The Therapeutic Alliance as a Component of Risk Management and Assessment in Forensic Mental Health

By

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PLAGIARISM DECLARATION

I, Tania Swart Barbour, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I authorise the University to reproduce for the purpose of research either the whole or any portion of the contents in any manner whatsoever.

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ABSTRACT

Background: Few forensic mental health facilities in South Africa use formal risk assessment instruments to monitor risk and recovery of forensic state patients. The study set out to examine the usefulness of the therapeutic alliance as a proxy measure of violent recidivism in a forensic state facility. The study proposed that the nature and strength of the therapeutic alliance is associated with risk of violence in a forensic population and that attachment security is a relevant factor in this relationship. Additional related factors were studied including demographic and contextual data and their influence on the alliance and risk.

Design and method: A quantitative research method was used to sample both inpatients and outpatients (n=131) using a naturalistic, cross-sectional research design. Statistical analyses focussed on regression modelling and addressed mainly the statistical associations between ratings of the different variables. Various psychometric tests were administered and scored and entered into a database. It was hypothesised that a strong (positive) therapeutic relationship measured with the Dual-role Relationship Inventory-Revised (DRI-R) questionnaire is associated with low risk for violence using the Historical, Clinical, Risk Management (HCR-20) scale.

Findings: Essentially there was a direct association between the therapeutic alliance and violent recidivism, that is, men with a strong therapeutic alliance have lower risk for violent behaviour. Key practitioner type was considered to be highly influential in establishing positive alliances and as a mediator of potential violent recidivism. An insecure attachment style was dominant in the study sample and insecure states of mind partially influenced current therapeutic alliances with an associated increased vulnerability for violence. Positive psychotic symptoms remained a high risk factor for violence and criminal histories and antisocial behaviour may continue to present a risk for recidivism in the absence of psychosis.

Conclusion: Violent recidivism can be adequately monitored by the DRI-R. Affiliation and control are not mutually exclusive in forensic mental health care. Addressing attachment deficits prevalent in this population may be useful in informing both risk and recovery. Symptom reduction remains an important aim in treatment and risk management. Ratings of the alliance by practitioners and how it concurs with risk is an area for further research.

Key words: Therapeutic alliance, dual-role relationships, risk assessment, violence, attachment, state patients, recovery

To my mother and late father –

for whom education meant knowledge and freedom in a marginalised society.

To them I dedicate my PhD.

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LIST OF ABBREVIATIONS

Term	Definition
AAI	Adult Attachment Interview
AS	Attachment style
CPA	Criminal Procedure Act, 51 of 1997
CPM	Coloured Progressive Matrices
DRI-R	Dual-Role Relationship Inventory-Revised
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders
ECR-RS	Experiences in Close Relationships-Relationship Structures questionnaire
ERP	Emerging Researcher Programme
FMHS	Forensic Mental Health Services
HCR-20	Historical, Clinical, Risk Management -20
HREC	Human Research Ethics Committee
IWM	Internal working models
IQ	Intelligence quotient
MDT	Multi-disciplinary team
MCMI-III	Millon Clinical Multiaxial Inventory-III
PANSS	Positive and Negative Syndrome Scale
PCL	Psychopathy Checklist
PCL-SV	Psychopathy Checklist: Screening Version
ROM	Routine Outcome Measures
RPM	Raven's Progressive Matrices
RTTA	Revised Theory of the Therapeutic Alliance
SPJ	Structured Professional Judgement
SPM	Standard Progressive Matrices
SRAI	Structured Risk Assessment Instruments
SST	Strange Situation Test
TA	Therapeutic Alliance
WAI	Working Alliance Inventory

CHAPTER 1 INTRODUCTION

1.1 South African forensic and legal system

Forensic mental health is defined as the care of psychiatric patients with serious mental illness who have committed offences. Forensic mental health services (FMHS) in South Africa (SA) provide forensic assessments, also referred to as 30-day observations, of court-referred cases to determine whether an individual (the accused) has a mental illness or defect which may render him or her either incompetent to stand trial, lacking in criminal responsibility at the time of the offence or both (Kaliski, 2006). The court then determines the outcome of the case based on the findings and recommendations of the forensic observation report.

According to sections 77 and 78 of the Criminal Procedure Act, 51 of 1977 (CPA) of South Africa, if an accused person by reason of mental illness or mental defect is found to lack criminal capacity (*mens rea*) or is unable to understand court proceedings, the court may commit the accused involuntarily to a state psychiatric facility otherwise known as a forensic facility, for an indeterminate period of time, discharge from which may only be granted by a judge in chambers on the recommendation of the treating team. The forensic patient is thereafter referred to as a state patient in the South African forensic system (Kaliski, 2006). State patients who have committed violent offences such as murder or sexual assault are detained at the forensic facility in accordance with section 42 of the Mental Health Care Act, 17 of 2002 (MHCA) (Kaliski, 2006). State patients who have committed non-serious offences such as malicious damage to property were also detained under this section of the MHCA up until 10 years ago when the South African Criminal Procedures Act of 1977 was amended to provide for the commitment of only violent offenders (Kaliski, 2013). Non-violent committals may still occur at the discretion of the court. Section 47 of the MHCA provides for the discharge of state patients conditionally or unconditionally or for reclassification as an involuntary patient. State patients are essentially referred to a forensic facility for treatment and recovery (rehabilitation) and not as a punishment for their offence.

Over and above the complex treatment needs of this population, the forensic milieu is characterised by the ongoing management and monitoring of their potential risk to the community. The competing demands of risk and recovery that is, the challenges of dual agency and coercion are assumed to influence treatment outcomes, including future violence risk (Pfafflin & Adshead, 2004; Skeem, Eno Louden, Polaschek & Camp, 2007; Drennan & Alred, 2012). The rehabilitation of state patients encompasses the processes of both risk management and recovery, the major focus of which includes broad clinical issues of treatment, risk assessment and management with the aim of re-integration into communities. Treatment is implemented by the multi-disciplinary team (MDT) of psychologists, psychiatrists, social workers, occupational therapists and psychiatric nurses across its maximum

secure, medium secure and low secure (recovery) wards. Patients are managed in the maximum secure ward for between six months and a year, sometimes longer depending on their response to treatment. When patients have stabilised, they are transferred to less secure wards where more emphasis is placed on psychotherapeutic treatment implemented by the various disciplines within the MDT. Compliance with treatment and therapeutic engagement is implemented through varying degrees of assertiveness and control ranging from encouragement and restrictions, to access to privileges such as leave of absence (LOA) from the forensic facility and the securing of state disability grants. As patients progress from maximum, to medium and ultimately low secure settings, they are allowed increasing periods outside the hospital where they are supervised mostly by family members. LOA is determined by the MDT that very often has to make decisions to send patients on leave based on the need to vacate hospital beds and the willingness of families to accommodate them. Essentially, the MDT does not do an adequate risk assessment before sending state patients out on leave from the forensic facility which is why simple proxy measures of risk are needed. Eventually, longer periods of successful leave from the forensic facility can be used to support a recommendation to a judge in chambers for a conditional discharge. The conditional discharge of state patients requires far more stringent criteria to be met, which hinders the discharge rates of state patients from the facility and impacts on the length of institutionalisation of these patients regardless of the nature of the index offence (Kaliski, 2013).

The criteria for discharge as stipulated by the MHCA are a stable mental state, adherence to treatment, abstention from illicit substances and importantly patients being able to live harmoniously with family or others in the community (Kaliski, 2006, 2013).

1.2 Dissertation overview

There is a paucity of South African clinical and research literature in the field of forensic mental health (Kaliski, 2006; Strydom, Pienaar, Dreyer et al., 2011; Sukeri et al., 2016). Furthermore, mental health care services in general and forensic services in particular, face many challenges that include insufficient forensic facilities to cater for a growing chronic forensic service, and a limited number of highly trained professionals particularly in the public sector (Ogunlesi, Ogunwale, de Wet et al., 2012; Kaliski, 2013). Crime, poverty, inequality and unemployment remain significant socio-economic and socio-political challenges post-apartheid that impact not only on ordinary South Africans but also on the implementation of deinstitutionalisation of psychiatric patients (Kaliski, 2013). Poor social support, a lack of community care facilities and high rates of substance misuse, impact significantly on the treatment and adherence of the mentally ill and potentially increase the risk of re-offending for this population (Marais & Subramaney, 2015).

Research that has contributed to a largely neglected aspect of forensic mental health care in South Africa includes studies which describe the profile of forensic psychiatric patients admitted to forensic facilities in different provinces in the country. State patients are generally male, single and unemployed with a substance abuse history. A high percentage of forensic patients in local studies were found to be unemployed, which may mirror the high unemployment rate (25%) in the general population in SA (Calitz et al., 2006; Barrett, du Plooy et al., 2007; Marais & Subramaney, 2015). Psychotic disorders represented the most common diagnostic category and most offences were committed against people (Strydom, Pienaar et al., 2011; Marais & Subramaney, 2015). Kruger and Rosema (2010) investigated risk factors for violence of long-term violent and non-violent forensic patients over a 6-month period in 2007 and identified a subgroup of patients with low intellectual functioning as a high-risk group responsible for a large proportion of the violence in the hospital.

These authors determined that the risk was associated less with this group's psychiatric diagnosis and more with their cognitive deficits and poor coping skills. Similarly, Calitz et al. (2006) identified a similar cohort of low functioning patients as a high risk forensic group and posit poor supervision and rehabilitation as a reason for their increased involvement in crime. Additional findings suggest that violent patients were more likely to be in high secure (closed) wards and that most violence occurred among the patients themselves (Kruger & Rosema, 2010). Furthermore, these patients were younger at first age of admission and remained in the hospital for longer. Kruger and Rosema (2010) describe no significant association between violence and personality disorders, affective disorders, neurological disorders and substance misuse disorder. The longitudinal study by Marais and Subramaney (2015) examined the outcomes, including recidivism rates, in a three-year follow up study of 114 patients in a forensic facility in Gauteng. The study investigated a retrospective examination of clinical records of patients between 2004 and 2007. A third of the patients remained hospitalised after three years and the most frequent factors hindering their release into the community included their immediate mental state, risk of reoffending and poor family support. Marais and Subramaney (2015) cite an overburdened public health system in SA that may contribute to a high percentage of patients out on leave.

1.3 The state patient and dual-agency

State patients are a heterogeneous group of individuals by virtue of their serious mental illness, intellectual disability, comorbid personality disorders, substance misuse and often violent offending behaviour. The success of rehabilitation is therefore often undermined by the inability of the MDT members to engage with a group of patients who are doubly aggrieved: firstly, that they are being coerced into treatment, and secondly that they have to accept, against their will, that they suffer from a serious psychiatric disorder or that they may be at risk of being violent. Ultimately,

however, state patients are released into the community where relapse and recidivism assume greater significance in the treatment and management of their recovery and risk.

Their complex treatment needs require multiple foci for rehabilitation, including risk prevention. Furthermore, they remain in treatment for lengthy periods and form long and enduring treatment relationships with the team of mental health professionals. There are, however, challenges to maintaining the treatment relationship, most significantly the problem of dual agency and coercion. Dual agency involves balancing the roles of treatment and risk assessment, where the practitioner is not always an advocate for the patient as the courts and broader society are part of the treatment relationship (Lindqvist & Skipworth, 2000; Skeem et al., 2007; Robertson, Barnao & Ward, 2011; Roychowdhury & Adshead, 2014). Patients are usually aware of the control practitioners have over them, which may influence their motivation to engage in treatment and hinder the development of trust. Patients' disclosure of problems relevant to risk to self or to others is likely to have adverse consequences, for example, a change in leave status or discharge plans. An additional challenge to effective rehabilitation is how to motivate patients to change and to engage in therapy, despite the control by the team, which is often perceived as punitive (McCabe & Priebe, 2004; Ross, Polaschek & Ward, 2008).

Patient dissatisfaction with the unit, distrust of staff, high levels of stress on the unit, lack of internal motivation, reluctance to open up, and negative attitudes towards treatment are some of the impediments to forensic recovery (Robertson et al., 2011). In this regard, patients' perceptions of the treatment relationship are important and need to be carefully considered by the MDT (MacInnes et al., 2014). Another unstated limitation to the MDT approach is that each member of the team engages with patients differently for different purposes. The multidisciplinary team comprises different mental health professionals who have very specific scopes of practice. Psychiatrists and nurses emphasise the medical and pharmaco-therapeutic aspects of treatment. Psychologists address the complex psychodynamic and behavioural components of the forensic treatment milieu. Occupational therapists emphasise vocational and functional interventions, whereas social workers address social and family interventions necessary for recovery. The benefit of such a multidisciplinary approach is that each profession contributes significantly to a comprehensive understanding of the patient. Conversely, treatment models may be informed by different paradigms with different treatment outcomes, goals and expectations, which may hinder the output of cohesive risk and recovery plans (Robertson et al., 2011; Barnao & Ward, 2015).

