20 out of 20, with an average of 15.71, making all the studies similar in terms of quality. In two studies participants were randomly allocated to various interventions. Two studies had a control group, but unfortunately, in one of these studies (Barr et al., 2013), the two groups, experimental and control, were significantly different at baseline (on risk level and security needs), making this study subject to allocation bias. All studies used tools that were internally valid and well validated, but in most of them, it was not clear if the researchers were also involved in treatment provision. If the researchers were also some of the therapists involved in client care, this makes the studies subject to researcher / experimenter bias, that is the process by which scientists performing the research influence the results in order to portray a certain outcome.

In conclusion, this systematic review answered the following questions as follows:

(1) What is known about the relationship between attachment and relational security in forensic psychiatric populations?

Adshead (2012) highlights that many forensic psychiatric patients have insecure attachments. Based on this systematic review, there is no published paper exploring the relationship between relational security and attachment in adult forensic psychiatric patients detained in secure institutions. This may be because relational security is a relatively new concept, difficult to define and difficult to measure.

(2) What is the relationship between attachment and therapeutic relationships in forensic psychiatric populations?

Attachment seems to facilitate the development of a therapeutic alliance. More 'securely' attached clients appear to develop better therapeutic relationships with their therapists. Similarly, higher attachment security in therapists has been suggested to be associated with better alliances in more complex clients. However, there is a lack of research into the relationship between attachment and therapeutic relationships in forensic psychiatric populations. One of the difficulties in exploring these areas lies in the fact that different tools are used to measure each variable. In addition to this, studies are not consistent in whose attachment style they measure (the client versus the therapist) or from what perspective they measure the alliance (from the client, therapist, or from an observer perspective).

(3) What is the connection between therapeutic relationships and treatment outcomes for forensic psychiatric patients?

Stronger therapeutic relationships seem to be associated with more positive outcomes during treatment, but more research in this area is needed because many studies use a correlational design, rather than an experimental design with a control group testing differences between comparable groups; thus limiting causal explanations. In addition, most studies use non-forensic samples, limiting the applicability of their conclusions to this population.

Based on these observations, future research ought to measure relational security in forensic secure environments more systematically by using a well-validated tool. In addition, with regards to its relationship with attachment, future research might consider measuring the attachment representations of both staff and patients working / residing in these institutions, in order to have a more

comprehensive view of the interactions between relational security and the attachment representations of the whole system, not just part of it (the client or the therapeutic staff). Finally, the propositions that a secure attachment style and stronger therapeutic relationships seem to be associated with more positive treatment outcomes needs to be explored more systematically with offenders, as there is a paucity of studies in this area with this specific population. Still to be elucidated is the precise role that contextual factors (e.g., relational security), as well as patient and staff characteristics (e.g., attachment representations) play in the development and maintenance of an alliance, and the impact of these variables on patient recovery.

To meet this gap in the literature the research study of this thesis (described in Chapter 2) aimed to explore the relationships between relational security and staff's attachment representations, and with patients' levels of attachment to their treating teams, within various forensic psychiatric settings. It also examined the associations between relational security, risk incidents and treatment outcomes in these environments. More recommendations for practice and future research will be discussed in Chapter 4 of this thesis.

Chapter 2 – Research Study

Abstract

This research had three main objectives. First it aimed to explore the relationships between relational security and staff attachment representations, and with patients' levels of attachment to their treating teams, within various forensic psychiatric settings. Second, it examined the associations between relational security and risk incidents in these environments. Finally, this research looked at the relationships between relational security and treatment outcomes as measured by dynamic risk scores.

An explorative design using techniques based on correlation was chosen because of the paucity of published research in this area. Participants included staff ($N = 58$) and adult male forensic psychiatric patients ($N = 33$) residing on various wards (low secure, medium secure and open rehab) across two NHS sites in England. Data were collected using multiple means, including self-report questionnaires, official records of risk incidents and treatment outcomes (as measured via the Historical Clinical Risk Management 20) completed by clinicians involved in clients' care and blind to research procedures.

Statistical analyses were not run to explore the relationship between staff's attachment representations and relational security because of the poor reliability of the measure of staff's attachment. No relationship was found between relational security (as measured by staff) and service users' attachment to the service. In addition, no relationship was found between relational security and risk events on the wards and between relational security and treatment outcomes (as measured by changes in dynamic risk scores from baseline to follow up).

Additional analyses revealed that relational security and ward atmosphere were moderately correlated with higher levels of relational security associated with more positive ward atmosphere. The two variables shared 22.09% of the variance. Further, a large positive correlation was found between patients' attachment to the service and ward atmosphere, with higher attachment to the service being associated with more positive ward atmosphere. Furthermore, a moderate, negative, relationship was found between patients' attachment to the service and risk incidents, with higher attachment to the service being associated with fewer risk incidents. Finally, standard

multiple regression revealed that relational security and ward atmosphere significantly predicted patients' attachment to the service. Ward atmosphere was noted to make the stronger contribution compared to relational security, explaining 74% of the variance in service users' attachment to their treating teams, whereas relational security was found to explain 27% of the variance in the same variable.

These results are discussed in light of the limitations of this study and recommendations for future research, clinical practice and staff training are proposed.

Introduction

Measuring attachment in adulthood

There are three dominant approaches to conceptualising individual differences in adult attachment: dimensional, grouping and prototype (Griffin & Bartholomew, 1994). The dimensional approach implies that people's attachment representations can be quantitatively ordered, that is, there are no cut offs on the dimension that divides people into different categories. Second, it assumes that each dimension has an impact independent of the other categories, that is, there is no interaction between the different dimensions. Dimensional measures are not as common as categorical approaches in adult attachment research, but there are clear advantages in measuring individual differences with these types of measures. For example, they offer the flexibility associated with correlational data analyses (Griffin & Bartholomew, 1994). They are also more flexible, adaptive models of signifying individual differences (Fraley & Shaver, 2000). Some of the disadvantages are that they are variable-centred, focusing on the relationships amongst variables across individuals. Thus they imply a nomothetic model of individual differences, whilst categorical and prototype approaches come closer to the idiographic model (Bern, 1983), are more explicitly person-centred and paint a picture of types of individuals (Griffin & Bartholomew, 1994).

The categorical approach is the original and most common model of measuring infant attachment in the Strange Situation (Ainsworth, Blehar, Salter, Waters, & Wall, 1978). Hazan and Shaver's (1987) translation of infant attachment groups into adult categories has led to the domination of this approach in research on adult attachment. This method places individuals into their most appropriate group as it implies that people come in discrete types. Most researchers use categorical approaches because of their convenience in communication (i.e., a few groups serve as a shorthand summary of a complex pattern of individual differences) and statistical analyses (e.g., analysis of variance). Another advantage is that categorical approaches might capture the 'true' nature of the phenomenon under study. However, there are disadvantages too to this approach. Valuable within-group variance is lost. In addition, the categorical approach lead to an overly simplistic views about group

members, treating them as members of a diagnostic category rather than as unique individuals (Griffin & Bartholomew, 1994).

By contrast, the prototype approach is based on prototype theory (Rosch, 1978) and assumes that each attachment prototype is, like most natural categories (e.g., birds), defined in terms of the most common features of its members, with no particular feature being individually necessary or jointly sufficient to define group membership. Group members therefore differ in the degree to which they correspond to the group exemplar. From this perspective, categories are just 'fuzzy sets' that may overlap with one another and that contain members with varying degrees of typicality (Rosch, 1978).

The prototype approach to categorisation allows for the complex patterns of individual differences that may define types of people, whilst also acknowledging that not all members are equally good exemplars of that group. Consequently this approach integrates and addresses the limitations of both dimensional and categorical approaches to the measurement of individual differences in adult attachment representations (Griffin & Bartholomew, 1994). In fact, it is unlikely that many adults correspond perfectly to any one attachment pattern, given the multitude of past influences (e.g., genetic, life experiences) and of present situational, relationship-specific influences (e.g., friends, romantic relationships, family, children, work colleagues, etc.). Rather, over time and across situations, most adults would be expected to show varying degrees of two or more attachment patterns (Griffin & Bartholomew, 1994).

Bartholomew and Horowitz (1991) and Bartholomew (1990) have organised Bowlby's definition of internal working models into a four-category classification of adult attachment that explicitly uses a prototype approach. In their model, there is a distinction between the two types of avoidant attachment: fearful and dismissing. Attachment patterns are defined in terms of two intersecting underlying dimensions: the person's model of the self and the person's model of others. Dichotomising each dimension as positive or negative leads to four attachment patterns (see Table 2 and Figure 3).

Each of the four attachment patterns identified by this model is conceptualised as a theoretical prototype with which people may correspond to varying degrees. This approach also acknowledges that most individuals exhibit elements of more than one attachment pattern and that, to assess adequately their feelings, thoughts and

behaviours in the attachment domain, it is necessary to consider their profile across the four attachment patterns. For example, an individual who is moderately secure but secondarily dismissing would present quite differently from an individual who is moderately secure but secondarily preoccupied (Griffin & Bartholomew, 1994).

There are two dominant approaches to measuring adult attachment representations: narrative and self-rated. The narrative approach arises from the developmental tradition, using the Adult Attachment Interview (AAI) as a method (George, Kaplan, & Main, 1985). The AAI classification is based on the quality and coherence of narratives about childhood relations and experiences, including illness, separation and trauma. By contrast, self-rated approaches to measuring attachment representations arise from the social psychology tradition, and they depict conscious experiences of current attachment relationships (Hietanen & Punamaki, 2006). An example of self-report measures that directly assess the match between an individual and each of the attachment prototypes is the Relationship Questionnaire (Bartholomew & Horowitz, 1991) which has been used in this study and is described in the Method section of this chapter.

Table 4. Types of attachment styles (Bartholomew & Horowitz, 1991).

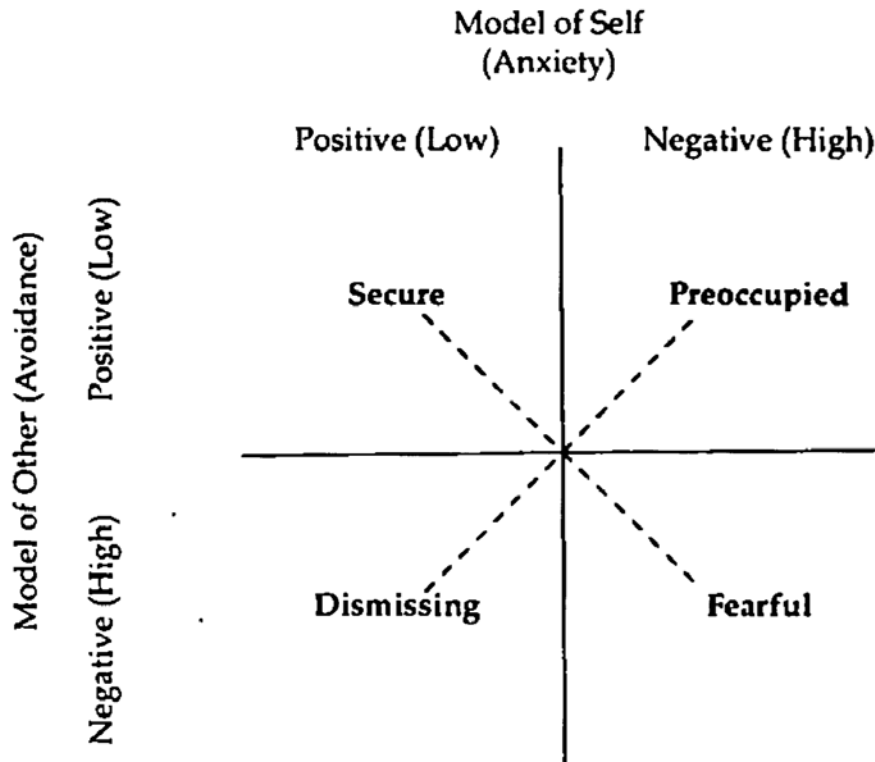| Attachment Style	Description
Secure (Autonomous)	Individuals who are secure in attachment style have a positive view of self, with high self esteem and a positive view of others, viewing others as warm and accommodating. Secure attachment develops from responsive and receptive parenting and is generally linked with future self-esteem and an ability to form close relationships with others. Secure individuals are able to regulate their emotions internally through effective techniques (Mikulincer & Shaver, 2007). Secure individuals have low attachment anxiety and low attachment avoidance.
Fearful (Avoidant)	Individuals who are fearful in attachment style have a negative view of self and a negative view of others. These individuals have a fear of rejection but desire closeness with others. Fearful attachment develops from negative, abusive and rejecting parenting leaving them feeling unlovable. Fearful individuals have high attachment anxiety and high attachment avoidance.
Preoccupied (Anxious/ Ambivalent)	Individuals who are preoccupied in attachment style have a negative view of self and a positive view of others, seeking approval from others. These individuals are anxious and afraid of intimacy. Preoccupied attachment develops from contradictory parenting or over-involved. Preoccupied individuals have high attachment anxiety and low attachment avoidance.
Dismissing (Avoidant; Angry-dismissing; Withdrawn)	Individuals who are dismissing in attachment style have a positive view of self and a negative view of others. These individuals value independence and are cynical about intimate relationships. Dismissing attachment develops from detached and unresponsive parenting. Dismissing individuals have low attachment anxiety and high attachment avoidance. They have difficulty regulating emotions internally and ineffective techniques such as hostility, distracting and separation (Maunder & Hunter, 2009).

Model of Self
(Anxiety)

Positive (Low)　　　　　Negative (High)

Model of Other (Avoidance)
Positive (Low)　　　　　Negative (High)

Secure　　　　　Preoccupied

Dismissing　　　　　Fearful

Figure 3. Four-category model of adult attachment (Griffin & Bartholomew, 1994).

Attachment in inpatient settings

Because of increasing research supporting links between the quality of patient-provider relationship, health care utilisation, and medical outcomes (e.g., Dozier, Stovall-McClough, & Albus, 2008; Meredith, Strong, & Feeney, 2006; Waller, Scheidt, & Hartmann, 2004), the Department of Health has highlighted the need for mental health services to provide high quality treatment and care in safe and therapeutic settings (Department of Health, 2002). Previously, Bowlby (1980), in his description of attachment theory, highlighted the importance of safe and secure environments. Subsequently, Berry and Drake (2010) proposed that attachment theory could promote positive staff-patient relationships and inform patients' recovery. Adshead (1998) and Holmes (2004) have both argued that mental health services need to provide a secure base for inpatients, which can lead to positive therapeutic relationships with mental health staff and promote recovery (Adshead, 2001). One

way that a service may be able to provide a secure base is by providing sensitive and appropriate responses to distress, good listening skills facilitating emotional containment, and consistency of input (Adshead, 1998). Another way that a service may be able to provide a secure base is through modification of the ward environment to suit the needs of the service users. In 2010, the Department of Health published See, Think, Act (STA), which highlighted the need for mental health services to attend to relational aspects of security, in addition to procedural and physical security, and argued that relational security is more than just a good relationship between staff and patients; it requires these relationships to be professional, therapeutic and purposeful (Appleby, 2010).

As attachment behaviour becomes activated in case of illness (Bowlby, 1988), it is likely to be observable in treatment relationships (Hietanen & Punamaki, 2006). For example, in mental health institutions, the forming of positive relationships with staff members may help patients with seeking support and facing painful and difficult issues that arise in treatment, such as earlier trauma (Schuengel & van Ijzendoorn, 2001). Given that patients come into contact with a range of professionals during their hospitalisation (e.g., nurses, occupational therapists, psychologists, psychiatrists, etc.), measures of attachment to systems of care, rather than a therapist alone, might be more useful (Berry & Drake, 2010) in hospital settings. Goodwin, Holmes, Cochrane and Mason (2003) defined attachment to systems of care as the services' ability to meet the attachment needs of their clients, including the provision of a secure base for inpatients (Adshead, 1998). Most empirical studies on attachment have focused on one-to-one relationships but the results of these studies might not generalise to the type of attachment people may have regarding their involvement with whole mental health teams. Consequently, in order to measure service users' attachment to the services providing them with care, Goodwin et al. (2003) developed the Service Attachment Questionnaire (SAQ).

Previous research has highlighted the importance of patient-staff relationships in mental health care (Ma, 2006) for patients' attachment to mental health services (Campbell, Allan, & Sims, 2013). At present, however, it is unknown how the constructs of service attachment, staff's personal attachment styles and relational security may be linked. If relational security does play a contributory role to the development of professional, therapeutic relationships, thus improving patients'

attachment to a service, an argument can be made for investing in relational security, in order to improve patient outcomes.

Hypotheses

The interaction between relational security and attachment has yet not been explored, as the concept of relational security is a relatively new one. Therefore there is a need to research if more robust relational security in forensic psychiatric services is related to more secure therapeutic relationships in the clients using these services. In addition, the suggestion that a breakdown in relational security might be related to risk incidents in forensic psychiatric institutions has not been researched. Hence the need to investigate formally how relational security and risk-related behaviours are associated.

Therefore, this study aims to explore the relationship between attachment and relational security in forensic psychiatric settings. This project also aims to explore if relational security can be used to predict risk incidents and treatment outcomes. If this is the case, an argument can be made for investing in improving relational security on forensic psychiatric wards, in order to enhance client recovery / progress and decrease risk incidents. Based on these aims the following hypotheses will be tested:

1. There is a relationship between attachment and relational security in forensic psychiatric settings.
2. Relational security is related to problematic behaviour on the wards.
3. Relational security is related to treatment outcome.

Method

Design

An exploratory design (i.e., using techniques based on correlation) was chosen for this study because there is a paucity of published research about relational security and attachment, risk incidents and treatment outcomes in forensic psychiatric populations, as the concept of relational security is a relatively new one. Thus it was felt that exploring relationships among pairs of variables and predicting scores on a dependent

variable from scores on a number of independent variables was a helpful way of testing the hypotheses and underlying theories.

Ethics

Ethical approval for the study was obtained from the local Ethical Review Committee (see approval letter in Appendix 4) and from the University of Birmingham Research Governance and Ethics Department. Consent to participate in the research was sought from participants in writing. Participants were assured of confidentiality and informed that their treatment (or job for staff participants) would not be affected negatively if they chose not to participate in the research. Confidentiality was maintained by allocating a reference number to each participant.

Participants

Participants included staff and adult male forensic psychiatric patients residing on various wards (low secure, medium secure and open rehabilitation) across two NHS sites in England. This was a convenience sample. To be included in this study it was not necessary that staff had worked directly (keyworked) with the clients who agreed to participate in the research, but it was a requirement that staff were working on the same wards on which the clients resided for at least one month before data collection, because the researcher wanted staff to have some understanding of policies and procedures on the ward and insight into the ward environment.

To be included in the research, patients needed to have a primary diagnosis of an Axis I mental illness (American Psychiatric Association, 1994), be able to give informed / true consent (capacity to give true consent was established by liaising with the client's treating team) and have resided on the ward for at least one month prior to data collection. This was because the research needed them to have had the opportunity to develop some attachment to their treating team and to have insight into the ward environment.

Patients were excluded from the research if they were unable to give informed consent (e.g., due to extremely low cognitive functioning, being currently mentally unwell, having developed dementia or other mentally degenerative condition), if they were unable to understand / read / communicate in English language (as the

researcher did not have access to funding to pay for interpreters), and if patients had any other special communication needs (e.g., deafness) that required use of third party to liaise with the researcher. The total sample consisted of 91 participants, 58 (63.7%) members of staff and 33 (36.3%) service users. All patients were detained under sections of the Mental Health Act (1983 amended in 2007). Additional demographic information about the sample by group (patients or staff) can be found in Table 3.

Table 5. Demographic information of the study sample.

Demographics		Patients ($N = 33$)	Staff ($N = 58$)
Mean age	Years	38 ($SD = 9.9$)	39 ($SD = 10.7$)
Ethnic origins	White	14	22
	Black	13	20
	Asian	3	4
	Mixed	2	1
	Missing	1	11
Security level	Medium	11	27
	Low	19	19
	Open rehab	3	9
	Missing		3
Gender	Male	33	23
	Female		27
	Missing		8
Job title	Nurse		25
	Health care assistant		18
	Other MDT professional		7
	Missing		8
Length on current ward	Months	8.7 ($SD = 6.5$)	
Length in current post	Years		4.5 ($SD = 3.4$)

Power analysis

The computer programme G3 Power was used to calculate power. The power analysis was run with a medium effects size. For correlational designs, with a power of 0.8, an effect size of 0.5 and $p < 0.05$, a minimum sample size of 34 was recommended. For multiple regression analyses, with a power of 0.8, an effect size of 0.5, $p > 0.05$ and two predictors, a minimum sample size of 24 was recommended. The sample was composed by 33 patients and 58 staff. Thus sample size was considered adequate. However, when subgroups were considered, power was not enough to detect substantial effect sizes.

Measures

Self-report measures

See Think Act (STA)

The STA scale (Tighe & Gudjonsson, 2012) is a 28-item self-report instrument completed by forensic staff, designed to measure relational security within secure services. Items belong to one of four subscales: therapeutic risk management, pro-social team culture, boundaries and patient focus. Each item is responded to on a 4-point Likert-type scale, ranging from 3 (just like our team) to 0 (not like our team). Initial validations of this measure with forensic psychiatric nurses have indicated that the scale has high levels of internal consistency, has good convergent validity with tools measuring similar constructs, and is sensitive enough to detect differences between different groups of participants (Chester, 2012; Tighe & Gudjonsoon, 2012). See Appendix 5 for a copy of this scale. In the current study, the Cronbach alpha coefficient was .95.

Relationship Questionnaire (RQ)

The Relationship Questionnaire (Bartholomew & Horowitz, 1991) measures Bartholomew and Horowitz's (1991) four-category two-dimensional model of attachment. It is a four-item instrument in which the four styles of attachment (secure, dismissing, preoccupied and fearful) are described in brief paragraphs (see Appendix

6). Respondents are asked to rate the degree to which they resemble each style on a 7-point scale, from 1 (disagree strongly) to 7 (agree strongly).

This instrument was chosen over other self-report measures of attachment because (1) it is very short, thus requiring little time to complete; (2) it measures attachment representations dimensionally (on a continuum), thus allowing for detection of subtle difference between individuals, which can be of greater utility in research, as opposed to categorical measures of attachment; (3) it has been found to have adequate test-retest, interrater and interitem reliability; (4) it has been found to have good convergent, discriminant and predictive validity (Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010); and (5) because the statements that compose it are interpersonally neutral in language, not referring specifically to romantic or parental relationships. The RQ was used to assess staff's attachment representations. Scores on the four items of the RQ were used to derive the two dimension of 'model of others' and 'model of self' as done in Griffin and Bartholomew (1994). In the current study, the Cronbach alpha coefficient was .17, which is well below the ideal value of .7 (DeVellis, 2003). The mean inter-item correlation value .08 suggested no relationship between the items on the RQ. A look at the corrected item-total correlation values indicated that all items on the scale appear to be measuring something different from the scale as a whole, as the values were all less than the recommended .3 (DeVellis, 2003).

There may be many reasons for the poor reliability to the RQ. Cronbach alpha values are quite sensitive to the number of items in the scale. With short scales (fewer than 10 items) it is common to find quite low Cronbach values (Pallant, 2010). The reliability of a scale can also vary depending on the sample. To date there is no published literature describing the use of the RQ with forensic psychiatric staff; thus it is possible that the RQ might not have been the most appropriate tool to assess attachment representations with this sample. Indeed, during data collection, many staff reported to the researcher that they found the instrument confusing and that they struggled to rate themselves on the four paragraphs, as they could recognise parts of themselves described in each sentence.

Essen Climate Evaluation Schema (EssenCES)

The EssenCES (Schalast, Redies, Collins, Stacey, & Howells, 2008) is a 15-item scale, with two additional non-scored items at the beginning and end, completed by staff and patients (see Appendix 7). The EssenCES taps into three aspects of the ward environment in forensic psychiatric services. The three subscales are: (1) therapeutic hold (the extent to which the climate is perceived as supportive of patients' therapeutic needs); (2) experienced safety (the level of perceived tension and threat of aggression and violence); and (3) patients' cohesion and mutual support (whether mutual support of a kind typically seen as a characteristic of therapeutic communities is present). Each item is responded to on a 5-point Likert-type scale, ranging from 0 (not at all) to 4 (very much). Scores on each subscale can range from 0 to 20. High scores indicate a positive social climate. The EssenCES has been found to have satisfactory internal consistency and construct validity (Milsom, Freestone, Duller, Bouman, & Taylor, 2014; Howells et al., 2009; Tonkin et al., 2012). In the current study, the Cronbach alpha coefficient was .75.

The EssenCES was chosen because (1) it has been used to validate the STA Scale (Tighe & Gudjonsson, 2012), (2) it has been found to be significantly (positively) correlated with patients' motivation to engage in treatment and the strength of the patient-therapist therapeutic alliance (Long et al., 2010); and (3) it has been found to be significantly associated with lower levels of behavioural disturbance (Long et al., 2010), all constructs which are being evaluated in the current study.

Service Attachment Questionnaire (SAQ)

The SAQ (Goodwin et al., 2003) is a 25-item self-report instrument used to indicate how far adult mental health services meet patients' attachment needs. Higher scores indicate a stronger service attachment. The SAQ has been found to have high levels of internal and test-retest reliability and satisfactory construct validity. As a self-report instrument, the SAQ enjoys the same advantages as other self-report measures. For example, it is relatively easy to administer and score, and it directly assesses views that adults have about contemporary attachment figures. However, equally applicable to the SAQ are the disadvantages of self-report instruments, most notably social desirability bias. Although participants were informed that their responses would remain anonymous and would not be seen by their service providers, patients are frequently reluctant to be critical of services (especially hospitals) (Goodwin et al., 2003) and this may have affected their responding on the SAQ. As in previous

research (Campbell et al., 2013) the SAQ was used to measure patient attachment to their treatment providers. See Appendix 8 for a copy of this instrument. In the current study, the Cronbach alpha coefficient was .85.

Positive and Negative Affect Schedule (PANAS)

The Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1998) is a 20-item self-report measure that consists of a number of words that describe different feelings and emotions. Respondents are asked to indicate the extent to which they have felt each way over the past week on a 5-point Likert scale (1=very slightly or not at all; 5=extremely). Items are divided into positive or negative affect, with ten items in each category. A score between 10 and 50 is possible in both categories. The mean scores for the sample on which the test was developed (undergraduate students and staff at an American University) were as follows: for positive affect the mean was 33.3 (SD = 7.2) and for negative affect the mean was 17.4 (SD 6.2) (Watson, Clark, & Tellegen, 1988). The PANAS has been found to be a reliable and valid measure of positive and negative mood states (Crawford & Henry, 2004). A copy of the PANAS can be found in Appendix 9. As done in previous research (Campbell et al., 2013), the PANAS was administered to patients and only the negative affect subscale scores were used in this study, in order to control for negative affectivity.

Demographic data

Staff

During administration of the self-report questionnaires, staff were asked to complete a front sheet (see Appendix 10) requesting them to disclose the following demographic data: age, gender, ethnicity, job title, years in current post, type of contract (e.g., permanent, bank), years in profession and security level (e.g., medium, low, open rehab). During data collection it was noted that many staff did not disclose information about their age, and some staff did not disclose information about their gender and ethnicity, perhaps because they found this information irrelevant for the study, or they felt it was of a sensitive nature, or maybe because they believed that this information might have hindered the confidentiality of their data.

Patients

The following demographic data were extracted by the author from the clients' electronic records: age, length on ward, ethnicity and security level.

Risk incidents

Many investigators and hospital administrators rely on reviews of official incident reports to evaluate frequency of risk events within the hospital setting (Crowner, Peric, Stepcic, & Van Oss, 1994; Daffern, Mayer, & Martin, 2003). Although official records tend to underestimate the volume of risk incidents (Daffern et al., 2003), institutional records can be difficult to access, time-consuming to review, or inadequate in providing relevant data (Padgett, Webster, & Robb, 2005). Because of these reasons patient risk incidents were requested from datix managers nine months after clients completed self-report questionnaires. Datix is an official online incident reporting system that is used across the NHS. Incidents can be submitted by any staff with access to a computer on their NHS network. Datix data are used to analyse and run reports on incidents in specific services, in order to encourage local ownership and improve patient safety. Example of incident types which are recorded in datix include: health and safety (including accidents, fire and security incidents), missing/absent service users, slips and falls incidents, care pathway and clinical incidents (including incidents relating to admission, discharge, transfer, communication, dispense of the wrong medications), child protection/ safeguarding adults incidents and referrals, violence and aggression incidents, information governance (e.g., breach of confidentiality, IT incidents), self harm incidents, illegal acts (e.g., substance abuse), and death of service users (including suicide) (Patient Safety Support Team, 2014).

For the purpose of this study, only the incidents instigated by patients (not the ones caused by staff, e.g., administering the wrong medications, breach of confidentiality) were extracted from the datix forms and were entered in SPSS for data analyses. Incidents were coded (and summed up) into the following categories: verbal aggression, physical aggression, self-harm, fire setting, and other anti-social behaviour (e.g., substance abuse, inappropriate sexual behaviour, bullying, clients not returning from leave). Alongside coding / summing up incidents in these categories, a total number of incidents was calculated for each patient and entered in SPSS.

Treatment outcomes

As carried out in previous research (Belfrage & Douglas, 2002; Douglas, Cox, & Webster, 1999; Muller-Isberner, Webster, & Gretenkord, 2007), treatment outcomes were assessed by requesting patient HCR20 scores from their clinical teams at baseline and nine months after clients completed self-report questionnaires. The HCR-20 is a systematic guide for assessing risk for violence in mentally disordered offenders (Douglas, Hart, Webster & Belfrage, 2013). It contains 20 risk items organized around three scales – historical (ten items), clinical (five items), and risk (five items). The ten Historical items (H) are mainly static in nature and are therefore unlikely to fluctuate over time. The five Clinical items (C) refer to current (within the past 6 months) mental, emotional and psychiatric status and includes risk markers that are dynamic and are, therefore, likely to change over time. The five Risk items (R) are concerned with forecasting the future (usually within the next 6 months) social, living and treatment circumstances as well as anticipating the person's reaction to those conditions. There is ample evidence that the HCR20 has adequate inter-rater reliability (Douglas, 2001; Douglas & Belfrage, 2014; Strand & Belfrage, 2001; Strand, Belfrage, Fransoon, & Levander, 1999). Similarly, validity has been established by showing that the HCR20 scores are related to violence in different samples of mentally and personality disordered individuals in civic and forensic hospitals (Douglas & Webster, 1999; Grann, Belfrage, & Tengstrom, 2000; Singh, Grann, & Fazel, 2011).

As the H scores on the HCR20 tend to remain relatively static, the main focus when it comes to planning interventions for risk minimisation and evaluating treatment tends to be on the "dynamic" C and R factors (Muller-Isberner et al., 2007). Therefore, for the purpose of this study, only the C and R scores of the clients' HCR20 were used for data analysis as, by being dynamic items, these were the ones more likely to change (hopefully reduce) over time as a result of hospitalisation and treatment. The 20 items on the HCR-20 are scored as follows:

N = No, the item definitely is absent or does not apply.

P = The item possibly is present, or is present only to a limited extent.

Y = Yes, definitely present.

Omit = Item is not scored due to insufficient valid information.

For research purposes, HCR20 scores are converted into numerical values as follows: N=0, P=1 and Y=2 (Webster, Douglas, Eaves, & Hart, 1997). These were the scoring

procedures used in this study. As patients were known to their clinical teams, no Omit scores were noted in the data set on the C and R dynamic risk markers.

During data collection it was noted that of the 33 patients, 12 had version 3 of the HCR20 and 13 had version 2 of the HCR20 (with 8 missing values). As both versions have been found to very highly correlated, all C and R data were included in the data analyses as done in previous research (Douglas & Belfrage, 2014; Strub, Douglas, & Nicholls, 2014).

Consideration was given to using as outcomes measures the ones most commonly used in the studies reported in the systematic review (see Table 5), e.g., the CORE-OM or the Symptom Checklist 90-R, but a literature search revealed that these measures do not have forensic norms. Thus the HCR20s were preferred because they are comprehensive tools, widely used in secure settings because it is a requirement from the Commissioners, and because they have been developed for and normed on forensic populations.

Procedure

Once all the necessary ethical approvals were granted, the researcher contacted ward managers and asked to attend patients' community meetings and staff meetings during which she talked about the research and distributed information sheets. If no contact was made by staff / patients with the researcher after two weeks of these presentations, the investigator arranged to attend another staff meeting or patients' community meeting to remind participants of the research and explore their interest.

The researcher then met on a one-to-one basis, at a convenient time, with those staff and patients who expressed an interest in taking part in the research. During these individual meetings she again explained the research by going through the information leaflet (see Appendix 11 and 12) and answering their questions. If participants were still interested in signing up for the project, the researcher gained informed consent in writing (see Appendix 13 and 14), and followed this up with a data collection session at a time convenient for participants. Patients and staff were tested individually in a private room on their wards. Testing sessions lasted between 30 to 50 minutes, depending on the participant's ability to concentrate on the task, which involved completion of three questionnaires (described above), which were counterbalanced to minimise fatigue and boredom effects.

Before completion of the questionnaires, participants were reminded of the parameters of the research, the role of the researcher and the limits of confidentiality, i.e., they were explained that data or information that they shared with the researcher would be confidential unless (a) they specifically asked the researcher to pass this information on to a member of their treating team (in the case of patients) or their managers (in the case of staff's disclosure); or (b) if they disclosed any information that was risk-related (e.g., that they were going to harm themselves / others; that someone was at risk of harm). In these cases their disclosure would need to be passed onto staff / managers, but before doing so, the researcher would clarify the disclosure with them and, in case of concerns, she would inform them that she was going to breach the confidentiality agreement.