Despite these limitations, this study postulates that the therapeutic relationship is an under-rated and often overlooked protective element in the forensic setting where enduring treatment relationships develop between practitioner and patient. A survey conducted by MacInnes et al. (2014) describes the key best practice guidelines adopted by the National Health Service (NHS,

2007) which emphasise the centrality of the therapeutic alliance between staff and patients in secure forensic settings. Relational security is best defined by Tighe and Gudjonsson (2012:1) as 'the therapeutic relationship clinicians have with their patients and the way this relationship is used to maintain safety through the recovery process''. This alliance relies on 'detailed knowledge' of the patient coupled with ongoing risk assessment which is considered to produce both safety and security as well as clinical and social benefits (Appleby, 2010; Drennan & Alred, 2012; MacInnes et al., 2014:657). Identifying the therapeutic alliance as an 'attenuator' of risk (Beauford, McNeil & Binder, 1997:1276), may be beneficial in addressing some of the challenges that confront the forensic service, such as reducing the cost of forensic care incurred by indefinite incarceration.

1.4 The dialectic of risk and recovery in forensic mental health

Risk and recovery may seem to be contradictory constructs in forensic mental health and they have generated much debate in the forensic literature, specifically regarding the use of risk assessment instruments in this setting. Forensic patients are perceived as dangerous by their communities and society, which is premised on validated evidence of the association, albeit a modest one, between mental illness and violence (Monahan, 1988, 1992; Elbogen & Johnson, 2009; Volavka, 2014). Risk assessment, therefore, has come to occupy a central role in secure forensic services alongside mental health treatment and, despite its original introduction to avoid having to predict, risk assessment is used for precisely that. Besides the local constraints on implementing risk assessment in forensic settings, risk assessment in general has been subject to significant criticism internationally. Accurate risk prediction is limited by a complex interaction of many factors such as the setting in which risk is being assessed and the broad range of variables that interact to produce violent behaviour. The choice of instrument and the multiple definitions of risk generate variations across risk assessments and across studies (Mulvey & Lidz, 1984, 1995; Kruger & Rosema, 2010). This concern is reiterated by Singh and colleagues (2014) who similarly identify the inconsistent operational definitions of the term 'high risk', which may account for some of these variations between rates of violence in different risk populations due to the variability of base rates of violence in different populations. Most structured risk assessment instruments do not address local base rates, which has some important repercussions (Hart & Cooke, 2013). High-risk patients can only be so delineated if they are compared to the local base rates for specific violence in a particular population of patients; yet there is no such resource for practitioners to make these comparisons. This could render the assessment of risk categories questionable and the estimation of such risk to influence patient liberty perhaps even invalid and unethical (Buchanan et al., 2012; Singh et al., 2014).

Structured professional judgment (SPJ) risk management schemes such as the HCR-20 provide guidelines to assist in the clinical evaluation of violence risk (Haque & Webster, 2012). Contemporary best practice risk assessment recommends a multidisciplinary approach in managing violence risk that

is considered to minimise single-rater bias. According to Haque and Webster (2012) integrated risk management is popular and increasingly implemented in first world countries. However, this is not always possible in contexts where resources and expertise are lacking, which further hinders the effective utilisation of assessment tools. Furthermore, the implementation of an evidence-based multidisciplinary approach to clinical risk management has its own pitfalls as members of the team from various disciplines bring their own professional viewpoint to bear and a consensus perspective is not always easy to achieve (Haque & Webster, 2012). Meta-analyses by Yang et al. (2010) and Singh et al. (2011) have demonstrated that no one tool is more effective in violence risk assessment. Fazel and colleagues (2012) conducted a systematic review of the predictive validity of risk assessment tools which generated significant findings. This was a fairly large-scale meta-analysis incorporating 73 samples of 24 847 participants in 13 countries across the world. It was found that risk assessment instruments used for predictive purposes were better at predicting violent offending than sexual or general crime. Their conclusion was that although widely used in some countries, risk assessment tools' predictive accuracy depends on how they are used, and that caution should be exercised especially with respect to use in clinical and criminal justice settings. High false positive outcomes in particular can have significant ramifications for length of detention and related impact on economic, social and civil rights consequences. According to Fazel et al. (2012), the value of these instruments may be best realised in addressing management and treatment of high risk individuals as they more effectively screen out those at lower risk. In line with other reviews cited before, risk assessment instruments can only roughly classify individuals at the group level and not in individual cases (Hart & Cooke, 2013).

Some authors argue that risk assessment tools are designed solely to assess specific forms of risk and in so doing may exclude other meaningful outcomes pertinent to all forensic patients (Shinkfield & Ogloff, 2014). These authors query the fit of these predictive measures in the forensic environment because many of the instruments are validated in mainstream psychiatric and correctional settings and are not necessarily appropriate for the specialised forensic service. Forensic patients present with a unique constellation of impairments, and risk practices should ideally reflect the broad range of treatment goals required in this setting.

South Africa is not unique in experiencing burgeoning demands for forensic services for many of the reasons cited above; these have been expanding steadily resulting in overburdened forensic facilities. There is a long waiting list of defendants who have been referred for assessment as well as an unremitting stream of new forensic patients being admitted following such assessment (Kaliski, 2012; Marais & Subramaney, 2015). Research addressing risk assessment that is relevant and pertinent to the needs and demands of this specialty service is therefore of paramount importance.

1.5 Risk assessment in the South African context

The forensic mental health service has slowly become the repository for the long-term rehabilitation of the seriously mentally ill who have offended and whom society has discarded (Adshead, 2001; Kaliski, 2013). A core function of the service is the assessment of a patient's risk of violence where violence is defined as 'any act that causes physical harm to another or is intended to do so' (Roychowdhury & Adshead, 2014:77). Risk concerns in particular contribute to indefinite periods of inpatient admission, which in turn, contributes to increasing patient numbers and under-resourced services. The regulations of the MHCA primarily require that state patients be supervised by families when on leave from the hospital, which can be an obstacle to their re-integration into the community. Discharging patients into the care of families who, more often than not, are the victims of previous offences, is fraught with concerns about relapse and re-offending. In the present forensic context, the decision to grant state patients privileges, especially leave into the community, often has to be made without recourse to sufficient information. The MDT depends on collateral information from families, clinical staff and other community sources to determine whether leave should be granted, continued or extended. Risk is gauged through clinical observation and judgment by staff based on historical risk factors, severity of the offence, behaviour in the ward, response to treatment, adherence to medication and willingness to participate in ward therapeutic programmes. Some of these assessment criteria can be described as surrogate risk measures that enable the MDT to assess a patient's risk of re-offending.

Violence prediction in mental health remains a challenging aspect of recovery, particularly in forensic mental health services (Kruger & Rosema, 2010). Informal risk assessment remains convenient for most forensic practitioners in busy forensic wards and a local survey of forensic professionals suggests that this is commonplace in their day-to-day clinical practice (Roffey & Kaliski, 2012). Informal risk assessment may have its own unique structure based on clinical experience, but it has served its function fairly successfully, which perhaps lends credence to Mossman's (1994) conclusion that unstructured clinical violence predictions are more accurate than chance. In the local context, forensic services do not routinely administer formal risk assessments mainly due to a severely under-resourced psychiatric service. An additional challenge in South Africa is a lack of reliable and valid instruments for local use particularly in the field of forensic risk assessment. Nevertheless, risk assessment in the forensic arena needs to be formalised for a number of valid reasons, one of which is to establish good clinical governance and second, to contribute to much needed research on the continent in the specialist area of forensic mental health.

1.6 Research on the African continent

Ogunlesi and colleagues (2012:3) lament the 'dearth of information' and comparable, valid measures in forensic mental health care on the continent, which makes comparative research difficult. Additionally, the use of violence risk measures validated in developed countries presents an added

dilemma in mental health research across developing countries as well as in South Africa. Nevertheless, research in Africa is necessary and is currently conducted in the full knowledge that there are many limitations including the use of instruments that have been validated elsewhere.

Several local authors have attested to the difficulties in obtaining equivalence and validity for general measures developed in western societies (Foxcroft, 1997; Swanepoel & Kruger, 2011; Laher &Cockcroft, 2013). This is particularly relevant when considering the diversity of the populace, the rapid acculturation and the huge socio-economic disparities that are the legacy of apartheid. South Africans may represent more than one culture and speak many languages, both of which impact on test development, the development of new measures or the adaptation of recognised international research tools (Foxcroft, 1997; Swanepoel & Kruger, 2011). Additional local constraints such as inadequate language resources and heavy clinical workloads in state psychiatric services, while not insurmountable, hamper the development not only of relevant tests but particularly the specialised measures necessary for assessment and management of forensic populations (Ogunlesi et al., 2012).

There are two schools of thought with respect to fair testing practices in South Africa, one being that psychometrically sound measures validated internationally should be used provided limitations are made explicit and bias reduced through standardisation where possible (Shuttleworth-Jordan, 1996). Alternatively, new unbiased culturally relevant measures should be developed. There are inherent complexities to both arguments; firstly, in reality, not many specialised measures have been standardised which requires practitioners to utilise what is available and practical in order to do research. Secondly, developing new measures that aspire to address linguistic diversity and the nuances of cultural diversity is not realistically possible. Essentially, there are no guarantees that equivalence and adaptations of measures will be fair and valid across the diverse population in South Africa (Foxcroft, 1997, 2011; Swanepoel & Kruger, 2011; Patel & Laher, 2013). Notably, there is a real risk that an over emphasis on cultural differences may in fact lead to greater bias in the psychometric arena. A related and highly contentious issue involves racial profiling in medical research. The misleading use of race and ethnicity as explanatory variables in research requires thoughtful reflection by researchers and practitioners alike to guard actively against promoting racist ideology in contemporary mental health research (Ellison & de Wet, 1997). This is particularly cogent when it is instead the actual underlying constructs that are scientifically valid variables that can and should be directly measured, such as employment status and poverty (Ncayiyana, 2007). Further explication of racial profiling in medical research is addressed in Appendix A. Furthermore, the preoccupation with culture-specificity in research in general in SA may, in this author's opinion, perpetuate a culturalist/separatist paradigm reminiscent of the apartheid era. In line with this argument, Magwaza (1995) points out, that instead, the emphasis should be directed at creating humane and democratic environments in which cultural knowledge and sensitivity are foregrounded, and where power dynamics are actively mitigated against in research.

Psychological testing has to be contextualised as an adjunct to clinical assessment and one of many ways of gaining objective information in clinical and research settings to enhance diagnostic and treatment decisions (Foxcroft, 1997). If no valid tests are available to conduct scientific research in the forensic service in particular, studies in SA will have to rely on tests validated elsewhere and use creative methods to deal with these constraints or risk research in SA being indefinitely stymied. It is further argued by the present author that future meta-analysis of data from similar studies will provide the requisite validation of research data. Consequently, in this study, a variety of instruments were used that overlap in the qualities they test so that although it was beyond the scope of this study to conduct cross-validations between the instruments, it was assumed that this would ameliorate the possible lack of validity of any one of the instruments, i.e. the principle of ecological validity was applied in the use of assessment instruments.

Despite the context of limited resources, increasing workload and inadequate language resources in public psychiatric service delivery, generating new knowledge and using scientific methods to address the paucity in forensic mental health research is an overriding imperative of the present study, which is echoed by several African researchers (Shuttleworth-Jordan, 1996; Alem & Kebede, 2003; Foxcroft, 2011; Swanepoel & Kruger, 2011; Ogunlesi et al., 2012). Lack of research into the validity of international tests in Africa is therefore considered not sufficient to invalidate research using internationally recognised instruments that are well validated with sound psychometric properties, while acknowledging the limitations inherent in this exercise (Alem & Kebede, 2003). Further ethical and testing constraints are expanded upon in Research ethics (section 3.9) and in Limitations (section 5.1.).

1.7 Research focus – the therapeutic alliance

It was argued that risk assessment in forensic services in SA needs to be formalised for a number of valid reasons including the establishment of good clinical governance and a standardised process of LOA that will account for the ongoing detention of state patients as well as inform treatment (Roffey & Kaliski, 2012; Roychowdhury & Adshead, 2014). The purpose of admitting forensic patients (under certification) is to manage their dynamic risk factors to reduce the likelihood of future violent behaviour. It seems logical, therefore, to investigate factors operating in the therapeutic environment which can also be used to monitor the status of their risk. The quality or strength of the therapeutic alliance may well address this imperative.