It was noted that most patients preferred to have the scales read to them with the author recording their responses, whilst staff completed the questionnaires on their own. It was explained to all participants that there were no right or wrong answers, that they could ask questions at any time, that they could take a break at any time and that they could withdraw from the research with no consequences for them and without giving any reason. Following completion of the testing, participants were thanked for their co-operation and were given the opportunity to ask further questions about the research and how the results would be used / distributed.

Self-report data were collected over a period of 3 months, from April to June 2014 in one hospital, and from January to March 2015 in the second hospital. Delay in data collection occurred because in the second hospital the Head of Psychology and the Nursing Security Lead, who initially agreed to support the research, moved onto new posts by the time data collection started in the first hospital, hence the researcher needed to wait for the new Head of Psychology and Nursing Security Lead to be appointed in the second hospital. She also needed to introduce herself and the research to these new staff members.

Patient demographic data, risk incidents and scores on their HCR20 risk assessments (at baseline and follow up) were collected by the researcher nine months following questionnaire completion. The cut off of nine months was chosen by the author subjectively because (a) a literature search failed to identify explicit guidelines for follow up studies, (b) HCR20s are usually updated every six to 12 months, and (c) a conversation with the supervisor highlighted that nine months was a suitable time for follow up as it was long enough and at the same time would not delay submission

of this thesis. All research data were entered into the computer programme SPSS for analysis.

Results

This study hypothesised that (1) there would be a relationship between attachment and relational security in forensic psychiatric settings; (2) relational security would be related to problematic behaviour on the ward; and (3) relational security would be related to treatment outcomes.

These hypotheses were investigated using primarily correlational analyses. The ensuing result section will describe the statistical analyses conducted on the data set in the following order:

1. Descriptive analyses and data screening
2. Tests of Hypothesis 1 – Correlations
3. t-tests
4. Tests of Hypotheses 2 and 3 – Correlations
5. Regression analyses
6. Additional analyses.

Descriptive analyses and data screening

Before the hypotheses were tested, descriptive analyses were conducted and the data were examined for accuracy of data entry, missing values, and outliers. It was noted that there were eight missing values (24.25%) in the HCR20 data set (i.e., HCR20 data were available for 25 patients out of 33). Thus a new HCR20 C and R variable was created in which the missing values were substituted with the variable means. All subsequent analyses were run with the original variable (the one with the missing values) and with the newly created one, in order to explore if there were any differences in the results with / without the missing values.

Next the distributions of the scores on the continuous variables were checked in relation to their normality. This was done by producing histograms and assessing if the distribution of the scores fell under a symmetrical, bell-shaped curve, with the greatest frequency of the scores in the middle and smaller frequencies towards the extremes. To further assess the assumption of normality the Kolmogorov-Smirnov

101

statistic for each continuous variable was produced. It was noted that all continuous variables but two (total negative affect of the PANAS and staff model of others, as measured by the RQ) were normally distributed. Then the reliability of each questionnaire was checked. The results of these reliability analyses have already been reported in the Measures section of this chapter; thus they will not be repeated here.

As it was noted that service users varied significantly in how long they had been on the wards, the possibility that length of time on the ward may act as a confounding variable affecting their attachment to the service was explored, by correlating service users' length of time on wards with their attachment to the service scores. It was noted that there was no relationship between the two variables, $r = -.008$, $n = 32$, $p = .633$.

Tests of Hypothesis 1

Correlations

Correlational analyses to explore the relationship between relational security and staff model of self and relational security and staff model of others were not conducted due to the low alpha value of the RQ. The reasons why this measure might have been so problematic will be discussed further in the Discussion section of this chapter.

To explore the relationship between relational security (as measured by staff) and service users' attachment to the service, first an average relational security score per ward was calculated, and patients were assigned this average score depending on the ward they were in. Then, the relationship between average relational security per ward and clients' attachment to the service was investigated using Pearson product-moment correlation as both variables were normally distributed. No relationship was found between the two variables, $r = -.128$, $n = 33$, $p = .477$.

Tests of Hypotheses 2 and 3

Correlations

The strength and direction of the relationship between relational security and risk incidents was determined by calculating Spearman rho correlation coefficient, because during the data screening phase of the data analysis, it was noted that the variable of 'risk incidents' was not normally distributed. There was no relationship between the two variables, $r = - .018$, $n = 31$, $p = .924$.

Next, to investigate the relationship between relational security and treatment outcomes (as measured by the clinical and future risk scores of patients' HCR20s), the author first investigated if there was a difference between the C, R, and C+R HCR20 scores collected at baseline and at follow up. This was done by using paired sample t-tests.

There was a statistically significant decrease in C scores from baseline ($M = 4.75$, $SD = 2.72$) to follow up ($M = 2.95$, $SD = 2.52$), $t (23) = 3.75$, $p = .001$ (two tailed). The mean decrease in C scores was 1.79 with a 95% confidence interval ranging from .8 to 2.77. The eta squared statistic (0.37) indicated a large effect size.

In addition, there was a statistically significant decrease in R scores from baseline ($M = 4.62$, $SD = 2.65$) to follow up ($M = .91$, $SD = .82$), $t (23) = 7.73$, $p < .000$ (two tailed). The mean decrease in R scores was 3.7 with a 95% confidence interval ranging from 2.71 to 4.7. The eta squared statistic (0.72) indicated a large effect size.

Further, there was a statistically significant decrease in C+R scores from baseline ($M = 9.37$, $SD = 4.83$) to follow up ($M = 6.45$, $SD = 5.26$), $t (23) = 3.31$, $p = .003$ (two tailed). The mean decrease in C+R scores was 2.91 with a 95% confidence interval ranging from 1.09 to 4.73. The eta squared statistic (0.32) indicated a large effect size.

After having established that there was a significant decrease in HCR20 dynamic risk scores from baseline to follow up, next the author calculated the change in C, R and C+R scores from baseline to follow up for each patient. These new variables were used as a measure of treatment outcomes in subsequent analyses.

The strength and direction of the relationship between relational security and treatment outcomes (as measured by the changes in C, R and C+R scores of patients' HCR20s from baseline to follow up) was determined by calculating Spearman rho correlation coefficients because the three treatment outcome variables were not normally distributed. There was no relationship between (1) changes in C and

relational security, $r = .238$, $n = 24$, $p = .264$; (2) changes in R and relational security, $r = .36$, $n = 24$, $p = .084$, and (3) changes in C+R and relational security, $r = .34$, $n = 24$, $p = .096$. These analyses were repeated by replacing the missing values in the C, R and C+R change scores with their respective means but the correlation coefficients continued to remain non significant.

Regression analyses

Standard multiple regression was used to explore to what extent relational security predicted treatment outcomes as measured by changes in C, R, and C+R scores. According to Stevens (1996), a minimum of 15 participants per predictor are needed. Thus, as the patient sample included only 33 participants, only two independent variables (relational security and ward atmosphere scores) were entered in the equation. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

With regards to changes in C scores, the total variance explained by the model was 6.8%, $F (2, 30) = 1.085$, $p = .350$. The same analysis was repeated with changes in R scores. In this case, the total variance explained by the model was 13.3%, $F (2, 30) = 2.305$, $p = .117$. Finally, standard multiple regression was used to explore to what extent relational security predicted treatment outcomes as measured by changes in C+R scores. The total variance explained by the model was 12%, $F (2, 30) = 2.044$, $p = .147$. A look at the Beta standardised coefficients indicated that relational security made a significant contribution only to changes in R scores (Beta coefficient = .413, $p = .04$). Next the part correlation coefficients were looked at to explore the unique contribution relational security made to changes in R scores. It was noted that relational security accounted for 13.24% of the variance in changes in R scores.

Next standard multiple regression was used to explore to what extent relational security and ward atmosphere predicted risk incidents. The total variance explained by the model was 6% ($F (2, 28) = 2.053$, $p = .147$). A look at the Beta standardised coefficients indicated that neither variable made a significant contribution to the dependent variable (risk incidents).

Additional analyses

Three one-way between-groups analyses of variance were conducted to explore the impact of security level (medium, low and open-rehab) on (a) relational security, as measured by the STA, (b) ward environment, as measured by the EssenCES, and (c) on patients' attachment to the service, as measured by the SAQ. There was no statistical difference ($p > .05$) in relational security and in patients' attachment to the service.

However a statistical difference ($p < .05$) was found in EssenCES total scores for the three security levels ($F (2, 83) = 5.49, p = .006$). Despite reaching statistical significance, the actual difference in mean scores between the security levels was quite small. The effect size, calculated using eta squared, was 0.11, which is small. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for open rehab ($M = 41.66, SD = 6.95$) was significantly different from low secure ($M = 37.52, SD = 7.13$) and from medium security ($M = 33.96, SD = 6.98$).

Next the relationship between relational security (as measured by STA) and ward atmosphere (as measured by the EssenCES) was investigated using Pearson product-moment correlation as both variables were normally distributed. There was a moderate (Cohen, 1988), positive correlation between the two variables ($r = .470, n = 89, p = .000$), with higher levels of relational security associated with more positive ward atmosphere. To get an idea of how much variance the two variables shared, the coefficient of determination was calculated. It was noted that relational security and ward atmosphere shared 22.09% of the variance. This analysis is relevant to the psychometric properties of the STA scale and will be discussed in more details in Chapter 3 of this thesis.

As carried out in previous research (Campbell et al., 2013), partial correlations were used to explore the relationship between patients' attachment to the service (as measured by the SAQ) and ward atmosphere (as measured by the EssenCES), while controlling for patients' negative affectivity (as measured by the PANAS). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a large (Cohen, 1988), positive, partial correlation between patients' attachment to the service and ward atmosphere, controlling for clients' negative affect, $r = .683, n = 30, p < .000$, with higher attachment to the service being associated with more positive ward atmosphere. An inspection of the zero order correlation ($r = .704$) suggested that controlling for

negative affectivity had very little effect on the strength of the relationship between these two variables.

Similarly partial correlations were used to explore the relationship between patients' attachment to the service (as measured by the SAQ) and risk incidents, while controlling for patients' negative affectivity (as measured by the PANAS). There was a moderate (Cohen, 1988), negative, partial correlation between patients' attachment to the service and risk incidents, controlling for clients' negative affect, $r = -.438$, $n = 28$, $p = .015$, with higher attachment to the service being associated with fewer risk incidents. An inspection of the zero order correlation ($r = -.381$) suggested that controlling for negative affectivity had some effect on the strength of the relationship between these two variables. Similar analyses highlighted no relationship between attachment to the service and treatment outcomes as measured by C and R dynamic HCR20 scores, $r = -.159$, $n = 30$, $p = .384$.

Finally standard multiple regression was used to explore to what extent relational security and ward atmosphere predicted patients' attachment to the service. The total variance explained by the model was 76.7%, $F(2, 30) = 49.246$, $p < .000$. To explore which of the two independent variables (relational security and / or ward atmosphere) contributed to the prediction of the dependent variable (patients' attachment to the service), the Beta standardised coefficients were looked at. It was noted that both independent variables made significant contribution, with ward atmosphere making the stronger contributions (Beta coefficient = .981, $p < .000$) compared to relational security (Beta coefficient = .589, $p < .000$) to the prediction of patients' attachment to the service. Finally the part correlation coefficients were looked at to explore the unique contribution of each independent variable. It was noted that ward atmosphere explained 74% of the variance in attachment to the service and relational security explained 27% of the variance in the same variable.

Discussion

This research topic was chosen because, to date, as highlighted by the systematic literature review in Chapter 2 of this thesis, there is scarce empirical research exploring systematically the relationships between attachment, relational security, risk incidents and treatment outcomes in forensic psychiatric units. This thesis hoped to add new insights to this under-researched area, in order to stimulate ideas for further research and practice / staff developments.

This research had three main objectives. First, it aimed to explore the relationships between relational security with staff attachment representations and with patients' levels of attachment to their treating teams, within various forensic psychiatric settings. Second, it examined the associations between relational security and risk incidents in these environments. Finally, this research looked at the relationships between relational security and treatment outcomes as measured by dynamic risk scores.

Based on the exploratory nature of the topic and the fact that the study involved looking at specific variables in a specific environment (forensic secure wards), a control group (e.g., non-forensic inpatients) was not used.

Attachment and relational security

The first aim was to establish if there was a relationship between attachment and relational security. Relational security was measured with the STA scale (Tighe & Gudjonsson, 2012) completed by staff. Staff attachment representations were measured with a short questionnaire (the RQ) and patients' attachment to their team was measured with another questionnaire (the SAQ). It was hypothesised that there would be a relationship between attachment and relational security in forensic psychiatric settings. Correlations were not run to explore the relationship between relational security and staff's attachment representations as the RQ was found to have a low Cronbach's alpha in this sample. The relationship between relational security (as measured by staff) and clients' attachment to the service was investigated using correlational analyses. No significant relationship was found between the two variables. It would have been interesting to measure patients' views about relational

security on their wards and if this bore any relationship with their attachment to their team.

There could be many reasons for the poor internal consistency of the RQ with forensic staff. One reason may be that the RQ has been developed by academics who have generated its items from the existing adult attachment literature, taking previously delineated categories / dimensions as a starting point. Although the experience of researchers developing measures is likely to be extensive, the resultant items and measures assume the relevance of attachment theory to the area in question prior to development of the measure, and items are likely to be articulated in ways familiar to academics rather than users (in this sample staff working in a very specific setting). Indeed many staff reported to the researcher that they found scoring the RQ confusing. This may have been because staff are usually required to adhere to boundaries whereas the measure was asking them to step over these boundaries. The content of the RQ is very personal and introspective, and people might have struggled with this, particularly if they felt that demographic information given could identify them. Piloting the instrument on a small group of ward-based staff prior to choosing it as an assessment measure would have highlighted these problems, and a more appropriate measure could have been chosen. Or following the pilot, the language of the RQ could have been re-phrased more meaningfully by nursing staff for the use with this sample.

In addition, as a self-report measure, the RQ probes conscious attitudes towards current relationships but cannot detect when defences, social desirability, or impression management distort responses. It has also been argued that attachment behaviours are not always on display but are activated by specific events such as situations of danger, threat or isolation (Ravitz, Maunder, Hunter, Sthankiya & Lancee, 2010), which are perceived differently by different people, making attachment a difficult construct to measure. Perhaps, a more meaningful measure of attachment for staff would have been, similarly to the patients, one that tapped into their attachment representations to their colleagues and managers, as one would assume that these people would be the first port of call in case of help.

Relational security and risk incidents

The second aim of this research was to evaluate the strength and direction of the relationship between relational security and risk incidents. It was hypothesised that relational security was related to problematic behaviour on the wards. No relationship was found between the two variables in this sample.

Standard multiple regression was used to explore to what extent relational security and ward atmosphere predicted risk incidents. Neither variable was found to make a significant contribution to the dependent variable (risk incidents). One reason for these disappointing results may be that the number of official risk incidents was very small and their distribution was skewed. A closer look at the risk events data revealed that most incidents were produced by few patients, with the majority of patients being fairly settled overall. This is consistent with previous research (Bowers, 2000), which found that in most cases, a large proportion of incidents are caused by a small number of service users. With a larger sample of patients involved in risk incidents, it may have been easier to detect meaningful interactions between relational security and risk events. However, more unstable clients might be mentally unwell and thus not considered able to give true informed consent to participate in the research, which would exclude them from the participant sample in the first place. This is one of the difficulties with recruiting participants within this population.

Another problem with using rates of incidents in research studies relates to the accuracy of data recording. Haller and Deluty (1988) caution that researchers relying on formal incident reports of assaults on staff very likely underestimate the actual incidence of assaults. Reporting systems may consistently underestimate the real frequency of incidents by as much as 60% (Daffern et al., 2003) although the frequency and reliability of reporting has been shown to increase in line with the severity of injuries (Infantino & Musingo, 1985). Some investigators (Convit, Isay, & Gadioma, 1988; Lion, Snyder, & Merrill, 1981) have found that ward reports may be more accurate records of ward-based incidents when compared to official estimates. Other researchers (Brizer, Convit, & Krakowski, 1987) have highlighted that interviews with staff and ward observations tend to report a higher frequency of risk events when compared to ward summaries. Video-cameras also have been found to detect more events involving assaults than official incidents reports, ward journals, and patient notes (Crowner et al., 1994). Based on this literature, it seems that more

sensitive detection methods and broader definitions of risk incidents lead to higher estimates of the frequency of risk events on psychiatric wards. This study used official reports of risk incidents, because the author wanted to make sure that risk incidents were defined and recorded using the same standardised process, in both sites where the research took place. In addition, due to time constraints, the author was unable to search for risk incidents in each service user's electronic journal for nine months following questionnaire completion. The possibility that risk incidents were underreported is a limitation of this study. Risk events might not have been reported by staff because they may not have seen them, or some staff might not have reported some risk events because they did not believe they were worth of being reported via official means.

Relational security and treatment outcomes

The third aim of this research was to evaluate the strength and direction of the relationship between relational security and treatment outcomes as measured by changes in dynamic risk scores on clients' HCR20s from baseline to follow up. It was hypothesised that relational security was related to treatment outcomes. No relationship was found between the two variables in this sample.

Standard multiple regression was used to explore to what extent relational security predicted treatment outcomes as measured by changes in HCR20 dynamic C, R and C+R scores. Neither variable was found to make a significant contribution to the dependent variables. Despite the disappointing results, more research is needed in this area because literature on HCR20 scores as a measure of treatment outcomes is still in its infancy, as is research on relational security.

Additional findings

Relational security (as measured by STA) and ward atmosphere (as measured by the EssenCES) were found to be moderately correlated with higher levels of relational security associated with more positive ward atmosphere. The two variables shared 22.09% of the variance. Further, a large positive correlation was found between patients' attachment to the service and ward atmosphere, with higher attachment to the service being associated with more positive ward atmosphere. Furthermore, a

moderate, negative, relationship was found between patients' attachment to the service and risk incidents, with higher attachment to the service being associated with fewer risk incidents.

As these were correlational analyses, causality cannot be established. It may be that wards with higher levels of relational security invested more in the development of safe and effective therapeutic relationships with service users, which impacted positively on the perceptions of the ward environment. Or it may be that on wards with more positively rated ward climate, staff were more confident in their awareness of relational security and its practical applications. In their paper (Tighe & Gudjonsson, 2012) use the EssenCES to validate the STA scale they created because in their view these scales measure similar constructs (this will be discussed further in Chapter 3). Unfortunately they do not provide data about the relationship between these two variables. As relational security guidelines are being applied across forensic psychiatric settings in England more research is needed into the impact of relational security on risk incidents on the ward, treatment outcomes, and on service users and staff's attachment to their service / team, so that recommendations can be made about areas of strengths, staff training requirements and service development needs.

As carried out in previous research (Campbell et al., 2013), partial correlations were used to explore the relationship between patients' attachment to the service (as measured by the SAQ) and ward atmosphere (as measured by the EssenCES), while controlling for patients' negative affectivity (as measured by the PANAS). Consistent with previous research (Campbell et al., 2013), a significant correlation was found, with higher attachment to the service being associated with more positive views of ward atmosphere. Controlling for negative affectivity had very little effect on the strength of the relationship between these two variables.

In addition, standard multiple regression revealed that relational security and ward atmosphere significantly predicted patients' attachment to the service. Ward atmosphere was noted to make the stronger contribution compared to relational security. In particular ward atmosphere explained 74% of the variance in service users' attachment to their treating teams and relational security explained 27% of the variance in the same variable.

These findings offer support for arguments in favour of the importance of staff-patient relationships in forensic mental health care (Ma, 2006). From these results, it may be inferred that all staff have an active and powerful personal influence

on ward atmosphere and the development of more secure relationships between clients and service providers. This fits with the call by the Royal College of Psychiatrists (2011) to provide patients with a therapeutic environment with adequate staffing of the right skill level and mix. It also suggests that quality of staff-patient relationships may be more important that staff numbers per se (Samarasekera, 2007).

Contrary to previous research (Tighe & Gudjonsson, 2012) there was no difference in relational security between the three security levels. Although the overall sample size yielded adequate statistical power for the analyses conducted on the entire sample, when subgroups were considered, power was not enough to detect substantial effect sizes. However, similarly to previous research (Fox et al., 2010; Tonkin et al., 2012) a significant difference, although small, was found in perception of ward environment (as measured by both staff and patients), with more positive perceptions in the open rehab ward and less positive views of the ward climate in the medium security wards. This may be because more secure wards are less settled because of the nature of their client group (more unwell patients), or it may be because there are greater restrictions upon personal freedom of residents in medium versus low secure units, which consequently may affect service users' views of the ward environment.

Strengths

The present study was truly prospective, and was located across two sites and three levels of ward security (medium, low and open rehab). It also included multiple means of data collection, including self-report questionnaires, official records (of risk incidents) and treatment outcomes (as measured via HCR20s) completed by clinicians involved in clients' care and blind to research procedures; thus this study tried to overcome the limitations associated with a single method of data collection by using various means to collect data. Further, this study is the first one that looks at the relationship between attachment and relational security using two subgroups, staff and patients. For all of these reasons, it can be argued that this study has greater generalisability than studies that look at only one sample, or use only one method of data collection, within only one setting. In addition, there is a relatively high degree of external validity as HCR20 raters were clinicians involved in clients' care who were familiar with completing HCR20s and risk incidents were defined and recorded using

a standardised process across both sites where this research took place. Demand characteristics and other confounding variables linked with using self report questionnaires were minimized by using standardized instructions and making participants aware that the research was completely separate to their treatment care pathways (if service users) or jobs (if staff participants) and that results would be anonymous and not fed back to their clinical teams / colleagues.

Additional limitations

Alongside the limitations associated with the small size of the subgroups, the underreporting of risk incidents, the majority of incidents caused by a small number of service users and the poor reliability of the Relationship Questionnaire with forensic psychiatric nurses, this study primarily recruited amongst ward-based staff, thus it could be improved by recruiting staff participants amongst other MDT members (e.g., psychologists, doctors, occupational therapists, etc.). This might give a broader perspective on relational security and its impact on forensic psychiatric settings. Staff's affect was also not measured and controlled for. It is possible that staff's feelings might have had an impact on their perceptions of ward environment or relational security. The two hospitals where participants were recruited also differed on many levels, including location in the UK and management structure. With regards to the latter, it was noted that, at the time of this research, one hospital was undergoing significant changes in their management team. It is possible that these changes might have increased feelings of uncertainties in ward-based staff and service users, which in turn could have had an impact on their attachment representations and perceptions of ward climate and relational security.

Another limitation relates to the use of the HCR20 as an outcome measure. The researcher requested that the clinical teams submitted service users' HCR20 data at 9-months follow up. In secure settings the HCR20s are routinely scored every 6 to 12 months. Thus it is possible that the HCR20s released to the researcher might have been scored for different patients at different times. If this were to be the case, time of HCR20 scoring would be a variable that might have confounded the result of this study. The significant reduction in dynamic risk scores from baseline to follow up is reassuring, as it suggests that detention in hospital and access to treatment have a beneficial effect on offenders' risk level. However, it is possible that the HCR20

might not have been the most sensitive / appropriate instrument to measure treatment outcomes in this study. Alongside risk assessment measures, future research in this area might want to review other outcome measures (developed and normed on forensic populations), which could be used to evaluate treatment outcomes.

Recruiting willing and able participants (staff and patients) in secure settings is not without its challenges. With regards to staff participants, it was noted that numbers were lower in more acute medium secure wards, with more volatile environments that required staff to respond to incidents. In addition, only the staff on shift during the days when the research was advertised and when data were collected participated in this research, thus excluding those staffs who were working on different days / shifts. Several attempts were made to encourage staff participation by liaising via email with ward managers, with limited success. During the time of data collection for this study, many changes also occurred in one of the hospitals, with senior staff members leaving and new managers being appointed.

Recruiting patients as participants was not easy either for a number of reasons. First, many of the patients on the wards have been in various hospitals for many years and hence are not always willing to participate in studies as they feel that they are regularly being approached to take part in research projects. Other problems with recruitment included the nature of mental illness itself in that participants, on more acute medium secure wards, were more volatile. If a patient was deemed too unwell to be approached by the nursing team, they were not deemed appropriate to take part in the research. Although this was a necessary procedure it did effectively reduce the sample size and emphasizes the problems with recruiting within a mentally disordered population.

Implications for future research, clinical practice and staff training

Future research might want to consider developing a measure of attachment that is more appropriate for use with forensic psychiatric staff. As connections with a group or a network of group members can be viewed as attachment bonds (Rom & Mikulincer, 2003), it has been argued that a person can seek proximity to his / her group (not just with an individual person) as a source of comfort, support and safety in times of need (Mikulincer & Shaver, 2007). Indeed research on group identification and intergroup relations show that people generally seek comfort and support from

their own groups, group members and leaders during challenging times (Devine, 1995; Dovidio & Gaertner, 1993). Because of the attachment functions served by groups, a measure that assesses staff's attachment to their colleagues, leaders and team as a whole might be more appropriate to evaluate the impact of their attachment representations, that are activated at work during challenging times. Overall, the studies conducted so far applying attachment theory to the study of groups has found that attachment anxiety and avoidance encourage negative attitudes towards groups and impair people's instrumental and socio-emotional functioning in group contexts. These findings have been replicated in student groups, small work teams and group counselling settings (Mikulincer & Shaver, 2007), but their generalisability to larger teams working in forensic settings remain untested.

Future research might also want to develop further the STA scale and design a version that could be used with patients. This would allow exploration of many relationships, including if there are any differences between staff and client's perceptions of relational security on the wards where they work / reside, and the interactions between relational security (as measured by service users) and their attachment to the service, risk incidents and treatment outcomes.

Contrary to the suggestions (Appleby 2010; Tighe and Gudjonsson, 2012) that improvements in relational security might reduce risk incidents in secure settings, this study found that relational security (as measured by staff) neither predicted risk incidents nor was related to a reduction in dynamic risk scores. As no other research has explored the relationships between these variables, more systematic investigations are needed to establish the impact of relational security on the risk posed by forensic patients. More interestingly, this study found that in clients, higher levels of attachment to their service were associated with fewer risk incidents. In addition, it found that a positive ward environment and relational security predicted service users' attachment to their treating teams. This findings are consistent with literature (Adshead, 2004; Aiyegbusy, 2004) highlighting the importance of developing secure attachment relationships with patients, whilst maintaining a relational security focus, which includes a clear understanding of how the patient responds to stress, especially to stress that arises in the context of interpersonal relationships, and how the client seeks help and make use of staff care when it is provided.

Although it may be unrealistic to expect ward staff to be trained in psychological therapies, attachment theory and relational security guidelines could be

used as a useful base for the training and support of forensic psychiatric staff, as traditional mental health training may leave staff unaware of the interpersonal aspects of their relationship with patients (especially if these relationships are difficult), and with a tendency to attribute relational problems to mental illness, personality disorder or evil (Bowers, 2002). It may be hard for staff to appreciate that medication may improve symptoms of mental illness but does little to change attitudes to caregivers. Staff may also be unprepared for the fact that they will experience emotional reactions to the patients, both positive and negative, which may be evoked in them by the service users' attachment behaviours (Adshead & Aiyegbusi, 2014). Attachment-based supervision could provide a space for reflection on the emotional demands of the job (Winship, 1995) and the complexities of relating to people whose attachment representations are insecure. Identification of a vulnerable sub-group of staff with insecure attachment styles to the team could lead to the provision of extra support, but could also place staff at risk of stigma and unfair employment practices (Adshead & Aiyegbusi, 2014).

To conclude, this chapter reported the results of a study, which explored the relationships between relational security, attachment, risk incidents and treatment outcomes in secure settings, using a newly developed measure, the STA scale. No relationship was found between relational security (as measured by staff) and service users' attachment to the service. In addition, no relationship was found between relational security and risk events on the wards and between relational security and treatment outcomes (as measured by changes in dynamic risk scores from baseline to follow up).

However, relational security and ward atmosphere were found to be moderately correlated with higher levels of relational security associated with more positive ward atmosphere. In addition, a large positive correlation was found between patients' attachment to the service and ward atmosphere, with higher attachment to the service being associated with more positive ward atmosphere. Further, a moderate, negative, relationship was found between patients' attachment to the service and risk incidents, with higher attachment to the service being associated with fewer risk incidents. Finally, relational security and ward atmosphere significantly predicted patients' attachment to the service. These results highlight the importance of investing in improving ward atmosphere and relational security on forensic psychiatric wards, in order to promote more secure therapeutic relationships between

staff and service users, as it appears that, if patients feels more securely attached to their treating teams, they may be less likely to engage in risk incidents.

The next chapter will review in more details the psychometric properties of the STA scale and will suggest recommendations for further validation of this instrument.

Chapter 3 - Critique of Psychometric Measure

This chapter examines the See, Think, Act Scale (STA Scale; Tighe & Gudjonsson, 2012), a recently developed measure of relational security in forensic psychiatric institutions (See Appendix 5 for a copy of the STA Scale). It will do so by firstly defining what relational security is and why it is important. This will be followed by a description of the scale and how it was developed. The See, Think, Act Scale's characteristics and psychometric properties are examined. The chapter ends with a list of recommendations regarding how to achieve further validation of the scale.

Definition of relational security

Security in forensic psychiatric settings in the United Kingdom (UK) is currently considered as having a theoretical separation into three domains (Collins & Davies, 2005): physical, procedural and relational security. These domains have been described in details in the Introduction and in Chapter 1 of this thesis; hence this information shall not be repeated here. The See, Think, Act (STA) (DoH; Appleby, 2010) is a recent government initiative detailing guidelines on how to improve relational security in forensic inpatient settings. This work was the result of an investigation into risk incidents in medium secure forensic services. The research team spoke to various stakeholders, including patients, various ward staff, managers, carers, advocates and the Ministry of Justice. An analysis of the themes revealed eight areas identified as key to relational security. These are summarised in Table 6.

Table 6. Areas identified as key to relational security (Appleby, 2010).

Key areas for relational security	Reasons for being relevant to relational security

Therapy	Should give patients realistic hope about their recovery and allow them to build trust in their care providers.
Boundaries	Are important to keep everyone safe.
Patient mix	The mix of patients presents its own set of risks. These need to be understood and necessary action should be taken if risk is presented.
Patient dynamics	Are important to shape how a ward feels.
Personal world	The histories of patients need to be known in order to understand how they feel and what might act as a trigger.
Physical environment	It is important to understand how the environment affects patients.
Visitors	It is important to be aware of the impact of visitors on patients as some might have a good influence, whereas others might have a negative impact.
Outward connections	Contact with the outside world can have noticeable effect on patients. It is important to know the risks and when to act.

All staff working in forensic secure environments in the United Kingdom are currently encouraged to acquaint themselves with the See, Think, Act practice

guidelines. This is an attempt to improve the quality of relational security and hopefully reduce the number of untoward incidents in forensic psychiatric institutions.

Some research (Blom Cooper, 1992; Fallon, 1999; NCAS London, 2008; Tighe & Gudjonsoon, 2012) suggests that relational security may be related to incidents on the wards. However, no formal research in this area has been conducted, perhaps because relational security is a relatively new concept which is hard to define and measure, making it difficult to assess the success of the STA campaign. Hence, Tighe and Gudjonsson (2012) set out to develop a reliable and valid measure of qualitative relational security based on the content presented in the STA DoH practice guidelines (Appleby, 2010), which was named the See, Think, Act Scale (STA Scale; Tighe & Gudjonsson, 2012).

Relational security has been compared to 'ward atmosphere' or 'social climate' (Tighe & Gudjonsson, 2012). 'Social climate' has been described has encompassing the material, social and emotional conditions of a given psychiatric ward or unit and the interaction between such factors (Moos, 1997). Numerous studies have been conducted to investigate the social climate of psychiatric and forensic psychiatric settings. Many of these studies have demonstrated statistically significant relationships between 'social climate' and a variety of clinical and organisational outcomes, including staff and resident satisfaction (Rossberg & Friis, 2004), institutional violence and the frequency of assaults on staff (Friis & Helldin, 1994), staff performance and morale (Moos & Schaefer, 1987), and treatment outcomes, such as attitudes towards offending, treatment drop-out, and discharge (Beech & Hamilton-Giachritsis, 2005; Moos, Shelton, & Petty, 1973).

In addition, 'social climate' has been found to correlate positively with patients' motivation to engage in treatment, the number of sessions they attended, the extent to which they felt the unit met their needs, and the strength of the patient-therapist therapeutic alliance, with correlational coefficients ranging from .25 to .49. More positive 'social climate' was also found to be associated with lower levels of behavioural disturbance and fewer episodes of seclusion, with correlation coefficients of -.29 to -.46 respectively (Long et al., 2010).

No research has formally investigated if relational security is also related to treatment outcomes. Hence Tighe and Gudjonsson (2012) developed the See, Think, Act Scale as a tool to measure relational security and its relationships to other variables in forensic psychiatric settings.

Development of the See, Think, Act Scale

The See Think Act Scale (STA; Tighe & Gudjonsson, 2012) was developed based on the guidelines on relational security (called See Think Act) published by the Department of Health (Appleby, 2010). The government guidelines (Appleby, 2010) relate to four areas of clinical practice:

1. The team's ability to maintain boundaries and deliver therapy.

2. The patient mix and inter-patient dynamics.

3. The inside world of the patient and the unit.

4. Connections to the outside world and the impact of visitors.

At the end of each guideline, there is a series of statements for discussion to facilitate teams' reflection on their practice. These were taken as a starting point for the development of the STA Scale. First, those discussion statements that hypothesised about the experience of patients or visitors on the ward were put aside, as the focus of the measure was to evaluate levels of relational security within the staff team.