A vast body of literature has, over the past two decades, recognised the therapeutic alliance as an important predictor of outcomes across therapeutic modalities, interventions and diverse patient populations. These findings have been documented in two important meta-analytical studies by Horvath and Symonds (1991) and Martin, Garske and Davis (2000). The therapeutic alliance can best

be defined as the central component of the treatment relationship that combines a mutual affective bond and trust (interpersonal relationship) with achieving the goals and tasks of treatment (therapeutic frame) (Kozar & Day, 2012). Whatever the theoretical paradigm or treatment philosophy, the consensus is that the alliance is beneficial and always operative in a treatment relationship, either actively and fundamental to the treatment process and change, or specific to the treatment framework (McCabe & Priebe, 2004; Meissner, 2007).What is less clear is whether these findings are applicable to the forensic setting characterised by a dual-role relationship of treatment and control that alters the nature of the helping relationship (Skeem et al., 2007; Kozar & Day, 2012). Treatment relationships in forensic settings differ from those in conventional psychotherapeutic settings which reinforces the importance of establishing an overarching risk and rehabilitation framework that is unique to forensic mental health services and governed by common principles, values and aims to ultimately benefit the 'secure recovery' of the forensic patient (Drennan & Alred, 2012).

In the present study, the term therapeutic alliance and therapeutic relationship are used interchangeably to reflect the broad range of treatment relationships and theoretical paradigms within the forensic mental health context. The study proposes that the presence of a strong therapeutic alliance is associated with a low risk for violent and offending behaviour in the forensic setting. A related avenue of research in forensic settings has been the work of attachment theorists such as Adshead (1998, 2001, 2004, 2008, 2013, 2015) and Fonagy (1998, 2004), who suggest that therapeutic relationships may in fact be construed as attachment relationships and subject to transference dynamics that have an impact on the patient's risk and recovery. These authors have long been proponents of the link between attachment and violence which informs the psychological component of the present study in attempting to understand pathways to violence and acts of harm to others.

The key forensic issues pertinent to this study include the significance of the therapeutic relationship in secure forensic settings in addressing complex treatment and security needs, and the limitations of current risk assessment approaches in forensic mental health. Of particular interest is to identify creative treatment-relevant risk measures that inform risk of future violent outcomes, as well as risk assessments that are context driven, simple to administer and have clinical utility in daily forensic practice; and further, that encourage patient accountability for their own recovery. Lastly, the thesis addresses the lack of a coherent psychological theory of violence in those undergoing rehabilitation and recovery, which places additional limitations on effective risk management and assessment. The study is informed by findings from the psychotherapy literature, attachment theory and risk assessment research across mainstream mental health settings, as well as forensic and correctional treatment settings.

The local context in which this study is situated is defined in relation to an expanding forensic population, under-resourced state and community mental health services, and ineffectual risk

assessment methods with lengthy incarceration as well as increasing accountability to public attention on the link between serious mental illness and violent crime. This, without compromising the autonomy and freedom of forensic patients or the fiduciary responsibilities of mental health recovery. The utility of the therapeutic alliance as a proxy measure of violent risk has not been researched in the forensic setting in South Africa.

CHAPTER 2 LITERATURE REVIEW

2.1 Risk assessment – ethical considerations

One of the core functions of psychiatric services is the assessment of risk for violence based on the general perception that the mentally ill are violent (Monahan, 1988, 1992; Lindqvist & Skipworth, 2000; Grann, Danesh & Fazel, 2008; Elbogen & Johnson, 2009; Volavka, 2014). This applies to forensic mental health in particular, where risk assessment is mandatory. In the context of mental health, risk is generally defined as the likelihood or probability that something or someone will be harmed (Yang, Wong & Coid, 2010; Roychowdhury & Adshead, 2014). Risk assessment is meant to address the nature of that risk, the probability of it occurring, its severity, when it will happen and how often it occurs. A risk management plan is then implemented that should consider each of the above aspects but ideally also consider individual strengths and positive attributes to reduce negative outcomes (de Ruiter & Nicholls, 2011; Roychowdhury & Adshead, 2014). That is, risk management aims to reduce the influence of high risk factors that are amenable to change, and a primary objective of risk assessment is to reduce harm inflicted by forensic patients on themselves or others. In Roychowdhury and Adshead's (2014) view, risk assessment should be treated as a clinical intervention and therefore subject to the same stringent 'bioethical frameworks' as other treatment interventions. Furthermore, restrictions to patients' rights and benefits become potentially unethical and unjustified should those very same risk assessments be fundamentally flawed (Roychowdhury & Adshead, 2014:75). Earlier proponents of ethical and appropriate risk assessment in forensic mental health caution that risk assessment research should be 'grounded in clinically-based studies that link risk assessment to management strategies capable of ameliorating that risk' and importantly, that treatment and recovery should never be secondary to the 'entrepreneurial nature of risk assessment' (Lindqvist & Skipworth, 2000:320). Furthermore, Roychowdhury and Adshead (2014:80) present a convincing argument of the potential negative impact of risk management based on over-prediction, the 'false positive premise', and advocate, along with several authors in the risk assessment arena, for broader-based risk assessment that is inclusive of dynamic and contextual factors (de Ruiter & Nicholls, 2011).

2.2 Risk assessment methods

Violence risk assessment research has developed substantially over the past four decades due in part to the contribution of studies that have informed risk assessment methods and approaches as well as to the development of evidence-based risk assessment instruments designed for use in various settings (Yang et al., 2010; de Ruiter & Nicholls, 2011). Risk assessment measures have generated much debate regarding their place in the treatment and care of psychiatric patients in general and of forensic patients in particular (Lindqvist & Skipworth, 2000; Shinkfield & Ogloff, 2014; Singh et al., 2014).

These risk assessment methods have varied along a continuum from purely a subjective clinical assessment at one extreme to a narrow reliance on actuarial risk assessment instruments on the other, both of which are open to valid criticism. The former relies on subjective clinical opinion and extensive knowledge of the patients being treated, which has been the traditional method of assessing risk that is both idiographic and quick to implement (Roychowdhury & Adshead, 2014:77). An assessment may comprise a thorough history, collateral information and a mental state exam that would generally serve as a baseline for making decisions to grant patients privileges such as leave into the community or greater freedom within the confines of the facility (Buchanan et al., 2012).

Actuarial methods rely on statistical relationships between predetermined variables and violence. These tests generate scores that fit into pre-determined ranges that define whether it represents low, medium or high risk (or even a probability score). The determination of the level of unacceptable risk tends to remain a value judgment. An actuarial score provides no further input to decision-making in this context (Buchanan et al., 2012; Singh et al., 2014). These methods often lack clinical utility, most notably in failing to consider the dynamic nature of risk, which is typical of inpatient treatment settings (Yang et al., 2010:742; de Ruiter & Nicholls, 2011; Buchanan et al., 2012). The benefit of actuarial instruments on the other hand, is that they are supposedly objective, standardised methods of determining risk.

Practitioners however are required to make a range of decisions about the imminent or short-term risk a patient may pose either in the ward or when allowed out on leave. This requires a particular emphasis on current situational and interpersonal factors the patient presents with and the inclusion of dynamic risk variables has been shown to increase the accuracy of risk assessment, which in turn can direct treatment and intervention thereby adding to its clinical utility (Lindqvist & Skipworth, 2000; de Ruiter & Nicholls, 2011).

It is further argued that despite confirmation of similar predictive validity across several risk assessment instruments, albeit with a 75% accuracy rate (Yang et al., 2010), risk assessment has not been well validated; the findings in fact demonstrate a greater variance both across and within structured risk assessment instruments that is often under-reported by these validation studies. Meta-analysis of violence risk prediction suggests that while current instruments are interchangeable and have similar if moderate predictive validity across instruments, overall violence rates for high-risk groups in 'different clinical settings and different patient populations', demonstrate greater variance 'within and between instruments' than is often reported (Singh & Fazel, 2010; Singh et al., 2014:183-184). For example, rates of violence in high-risk individuals increased when population rates of violence increased and where structured professional judgments (SPJs) were used. The absence of information on local base rates for violence illustrates a significant limitation of structured risk assessment instruments (SRAIs) that potentially renders the probability violence risk estimates

unreliable and unsupported by the current evidence base (Singh et al., 2014). Current research similarly identifies inconsistent operational definitions of the term high risk that may explain some of the variations between rates of violence in different groups. Risk estimates based on risk assessment instruments should be used judiciously and cautiously especially in relation to decisions of risk and security (Singh et al., 2014).

2.3 Violence risk

There is a consensus in the literature that severe mental illness increases the risk of violence and violent behaviour in a minority of people with schizophrenia and bipolar disorders and is a leading cause of admission into mental health services, which may be prolonged if the offending behaviour persists despite the amelioration of the mental illness care (Monahan, 1988; Lindqvist & Skipworth, 2000; Roychowdhury & Adshead, 2014). Most people with severe mental illness, however, are not violent (Volavka, 2014). The risk of violence appears to increase with comorbid substances misuse, personality disorders and when positive psychotic symptoms are present. Epidemiological studies cited in Binder (1999) and in Monahan (1992) identify substance misuse on its own and in combination with serious mental illness as increasing risk substantially and significantly predicted violence.

There is a strong counter-argument to this consensus in the literature with Elbogen and Johnson (2009) and Grann, Danesh and Fazel (2008), positing that existing evidence of this association remains sparse and liable to bias. The 2008 Swedish study followed up a cohort (n=4828) of mentally ill offenders in the community for a period of 5 years and found that a diagnosis of substance misuse and personality disorder were as strongly associated with a risk of subsequent or later violence, as known demographic and contextual factors, and that psychiatric diagnoses provided negligible predictive value. A patient's risk of future violence is dynamic and potentially changes according to environmental influences and addressing dynamic factors is therefore an important strategy for managing violence risk (Elbogen & Johnson, 2009).

According to some studies, only 10% of mentally ill inpatients account for approximately 60% of violent episodes (de Ruiter & Nicholls, 2011). Furthermore, most research on violence risk has emanated from criminology research, and apart from mental illness, it is suggested that the general correlates for violent behaviour remain similar across the forensic and criminal justice settings (Monahan, 1988, 1992; Douglas & Skeem, 2005). In his commentary on the literature, Monahan (1988:250) reiterates that the 'best predictors of violence' among forensic patients are the same demographic variables that predict violence in non-disordered offenders, and that a history of past violence remains a consistently strong predictor of future violence. However, even among high-risk patients, only a 33% predictive accuracy can be achieved. In general, the literature cites that inpatient

and preadmission violent crimes are committed by younger males from impoverished backgrounds where unemployment is rife and substance misuse ubiquitous – apart from psychiatric illness (Binder, 1999; Buchanan et al., 2012).

Furthermore, according to Binder (1999) schizophrenia and mania were over-represented in high-risk groups in a study across inpatient and community settings. Mania was associated with more physical aggression both inside and outside the institution, and violent inpatients were also violent in the community. Binder's (1999:196) premise is that 'non-compliance, acute symptoms, and substance abuse are correlated with each other'. What this translates into is that when patients misuse alcohol or other illicit substances, they may not take their medication and may relapse, and the potential for violence may increase significantly. By inference, acute symptoms may be the more robust indicator of potential violence (Binder, 1999).

Douglas and Skeem (2005: 352) conceptualise violence as a 'transactional process that likely reflects multiple causal risk factors and pathways', one of which is mental illness. Evidence has however been somewhat inconsistent in identifying which aspects of mental illness contribute significantly to violence risk. Many studies have called attention to the type of diagnosis, others to the threat/control override symptoms as a contributor to violence, while others have consistently linked positive psychotic symptoms and violence (Binder, 1999; McGauley, 2002; Douglas & Skeem, 2005). Resnick (2013:10) identified several types of delusions associated with violence including erotomania, Capgras delusions, threat/control override delusions and persecutory delusions. In his lecture on the relationship between paranoia and violence, Resnick described how a 'building crescendo of paranoia creates a high risk of violence'. Furthermore, he identified the therapeutic alliance as a key strategy to manage violence in patients: 'Ultimately, strengthening the therapeutic alliance can be an important protective factor for future violence' (Resnick, 2013:10).

Family and interpersonal relationships have also been identified in the literature as significant risk factors for violence (Lindqvist & Skipworth, 2000). According to Douglas and Skeem (2005:365), relationships may be conceptualised as 'proximate risk factors for violence or more general protective factors'. Forensic populations are characterised by histories of childhood trauma that range from neglect to severe physical, emotional and often sexual abuse and the majority of forensic patients in many local and international contexts derive from poor socio-economic backgrounds where unemployment is high and substance misuse is prevalent (Bradley, 1997; Adshead, 2004; Calitz, van Rensberg et al., 2006; Strydom, Pienaar, et al., 2011; Dorkins & Adshead, 2014). These factors may increase their vulnerability to antisocial and offending behaviour. Often, as is the case locally, forensic patients have been rejected by family and other social support systems through the chronic nature of their psychiatric illness (often exacerbated by poor adherence to treatment) and persistent offending behaviour (Binder, 1999; Lindqvist & Skipworth, 2000; Douglas & Skeem, 2005). The protective

influence of family support is often mediated by poor social and occupational functioning (Douglas & Skeem, 2005; Buchanan et al., 2012).

The review of violence risk and assessment studies indicates that certain constellations of static and contextual factors are more predictive of violence than others. Furthermore, rehabilitation progress is not well measured by risk assessment tools because of their over-reliance on static risk factors (Lindqvist & Skipworth, 2000; Douglas & Skeem, 2005; de Ruiter & Nicholls, 2011; Buchanan et al., 2012). Similarly, confining outcome instruments purely to risk prediction and assessment would defeat the purpose of successful recovery which supports the development of creative outcome measures, including reoffending, to address the unique needs of this service (Shinkfield & Ogloff, 2014). If rehabilitation progress is not adequately measured by risk assessment tools, it is preferable to measure a clinical phenomenon that is dynamic i.e. it can be changed, and is associated with the outcome of violence recidivism. One method to address these deficits is to develop alternative ways of measuring risk and other functional outcomes that embrace the philosophy that all behaviour and not only violent behaviour, is dynamic.

2.4 Therapeutic alliance and violence risk – an introduction

Risk assessment research has historically focused on known predictor variables (demographics, history of violence, diagnoses) in its evaluation of risk of violence in psychiatric settings. Clinical decisions have largely been influenced by these static factors, thereby neglecting the influence of changing situational variables in determining future risk. Although the influence of situational factors on violent behaviour is commonplace in psychiatric wards such as ward atmosphere and boredom, which have been documented in previous studies (e.g. Daffern & Howells, 2010), it was the seminal study by Beauford et al. (1997) that highlighted the relational context in which violence often occurs. Their study emphasised the interpersonal aspect of violence, which had previously been overlooked, and investigated the relationship between the patient and practitioner on admission to an inpatient psychiatric ward. Their findings indicated a fairly robust association between the quality of an early alliance and violence risk in so far as a poor initial therapeutic alliance was predictive of later inpatient violent behaviour. The therapeutic alliance as a predictor of outcomes in mental health has since become recognised beyond the confines of traditional psychotherapy literature where it has for decades been acknowledged as the quintessential element of psychotherapy outcomes across theoretical frameworks and treatment modalities (Beauford et al., 1997; MacInnes et al., 2014). In a more recent review of the alliance in offender literature, Kozar and Day (2012) dispute the role of the therapeutic alliance in producing positive outcomes in offender programmes for lack of convincing evidence. They do, however, acknowledge the theoretical and practical significance of establishing a strong therapeutic relationship in these settings and recommend that practitioners and offender

programme providers are suitably equipped to develop 'robust' relationships with clients (Kozar & Day, 2012:487).

There remains, however, limited empirical literature on the therapeutic alliance in forensic mental health settings. The mental health alliance literature has adopted much of the conceptual frameworks and measures developed for psychotherapy as its point of departure and offender research has produced seminal work on mandated treatment relationships in correctional settings (Skeem et al., 2007; Manchak, Skeem & Rook, 2014). More recent research has however begun to examine the therapeutic alliance in mainstream mental health settings and involuntary treatment settings (McCabe & Priebe, 2004; Ross et al., 2008; MacInnes et al., 2014).

Psychiatric settings differ from the traditional psychotherapy context. For example, recovery from serious mental illness can be more complex and encompass a broad range of treatment paradigms. Clinical roles and responsibilities may be less clearly demarcated than in psychotherapy, and mental health professionals may intervene across treatment settings and contexts (e.g. inpatient and outpatient services) and are often required to provide additional psychosocial and psychiatric support.

Furthermore, the duration of treatment is usually unspecified, and patients engage with multiple interventions and with several different professionals (McCabe & Priebe, 2004). There are significant differences in the delivery of treatment and care in mental health settings in general and in forensic mental health settings in particular. Treatment relationships are initiated by the practitioner who has statutory roles and custodial functions that differ from voluntary treatment relationships. Treatment is compulsory and is assertively delivered to achieve both traditional therapeutic outcomes as well as to manage and monitor risk and compliance (McCabe & Priebe, 2004; MacInnes et al., 2014; Manchak et al., 2014).

In forensic mental health services, especially, practitioners may establish and enforce rules such as duration of leave into the community and abstention from illicit substance use, and may monitor adherence to treatment and medication. Failure to comply with hospital and criminal justice regulations may result in withdrawal of privileges or transfer to a more secure ward. Forensic patients, like their mentally-ill probationer counterparts, ideally comply with these rules but at times may not. It is certain that these unique factors must influence the perspective of the therapeutic alliance in which control is emphasised (Skeem et al., 2007; Kennealy et al., 2012; Manchak et al., 2014).

The difference between forensic mental health practitioners and officials in correctional services however, is that the former deal with the problem of 'dual-agency' in that their primary loyalty is to external authorities such as the judicial system and that they have to establish a strong therapeutic relationship with their patients. Probation officers are mostly concerned with fulfilling their roles as representatives of the prison but as suggested by Skeem and colleagues (2007), the most positive

rehabilitative results occur when supervisors balance their dual roles. Key findings by several authors in mandated and probationer literature, suggest that mandated treatment relationships are not the same as traditional treatment alliances because of the explicit use of control in these relationships. However, the bond or affiliation in these relationships seem to remain intact and does not necessarily negatively influence the therapeutic relationship (Manchak, 2011; Manchak et al., 2014). Studies undertaken in correctional settings have also noted an association between the alliance and risk for violence.

Polaschek and Ross (2010) assessed the therapeutic alliance in high-risk violent psychopathic offenders in a group treatment programme and found that the alliance was not significantly associated with psychopathy, although offenders whose therapeutic alliance strengthened the most over the treatment period experienced the most change on the Violence Risk Scale stage of change measure (Polaschek & Daly, 2013). A study of women in a medium secure facility claims the alliance is a key mediator of inpatient violence (Long et al., 2011). However, according to MacInnes et al. (2014:662), many of these findings were inferred and variables were not directly examined. MacInnes and colleagues (2014) assert that a positive, respectful therapeutic relationship and increased patient contact may limit behavioural problems in inpatient settings.

2.5 The therapeutic relationship

The therapeutic alliance has been referred to variously as the therapeutic relationship, treatment relationship, treatment alliance and the working alliance (Horvath & Luborsky, 1993). All definitions of the therapeutic alliance imply some curative property inherent in the therapeutic process as well as an affective and collaborative bond between therapist and patient (Meissner, 2007). The therapeutic alliance has its origins in psychoanalytic psychotherapy and reflects the psychological dynamics that develop between therapist and patient. It has evolved from Freud's early psychoanalytic conceptualisation of the therapeutic dyad imbued with transference to the more contemporary understanding of the alliance as reflective of a transference process, a working alliance and a real relationship between therapist and patient (Bordin, 1979; Horvath, 2001; Meissner, 2007). Successful analysis has been ascribed to the alternation between the transference and the working alliance where the transference is regarded as the unconscious residual relational experiences from prior significant relationships that the patient brings to the therapeutic relationship; the real relationship is reflective of the present relationship between therapist and patient and the working alliance is the negotiated framework for therapy to take place (Horvath & Luborsky, 1993; Meissner, 2007). Bowlby (1988) described the therapeutic alliance from an attachment perspective in which the alliance provides a qualitatively different or 'corrective' attachment experience for the patient that brings about change. The Rogerian approach on the other hand defines therapist attributes of empathy, congruency and unconditional positive regard as sufficient to achieve therapeutic gains. Later findings indicate that it is the patient's perception of these attributes that influences outcome more robustly (Horvath &

Luborsky, 1993; Willmot & McMurran, 2014). Bordin's (1979) integrative conceptualisation of the alliance is often quoted in the alliance literature and that ultimately appealed to the broader clinical and research community because it reaffirmed that factors common to all therapeutic modalities could explain therapeutic outcomes. Bordin's pan-theoretical framework of the alliance comprised a bond, tasks and goals that is now commonly perceived as a single construct across therapeutic paradigms and mental health care settings (Bordin, 1979; Horvath & Symonds, 1991; Horvath & Luborsky, 1993; Martin, Garske & Davis, 2000). What is evident from the literature is the applicability of the therapeutic alliance across diverse psychotherapeutic paradigms. In all these therapeutic contexts, the alliance remains a critical component affecting treatment outcomes (Horvath & Luborsky, 1993; Martin et al., 2000; Meissner, 2007).

Numerous alliance measures have been developed with good correlation between the various rating scales which suggests firstly that they measure the same or similar underlying constructs of the alliance and secondly, all have similar predictive accuracy (Martin et al., 2000). Guided by the pan-theoretical definition of the alliance, Horvath and colleagues developed the Working Alliance Inventory (WAI: Horvath & Greenberg, 1989) that is one of the most researched and reliable measures of the therapeutic alliance and outcomes. The WAI measures a bond, an agreement on goals and the tasks required to achieve these goals in therapy. The WAI is a 36-item self-report measure rated on a 7-point Lickert scale. Another frequently used alliance measure with good predictive accuracy is the Pennsylvania (Penn) scales which rates the patient's perception of the therapist as supportive, as well as a rating of the collaborative relationship between therapist and patient (Martin et al., 2000). Horvath and Luborsky (1993) posit that what is essentially measured by these alliance scales is an attachment bond between therapist and patient and an invested and collaborative relationship to achieve desired outcomes.

Two significant meta-analyses, by Horvath and Symonds (1991) and Martin et al. (2000), provide persuasive evidence of this moderate but consistent association (r =.26 and r = .22) between the alliance and therapeutic outcomes in psychotherapy research. A more recent meta-analysis by Bernecker and colleagues (2014) consolidated the view of the alliance as the most significant predictor of therapeutic gains and behaviour change in psychotherapy research. In their review, Martin and colleagues (2000:446) reiterate as did Bordin (1979), that it is the strength of the alliance rather than the kind of therapy that predicts psychotherapeutic outcome. Furthermore, these reviews yielded additional facts, one of which was that patients tend to rate the alliance more consistently than their therapists. This could be explained as a methodological limitation since most of the scales are validated from the patient's subjective perspective whereas, a therapist's rating of the alliance would be informed by a more theoretical perspective (Horvath, 2001). These measures prompted numerous alliance-outcome studies that have over the past few decades established the therapeutic alliance as a

significant predictor of therapeutic outcomes across many clinical contexts (Horvath & Luborsky, 1993; Martin et al., 2000; McCabe & Priebe, 2004; Meissner, 2007).

2.6 Factors influencing the alliance-outcome measures

That the alliance is related to therapeutic outcome has been firmly established in psychiatric literature, and treatment-outcome studies have demonstrated that a significant percentage of the variance in these studies is attributed to the therapeutic alliance (Horvath & Luborsky, 1993; Martin et al., 2000; Meissner, 2007). Following from this, researchers have examined the various factors that influence the alliance-outcome relationship across clinical frameworks, time frames and patient characteristics (Horvath & Luborsky, 1993; Meissner, 2007). Findings remained positive across treatment modalities (psychodynamic, cognitive therapy, family therapy), treatment duration (short- and long-term therapies), settings (inpatient, community) and psychopathology (depression, psychosis, substance misuse) as well as treatment adherence. For example, a positive association has been found, among others, between the alliance and improved outcomes in depression (Krupnick et al., 1996), addictive disorders (Luborsky et al., 1985) and psychosis (Frank & Gunderson, 1990). However, according to Meissner (2007:246), in all these contexts, the various components of the alliance are more than likely expressed and emphasised differentially to accommodate the therapeutic frame and outcomes required. It has been argued in the literature that the curative effect of the alliance may in fact be explained by the temporal progression of therapy; however, this has been disputed by further studies which show that the quality and outcome of the relationship is not a direct function of time (Horvath & Symonds, 1991). In fact, the quality of the relationship and outcomes appears to be curvilinear and represent fluctuations in the alliance that Safran et al. (2001) refer to as failures or ruptures in the alliance. These rupture-repair cycles manifest when maladaptive patterns are challenged in the therapy process or when patients develop negative feelings about the therapy or the treatment relationship and which, unless skilfully repaired, may weaken the alliance (Horvath, 2001; Safran et al., 2001). This implies that the practitioner must be vigilant in monitoring these subtle or overt changes in the alliance that could signal potential behavioural or interpersonal difficulties in the patient.