Second, the remaining discussion statements which addressed more than one subject were broken down into separate questions. For example *"We have a ward purpose, philosophy and core values that patients and staff understand"* was changed into three separate questions:

1. *We have a ward purpose that we all understand.*
2. *We have a ward philosophy that we all understand.*
3. *We have ward core values that we all understand.*

Wordings were also simplified and some statements were reversed. The preliminary questionnaire, composed of 120 items, then went through three rounds of being reviewed by a panel composed of three senior nurses and two health case assistants with lengthy experience of working in forensic settings. Tighe (phone communication, 29.10.2014) explained that only ward-based staff were involved in the review process for two main reasons. First, the request of developing an

instrument measuring relational security came from the nursing team, so he was responding to the needs of this staff group. Second, as this was a pilot project, he wanted to validate the newly-developed measure on a well-defined population, to reduce the number of confounding variables. In the same telephone conversation, Tighe acknowledged the need to validate the measure on other groups of professionals, including occupational therapists, psychologist, psychiatrists, social workers, etc., in order to see how the model applied to other professional groups and explore the dynamics of relational security from other perspectives.

At each round, all feedback was incorporated for further examination. At the third round, it was agreed that no further changes could be made to improve the face validity of the scale.

The final questionnaire had 50 items[4]. Each item was related to one of the four sections of the original STA DoH practice guidelines (Appleby, 2010). Example items were:

- We know which boundaries are non-negotiable and which we can make individual and team judgements about.

- We know how to respond if the patient mix needs addressing.

- We know the histories of our patients.

- We set a good example and are positive role models.

This was administered to 159 nursing staff who were working in a forensic medium secure and challenging behaviour low secure service, with wards for both males and females, in two sites in South-east London. Demographics for the preliminary validation sample can be seen in Table 7.

Table 7. Demographics for the preliminary validation sample of the STA Scale (Tighe & Gudjonsson, 2012)

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[4] Several attempts were made to get a copy of this questionnaire from the authors so that it could have been included in this thesis as an appendix, but no reply was received.

Gender (*n*=159)	Males	60 (37.7%)
	Females	99 (62.3%)
Grade (*n*=153)	Qualified nurses	78 (49.1%)
	Support workers	65 (40.9%)
	Student nurses	10 (6.3%)
Ethnic background (*n*=156)	Black African	82 (51.6%)
	White European	40 (25.2%)
	Black Caribbean	12 (7.5%)
	Asian	6 (3.8%)
	Other	16 (10.1%)

Using a Likert scale (value range 3 to 0), respondents were asked:
Please indicate how well you think that each item reflects the way that your ward team works. Some questions may be true for some members of your team and not of others; or true of your team at some times and not at others. Base your responses on your first overall estimate of how well the item reflects your team.

The response options were:

- Just like our team (value of 3)

- Quite like our team (value of 2)

- A little like our team (value of 1)

- Not like our team (value of 0).

Items were presented in random order. Anonymity was ensured for all participants. The authors carried out a principal component factor analysis of the questionnaire. The analysis confirmed a four-component structure (discussed below). The authors (Tighe & Gudjonsson, 2012) removed all items that did not load > .4 on any component. This process resulted in a 28-item questionnaire.

Examination of the scree plot indicated a one-component solution accounting for 50.4% of the variance; however, examination of the eigenvalues indicated a four-factor solution accounting for 65.3% of the variance:

1. Component 1 – Therapeutic Risk Management (eigenvalue 14.1; 50.4% of the variance) has eight items and includes all questions concerned with the management of visits and visitors as well as items concerning mental state.

2. Component 2 – Pro-Social Team Culture (eigenvalue 1.8; 6.4% of the variance) has nine items and taps into the extent to which staff work as a team and have a pro-social culture.

3. Component 3 – Boundaries (eigenvalue 1.3; 4.5% of the variance) has five items concerning the team boundaries and their maintenance.

4. Component 4 – Patient Focus (eigenvalue 1.1; 4% of the variance) has six items and concerns focus on patient care including monitoring of mental state and use of care plans.

As both scree plot and eigenvalue approaches have strengths and weaknesses (Jackson, 1993), Tighe and Gudjonsson (2012) used the data as both a unidimensional scale and as a set of four subscales for further reliability and validity analyses.

In summary, the See, Think, Act Scale (STA Scale; Tighe & Gudjonsson, 2012) is a 28-item self-report questionnaire designed to measure the quality of relational security in forensic psychiatric settings. Currently, only a staff version has been developed, although the authors are in the process of building a version of the scale to be administered to patients. It can be completed in five minutes. No technical handbook for the STA Scale has yet been published as the scale has recently been developed and further validation is necessary.

Characteristics of the psychometric measure

Level of measurement. The level of measurement used in the STA Scale is interval level data. Interval scales lack a true zero point and provide a score for each participant on each of their scales / subscales (Kline, 2000).

Self-report. The STA Scale is a self-report measure, completed by the participants themselves. Self-report measures in psychological and behavioural sciences research are popular for a number of reasons. First, they represent a 'cheap' way (in terms of both time and cost) of obtaining data. Second, they can be easily implemented with large samples. Finally, they can be used to measure constructs that would be difficult to ascertain with behavioural or physiological measures (for example, getting someone's views of themselves) (Oppenheim, 1998).

However, there are a number of problems with self-report measures, which need to be considered when interpreting the results (Langdridge & Hagger-Johnson, 2009). The most common problems relate to acquiescence (i.e., agreeing with the items regardless of content) and social desirability (i.e., the tendency to endorse items because it is socially desirable to do so). Another problem relates to the introspective ability of the respondent. Even if participants are responsive to item content and trying to be open and transparent about their views, they may lack the introspective ability to provide an accurate response to a question because individuals vary in their ability to self-reflect and think abstractly. Participants may also vary regarding their understanding or interpretation of particular questions. This is less of a problem with questionnaires measuring concrete things like exercise, but can be a problem when measuring more abstract concepts such as relational security or ward environment. In addition, some participants may 'fake bad', i.e. making problems appear more evident, assuming that they will gain more support. Or, in research studies, demand characteristics may play a role whereby participants attempt to concur or sabotage the study's aims by responding in ways that agree / disagree with outcome, or merely suffer from fatigue or lose focus.

There are a number of ways to overcome some of the problems presented by self-report measures. Ensuring anonymity and confidentiality of responses can attenuate the impact of demand characteristics and social desirability. Presenting the items in random order can counteract fatigue or boredom effects. The authors of the STA Scale (Tighe & Gudjonsson, 2012), during their preliminary validation of the STA Scale, ensured participant anonymity and presented the scale items in random order.

Response bias can be removed by 'reversing' half the questions on a questionnaire so that the variable is scored by positive responses on half the questions and negative responses on the other half, thus cancelling out any response bias. This

has not been done with the STA Scale and therefore could be a way to improve the scale.

To prevent satisficing (Krosnick, 1991; Krosnick et al., 2002), that is the possibility that respondents might choose the no-option response in order to avoid reporting the true opinions they have, Tighe and Gudjonsson (2012) did not adopt a neutral middle option in the Likert scale used to score the STA Scale (value range 3 to 0).

Another procedure for overcoming the problems associated with impression management and lack self-insight is to administer participants with a social desirability scale (e.g., Paulhus Deception Scale, PDS; Paulhus, 1998). The researcher then can drop from the analysis those cases that are high on impression management and / or lack of insight. The drawbacks of this method are a reduced sample size and loss of information. Saunders (1991) proposes a statistical method to adjust for these biases. He suggests calculating adjusted scores for each client on the self-report measures used in a study, and using these adjusted scores in further analyses.

Psychometric properties of the See, Think, Act Scale

It is essential to establish if the scale has robust psychometric properties. High reliability is particularly important because the lower the reliability the larger the standard errors of measurement (Kline, 2000). It is also essential to establish if the scale measures what it has been designed to measure and if it is applicable to the sample under study.

Test-retest reliability. Reliability has two distinct meanings. One refers to stability over time, the second to internal consistency. The reliability of a test over time is known as test-retest reliability (Kline, 2000). The study by Tighe and Gudjonsson (2012) was a preliminary validation of the STA Scale. Test-retest reliability of the scale was not established / reported[5].

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[5] Several attempts were made to find out from the auhtors why test retest reliability was not reported / established but no response was received.

Internal reliability. Internal consistency reliability is a debated concept in psychometrics. It relates to the extent to which all items within a scale are measuring the same underlying construct (Streiner & Norman, 2008). Guilford (1956) and Nunnally (1978) argue that internal consistency must be high if a test is to measure what it is intended to measure (i.e., to be valid – validity of the STA Scale will be discussed below). In contrast, Cattell and Kline (1977) have argued that very high internal consistency leads to narrow, very specific tests, which are not valid as most psychological variables are on a spectrum. Internal consistency is measured by Cronbach's alpha and Corrected Item –Total Correlation (CITC) coefficients. Kline (2000) and Helmstadter (1964) recommend a reliability of .7 (measured by Cronbach's alpha) as a minimum for a good test. According to Helmstadter (1964), a CITC above .50 is considered high (cut-off is .30).

Internal consistency of the STA Scale was assessed (Tighe & Gudjonsson, 2012) using Cronbach's alpha. Total Cronbach's alpha for the scale was .97. Its four subscales (factors) were found to have a Cronbach's alpha ranging from .87 to .91. Another study (Chester, 2012) that assessed the internal consistency of the STA Scale using Cronbach's alphas and CITC coefficients found that the overall alpha of the STA Scale was .932. All individual items of the STA Scale reached the CITC cut off of .30 (Helmstader, 1964). According to Kline's criteria, these values indicate high internal consistency. A high value of alpha (> 0.90) may suggest redundancies in the test items and that the test length could be shortened (Tavakol & Dennick, 2011).

Validity. A test is said to be valid if it measures what it claims to measure (face validity). The STA Scale appears to measure ward environment and working practices on a psychiatric ward. The advantage of face validity is that it can increase participants' motivation to complete the test. The disadvantage is that participants can guess what the test is measuring which might increase faking or deliberate distortions in responding (Kline, 2000).

Concurrent validity. A test is said to possess concurrent validity if it can be shown to correlate highly with another test of the same variable which was administered at the same time. One of the problems with concurrent validity is that it depends, to some extent, on the quality of the criterion test with which the new test is to be

127

correlated. The Pearson's *r* correlation should be high (around .9) but in practice a correlation of .75 is regarded as good enough (Kline, 2000).

Another measure that addresses relational security is the Essen Clinical Environment Scale (EssenCES; Schalast, Redies, Collins, Stacey & Howells, 2008). It was developed to measure the therapeutic environment in secure forensic and addiction mental health units in Germany, where it showed a sound factor structure and psychometric properties. The scale items concern the approachability of staff and the extent of their knowledge about and interest in their patients. Tighe and Gudjonsson (2012) used this scale to establish construct validity of the STA Scale (see below).

One might question the value of creating a new scale if one already exists that serves a similar purpose. Kline (2000) says that a new scale must have some advantage that differentiates it from the criterion test. Tighe and Gudjonsson (2012) argue that, although the EssenCES is a widely used and well-validated scale, it does not include how staff use client information and how decisions about patient care are made. Also one of the three subscales of the EssenCES (i.e., experienced safety) is prone to rapid variation, thus making it a less stable measure. Further, no data on the EssenCES test / retest reliability have yet been published. Finally, though the EssenCES has three subscales, the way these are used suggests a unidimensional phenomena very similar to the Rogerian concept of therapeutic hold, which Schalast et al. (2008) define as an essential feature of any therapeutic setting and relationship.

However, relational security is multifaceted and complex. It encompasses the interpersonal aspects of therapeutic relationships between staff and clients, as well as aspects of patients' inner worlds and of how clients interact with each other and with the outside world. For these reasons, Tighe and Gudjonsson (2012) argue that any measure of relational security ought to include the multifaceted and complex aspects of interpersonal relating and risk management in forensic psychiatric settings.

Questions remain about the appropriateness of using a measure validated with a foreign sample to assess the validity of the STA Scale with UK participants. Howells et al. (2009) carried out a validation of the EssenCES with an English-speaking cohort in high-secure dangerous and severe personality disorder units and a women's unit. Cronbach's alphas for the three subscales ranged from .74 to .78, which is acceptable (Kline, 2000). The factor structure found in German samples was replicated. Similarly, a large-scale UK validation study using a sample of staff,

prisoners, and patients from a variety of prisons and secure forensic psychiatric hospitals (Tonkin et al., 2012) found overall Cronbach's alphas ranging from .79 to .92, demonstrating satisfactory internal consistency (Helmstader, 1964). The three-factor structure was replicated across the various settings and populations.

More recent research in a UK medium security setting (Milsom, Freestone, Duller, Bouman, & Taylor, 2014) found Cronbach's alphas ranging from .79 to .86 and CITC values ranging from .15 to .61 (mean = .40). Two items on the 'experienced safety' of the EssenCES were noted to have CITC below .20. Helmstadter (1964) recommends CITC greater / equal that .30). Milsom et al. (2014) noted that removing these items would not have improved the internal consistency for either the EssenCES total or the 'experienced safety' subscale. The three –factor structure proposed by Schalast et al. (2008), since confirmed by Howell et al. (2009) and Tonkin et al. (2012), was retained. The findings of this UK-based literature appear to provide further evidence that the notion of social climate as measured by the EssenCES translate to a UK forensic setting. No study to date has been published exploring the concurrent validity of the EssenCES and the STA Scale.

Predictive validity. A test is said to have predictive validity if it predicts a related criterion (Kline, 2000). Predictive validity is good support for the efficacy of a test. One of the difficulties of predictive validity is finding a clear criterion for prediction (Kline, 2000). Tighe and Gudjonsson (2012, p. 196), in their discussion, acknowledge themselves that "*the ultimate test of this scale will be its capacity to predict untoward incidents*" as the guidelines on relational security were originally developed to minimise incidents in forensic institutions (Appleby, 2010), but they have not yet done this.

Literature on ward environment in psychiatric institutions has highlighted that the social climate of treatment settings is an important factor influencing clients' wellbeing and treatment outcomes (Middelboe, Schjodt, Byrsting, & Gjerris, 2001; Moos, 1974). Studies in forensic psychiatric services in Germany have drawn attention to ward climate as a significant factor influencing patients' motivation for treatment and employees' job satisfaction (Schalast, 1997, 2000). The EssenCES has been found to be strongly negatively associated with the number of problematic occurrences in forensic mental health hospitals in Germany (Schalast, et al., 2008). This literature seems to suggest that one way to assess the predictive validity of the

STA Scale may be to research if the STA Scale can be used to predict untoward incidents in psychiatric forensic institutions, clients' treatment outcomes, and / or staff-related data, e.g., job satisfaction, staff turnover, sickness rate, etc.

Construct validity. Cronbach and Meehl (1955) introduced the notion of construct validity to overcome the difficulty that no single validity method was sufficient to establish the validity of a test. In establishing the construct validity of a test, a number of studies are carried out with it. If the results of these studies are consonant with the definition of the psychological variable, construct, under investigation, the test is said to have construct validity. Construct validity embraces validity of every type (i.e., face validity, concurrent validity, divergent validity, predictive validity and discriminant validity). Kline (2000) stresses the importance of demonstrating what the test does not measure as part of the validity exercise (divergent validity).

Tighe and Gudjonsson (2012) assessed construct concurrent validity of the STA Scale by testing it for convergent validity. Convergent validity can be established if two similar constructs correspond with one another. Tighe and Gudjonsson (2012) tested this by correlating the STA Scale and its subscales with the total scale and subscales of the EssenCES using Pearson's r. All four subscales and the total scale of the STA Scale were correlated positively and significantly at $p < .05$ with two subscales and the total scale of the EssenCES.

Chester (2012) assessed the convergent validity of the STA Scale by correlating its subscales with the subscales of the Relational Security Explorer (Appleby, 2010). The Relational Security Explorer is a tool designed to measure staff confidence on the eight areas identified as key to relational security, listed in Table 6. Convergent validity between the STA Scale and the Relational Security Explorer was assessed using Pearson's r. Chester (2012) found that all four subscales of the STA Scale correlated significantly with each other (r ranging from .73 to .84). By contrast, the subscales of the Relational Security Explorer did not all correlate with each other. Contrary to expectations, there was little convergent validity between the subscales of the two measures. Only one subscale of the Relational Security Explorer correlated significantly with the STA Scale, the 'Personal World' subscale. Chester (2012) explained that the concept of 'Personal World' relates to the knowledge that staff hold of patients' individual risk factors and triggers, and the way in which this knowledge can be used to manage risk and security. This concept features in most definitions of

relational security, thus explaining the high correlation between the 'Personal World' subscale of the Relational Security Explorer and the STA Scale as a whole.

Another aspect of construct validity is assessed using the "method of contrasted groups". This method examines whether test scores from distinct groups vary as predicted by theory (Shaughnessy, Zechmeister, & Zechmeister, 2003). Tighe and Gudjonsson (2012) found that staff working on medium security wards gave higher scores on various dimensions of relational security compared to staff from low security wards (these results were not replicated in the research described in Chapter 2). Similarly Quinn, Thomas and Chester (2012) also found that staff working on higher security wards rated 'ward climate' higher than those working on lower security wards. By contrast, Milson et al. (2014) found that 'social climate' scores from their medium security sample were overall significantly higher (more positive) than those from Howells et al. (2009) high security sample.