The impact of personal and clinical characteristics of patients on the alliance has been varied. The McCabe and Priebe (2004) review shows that older age influenced the alliance positively in those with serious mental illness, and better alliances were achieved with less severe symptoms and at discharge and 3-month follow up from hospital. Similarly, systematic reviews by Meier and colleagues in 2005 showed that older age and less severe symptoms predicted better alliances in severe mental illness, whereas in substance users, general demographic data including age, marital and employment status were unrelated to the alliance (Barrowclough et al., 2010). Barrowclough and colleagues similarly found substance use and psychosis to have a negligible impact on the alliance with poor insight being the better predictor of outcome. Further reviews suggest that successful relationship histories, a secure

attachment style and good social support are associated with stronger therapeutic relationships, while the influence of personality pathology including psychopathy, showed inconsistent results across these studies (Ross et al., 2008; Barrowclough et al., 2010). There is consensus however that personality-disordered patients challenge the establishment and maintenance of the therapeutic relationship particularly those patients with cluster A and cluster B disorders (Ross et al., 2008; Adshead & Sarkar, 2012; Gask, Evans & Kessler, 2013).

2.7 Factors influencing the offender alliance outcome measures

Literature purports that the therapeutic relationship is a reliable predictor of therapeutic outcomes even in mainstream psychiatric settings and that its measures have acceptable psychometric properties in these contexts (McCabe & Priebe, 2004:121). For example, a seminal study of psychiatric patients by Beauford et al. (1997) found that a poor alliance at admission to hospital predicted violent behaviour in the first week. However, despite an extensive literature base on alliance-outcome measures, very few studies have examined the relationship between the alliance and outcomes for violent offenders. Polaschek and colleagues (2010) demonstrated a relationship between the alliance and outcomes in the offender literature where the WAI correlated with client motivation, attitude and psychopathy. However, some of these assumptions have been critiqued by several authors in the offender literature who perceive the alliance to be substantially influenced by many additional factors peculiar to the forensic setting such as the dual nature or agency of the treatment relationship in which control is emphasised (Ross et al., 2008; Kozar & Day, 2012; Manchak et al., 2014). In many instances, involuntary or mandated treatment contexts impose greater demands on the relationship especially where alliances are initiated and maintained by the practitioner, and where security risk has to be considered. Patients are often coerced into treatment, thereby potentially rendering them poorly engaged in changing their behaviour or refusing to accept that they have a mental illness (McCabe & Priebe, 2004:124; Skeem et al., 2007; Kennealy et al., 2012; Kozar & Day, 2012). However, despite the unique constraints of a mandated treatment relationship, trusting, functional alliances can be established in these settings that influence clinical as well as offending behaviour (Skeem et al., 2007; Manchak et al., 2014). Treatment delivery mediated by procedural justice is thought to be key to establishing strong therapeutic relationships in the offender setting (Skeem et al., 2007; Manchak et al., 2014). Procedural justice is a construct that is premised on an individual's compliance with authority when they perceive they are treated with respect and concern and have some degree of autonomy and agency. Researchers and practitioners have also queried the appropriateness of transposing alliance measures to correctional environments and advise caution in interpreting results of studies that have used measures not developed for use in the forensic context (Kozar & Day, 2012). Measures like the Working Alliance Inventory (WAI: Horvath &Greenberg, 1989) used in the majority of alliance studies, do not capture the control element inherent in mandated treatment

relationships. Following from this, Skeem and colleagues (2007) developed the Dual-role Relationship Inventory-Revised (DRI-R) tool to address this deficit in the probationer mental health field. The DRI-R relates to relationship satisfaction, within-session behaviour, treatment motivation and rule compliance (Skeem et al., 2007). These authors have demonstrated that the dual-role relationship measure reflects the dual agency of specialty supervisors and assesses the domains of both affiliation (care and bond) and control (behaviour monitoring and influence) (Manchak, Kennealy & Skeem, 2014:65; Manchak, Skeem & Rook, 2014). The DRI-R has been validated for general and specialty (psychiatric) offender populations and findings indicate an association between stronger relationship quality and better compliance, less resistance and more motivation (Manchak, Kennealy & Skeem, 2014). Strong alliances were also characterised by higher affiliation (Fair/care and Trust) and lower control (Toughness). The Toughness subscale represents authority and control however, punitive control is associated with reduced affiliative elements of caring, fairness and trust in the therapeutic relationship. Importantly, the quality of these dual role relationships affects criminal outcomes including risk of offending behaviour (Kennealy, et al., 2012). Despite the dual-agency of these therapeutic relationships, according to Manchak, Skeem and Rook (2014:53), these alliances remain largely affiliative that is, appropriate application of control does not come at the expense of decreased affiliation.

Studies examining the alliance in offender rehabilitation have been inconsistent and vague according to Kozar and Day (2012), which may be due to several factors such as the treatment perspective and the complex interaction of internal and external patient and practitioner variables that encroach on the treatment relationship (Ross et al., 2008; Kozar & Day, 2012). However, Kozar and Day (2012:482) acknowledge that despite evidence being inconclusive regarding the effects of 'therapeutic alliance on violent offender treatment', there is consensus that robust therapeutic relationships with violent offenders may enhance treatment outcomes and other clinical benefits in offender treatment programmes. Ross and colleagues (2008) proposed a revised model of the therapeutic alliance (Revised Theory of the Therapeutic Alliance: RTTA) to account for the complex interaction of variables in offender rehabilitation. These authors concur that attention to the alliance in offender treatment programmes represents good practice and that practitioners should be familiar with the alliance both as a process and as a dynamic construct that influences treatment outcomes. In this regard, these authors recommend that practitioners acquire requisite skills to develop robust alliances with their patients (Ross et al., 2008; Kozar & Day, 2012; MacInnes et al., 2014). According to Haque and Webster (2013), the alliance is construed as both a primary cause of therapeutic change and, a mode to effect change. Whether these findings translate to forensic patients in secure forensic settings is yet to be determined in the present study.

2.8 Therapeutic alliance and attachment – an introduction

Bernecker, Levy and Ellison (2014) reflect on the causal pathways underlying the alliance and therapeutic change which remain tenuous and open to debate. Three potential causal pathways are proposed by these authors. The therapeutic relationship may facilitate behaviour change by establishing a therapeutic environment of trust and a bond that encourages disclosure and a willingness to engage in treatment that is, a necessary but not sufficient condition for change to occur; or the therapeutic relationship is directly curative in and of itself that is, it directly brings about behaviour change by providing the patient with more adaptive strategies, insight and improved interpersonal skills. A third perspective is that prior to measuring the alliance, change has already occurred that enhances both outcome and perception of the alliance without it actively bringing about change itself (McCabe & Priebe, 2004:125; Kozar & Day, 2012:483; Bernecker et al., 2014:13). Most theorists concur that the relationship is complex and potentially inclusive of all these possibilities and furthermore agree that determining the sources of variance in the alliance is critical in attempting to understand how the alliance develops so that it can be enhanced to improve treatment outcomes (Ross et al., 2008). There is now substantial evidence to suggest that the quality of therapeutic relationships is a key predictor of outcomes across a range of different settings (McCabe & Priebe, 2004).

Among the many factors outlined earlier that impact on the alliance, adult attachment style has received significant attention in the literature (Shaver & Mikulincer, 2005). Attachment is defined as the significant bond between caregiver and infant that provides a secure base for exploration and regulation of anxiety in the developing infant. Mental representations (cognitive and affective schemas) or internal working models (IWM) of these early attachment experiences evolve into adult attachment styles that are considered to mediate future adult interactions and interpersonal relationships (Bowlby, 1977, 1988; Ainsworth et al., 1978). This premise extends to the treatment context in which early attachment experiences are thought to influence the therapeutic alliance between the patient and practitioner (Fonagy, 1998; Adshead, 1998, 2001, 2004; Bernecker et al., 2014). Furthermore, the role of the practitioner in facilitating the development of secure attachments has been well documented in the literature (Adshead, 1998, 2004; Blackburn et al., 2010).

2.9 Attachment theory

Extensive literature supports the concept of a link between ‘good enough’ care in childhood and the development of a secure, independent and autonomous self in adulthood (Bowlby, 1977, 1988; Shaver & Mikulincer, 2005; Adshead, 2015). Bowlby (1977, 1988) and Ainsworth et al. (1978) drew on cognitive psychology, ethology and psychodynamic principles in explicating a theory of childhood development, emotional bonding and affect regulation. Bowlby (1971, 1975, 1985) argued that human beings are social animals who seek relationships not only for survival but also for emotional security.

Attachment behaviours are therefore driven by a need to attain and maintain proximity to an attachment figure through searching, calling, crying, following and clinging especially in times of distress, until the anxiety is assuaged or modulated by the caregiver. Healthy attachment experiences in childhood lay the foundation for the development of secure internal working models of relationships that give rise to secure self-reliant, trusting and cooperative adults. This can best be described theoretically as having developed a strong ego, showing basic trust, exhibiting mature defences or having positive mental representations (Bowlby, 1977). The child's sense of self and agency develops optimally in the context of 'trust in the person who has the child's mind in mind' (Fonagy & Target, 2006:568). What this suggests is that the child's anxieties are made tolerable through the mental processes of the adult and becomes aware of his own mind by observing the thoughts, beliefs, desires and emotions in others (Adshead, 2008; Yakeley & Adshead, 2013). In this way, the child develops an understanding of its own mind and is able to interpret and respond to the mental states of others. In other words, he develops a theory of mind that includes the capacity for empathy, that is, to be able to understand and feel what someone else feels or thinks. According to Yakeley and Adshead (2013:42), 'If he does not see others as thinking beings at all, he will not feel empathy with them'. This capacity for mentalisation translates into a host of associated meta-cognitive capacities such as a theory of mind, reflective functioning, the regulation of affect and arousal as well as a capacity for empathy (Adshead, 1998; Fonagy, 1998, 2004; Fonagy & Target, 1997, 2006; Frodi et al., 2001).

Failed attachments caused by mis-attunement and inadequate responsiveness from the environment, or at worst, rejection and childhood trauma, can lead to pervasive insecurity and mistrust in the environment as a safe, predictable and reliable place (Bowlby 1977,1988; Adshead, 1998, 2008, 2015). The insecurely attached child employs secondary strategies to alleviate anxiety and gain proximity to the attachment figure (Shaver & Mikulincer, 2005; Ma, 2006). These hyperactivating and deactivating strategies become rigid defences in adulthood that Adshead (1998, 2001, 2004) refers to as 'toxic' behavioural strategies that are repetitive, compulsive and provide brief respite from anxiety. These strategies often fail to elicit care in appropriate ways and compromise realistic appraisals of future interactions with others, which in turn reinforce insecure cognitive schemas. These attachment-related experiences in childhood provide the template for the development of personality and interpersonal relationships and in some instances, account for the development of psychopathology and offending behaviour in adults (Bowlby, 1977, 1988; Adshead, 1998, 2004; Fonagy, 2004; Ma, 2006, 2007; Adshead, Moore et al., 2013).

Following on from this in the literature, insecurity of attachment is thought to be closely associated with the treatment relationship and that a patient's early relational experiences (attachment style) forms a significant constituent of the therapeutic relationship (Horvath & Luborsky, 1993; Horvath, 2001) and, is argued to influence the alliance (Adshead, 1998; Dozier et al., 2001; Daniel, 2006).

Furthermore, Bowlby (1977, 1988) was of the opinion that attachment representations were activated during therapy and that insecure attachment could be modified by the practitioner by providing a secure base and containment of intense affect (Horvath & Luborsky, 1993:561; Adshead, 1998; Shaver & Mikulincer, 2010; Smith, Msetfi & Golding, 2010). Furthermore, it is also argued that patient and staff attachment histories interact to influence the therapeutic relationship (Berry, Shah et al., 2008). In contrast, many theorists perceive attachment to be an important but separate construct from the alliance that may or may not influence the alliance and outcome (Bernecker et al., 2014).

2.10 Attachment styles

It is argued that help-seeking behaviour of patients is influenced by their early attachment experiences (Bowlby, 1977; Fonagy, 1998; Dozier et al., 2001). An attachment style is the expression of early cognitive, affective and behavioural experiences of individuals that shape their perception of self, others and interpersonal relationships in the world (Pfafflin & Adshead, 2004; Ma, 2006).

Ainsworth et al. (1978) defined the various ways that individuals attach in intimate relationships. They extended Bowlby's theory of attachment by documenting different attachment styles of infants in the famous Strange Situation Test (SST: Ainsworth et al., 1978). These authors experimentally elicited different behavioural strategies from infants who were briefly separated from their caregivers. Infants classified as secure, although distressed by the separation, quickly sought proximity to the caregiver before returning to explore and play. Avoidant infants showed an apparent lack of distress at separation and tended to ignore the returning caregiver, whereas anxiously attached infants displayed considerable distress at separation as well as anger and neediness when reunited with the caregiver. It is thought that avoidant children develop into adults with a dismissing attachment style and ambivalent children have preoccupied or enmeshed adult attachment styles (Fonagy, 1998).

Adult attachment measures that developed from these earlier studies, including the Adult Attachment Interview (AAI: George, Kaplan, & Main, 1984), confirmed the relative stability of attachment styles across the lifespan. However, the AAI is not amenable to research on large samples as it is time-consuming to administer and requires extensive training to interpret. Self-report measures became popular because they were simple and quick to administer (e.g. Relationship Questionnaire: Bartholomew & Horowitz, 1991). Categories of insecure attachment styles were eventually replaced by a dimensional measure of attachment-related anxiety and attachment-related avoidance that reflect the ways in which people behave in relationships (Fraley, Waller & Brennan, 2000). Individuals with an avoidant attachment style do not easily rely on others and, because they fear rejection, tend to suppress attachment needs. The anxiety dimension reflects the extent to which individuals also fear rejection but who counteract this by demanding intimacy and attention to maintain proximity to the other (Shaver & Mikulincer, 2005; Fraley et al., 2011). The dimensional approach still allows for

classification of adults into the categorical attachment styles. For example, low scores on both dimensions are indicative of a secure attachment style (Smith et al., 2010).

These attachment characteristics are thought to influence how patients behave in therapy and the scores computed on these dimensions are regarded as an indication of the patient's level of attachment security. Insecurity of attachment has been shown to be associated with greater interpersonal difficulties as well problematic therapeutic relationships (Berry et al., 2008). Patients who are anxious in attachment relationships may become preoccupied with, or overly dependent on the practitioner to alleviate distress. Often their self-worth depends on a need to gain approval from others and they may perceive staff as rejecting when they are not able to meet their needs immediately. Patients who are avoidant in attachment relationships fear becoming overly dependent on the practitioner which escalates their anxiety. These patients may dismiss the importance of close relationships, may deny feelings of distress and may not engage in potentially helpful therapeutic relationships (Blackburn et al., 2010; Smith et al., 2010). What insecurely attached patients have in common is a lack of trust in the therapeutic relationship.

Attachment theory and the development of numerous attachment measures have contributed significantly to research in this area. Reviews from correlational studies between the alliance and insecure attachment dimensions have however been inconsistent with only moderate to negligible negative associations between the alliance and attachment dimensions (Horvath 2001; Goldman & Anderson, 2007; Ma, 2007; Bernecker et al., 2014). One explanation for these inconsistencies according to Horvath and Luborsky (1993:567), is that the strength of the therapeutic alliance is 'influenced but not determined by early relationship experiences'. Furthermore, according to Adshead (2015), an insecure attachment style may constitute only one of many risk factors for psychopathology. However, literature has shown that a high proportion of people with mental health problems have been found to have an insecure attachment style which suggests that insecure attachment could be a significant factor in the aetiology of psychiatric disorders such as schizophrenia and mood disorders (Dozier, 1990; Blackburn et al., 2010) as well as personality pathology which is characterised by severe relational difficulties (Sarkar & Adshead, 2006; Adshead & Sarkar, 2012). Furthermore, according to Sarkar and Adshead (2006), insecure attachment and personality pathology share the common clinical feature of affect and arousal dysregulation which can interfere with the alliance and influence clinical outcomes negatively (Adshead & Sarkar, 2012).

2.11 Attachment and violence risk

Insecure attachments are over-represented in adult clinical populations in general, and in forensic populations in particular, and have become associated with serious psychiatric illnesses such as schizophrenia, bipolar mood disorder, personality pathology as well as with violence and offending

behaviour (Adshead, 2004; Fonagy, 2004). Yakeley and Adshead (2013:38) refer to 'security of the mind' in their conceptualisation of risk assessment and are strong proponents of a psychodynamic framework to understand violence and to inform risk assessment and treatment in forensic practice.

Forensic patients have difficult interpersonal relationships in general and therapeutic relationships in particular for a number of reasons that can be explained psychodynamically. Disturbed attachment histories and early exposure to violence may curtail the development of mentalising ability (Adshead, 2008). Deficits in mentalising and affect regulation are associated with cognitive bias and an increased propensity for acting out behaviours including violence (Fonagy, 1998, 2004; Yakeley & Adshead, 2013). According to these authors, there is usually some meaning to violence even if driven by psychotic symptoms that is often disregarded in risk assessment and, without which any risk assessment is rendered incomplete at best and superficial at most (Welldon & Van Velsen, 1997; Yakeley & Adshead, 2013). To this end, Adshead (1998:65) questions whether attachment-based research could provide the 'empirical basis for Freud's concept of repetition compulsion as a means of mastering trauma'.

It has been proposed by practitioners and researchers alike that an understanding of how therapeutic relationships are influenced by attachment behaviour within forensic settings may offer a new perspective on the management and assessment of risk (Adshead, 2001, 2004; Berry & Drake, 2010). The forensic system provides long term psychiatric care to difficult often treatment resistant and potentially violent patients that have been rejected by society and by their families. In many instances, the forensic facility is the only stable and secure environment they have experienced and the mental health professionals who treat them are the only consistent attachment figures in their lives (Schuengel & van Ijzendoorn, 2001; Adshead, 2004). Simultaneously, forensic patients perceive their stay in secure units as unjust and coercive preventing them from leading an ordinary existence outside, coupled with therapeutic relationships that impose limits and control that may evoke re-enactment of attachment behaviours that escalate anxiety rather than contain it (Adshead, 2004, 2008). The literature suggests that violent behaviour is often directed at attachment figures for several reasons, one of which being that family members similarly set limits and attempt to control unreasonable behaviour by the patient. Adshead (2001:328) suggests that, 'attachment histories are relevant to admission and progress through institutions', which in turn has significant bearing on establishing treatment alliances. The literature review also describes aspects of dynamic risk factors that are relational and even psychodynamic in nature. Fonagy and colleagues (1997) are strong proponents of the link between impaired reflective functioning and violence and studies have demonstrated that reflective functioning in forensic patients is significantly lower than in the general population, which by implication places these patients at high risk for antisocial and potentially violent behaviour (Fonagy, 1998). These authors propose that harmful early environmental experiences interact with genetic vulnerabilities in the child to increase the risk of dysfunctional and often violent behaviour in

adults (Adshead, 1998, 2008; Fonagy, 2004). These assertions have significant relevance to the treatment of mental illness and violence risk in a forensic population.

Douglas and Skeem (2005) also identify the role of interpersonal relationships and importantly therapeutic alliances as particularly relevant to risk assessment. Supportive interpersonal relationships and strong alliances have been shown to predict positive therapeutic gains as well as offending outcomes in which treatment relationships are construed as 'proximate' risk factors for violence (Beauford et al., 1997; Douglas & Skeem, 2005; Skeem et al., 2007; Yakeley & Adshead, 2013).

Attachment theory may well offer insights into therapeutic relationships based on an assumption that modifying insecure attachment may achieve behaviour change (Adshead, 1998). It is argued that patients become more secure in their attachment as they progress over time through the secure facility and that the therapeutic environment and secure nature of the environment acts as a secure base that can ameliorate insecure attachment (Adshead, 1998, 2004; Berry & Drake, 2010). A practitioner may act as an attachment figure for the patient to regulate intense affect and so reduce the manifestation of primitive and psychotic defences and inhibit the potential for violence. Importantly, integrating psychodynamic (psychological) and criminological theories to better understand and manage potential violence risk may be a critical but overlooked component in risk assessment research (Welldon & Van Velsen, 1997; Douglas & Skeem, 2005; Adshead, 2014). Further research investigating the therapeutic alliance as a potential measure of risk may adequately address these considerations.

2.12 Personality and psychopathology

Personality is a construct that encompasses an individual's constellation of behaviour, thoughts and feelings and his or her interaction with the world and others (Adshead & Sarkar, 2012). Personality is a term derived from the Greek word 'persona' which means mask and includes the concept of self and identity. There are numerous theories of personality that include Freud's theory of innate drives and defences against anxiety and its effect on the expression of adult personality. Later theorists such as Bowlby (1988) emphasised the importance of the interaction between the child's innate features and the environment in the development of normal personality functioning. It is generally regarded that personality is derived from a combination of inheritable factors (temperament) and early external social influences. Temperament can be seen in children from an early age, but personality refers to the patterns of cognition, affect and actions that are flexible and differ in different social situations (Gask, Evans & Kessler, 2013). As such, personality has a regulatory function that includes the regulation of arousal, impulsivity and emotions and assists the individual to self-modulate and self-soothe in times of stress. The personality has an integral role in maintaining a coherent and integrated sense of self and reality testing (Adshead & Sarkar, 2012).

Personality disorders are prevalent comorbidities in serious mental illness and like schizophrenia and affective disorders, can be described as the 'social manifestations of a pathological process' and which, 'cause disturbances in arousal, affect and reality testing that have an impact on interpersonal and social functioning' (Adshead & Sarkar, 2012:3). Epidemiological studies show that 4-12% of the adult population have a formal diagnosis of personality disorder with prevalence data similar worldwide (Gask, Evans & Kessler, 2013). Furthermore, no significant consistent differences have been found worldwide (Huang et al., 2009) and it is posited that if milder degrees of personality pathology were taken into account, the percentage would increase considerably. Individuals with personality disorders usually present with comorbidities that include severe interpersonal difficulties as well as psychiatric diagnoses and substance misuse and are frequent presentations to psychiatric services. They are regarded as more difficult to treat and may have a history of violence, and tend to have worse mental health outcomes. According to Gask, Evans and Kessler (2013) their relationships with mental health professionals may also be impacted negatively. In forensic services, and in prisons in particular, the prevalence of personality disorder is as high as 70% (Adshead & Sarkar, 2012), and a systematic review by Yu and colleagues (2012) demonstrated an association between personality pathology and violence.

2.13 Personality disorders

The ICD-10 (World Health Organisation; 1992) and the DSM-IV (American Psychiatric Association, 2000) are diagnostic systems that broadly define personality disorders as discrete categories comprising pervasive and enduring patterns of perceiving, relating and thinking about the world and the self that is rigid or inflexible (Gask, Evans & Kessler, 2013:28) and which originate in early development and lead to clinically significant distress or impairment in adulthood (Adshead & Sarkar, 2012). There are various criticisms of the categorical approach to personality abnormality because these systems do not address a primary aspect of personality pathology which is social interaction with the world (Adshead & Sarkar, 2012). There is also considerable overlap across categories and furthermore, personality disorder is considered to 'reflect abnormal functioning of normal dimensions at different times and in different settings' (Adshead & Sarkar, 2013:6). A dimensional approach may better describe the interpersonal sequelae of personality disorders along a continuum of severity as reflected in DSM-5 (Gask, Evans & Kessler, 2013). According to Yang et al. (2010), individuals with personality pathology may present with degrees of severity and become more or less disordered dependent on the context and furthermore may manifest pathology for a discrete period and then recover. This argument relates to the premise posited in Adshead and Sarkar (2012) that personality disorder may be acquired through environmental stressors and is therefore likened to pathology and not an inherent feature of the person.

In general, individuals with personality pathology have a limited range of coping skills and manifest repeated inflexible behaviours that are socially rejecting and self-destructive or result in social exclusion or withdrawal (Yang et al., 2010; Gask, Evans & Kessler, 2013). Prominent features of disturbed personality include negative affect such as anxiety, irritability, low mood, rage, intense distress and fear of abandonment. The DSM-IV system has defined three distinct categories of personality abnormality as clusters A, B and C. Individuals with cluster A disorders are defined as odd and eccentric (schizoid, paranoid, schizotypal) and have a tendency to disengage socially. Cluster C is defined as fearful and anxious (avoidant, dependent, obsessive-compulsive) and those with Cluster B disorders are defined broadly as dramatic and flamboyant (antisocial, borderline, narcissistic, histrionic) and a common feature of this cluster is ambivalence between dependency, fear of abandonment and subsequent withdrawal from others (Craig, 2002; Millon et al., 2009; Adshead & Sarkar, 2012). The extreme end of personality pathology could be determined as the degree of disorganisation such as impaired reality testing (psychosis), cognitive distortions, dissociation and harm to self and others (Adshead & Sarkar, 2012).