Chester (2012) investigated the construct validity of the STA Scale by examining the relationships between its subscales using the method of constructed groups. Demographic variables measured were; level of security, gender of ward, gender of staff, ward and staff discipline / department. Post hoc tests revealed that there were significant differences in ratings on the subscale 'Therapeutic risk management' of the STA Scale, with participants from medium and low security wards rating therapeutic risk management as higher on their wards compared to the rehab ward, with higher meaning 'doing' more therapeutic risk management. In addition, staff working on the female medium security ward rated 'Therapeutic risk management' lower than participants from other male wards. Chester (2012) proposed that this suggests that the female medium secure ward is a particularly challenging place to work in terms of maintaining relational security. These findings, alongside the ones presented in the previous paragraph, seem to suggest that more research is needed into relational security and its applications on different wards, before theoretical predictions can be made.

Discriminant validity. If a test fails to discriminate between individuals, it is unlikely it would be valid. Thus discriminatory power, defined as the ability of a test to produce a spread of scores (variance), is necessary but not sufficient for validity. Discriminatory power is at its maximum when the spread of scores is maximised

(Kline, 2000). The measure of test discrimination is Ferguson's Delta (d) (Ferguson, 1949). Generally a good test should have a delta d beyond .9 (Kline, 2000).

The STA Scale appears to be sensitive enough to detect differences between groups of staff on a number of demographic and clinically based criteria. For example, staff from a Black and Minority Ethnic background were found to perceive more therapeutic management of risk being carried out on their unit than their White European colleagues. In addition, staff working on medium secure wards were found to report significantly higher levels of relational security than staff working in a low secure environment (Tighe & Gudjonsson, 2012). Unfortunately, the Ferguson's Delta of the STA Scale is not reported in Tighe and Gudjonsson (2012) or Chester (2012) or Quinn et al. (2012), thus it is difficult to draw any conclusion about the discriminant validity of the STA Scale.

Normative samples

To standardise a test is to set up norms. Norms are sets of scores from clearly defined samples. The importance of standardisation is that it gives test scores psychological meaning and thus makes interpretation possible. Norms are necessary for psychological tests because for most types of psychological tests there is no true zero, i.e., they are not ratio scales (Kline, 2000). Scores from the sample under investigation can then be compared to their 'normed" peer group sample, to assess how different participants' behaviour is and infer meaning from their scores. This information can subsequently be used to ensure that appropriate assessments and interventions are developed. As the STA scale is a new measure, standardised norms have not yet been established. Thus the following paragraphs will discuss what the authors of the STA Scale (Tighe & Gudjonsson, 2012) would want to consider should they set out to develop norms for the tool.

Sampling is the crucial factor in the standardisation of a test. The quality of the norms depends upon the adequacy of the samples on which they are based. In sampling there are two important variables: size and representativeness. The normative sample must be a good reflection of the population which it represents and it must be sufficiently large to render the standard errors of its descriptive statistics, such as mean, standard deviation and distribution, to negligible proportions (Kline, 2000).

Norms for the general population (e.g., all people living in the UK) would have to be drawn from very large samples, in order to represent the population accurately, but for smaller specialised populations, in this case psychiatric forensic nurses, norms can be developed from smaller samples. Kline (2000) indicates that, to reduce standard errors, a sample of 500 is adequate for specialised populations.

One of the problems of working with smaller specialised populations concerns their definition. In the case of forensic psychiatric nurses, a list of all forensic psychiatric nurses practicing in the UK by might be drawn up by contacting the Health and Care Professions Council (HCPC) or the Nursing and Midwifery Council (NMC). However, this list would not include support workers, health care assistants, activity coordinators, social therapists, etc., who work alongside qualified, registered nurses in forensic psychiatric units.

In addition to the problem of defining the population from which to draw the sample, upon which to build standardised norms for a test, another difficulty arises during the process of obtaining a sample from the population under study. It is good practice that samples are randomly selected. A sample is said to be random if there is an equal chance that any individual in the population can be a member of the sample. The standard procedure for ensuring that any member on the list can enter the sample is to use random number tables. Kline (2000) lists several methods that might be adopted to achieve this but alerts the reader that random sampling is only possible only when the population under study can be adequately listed.

For this reason, other authors (Cattell, Eber, & Tatsuoka, 1970) argue that stratified sampling is more effective than random sampling, when trying to obtain a sample upon which to generate standardised norms for a test. Stratified sampling involves dividing a heterogeneous population into a number of more homogeneous populations, such that samples of the homogeneous populations can be combined to form a representative sample of the whole population under study. Stratified sampling does not however overcome the problem of adequately listing all staff working in forensic psychiatric units in the UK.

Once adequate samples have been drawn and tested, the results have to be expressed in a way that allows meaningful comparisons between the normative groups and an individual's scores. This is achieved by transforming the individual's raw scores on the test into norms. Commonly used norms are percentiles, z scores and T scores. They provide test performance information about individuals or groups of

individuals as compared to a representative norm group. Percentile ranks give the percentage of the norm group that scored below a particular raw score; z-scores and T scores allow for comparisons between two distributions of test performance. The reader is referred to Kline (2000) for a detailed description of these.

This discussion highlights the difficulty in establishing norms for psychological tests. If a test is to be used to make decisions, it is essential that its norms are set up following rigorous sampling procedures. This process is time-consuming and requires access to a vast amount of resources. That is why several test constructors publish their newly developed tools in journal articles alongside their psychometric properties, but do not embark in the lengthy process of establishing formal norms for their tools, e.g., Disruptive Behaviour and Social Problem Scale (DBSP) (Young, Gudjonsson, Ball, & Lam, 2003) and Blame Attribution Inventory (BAI) (Gudjonsson & Singh, 1988, 1989).

Conclusion

The initial validation study (Tighe & Gudjonsson, 2012) of the STA Scale suggests that this tool could be a reliable and valid measure of relational security as defined by the DoH practice guidelines (Appleby, 2010) because: (1) it correlated strongly with another measure of relational security (EssenCES) with large effect sizes, (2) it has high internal consistency both overall and in its four subscales, (3) it appears to have face validity, (4) it appears to be sensitive enough to detect differences between groups of staff on a number of demographic and clinically based criteria, and (5) it seems applicable to forensic psychiatric nurses for whom the DoH relational security guidelines were produced.

Despite these initial promising results, further validation of the STA Scale is necessary. This could be achieved by administering it to another sample of forensic psychiatric nurses working in medium and low secure environments. It might also be useful to administer the STA Scale to staff working in open-rehabilitation and community placements, housing forensic psychiatric patients. This might give an indication of how relational security changes (or not) across placements of different levels of security.

Other measures (other than the EssenCES) might prove valuable in assessing the validity of the STA Scale. For example, the Ward Atmosphere Scale (WAS),

developed by Moos in the late sixties, is a widely used instrument that captures important aspects of the ward environment (Moos, 1997). The WAS comprises ten subscales grouped conceptually into three higher order dimensions. The Relationship dimension comprises three subscales (Involvement, Support and Spontaneity), the Personal Growth dimension comprises four subscales (Autonomy, Practical Orientation, Personal Problem Orientation, and Anger and Aggression), and the System Maintenance dimension comprises three subscales (Order and Organisation, Program Clarity and Staff Control). The theoretical rationale of the WAS is that the consensus of individuals characterising their environment constitutes a valid assessment of the psychosocial climate of psychiatric wards. Another scale that could be used to further evaluate the validity to the STA Scale is the Working Environment Scale – 10 (WES-10). The WES measures the social environment in a work setting. It comprised ten subscales, which are divided into three sets; The Relationship dimension, the Personal Growth or Goal Orientation dimension, and the System Maintenance and System Change dimensions. The WES can be used to promote improvements in the workplace. It is available in three forms. Form R measures staff's perception of the work environment; Form I measures the ideal workplace, goals and desires held by employees, and Form E assesses an employee's expectations about his / her work environment (Rossberg, Eiring, & Friis, 2004). Additional scales, which may be used to validate the STA, are found in Table 4.

Additional work that needs to be done with the STA Scale includes: (a) the high Cronbach's alphas suggest that there is the possibility of shortening the scale further, (b) response bias might be attenuated by 'reversing' half the questions so that relational security is scored by positive responses on half the questions and negative responses on the other half, (c) test-retest reliability needs to be established, (d) a version for patients could be developed, (e) its divergent validity needs to be explored, and (f) its predictive validity needs to be established by exploring the STA Scale's capacity to predict untoward incidents on the wards, clients' treatment outcomes, and / or staff-related data in forensic psychiatric units. Evidence of predictive validity would strengthen the construct validity of the scale.

Despite the need for further research, the STA Scale is helpful in qualifying and measuring a concept that has been traditionally hard to define and measure. Longitudinal monitoring of relational security can be used to identify units that might be at risk of minor or major security incidents. In this way, it could be used by ward

managers to explore in what areas to focus staff training, in order to increase relational security in their units. The fact that the STA Scale measures four different aspects of relational security allow managers to be more focused in the interventions that they want to implement. For example, rather than developing generic interventions to improve relational security, they can develop different interventions that are designed to target the specific issues that are highlighted by the STA Scale.

At the same time, time-limited monitoring of relational security can be used to evaluate the impact of specific service changes (such as moving to a new building, resident / staff restructuring, or the adoption of a new method of working). Thus, the monitoring of relational security can play an important role in planning and evaluating service delivery within secure units.

Chapter 4 – Discussion

This research topic was chosen because, to date, there is scarce empirical research exploring systematically the relationships between attachment, relational security, risk incidents and long-term treatment outcomes in forensic psychiatric units. This thesis hoped to add new insights to this under-researched area, in order to stimulate ideas for further research and practice / staff developments. Attachment theory is a theory of interpersonal relationships that includes many features such as trust, verbal and non-verbal communication, soothing contact and protective care in the face of genuine or perceived threats to survival and safety (Bowlby, 1969). Secure attachment provides an essential ingredient for emotional and cognitive growth in the developing child and is a primary protective factor against the development of later psychopathology and violent behaviour (Levy & Orlans, 2000). Attachment theory can also be a useful framework for understanding management problems in forensic institutions, where staff and residents are involved in long-term dependency relationships that involve both care and control (Adshead, 2004). Within this framework, it is suggested that service users with insecure attachment will struggle to ask for help / care appropriately and to express anxiety and arousal adaptively, showing, instead, a range of abnormal behaviours when distressed (e.g., verbal or physical aggression, self-harm), and will find it difficult to form useful relationships with care providers (Henderson, 1974).

To address effectively the challenges of working with highly disturbed people and help both staff and patients to function better, Adshead (2004) argues that forensic institutions need to become a 'secure base', which promotes the development and maintenance of professional therapeutic relationships within a physically safe environment with a consistent, predictable structure. Recent guidelines issued by the Department of Health (Appleby, 2010) have suggested that a secure base is also established by investing in relational security.

The interaction between relational security and attachment has yet not been explored, as the concept of relational security is a relatively new one. Thus the need to research if more robust relational security in forensic psychiatric services is related to more secure therapeutic relationships in the clients using these services. In addition, the suggestion that a breakdown in relational security might be related to risk incidents in forensic psychiatric institutions (Tighe & Gudjonsson, 2012) has not been

researched. Hence the need to investigate formally how relational security and risk-related behaviours are related. With these in mind, this thesis aimed to explore the relationship between attachment and relational security in forensic psychiatric settings. This thesis also aimed to explore if relational security could be used to predict risk incidents and treatment outcomes. How these objectives were achieved will be summarised below.

Chapter 1 presented a literature review using a systematic approach, exploring the relationship between attachment and relational security in forensic settings and how these are linked to treatment outcomes. As only two studies exploring relational security were identified, the systematic review broadened its search focus and studies looking into how attachment and therapeutic relationships are related amongst themselves and with treatment outcomes were included. An additional twelve papers were identified. Of these, only two papers looked at attachment representations and treatment outcomes. Overall a very limited evidence base in this area was noted. The findings of the selected studies appeared to suggest that a secure attachment seems to facilitate the development of therapeutic relationships between clients and their therapists. Similarly, higher attachment security in therapists was found to be associated with better alliances, but only in more complex clients. In addition, stronger therapeutic relationships between clients and their therapists appeared to be associated with more positive outcomes following treatment. With regards to relational security, no conclusion could be drawn about the impact of relational security on treatment outcomes, because, in the two studies included in this review, relational security was not formally measured, and because these studies presented with many methodological limitations. Thus, despite suggestions that stronger therapeutic alliances and more secure attachment representations may be linked to better treatment outcomes, a need for further research in forensic mental health settings was evident because most of the available literature lacked methodologically robust trials and was based on non-forensic samples.

Chapter 2 addressed this gap in the literature and presented a research study that had three main objectives. First, it explored the relationships between relational security with staff attachment representations and with patients' levels of attachment to their treating teams, within various forensic psychiatric settings. Second, it examined the associations between relational security and risk incidents in these environments. Finally, this research looked at the relationships between relational

security and treatment outcomes as measured by dynamic risk scores. Participants included staff and adult male forensic psychiatric patients residing on various wards (low secure, medium secure and open rehab) across two NHS sites in England. Data were collected using multiple means, including self-report questionnaires, official records reviews of risk incidents and treatment outcomes (as measured via the HCR20) completed by clinicians involved in clients' care and blind to research procedures.

Statistical analyses were not run to explore the relationship between staff's attachment representations and relational security because of the poor reliability of the measure of staff's attachment. No relationship was found between relational security (as measured by staff) and service users' attachment to the service. In addition, no relationship was found between relational security and risk events on the wards and between relational security and treatment outcomes (as measured by changes in dynamic risk scores from baseline to follow up). Additional analyses revealed that relational security and ward atmosphere were moderately correlated with higher levels of relational security associated with more positive ward atmosphere. Further, a large positive correlation was found between patients' attachment to the service and ward atmosphere, with higher attachment to the service being associated with more positive ward atmosphere. Furthermore, a moderate, negative, relationship was found between patients' attachment to the service and risk incidents, with higher attachment to the service being associated with fewer risk incidents. Finally, standard multiple regression revealed that relational security and ward atmosphere significantly predicted patients' attachment to the service. Ward atmosphere was noted to make the stronger contribution compared to relational security, explaining 74% of the variance in service users' attachment to their treating teams, whereas relational security was found to explain 27% of the variance in the same variable. These results might support the suggestion that a secure base on forensic wards is established by investing in relational security (Appleby, 2010). These results were discussed in light of the limitations of the study and recommendations for future research, clinical practice and staff training were proposed.

Chapter 3 presented a critique of the See, Think, Act Scale (Tighe & Gudjonsson, 2012), a recently developed measure of relational security in forensic psychiatric institutions. Traditionally proxy measures have been used to measure relational security, e.g., staff satisfaction, staff turnover, levels of incidents on wards.

The STA Scale is the first attempt to create a reliable and valid population-based measure of relational security, that covers a range of different elements, including less tangible aspects outside of the staff-patient relationship and how risk concerns might impact on the care provided. The initial validation study (Tighe & Gudjonsson, 2012) of the STA Scale suggests that this tool could be a reliable and valid measure of relational security as defined by the DoH practice guidelines (Appleby, 2010) because it correlates strongly with another measure of relational security, it has high internal consistency, it appears to be sensitive enough to detect differences between groups and it seems applicable to forensic psychiatric nurses for whom the DoH relational security guidelines were produced. Thus the STA Scale is a helpful measure to quantify and measure a concept that has been traditionally hard to define. However, there are issues with this tool. As it is a self-rated instrument, it is subject to responder bias, so it is unclear if higher scores relate to the actual quality of relational security on a ward, or reflect the views of a complacent team. In addition, multiple factors may affect the score depending on what happens on the days prior to completion of the measure (e.g., risk incidents, high number of bank staff). Consequently, despite preliminary promising results, further validation of the STA Scale is necessary in order to establish additional psychometric properties (e.g., test-retest reliability, divergent and predictive validity), to develop standardised norms for the instrument, and to identify which confounding variable might have an impact on scale completion, so that these could be controlled for in order to have an accurate assessment of relational security on a ward.

Implications for practice / staff development

The See Think Act (STA) guidelines on relational security were published by the Department of Health in 2010 as a response to lessons learnt from some serious incidents in secure psychiatric settings. Since then, NHS England's Quality and Safety Group has regularly reviewed trends in serious incidents in secure care. It has been noted that there has been a reduction in opportunistic escapes but that there continues to be a number of escapes connected to staff-patient relationships. Thus an argument has been made to re-engage staff, in particular ward-based staff, in reflecting on and understanding relational security. As a result the Department of Health and NHS England have approached the Quality Network For Forensic Mental

Health Services to lead on this task and a refreshed 2nd edition of the STA guidelines has been developed (published online at http://www.rcpsych.ac.uk/workinpsychiatry/qualityimprovement/ccqiprojects/forensic mentalhealth/seethinkact.aspx). Re-engaging staff could be achieved by re-launching the STA guidelines, by delivering more methodical training across secure settings, by measuring the impact of this training systematically with a tool with good psychometric properties (e.g., STA Scale), and by examining with rigorously designed research studies if relational security is linked with risk incidents.