As stated earlier, in forensic services and prisons the prevalence of personality disorder is much higher than in the general population (Adshead & Sarkar, 2012). In one study, 40% of patients with a psychiatric disorder fulfilled criteria for at least one personality disorder (Newton-Howes et al., 2010), and according to Duggan et al. (2007), in forensic treatment settings, comorbidity is very high with psychiatric disorders and substance misuse, and most patients manifest the criteria for several personality disorders. Prevalence rates of between 60% and 80% have been described in European forensic psychiatric samples (Hildebrand & de Ruiter, 2004), with paranoid, antisocial, borderline and narcissistic pathology being the most common (Coid, 1992; Adshead & Sarkar, 2012). According to Adshead and Sarkar (2012), individuals in cluster B tend to display degrees of violence and rule-breaking, and those who display predatory violence and lack of empathy particularly have been defined as psychopathic (Cleckley, 1976). The dangerous and severe personality disorders in the UK include patients who are violent and meet the criteria for several personality disorders, a positive score on the psychopathy checklist and a functional link between the disorder and violence. However, these authors recommend caution in over-generalising personality pathology based purely on prevalence data in certain settings and populations that due to selection bias can be misleading (Coid, 1992; Adshead & Sarkar, 2012).

2.14 Personality pathology as a proxy for insecure attachment

Patients with personality pathology are generally regarded as problematic patients in mental health services particularly forensic services, because of antisocial behaviour, chronic and severe psychological and psychiatric problems and substance misuse (Sarkar & Adshead 2006; Adshead & Sarkar, 2012). These comorbid behavioural and psychological symptoms create interpersonal

difficulties that can often influence the therapeutic relationship with mental health professionals negatively. There is evidence that help-seeking behaviours including engaging in and adherence to therapy are influenced by attachment experiences in childhood (Dozier, et al., 2001). This suggests a link between personality disorder and attachment history. Those in cluster A and C and the more antisocial patients may rebuff help or even denigrate practitioners and therapy. Patients with dependent personality disorders commonly form submissive and dependent relationships with practitioners; by contrast, cluster B patients with borderline personality pathology have highly ambivalent attachment patterns and alternate between idealising and devaluing their therapists. Adshead and Sarkar (2006, 2012) suggest that a defining feature of personality pathology is a failure of affect regulation which, as mentioned earlier in the literature review, is also a prominent feature of insecure attachment and that essentially all therapeutic interventions in mental health seek to regulate affect (Sarkar & Adshead 2006; Adshead & Sarkar 2012).

Genetic studies indicate that personality disorders are strongly heritable; however, childhood adversity and environmental stressors contribute significantly to the development of personality pathology as well as psychiatric morbidity and substance misuse (Adshead & Sarkar, 2012). There are three approaches to understanding the aetiology of personality pathology. There are theories that define personality pathology as arising from a reliance on immature childhood patterns of behaving, thinking and feeling. This can also be understood as an over-reliance on a set of immature defences to regulate distress. These conscious and unconscious aspects of the personality develop in childhood as a set of psychological mechanisms that are mediated through memory, to alleviate anxiety. Defences are used continuously throughout life and everyone uses a mixture of mature, neurotic and immature defences. Optimal functioning is associated with mature defences and minimal use of immature defences. In times of stress, however, most healthy people use immature defences but return to using mature defences when the stress has abated. Those with personality disorders tend to rely almost exclusively on immature defences and may either reject help when they need it most or escalate their demands for attention. Professionals should be cognisant of these features of a personality disorder which are often perceived as manipulation by mental health professionals (Adshead & Sarkar, 2012).

An alternative theory suggests that toxic environments in childhood give rise to personality pathology by altering the developing cyto-architecture of the autonomic nervous system, limbic system, amygdala and the right orbitofrontal cortex. Schore (2001), one of the major proponents of this view of personality disturbance, posited that the infant's relationship with the caregiver has a direct effect on the development of brain structures and pathways involved in affect regulation. A distressed infant will experience high arousal levels but cannot as yet self-regulate the sympathetic nervous system and so requires an attachment object to respond sensitively to changes in homeostasis of the autonomic nervous system. When distressed, the infant experiences the effects of noradrenaline for the flight or fight response which are uncomfortable and include rapid heart and pulse rate and increased blood

pressure. The amygdala is activated by these negative events (fear/threat) leading to enhanced learning of fear and stress cues, both external (loud voice, pain) and internal (rapid heartbeat, dryness of mouth). When soothed by the attachment object, the parasympathetic system is activated and restores homeostasis. Infants who have experienced mis-attunement or poor responsivity or even neglect from the attachment object are at risk of developing dysregulated and disorganised affective systems. Insecure attachment therefore probably disrupts the development of a proper affect regulatory capacity, the sequelae of which includes a heightened sensitivity to perceived threat and pervasive mistrust of others which are common features of a personality disorder. This is compounded by an inability to repair the emotional states stimulated by perceived threat or fear and this impairment in affect regulation particularly within dependency relationships increases the chance of responding with unregulated hostility or anger. This has particular significance in therapeutic relationships in which disparities in power may elicit vulnerability that may feel threatening (Sarkar & Adshead, 2006; Adshead & Sarkar, 2012).

Fonagy and colleagues (1997) similarly view early childhood adversity, especially neglect, as a risk factor for the development of personality disorders. Insecurely attached children grow up into insecurely attached adults and it has been postulated that because insecure attachment in adulthood resembles the signs and symptoms of personality disorder, an insecure attachment style should be seen as a dimension of personality disorder (Livesley, 1998; Sarkar & Adshead, 2006). Furthermore, many studies suggest that personality pathology is characterised by a preponderance of insecure attachment more so than in the general population. For example, borderline pathology is associated with a preoccupied attachment style characterised by ambivalence and those with antisocial personality disorder show a more dismissing attachment style in which attachment to others is minimised (Pfafflin & Adshead, 2004; Adshead & Sarkar, 2012).

The patterns of insecure attachment found in forensic populations are different from those found in other clinical populations. Most studies of attachment in clinical populations found a preponderance of enmeshed/preoccupied attachment styles whereas in forensic populations attachment styles are predominantly of the dismissing attachment type (Adshead, 2004:52). This is a pattern of thinking about attachment relationships in which neediness and vulnerability are denied or derogated and may be relevant to the commission of violence. Similarly, Rosenstein and Horowitz (1996) demonstrated an association between dismissing attachment and antisocial personality disorder whereas preoccupied attachment was associated more with internalising disorders such as depression. Fonagy et al. (1997) studied 22 prisoners with psychiatric disorders and found a preponderance of dismissing attachment styles in this population, with a comorbid history of childhood abuse in 82% of the sample. Frodi et al. (2001) found that 64% of psychopaths had a dismissive attachment style. Higher psychopathy scores were also associated with more violent offences, more convictions, more foster home placements and higher incidence of physical abuse experienced in childhood. Van Ijzendoorn et al. (1997) studied 40

violent male offenders in a forensic institution and found an over-representation of insecure attachment styles. They found no clear link between attachment classification and specific DSM-IV diagnoses in part due to the very high degree of comorbidity that is, as many as 64 personality disorder diagnoses in only 22 subjects. These studies demonstrated a distinct absence of secure attachment among personality disordered offenders and a preponderance of dismissing attachments styles. Other attachment styles do not appear to be prevalent in these settings which may be an artefact of measurement or may reflect that attachment is being measured in a setting where people are both fearful and defensive and reluctant to reveal any vulnerability. There is now a considerable evidence base of studies that show higher levels of insecure attachment in violent offenders compared with community norms (Pfafflin & Adshead, 2004). In the general population, insecurity of attachment is found in 40% of the population but in forensic settings this is closer to 60–70% (Frodi et al., 2001; Adshead, 2004). This level of insecure attachment is unsurprising given the extreme levels of childhood adversity and trauma in forensic populations, both in prison and in forensic psychiatric settings. Abuse and neglect are typically reported in 30% of most general populations internationally but rates of 60–70% are the norm in forensic settings (Coid, 1992). Offenders in prison or in forensic secure care are more likely to have been separated from their parents who severely maltreated or neglected them than their non-offending counterparts in the community.

The evidence that insecure attachment alone is a highly influential risk factor for violence is somewhat limited and only a minority of people with personality disorder including antisocial personality, are violent to others. Insecurity of attachment may constitute a risk factor for violence in certain circumstances or under certain conditions (Adshead, 2004).

2.15 Psychopathy as severe personality pathology

According to (Skeem, Polaschek et al., 2011) the definition of psychopathy remains a poorly defined disorder. Psychopathy is defined as a personality construct that can be explained by numerous psychological theories including attachment theory, which provides a developmental perspective for its occurrence. The psychopathic personality is regarded as a severe personality disorder and often used to describe someone who is ‘incapable of maintaining a stable, affectionate bond with anyone’ (Bowlby, 1977:208). Meloy (1997:67) cites a lack of a capacity to form an attachment as ‘one of the cornerstones of psychopathic personality’ and describes psychopathy as ‘a disorder of profound detachment’ from which ‘emerges a heightened risk of violence’. In general, severe personality pathology including psychopathy is thought to arise from the interaction between a hostile environment and a ‘genetic’ predisposition or ‘vulnerability’ to produce increased risk of offending behaviour (Adshead, 2008:573). Cleckley (1976), a pioneer in this field, described psychopaths as charming, manipulative and quick to take advantage of others. These patients, however, seemed to lack insight and expressed little or no empathy for others; their lives were often impersonal and devoid

of meaningful intimacy. Although psychopathy and antisocial personality disorder share similar antisocial behavioural traits, the psychopathic personality includes traits of grandiosity, egocentricity, a lack of empathy or remorse, and superficial affect that are not necessarily prevalent in an antisocial personality (Babiak & Hare, 2006; Hare & Neumann, 2009). Psychopathy is regarded as one of the strongest risk factors for antisocial and violent behaviour and studies have shown a robust relationship between psychopathy and violence in offender and forensic populations (Skeem & Mulvey, 2001; Hare & Neumann, 2009; Yang et al., 2010). At least a quarter of forensic patients are estimated to have a psychopathic personality disorder (Doyle et al., 2002; Hart et al., 1995; Hildebrand & de Ruiter, 2004; Doyle & Dolan, 2006) Similar estimates of between 20–30% have been found in offender prison populations (Edens, 2006) but not as prevalent as antisocial personality disorder in offenders of between 50- 80% (Hildebrand & de Ruiter, 2004).

Research into psychopathy and its relation to violence has grown substantially over recent years, encouraged predominantly by the advent of the Psychopathy Checklist (PCL: Hare, 1980) and the subsequent later revised and screening versions (PCL-SV: Hart et al., 1995) of the instrument to measure psychopathy (Meloy, 1997; Skeem & Mulvey, 2001; Edens, 2006). In applied settings, psychopathy is defined as a severe personality disorder reflected in a high score on the PCL-R or PCL-SV. PCL-SV scores are strongly correlated with the PCL-R (weighted r=.8; Hart et al., 1995). Ideally, ratings on each tool are based on information from face-to-face interviews with the offender as well as collateral sources of information such as institutional files (Polaschek & Daly, 2013). The relevance for psychopathy scores in forensic contexts is to identify high risk offenders, however, the magnitude of the relationship between psychopathy and violence has varied between studies (Skeem et al., 2011). There is a dearth of empirical data to determine a cut-off point of PCL scores to differentiate between high and low risk. According to Skeem and colleagues (2011), this is cause for concern when considering psycho-legal decisions about risk for future violence based on these scores. Caution should be exercised in over-valuing or misusing measures such as the Psychopathy Checklist to support risk prediction. Psychopathy like other personality disorders is best understood on a continuum and a categorical approach based on a cut-off score may not be the most prudent method of determining this complex psychological construct (Edens, 2006; Polaschek & Daly, 2013). In the present study, the PCL-SV was used to establish severity rather than diagnose psychopathy. A ubiquitous argument related to all risk measures is the conflation of conclusions and predictions about individuals based on group-level data (Polaschek & Daly, 2013).