The last part of this chapter will discuss how the above objectives might be achieved. This section will be structured by using as headings the key areas for relational security listed in Table 7.

Therapy

Despite the paucity of research with forensic populations, the systematic review described in Chapter 1 seems to suggest that stronger therapeutic relationships between clients and their therapists appear to be associated with greater retention / engagement in treatment and more positive outcomes. However, because of the lack of published literature into the relationships between attachment, therapeutic relationships and treatment outcomes in forensic population, more research is needed in these areas. Future studies ought to explore the relationships between these variables more consistently (e.g., using the same measures) and more systematically (e.g., using rigorous designs with random allocation of participants to experimental and control groups). Still to be elucidated is the precise role that contextual factors (e.g., relational security) and patient and staff characteristics (e.g., attachment representations) play in the development and maintenance of working alliances, and the impact of these variable on treatment outcomes.

Treatment should give patients realistic hope about their recovery and allow them to build trust in their care providers. This might be achieved by engaging with patients proactively, and involving them in planning their care, including being transparent as to why patients need to engage in certain therapeutic activities (e.g., to minimise risk or reduce distress), and being clear as to how progress is going to be measured (e.g., by updating their HCR20s on a regular basis). It is also very important that all staff role-model the skills that they want service users to develop in

themselves (e.g., communication skills, emotional literacy, self-monitoring) by creating opportunities for positive social engagement and minimising time spent in the office.

Establishing and maintaining professional therapeutic relationships with forensic psychiatric patients does not come without challenges. In order to support staff working in forensic institutions to overcome these challenges (described in the introduction of this thesis) and promote the development of more securely attached working alliances, it is necessary to train all staff in formulating clients' presentation within an attachment theory framework, so that negative judgments are not attached to service users' behaviour (e.g., he is just attention-seeking; she is being manipulative; he is kicking off as usual). Within this context, challenging presentations can be understood as maladaptive help seeking behaviours, that have their roots in childhood and have been established through the years as a result of inadequate parenting / caring and needs (physical, emotional) not being met. Because of the high staff turnover in forensic settings (Johnson, Wood, Paul et al., 2011) and the fact the ward-based staff work on a rota system, this training could be made mandatory for all staff, or it could be offered on forensic wards on a regular basis during staff / team meetings, so that new staff or staff working on different shift patterns can access the same training and consistent practice is enhanced.

Staff might also benefit from receiving training in basic skills that may foster the development and maintenance of therapeutic relationships (Bordin, 1994; Safran & Muran, 2000), including, for example, contracting treatment collaboratively with service users, active listening skills, open ended questioning which encourage clients' ability to reflect on their behaviour and its impact on others, and recovery principles (Mitchell & Callaghan, 2015) in order to promote hope about recovery and optimism about treatment outcomes. Additionally, staff should be encouraged to reflect on how power dynamics might impact on the therapeutic alliance; they should be encouraged to monitor how they feel and talk about their feelings during supervision, so that they can maintain a neutral attitude when dealing with challenging situations. Staff may benefit from being trained in solution-focused techniques (Shennan, 2014) and motivational interviewing (Rollnick, Miller, & Butler, 2008). These trainings might enhance their clinical practice so that they are more adept at channelling patients' skills, building on their protective factors, and encouraging service users to set realistic goals so that their motivation further increases.

Boundaries

Boundaries are important to keep everyone safe. It is important that a team is clear which are negotiable and non-negotiable boundaries, so that these can be communicated clearly to each patient upon admission. Staff also need to be aware of how they feel and behave at work, and how their behaviour could be interpreted by others. If there are concerns about one's personal boundaries (staff or patient), a team needs to be prepared to talk about personal boundaries, discuss how they feel and ask for help when needed.

Therefore, staff might benefit from accessing training on the importance of maintaining professional boundaries (Adshead, 2002; Appleby, 2010; Zur, 2004, 2011) in order to protect vulnerable clients or themselves from potential harm or abuse, to help their clients contain distressing feelings, to keep separate what belongs to them from what belongs to their patients, to prevent team splitting and boundary crossing and violations (Francis, 2009). Maintaining a consistent, reliable approach might be difficult in large staff teams, with high staff turnover and high reliance on bank staff. In order to provide a consistent approach to understanding clients' presentation, provision of care and boundary setting, regular group supervision (based on attachment and relational security principles) could be offered to staff from all grades. This would help in promoting reflective practice, in enhancing clinical practice and in challenging / problem-solving areas for improvement. In the current climate of NHS budget cuts, staff training and group clinical supervision could be provided jointly by in-house psychologists and senior multidisciplinary staff with particular expertise in developing and maintaining professional therapeutic relationships with forensic psychiatric patients. Alternatively, modules on relational security, the applications of attachment theory to adult mental health, and how to develop and maintain professional therapeutic relationships with forensic patients could be added to university undergraduate courses in nursing, so that those nurses who wish to pursue a career in mental health might be more equipped to understand the complex presentations of psychiatric patients and to deal more appropriately with the interpersonal challenges presented by this client group.

Patient mix and the personal world

Each patient presents with historical and dynamic risks, which need to be understood individually and in combination with the risks posed by the other service users. Particularly important is to have a clear understanding of what may be the triggers for violent behaviour for each patient. In order to achieve this, it may be useful to have case formulations or case discussions before each new admission, and to monitor the effect a patient arriving or leaving has on the ward. If there are concerns about how a service user is impacting on the ward dynamics (e.g., he / she is exploiting more vulnerable patients), staff need to be confident to speak up and act, if they need to change the interaction between certain patients.

Alongside staff being aware of patients' histories and risk factors, service users themselves need to develop insight into what their triggers are, and need to be involved in planning how they / the team will respond to and cope with potential triggers. This would require staff to stay alert and attentive to change, and to communicate clearly during the shift and at handover about what they have noticed. Safety and containment have been highlighted as important factors in the early stages of treatment for promoting change in patients with personality disorders (Livesley, 2007; Willmot & McMurran, 2014). These can be attained by providing patients with support, validation, empathy, and emotional regulation. These tasks are thought to promote attachment (Pistole, 1989). According to Livesley (2007), only when the goals of safety and containment are achieved, can a patient start to develop his / her own self-regulation skills before developing more adaptive ways of thinking, behaving, and relating to others in more advanced stages of treatment.

Visitors and outward connections

It is important to be aware of the impact of visitors on patients as some might have a good influence, whereas others might have a negative impact. In addition, contact with the outside world can have noticeable effect on patients. Thus, it is important to know the risks and when to act. This might be achieved by ensuring that staff prepare for visits or for patients going on leave, by talking to them about these events, and by planning collaboratively how they might manage potential risks. Visitors might also need to be debriefed about the expectations of the ward, how they can play a positive

role in a patient's recovery, and how staff might intervene if they detect worrying or unusual behaviour during a visit.

One paper (Moore, Moretti, & Holland, 1998) has highlighted the need for support for carers / families and for co-working with them to support recovery in the patients. The authors describe the use of a support group for families and carers of young people, as well as individual therapy sessions, to help them recognise their role in maintaining maladaptive behaviours in their loved ones. These interventions enabled the carers to explore their own attachment styles and how they influenced their relationships with their young ones. Little is known if similar interventions would be useful in relation to the adult attachment problems of forensic patients; thus, given that the establishment of carers support groups on forensic wards is one of the targets set by NHS England, future research might want to report how these groups have been set up and evaluate their effectiveness.

Patient dynamics and the physical environment

These affect the social climate of the ward. It is essential to observe how patients interact amongst each other, and how these interactions are affected by the physical environment of the ward. Thus it is important that staff monitor suspicious, unusual or out-of-the-ordinary behaviour between patients (e.g., some patients congregating in blind spots on the ward, or some service users entering other clients' bedrooms). If concerns arise, staff need to encourage patients to talk about how the ward dynamics affect them and make them feel, by providing them with a 'safe space' to report suspicious behaviour without fear of retribution from other patients.

Adults with severe, complex and enduring mental health problems tend to have experienced insecure, damaging, neglectful or broken attachments during their earlier developmental years (Adshead, 2012). This means that they will need services that can provide stable and consistent therapeutic attachments to repair past damage and address unmet needs (Seager, 2014). Despite the need for more rigorous research with forensic populations exploring the associations between relational security, attachment representations and patient recovery, the systematic literature review completed as part of this thesis suggested that more secure attachment representations in both professionals and service users seem to facilitate the development of therapeutic relationships, which may improve treatment engagement and outcomes.

The research described in Chapter 2 highlighted that clients more strongly attached to their services engaged in fewer risk incidents and held more positive views of the ward environment. Likewise, higher levels of relational security were associated with more positive views of the social climate, and were found to predict patients' attachment to their treating team. Robust conclusions cannot be drawn from these results as they are based on correlational analyses. More rigorous research is needed in forensic mental health exploring the impact of relational security on the development of more secure therapeutic relationships, treatment outcomes and risk incidents on forensic wards.

However, an argument can be made for shifting the focus of mental health services from the bio-medical model where people are assumed to be afflicted by a range of specific illnesses that require evidence-based treatment in specific doses, to a model where the focus is on developing compassionate, emphatic, consistent and more 'interpersonally' secure services. Both the STA Scale and the Service Attachment Questionnaire could be used as audit tools to evaluate the relational safety of secure care environments and establish areas for service improvement. Secure attachments between staff and their own caregivers (supervisors, managers) and colleagues are also vital in creating a healthy work environment. In fact, if care professionals are not securely attached to their place of work, they will struggle to transmit security and stability to their patients, in the same way that a chaotic family environment undermines the healthy development of its children (Seager, 2014). Professionals working with complex clients who do not feel supported by their service are at risk of losing their empathic stance and interest in developing therapeutic relationships with service users through fatigue, burnout, vicarious trauma, negative counter-transference, stress overload, poor managerial support, limited supervision and bureaucracy (Figley, 1995; Seager, 2006). Thus it is necessary that mental health services are organised in ways that support an interpersonally secure ward (family) atmosphere, where the psychological well being of both staff and service users is promoted. This task is not an easy one in the current NHS budget-cutting climate. However, attempts at developing more psychologically informed environments (see Johnson & Haigh, 2010) have been made in the prison system, also undergoing cost-cutting exercises, with some interesting learning points that could be applied to forensic psychiatric settings (Turley, Payne, & Webster, 2013).

To conclude, the results of this thesis seem to suggest that, on forensic wards, investing on improving relational security and ward atmosphere might make these environments more "secure bases" as advocated by Adshead (2004). As a result this might strengthen clients' attachment to their treating team by enhancing the therapeutic relationships between staff and patients, might lead to a decrease in risk events and hopefully might boost service users' recovery journey.

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Appendix 1. Experts contacted by email.

The following professionals were contacted by email to request any further research details in addition to those already obtained:

[The contact list is redacted from the e-version for confidentiality protection.]

Please find detailed below a template of the emails sent:

To

My name is Lara Arsuffi and I am a Forensic Psychologist working in a low secure setting in Northampton. I am currently studying for a Doctorate in Forensic Psychology at the University of Birmingham.

I am contacting you because I am working on a doctorate thesis on the relationships between relational security, attachment, and therapeutic relationships, and their links with treatment outcomes / risk incidents, in various forensic psychiatric settings. I have completed a systematic literature review in these areas but I have not found very much on relational security perhaps because it is a relatively new concept.

However, I was expecting to find much more on the relationship between attachment and therapeutic relationships and their links with treatment outcomes. I am emailing you because I wanted to know if you were aware of any papers (published or unpublished) that would be helpful for my thesis.

If you think I should contact somebody else in the area, whom would you recommend that I contact?

Please let me know.

Thanks for your time with this matter.

Lara Arsuffi, Forensic Psychologist

Appendix 2. <u>Quality Assessment Form- Quantitative studies.</u>

Author(s):

Title:

Journal:

Year:

Screening Questions	Outcome		Unclear (U)	Comments
	Yes (Y)	No (N)		
Did the study address a clearly focused issue?				
Did the authors use an appropriate method to answer their questions/aims? (Consider, whether the method allowed the questions to be answered?)				
Is it worth continuing?				

Questions	Scores			Unclear (U)	Comments
	Yes (2)	Partial (1)	No (0)		
Detailed Questions					
Were the participants recruited in an acceptable way? (Consider if the recruitment process has been clearly described)					
Does the sample represent the population? (Consider number of participants and demographic details)					
Is there any mention of ethical procedures adopted? (Consider consent, confidentiality and anonymity)					
Was the research design appropriate to address the aims of the research?					

(Consider, have they discussed why the method was chosen?)				
Were the measures appropriate for answering the research questions? (Consider validity and reliability. Were these discussed? Also consider if the measures were fully described, including information on scoring)				
Are the confounding variables discussed?				
What are the results of the study? (Consider, are they clear and do they relate back to the questions?)				
Have the appropriate statistical tests been used to analyse the results?				
How precise are the results? (Consider P-value, effect sizes and confidence intervals)				
Are the results flawed due to design and methods? (Consider if limitations for the study are discussed)				

Quality score: /20   Number of Unknowns:

Percentage:

Appendix 3. <u>Data Extraction Form.</u>

Author(s)	
Title	
Journal	
Year	
Volume/ Page number	
Location	
Study aims	
Participants *Sample size* *Gender* *Age* *Ethnic background* *Diagnoses* *Setting* *Forensic history* *Recruitment method*	

Intervention	
Measures *Measures used* *Validity of measures* *Data collection* *methods*	
Outcomes *Statistical analysis* *Findings*	
Limitations	
Quality score	

Appendix 4. Letter from local Ethical Review Committee confirming ethical approval for the study.

[The Ethical Review confirmation letter is redacted from the e-version for confidentiality protection.]

Appendix 5. Copy of STA scale (Tighe and Gudjonsson, 2012).

'See, Think, Act' Scale.				
Please indicate how well you think that each item reflects the way that your ward team works. Some questions may be true for some members of your team and not of others; or true of your team at some times and not at others. Base your response on your first overall estimate of how well the item reflects your team.	*Just like our team*	*Quite like our team*	*A little like our team*	*Not like our team*
1. We know how to respond if the patient mix needs addressing.				
2. We are respectful of each other.				
3. We know which boundaries are non-negotiable and which we can make individual and team judgements about.				
4. We adjust patients care plans according to their risk.				
5. We can engage with this patient group and maintain control.				
6. We deal robustly with discrimination.				
7. We speak up if we think we can see that a colleague has been put in a difficult position that could weaken security.				
8. We know the histories of our patients.				
9. We have ward core values that we all understand.				
10. We understand the potential for some visitors to undermine the treatment plans and recovery of patients and take the appropriate action to address this.				
11. We set a good example and are positive role models.				
12. We understand what maintaining clear boundaries with patients means.				
13. Care plans are up to date to reflect how our patients are feeling today.				
14. We are vigilant about how visits affect the patient before their visit.				
15. There is a discipline and pride on our ward.				
16. We talk as a team during the shift and at handover.				
17. We monitor how our patients are feeling day to day.				

Please indicate how well you think that each item reflects the way that your ward team works. Some questions may be true for some members of your team and not of others; or true of your team at some times and not at others. Base your response on your first overall estimate of how well the item reflects your team.	Just like our team	Quite like our team	A little like our team	Not like our team
18. We promote tolerance.				
19. We deal robustly with bullying.				
20. We understand why maintaining a clear boundary with patients is important.				
21. We recognise the relapse factors for each of our patients.				
22. We look out for patients trying to conceal a deterioration in their mental state.				
23. We have a ward philosophy that we all understand.				
24. We engage in reflective practice.				
25. We are vigilant about how visits affect the patient after their visit.				
26. We deal robustly with harassment.				
27. We understand the risks some visitors might pose to patients.				
28. We have a ward purpose that we all understand.				

Appendix 6. Copy of the Relationship Questionnaire (Bartholomew & Horowitz, 1991).

SELF-REPORTING INTERACTIONAL STYLE

PLEASE TICK ON A SCALE FROM 1 TO 7 (**1 BEING NOT AT ALL LIKE ME; 7 BEING VERY MUCH LIKE ME**) THE DEGREE TO WHICH YOU RESEMBLE EACH OF THESE FOUR INTERPERSONAL STYLES

	1	2	3	4	5	6	7
IT IS EASY FOR ME TO BECOME EMOTIONALLY CLOSE TO OTHERS. I AM COMFORTABLE DEPENDING ON OTHERS AND HAVING OTHERS DEPEND ON ME. I DON'T WORRY ABOUT BEING ALONE OR HAVING OTHERS ACCEPT ME (S)							
I AM COMFORTABLE WITHOUT CLOSE EMOTIONAL RELATIONSHIPS. IT IS VERY IMPORTANT TO ME TO FEEL INDEPENDENT AND SELF-SUFFICIENT, AND I PREFER NOT TO DEPEND ON OTHERS OR HAVE OTHERS DEPEND ON ME (D)							
I WANT TO BE COMPLETELY EMOTIONALLY INTIMATE WITH OTHERS, BUT I OFTEN FIND THAT OTHERS ARE RELUCTANT TO GET AS CLOSE AS I WOULD LIKE. I AM UNCOMFORTABLE BEING WITHOUT CLOSE RELATIONSHIPS, BUT I SOMETIMES WORRY THAT OTHERS DON'T VALUE ME AS MUCH AS I VALUE THEM (P)							
I AM UNCOMFORTABLE GETTING CLOSE TO OTHERS. I WANT EMOTIONALLY CLOSE RELATIONSHIPS, BUT I FIND IT DIFFICULT TO TRUST OTHERS COMPLETELY, OR TO DEPEND ON THEM. I WORRY THAT I WILL BE HURT IF I ALLOW MYSELF TO BECOME TOO CLOSE TO OTHERS (F)							

Appendix 7. Copy of the EssenCES (Schalast, Redies, Collins, Stacey, & Howells, 2008).

		not at all	little	somewhat	quite a lot	very much
1	This ward has a homely atmosphere	☐	☐	☐	☐	☐
2	The patients care for each other	☐	☐	☐	☐	☐
3	Really threatening situations can occur here	☐	☐	☐	☐	☐
4	On this ward, patients can openly talk to staff about all their problems	☐	☐	☐	☐	☐
5	Even the weakest patient finds support from his fellow patients	☐	☐	☐	☐	☐
6	There are some really aggressive patients on this ward	☐	☐	☐	☐	☐
7	Staff take a personal interest in the progress of patients	☐	☐	☐	☐	☐
8	Patients care about their fellow patients' problems	☐	☐	☐	☐	☐
9	Some patients are afraid of other patients	☐	☐	☐	☐	☐
10	Staff members take a lot of time to deal with patients	☐	☐	☐	☐	☐
11	When a patient has a genuine concern, he finds support from his fellow patients	☐	☐	☐	☐	☐
12	At times, members of staff are afraid of some of the patients	☐	☐	☐	☐	☐
13	Often, staff seem not to care if patients succeed or fail in treatment	☐	☐	☐	☐	☐
14	There is good peer support among patients	☐	☐	☐	☐	☐
15	Some patients are so excitable that one deals very cautiously with them	☐	☐	☐	☐	☐
16	Staff know patients and their personal histories very well	☐	☐	☐	☐	☐
17	Both patients and staff are comfortable on this ward	☐	☐	☐	☐	☐

Essen CES©
Essen Climate Evaluation Schema (rev. 2010)

I agree

Version 1
ESSEN CES   02.05.2014

Appendix 8. Copy of the Service Attachment Questionnaire SAQ (Goodwin et al., 2003).

QUESTIONNAIRE ABOUT THE SERVICE

BELOW IS A LIST OF 25 STATEMENTS ABOUT MENTAL HEALTH SERVICES AND THE EXPERIENCES PEOPLE MIGHT HAVE WHILST RECEIVING THEM. PLEASE READ EACH ITEM AND THEN RESPOND TO EACH ONE BY INDICATING WITH **A TICK IN THE RELEVANT BOX** HOW CLOSE THE STATEMENT IS TO **YOUR OWN EXPERIENCE AND FEELINGS ABOUT THE SERVICE YOU ARE CURRENTLY IN CONTACT WITH.**				
	NOT AT ALL	SOMETIMES	QUITE OFTEN	ALWAYS
1 I HAVE SOMEBODY WHO LISTENS ATTENTIVELY TO ME				
2 I HAVE REGULAR TIME WITH THE SAME PERSON THAT KNOWS ME AND MY PROBLEMS				
3 I FEEL UNDER PRESSURE TO GET BETTER AND BE DISCHARGED				
4 I HAVE A FEELING OF BEING LOOKED AFTER				
5 I HAVE THE FEELING THAT I'LL BE ACCEPTED FOR WHO I AM, WHATEVER I SAY				
6 I'M HELPED TO REALISE THAT IT'S NOT JUST ME – OTHER PEOPLE HAVE SIMILAR PROBLEMS				
7 I DON'T FEEL LISTENED TO, OR TAKEN NOTICE OF				
8 I GET FRUSTRATED BECAUSE I HAVE TO WAIT TOO LONG TO SEE MY KEYWORKER/THERAPIST				
9 I FEEL CONFIDENT THAT SUPPORT WILL BE PROVIDED WHEN I AM DISCHARGED				
10 I FEEL SUFFOCATED BY THE SERVICE RATHER THAN FEELING SAFE				
11 I CAN'T RELATE TO/GET ON WITH CERTAIN PEOPLE IN THE SERVICE				
12 IT FEELS LIKE THERE'S A 'THEM AND US' ATTITUDE FROM THE STAFF				
13 I FEEL THAT PEOPLE IN THE SERVICE UNDERSTAND MY NEEDS AND PROBLEMS				
14 I KNOW THAT THE SAME PERSON IS THERE FOR ME CONSISTENTLY				
15 I WORRY THAT I WON'T BE BETTER WITHIN THE ALLOCATED TIME AND WILL NEED LONGER				
16 I FEEL SAFE WITHIN THE SERVICE				

17 I DON'T FEEL JUDGED, JUST ACCEPTED				
18 I FEEL PATRONISED AND STIGMATISED BY THE SERVICE				
19 I DON'T FEEL THAT PEOPLE REALLY WANT TO LISTEN TO WHAT MY PROBLEMS ARE				
20 I WORRY THAT I'LL BE DISCHARGED WITHOUT ANY FOLLOW-UP FROM MY KEYWORKER/THERAPIST				
21 I FEEL CONFIDENT THAT IF I NEED MORE TIME AND HELP, OVER LONGER TIME, THAT IT WILL BE GIVEN				
22 I FEEL FRUSTRATED AT MY LACK OF FREEDOM WITHIN THE SERVICE				
23 I FEEL I HAVE A PARTNERSHIP WITH MY KEYWORKER/THERAPIST AND THAT WE WORK TOGETHER				
24 I HAVE THE FEELING MY KEYWORKER/THERAPIST IS REALLY INTERESTED IN ME AND WANTS TO HELP				
25 I AM MADE TO FEEL THAT I AM A BURDEN TO THE SERVICE AND OUTSTAYING MY WELCOME				

Appendix 9. <u>Copy of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1998).</u>

PANAS

Directions

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way <u>during the past week</u>.

Use the following scale to record your answers.

(1) = Very slightly or not at all   (2) = A little   (3) = Moderately   (4) = Quite a bit   (5) = Extremely

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5
17. Attentive	1	2	3	4	5
18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

Version 1
PANAS
02.05.2014

187

Appendix 10. <u>Copy of sheet requesting staff demographic details.</u>

Age:_____

Gender:
    M ☐   F ☐

Ethnicity: _____

Job title: _____

Number of years in present post: _____

Permanent ☐   Bank ☐

Number of years in profession: _____

Ward security:_____

Appendix 11. <u>Copy of information leaflet for patients.</u>

Northamptonshire Healthcare **NHS**
NHS Foundation Trust

UNIVERSITY OF BIRMINGHAM

Leaflet explaining the research to clients

Lara Arsuffi
Wheatfield Unit
Berrywood Hospital
Berrywood Drive
Northampton
NN56UD

Study title

Does the way client and staff interact on forensic psychiatric wards predict incidents on the wards and long term treatment outcomes?

Invitation to participate in a research project

You are being invited to take part in a research study. Before you decide to participate, it is important for you to understand why the research is being done and what will be involved. Please take your time to read the following information carefully. Please ask if there is anything that it is not clear, if you would like this leaflet read to you or if you would like more information. Take your time to decide whether or not you wish to take part.

What is the goal of the research?

There is some research that suggests that the way clients and staff interact on forensic psychiatric wards may predict incidents on the ward and treatment outcomes. The aim of this study is to explore if there is evidence for these suggestions. If this is the case, we may be able to make suggestions to Team Leaders and Senior Managers about ways to improve staff-client interactions on the wards with the hope to improve services and treatment outcomes.

How is this study being done?

In order to carry out the study, we need your help. We need you to complete three questionnaires. This would take no more than 30 minutes. If you would like to see a copy of these questionnaires before you decide if you want to take part or not in this research, let me know. I can support you with completing the questionnaires if you decide to take part in this research.

You also need to give us permission to extract confidential data, in 9 months time, from your electronic file at the hospital about:
- Untoward incidents on the ward that you have been involved in (if any). For example, verbal and physical aggression, self-harm, fire setting, other anti-social behaviour.

- Your scores on your HCR20 risk assessment.
- Demographic information about you, such as how long you have been on the ward, your age, your diagnoses, if you have a history of substance abuse.

No additional time / input are requested of you.

Are there any risks and discomforts?

There are no risks or discomforts involved for you.

What are the potential benefits?

You will help us to determine how to improve the ward environment and the services we provide.

Who will have access to the information we collect?

No one else but me will collect the data. All information will be kept in a locked cabinet in a secure room. Your name WILL NOT appear on the data collection sheets, but you will be assigned a reference number. All information is confidential and no identifying information will be given when I write up the study. No data collected will be given to any other agency, including staff at the hospital, unless you ask us to do so.

Limits to confidentiality

What you say to the researcher will be confidential unless (a) you specifically ask me to pass this information on to a member of your treating team or (b) if you tell me that you are going to harm yourself / others or that someone is at risk of harm. In this case I would need to pass this information onto staff. But before doing so, I will inform you that I am going to breach our confidentiality agreement.

Consent

Please keep this sheet for your information. Participation in this study is entirely voluntary. You do not have to take part if you do not want to. If you decide to take part, you may withdraw at any time (in the next 9 months) without giving a reason and without any consequences for you. Your withdrawal or refusal to participate will not in any way affect your treatment.

If you choose to sign up for this research, we will inform your Responsible Clinician that you are taking part in this research.

Who has approved the study?

All proposals for research with people are reviewed by an Ethics Committee before they can proceed. Birmingham University and the local NHS' Ethics Committees have reviewed this proposal.

Who else can you contact to know more about this project?

Dr Catherine Hamilton-Giachritsis, Research Supervisor,

PALS, Patient Advice and Liaison Service, Tel: **0800 917 8504**.

Will you receive feedback about the study? If you want, when I write up the study, I will put a summary in the post for you.

If you decide to take part in the study, please complete the tear off slip below and return it in the enclosed self-addressed envelope. <u>Thanks very much for your time!</u>

I………………………………………………….(please print your name) from ……………… (please print name of your ward) am interested in taking part in this research and would like to be contacted by the Researcher, Ms Lara Arsuffi, to discuss this further.

Signature:…………………………………………Date:…………………………

10.06.2014 – version 2

Appendix 12. <u>Copy of information leaflet for staff.</u>

Northamptonshire Healthcare **NHS**
NHS Foundation Trust

UNIVERSITY OF BIRMINGHAM

Leaflet explaining the research to staff

<div align="right">
Lara Arsuffi
Wheatfield Unit
Berrywood Hospital
Berrywood Drive
Northampton
NN56UD
</div>

Study title

Do client and staff interactions on forensic psychiatric wards predict incidents on the wards and long term treatment outcomes?

Invitation to participate in a research project

You are being invited to take part in a research study. Before you decide to participate, it is important for you to understand why the research is being done and what will be involved. Please take your time to read the following information carefully. Please ask if there is anything that it is not clear or if you would like more information. Take your time to decide whether or not you wish to take part.

What is the goal of the research?

There is some research that suggests that the way clients and staff interact on forensic psychiatric wards may predict incidents on the ward and treatment outcomes. The aim of this study is to explore if there is evidence for these suggestions. If this is the case, we may be able to make suggestions to Team Leaders and Senior Managers about ways to improve staff-clients interactions on the wards with the hope to improve services and treatment outcomes.

How is this study being done?

In order to carry out the study, we need your help. We need you to complete three questionnaires. This would take no more than 30 minutes. If you would like to see a copy of these questionnaires before you decide if you want to take part or not in this research, let me know.

You also need to provide us with demographic information about you, such as gender, how long you have been working on this ward, what your role is and your ethnicity.

No additional time / input are requested of you.

Are there any risks and discomforts?

There are no risks or discomforts involved for you.

What are the potential benefits?

You will help us to determine how to improve your work-environment, the services we provide and treatment outcomes for our clients.

Who will have access to the information we collect?

No one else but the researcher (Lara Arsuffi) will collect the data. All information will be kept in a locked cabinet in a secure room. Your name WILL NOT appear on the data collection sheets, but you will be assigned a reference number. All information is confidential and no identifying information will be given when I write up the study. No data collected will be given to any other agency, including other staff or clients at the hospital, unless you ask us to do so.

Limit to confidentiality

What you will say to the researcher will be confidential unless (a) you specifically ask me to pass this information on to your manager or (b) if you tell me that you are going to harm yourself / others or that someone is at risk of harm. In this case I would need to pass this information onto your manager. But before doing so, I will inform you that I am going to breach our confidentiality agreement.

Consent

Please keep this sheet for your information. Participation in this study is entirely voluntary. You do not have to take part if you do not want to. If you decide to take part, you may withdraw at any time (in the next 9 months) without giving a reason and without any consequences for you. Your withdrawal or refusal to participate will not in any way affect your job.

Who has approved the study?

All proposals for research with people are reviewed by an Ethics Committee before they can proceed. Birmingham University and the local NHS Ethics Committees have reviewed this proposal and approved it.

Who else can you contact to know more about this project?

Dr Catherine Hamilton-Giachritsis, Research Supervisor,

Will you receive feedback about the study?

If you want, when I write up the study, I will put a summary in the post for you.

If you decide to take part in the study, please email me on

<u>**Thanks very much for your time!**</u>

20.02.2014 – version 1

Appendix 13. <u>Copy of informed consent form for patients.</u>

Northamptonshire Healthcare **NHS**
NHS Foundation Trust

UNIVERSITY OF BIRMINGHAM

South London and Maudsley **NHS**
NHS Foundation Trust

**Lara
Arsuffi
Wheatfield Unit
Berrywood Hospital
Berrywood Drive
Northampton
NN56UD**

INFORMED CONSENT FORM (for clients)

Title of Study: Does they way clients and staff interact on forensic psychiatric wards predict incidents on the wards and long term treatment outcomes?

Name of Researcher (CI/PI): Lara Arsuffi

Please initial box

1.	I confirm that I have read and understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without any medical care or legal rights being affected.	
3.	I understand that personal information in strictly confidential, will not be used, and that I will be given a reference number.	
4.	I understand that data collected during the study may be looked at by appropriate individuals (Researcher's Supervisor) from the University of Birmingham, where it is relevant to my taking part in this research. The Sponsor may appoint a third party to access my data. I give permission for these individuals to have access to	

	my data.	
5.	I agree to my Responsible Clinician being informed of my participation in the study.	
6.	I know that University of Birmingham and the local Research Ethics Committee have seen and agreed to this study.	
6.	I know other people I can contact to know more about this research are:	

- Dr Catherine Hamilton-Giachritsis, Research Supervisor,

- Prof Tony Beech, Research Supervisor,

7.	I agree to take part in the above study.	

_____   _____

Name of participant   Date   Signature

_____   _____

Name of person taking consent   Date   Signature

1 original for participant and 1 copy for study file.

Participant reference number: _____

196

Northamptonshire Healthcare **NHS**
NHS Foundation Trust

UNIVERSITY OF BIRMINGHAM

South London and Maudsley **NHS**
NHS Foundation Trust

Lara
Arsuffi
Wheatfield Unit
Berrywood Hospital
Berrywood Drive
Northampton
NN56UD

INFORMED CONSENT FORM (for staff)

Title of Study: Does they way clients and staff interact on forensic psychiatric wards predict incidents on the wards and long term treatment outcomes?

Name of Researcher (CI/PI): Lara Arsuffi

Please initial box

1.	I confirm that I have read and understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without any rights being affected.	
3.	I understand that personal information in strictly confidential, will not be used, and that I will be given a reference number.	
4.	I understand that data collected during the study may be looked at by appropriate individuals (Researcher's Supervisor) from the University of Birmingham, where it is relevant to my taking part in this research. The Sponsor may appoint a third party to access	

	my data. I give permission for these individuals to have access to my data.	
5.	I know that University of Birmingham and the local Research Ethics Committee have seen and agreed to this study.	
6.	I know other people I can contact to know more about this research are: • Dr Catherine Hamilton-Giachritsis, Research Supervisor, 0121 414 4925, c.hamilton.1@bham.ac.uk • Prof Tony Beech, Research Supervisor, 01214147215	
7.	I agree to take part in the above study.	

_____   _____

Name of participant   Date   Signature

_____   _____

Name of person taking consent   Date   Signature

1 original for participant and 1 copy for study file.

Participant reference number: _____

Index