2.16 Conduct disorder as a proxy for insecure attachment

An important historical signifier of psychopathy and antisocial personality disorder is childhood onset of a conduct disorder. According to the DSM-IV and DSM-5, the essential features of conduct disorder (CD) are a repetitive and persistent pattern of behaviour in which the basic rights of others or

major age-appropriate societal norms or rules are violated (Murray & Farrington, 2010; Scheepers, Buitelaar & Matthys, 2011). The prevalence of conduct disorder and delinquency peaks in mid-to-late adolescence and shows considerable continuity over time. Delinquency is defined according to acts prohibited by criminal law such as theft, robbery, vandalism, violence and drug use and as such, considered to be symptoms of conduct disorder.

Significant risk factors that predict conduct disorder and delinquency include impulsiveness, low intellectual functioning and poor school achievement and a host of socio-economic factors such as high crime neighbourhoods and inadequate parental supervision. A study in New Zealand found that children who witnessed parental domestic violence were more likely to commit both violent and property offences (Murray & Farrington, 2010). Separation from families of origin is considered a significant stressor coupled with the effects of multiple other stressors including domestic violence, impoverished socio-economic circumstances, which are all contributory factors to the link between childhood factors and antisocial behaviour (Murray & Farrington, 2010). An Ontario study indicated a disproportionate number of children with conduct disorder came from low income families with unemployed parents living in subsidised housing and dependent on welfare benefits (Offord, Alder & Boyle, 1986). It is also considered that antisocial behaviour is intergenerational and that antisocial parents tend to have antisocial children that suggest there are multiple pathways to violence (Murray & Farrington, 2010; Adshead, 2015).

2.17 Pathways to violence and the role of the alliance

According to Daffern and Howells (2002:493), there is a scarcity of reviews considering theoretical pathways to aggression and violence that include multiple factors such as the demographic and dispositional makeup of the person and his situation or context that can contribute to violent behaviour. It is also argued that many of the factors associated with aggression and violence among psychiatric populations are no different from the factors that influence non-psychiatric individuals (Daffern & Howells, 2002). Research has highlighted a range of contextual elements that influence aggression in psychiatric wards and these include boredom and poorly structured ward activities and a ward climate that condones hostile interactions between staff and patients and between patients themselves. Overcrowding is another notable contributor to aggression and violence mediated by stress resulting from overstimulation due to lack of personal space and noise. Inexperienced staff with poor motivation and less skill are also considered to influence aggression in the ward. Staff hostility and belittlement of patients and a lack of respect towards them, influences aggressive behaviour (Beauford et al., 1997; Daffern & Howells, 2002; Skeem et al., 2007; MacInnes et al., 2014).

Additionally, pathways to aggression and violent behaviour of psychiatric patients in the community include active symptomatology rather than the presence of a diagnosis (McNiel & Binder, 1994;

Doyle & Dolan, 2006; Grann, Danesh & Fazel, 2008; Resnick, 2013). Literature suggests that 75% of patients that offend on the outside are actively psychotic at the time of the offence but that of this percentage, only 46% is driven by active symptomatology such as delusions and command hallucinations. In most cases the very same social and psychological motivations for violent behaviour apply to the mentally ill as well as their non-mentally ill counterparts, such as jealousy, revenge and retaliation to perceived provocation (Daffern & Howells, 2002). Experts in attachment research consider violence to be a failure of attachment (Fonagy, 2004; Pfafflin & Adshead, 2004; Adshead et al., 2013).

Insecure states of mind impair the capacity to mentalise (to understand one's own mind and the mind of others), which may translate into the physical expression of emotional arousal such as violence. Forensic institutions are occupied by men who are unable to manage intense distress and who are required to form treatment relationships with staff. According to Adshead (2004:263) it is plausible to 'extend the attachment research paradigm to therapeutic relationships between staff and patients' because as the author further posits, 'we can expect re-enactments of previous attachment relationships with professional carers'. Building trusting therapeutic relationships that provide a secure base for the containment of distress and protection against violence risk becomes integral to secure recovery in forensic settings (de Vries Robbe, de Vogel & de Spa, 2011).

CHAPTER 3 METHOD

3.1 Overview

The study evaluated the therapeutic alliance and its relation to risk of violence in a sample of male psychiatric state patients in a forensic state facility in the Western Cape, South Africa. Violence was broadly defined as any aggressive and/or offending behaviours that cause harm to others. The therapeutic alliance refers to the relationship between the forensic mental health professionals in the MDT and the forensic patients in their care and where risk is defined as the probability that a harmful event will occur (Roychowdhury & Adshead, 2014). It is proposed in this study that the therapeutic relationship is a proxy measure for risk of violence in a forensic setting and as such, it provides an assessment framework that accommodates both risk and recovery in forensic mental health services.

3.2 Objectives and aims

The broad objective of this study was to identify alternative risk measures such as the strength of the therapeutic alliance, to inform risk management and assessment in forensic mental health settings that are in line with the broad aims of risk and recovery.

- Aim 1: To evaluate the therapeutic relationship as a dynamic measure of risk for violent behaviour.
- Aim 2: To identify the dominant attachment style (insecure versus secure) of a forensic population and its association with the therapeutic relationship and violence risk
- Aim 3: To demonstrate an association between the therapeutic alliance and other factors, including intellectual level, and their relationship with risk.

3.3 Hypotheses

The hypotheses underlying this research are as outlined below:

- A strong therapeutic alliance (high scores) as measured by the Dual-role Relationship Inventory-Revised (DRI-R) is associated with low risk (low scores) for violent behaviour as measured by the Historical, Clinical, Risk Management-20 (HCR-20) scale.
- An insecure attachment style as measured by the Experiences in Close Relationships-Relationship Structures questionnaire (ECR-RS) is prevalent in a forensic population.
- There is a significant association between therapeutic relationships and attachment style and its impact on risk behaviour.

- Therapeutic relationship scores are negatively associated with personality pathology, insecure attachment (attachment avoidance and anxiety) and psychosis and these factors are related to increased violence risk potential.

3.4 Methodology

3.4.1 Research design

The study adopted a naturalistic, single group cross-sectional design that examined the association between the strength of the therapeutic relationship, attachment security and risk for violence. A quantitative research method was employed that sampled both inpatients and outpatients. A battery of psychometric instruments was administered and scored, and statistical analyses focussed on correlational indices and model-building.

3.4.2 Study population

The category of patients designated as State Patients in the South African mental health legislation formed the subject of enquiry. The forensic psychiatric facility in the Western Cape hosts only male forensic patients therefore female forensic patients, who are held in a separate hospital, were automatically excluded from the study. The sample included those patients who were recorded as being present in the wards or who were out on graded periods of leave from the unit. Patients who were out on leave from the wards during the period of the study were followed up regularly as part of the usual risk and recovery care plan by the MDT. All participants had been exposed to the assessment and treatment programme in the facility for a minimum of one year and were therefore familiar with and had exposure to the assessment and intervention practices of the team and forensic institution.

All participants were assessed as having basic proficiency in English. Interpreters were used for those men who indicated a preference for some of the tests to be administered in their first language. These patients were assessed in a group format to maintain some consistency in the translation of test questions. The group assessments were supervised by experienced psychologists (principal researcher and research assistant) and practical methods of introducing a fair assessment environment were introduced that included a familiar structured space in which to conduct the tests, clear and simple instructions, the use of concrete terminology and descriptions when required, constant supervision and patients were encouraged to ask for assistance throughout the testing procedure. The use of an interpreter may have introduced a degree of bias that is acknowledged; however, the study was exploratory in design and it was considered of greater value to include as diverse and representative a sample of men as possible within the limitations defined by the system in which the study was situated. These limitations are addressed in detail in Chapter 5.7.

Data were kept anonymous such that each participant was assigned a coded identification. The principal researcher and doctoral supervisor had access to the complete set of data. The research assistant and the statistician were provided with access only to information relevant to their participation in the collection and analysis of data. At completion of the study, all hard-copy data were stored in a locked cabinet in the doctoral supervisor's office.

Convenience sampling was used to identify 223 men, on paper, as potential candidates. Of these men, 151 were considered eligible for participation and were invited to attend information groups about the research. Twelve participants declined, one died on the ward, and four withdrew from the study. 133 participants that satisfied the selection criteria and indicated willingness to participate were finally selected across the forensic unit. Two participants absconded during the study and were unable to complete the full battery of assessments and so their results were excluded from the analysis. A sample size of 131 (n=131) men was entered into the data analysis stage of the study. The men were provided with refreshments and a small travel allowance was provided to accommodate those that were on leave from the unit. All testing occurred within the facility.

3.4.3 Eligibility

The inclusion and exclusion criteria for eligibility for the study are stated below.

Inclusion criteria

All state patients in the forensic unit who were competent to provide informed consent were invited to participate in the study. The men were informed individually and in groups both verbally and in writing about the broad objectives of the study and the assessment process involved and were given opportunities to pose questions and to refuse to participate from inception until while the study was in progress. Participants were reassured that they would be neither advantaged nor disadvantaged by their participation in the study, i.e. they were reassured that the results of the tests would not influence any clinical decisions affecting them. Informed consent was obtained by two practitioners who interviewed the participants. The participants were allowed to sign if the two practitioners agreed that they understood the aims of the study and nature of the tests that were to be administered and that their responses would remain anonymous (i.e. confidentiality). The two practitioners then signed as witnesses.

Admission to the forensic unit for a minimum of one year or more was a prerequisite for participation to ensure that the men had been exposed to all therapeutic modalities of the multidisciplinary team. A reasonable level of proficiency in English was preferred. Inpatients and outpatients were included in the study, i.e. current inpatients or if on leave, being assessed regularly in the unit.

Exclusion criteria

The men who declined to participate were excluded from the study as well as those who were unable to consent to the study due to significant cognitive impairment. Patients who were unable to read, speak or understand English were excluded from the study. Those who did not meet the criterion of a minimum of one year or more in the forensic unit were excluded from the study. Any physical impairment or medical illness that could hinder full participation was also an exclusionary criterion.

3.5 Data collection methods

Data collected from several sources (see below) were entered into a spreadsheet, on which participants were identified only by a coded reference number.

3.5.1 Clinical researchers

Principal researcher (clinical psychologist):

- Facilitation of the research process and preparation of the interview and testing schedule (e.g. contacting participants for their interview slots).
- Clinical interviews and administration of psychometric tests (MCMI-III, DRI-R, ECR-RS)
- Preparation of raw data: scoring, capturing, cleaning and coding of raw data (code booklet generated). Raw data entered into spreadsheet in preparation for analysis.

Research assistant (clinical psychologist)

- Review of patient files: collection of clinical and collateral archival data.
- Administration and scoring of Raven's IQ screen.

Principal psychiatrist (who had been previously trained in the use of these instruments)

- Administration of the PANSS, PCL-SV, HCR-20.

Forensic ward clerk

- Administrative assistance (e.g. contacting patients and liaising with ward staff to alert patients to their assessment slots).

Statisticians

- Dr Henk Temmingh - Department of Psychiatry & Mental Health and the Department of Biostatistics, University of Cape Town: data coding and statistical analysis.

- Dr Nicola Taylor – Independent Psychometrics Research Department (JVR): consultation on administration and scoring of the MCMI-III data and conversion of raw scores to Base Rate scores.

3.5.2 Data sources

The following data sources were utilised in the study:

Clinical records – patient review notes provided background information, demographic data, psychiatric diagnoses, medication regimen, psychotherapy records, process notes, psychometric reports, occupational therapy interventions, parole privileges, collateral information from family secured by the forensic social work, recorded incidents of aggression by the nursing department.

Legal records – original legal documentation including the nature and details of the index offence, date of index offence and prior convictions, forensic evaluation, psycho-legal recommendations.

Psychometric and psychiatric measures – results were obtained from the battery of psychiatric and psychological tests.

Clinical interviews – interviews related to the assessment battery.

3.5.3 Data collection

Data were collected for the study in the following categories (*refer to Appendix C – Demographic Data Sheet*):

Demographic characteristics:

- Coded identification, age (years), gender, marital status (single or married)
- Occupation at time of arrest, current occupation
- Education was recorded as years of education.

Clinical and developmental characteristics

The primary psychiatric diagnosis was derived from patient records according to the DSM-IV criteria (American Psychiatric Association, 1994) at the time of the study. Prior psychiatric histories were extracted from patient records. A positive finding was recorded if clinical records indicated a prior history of mental illness.

Length of hospital stay was determined from the time of admission up to the end of the assessment in 2014 in years. The number of previous psychiatric admissions was established from the patient records and ward databases. The duration of the disorder was calculated in years from the year of certification as a state patient to the end of 2014 to ensure that all participants had at least one year of admission.

A history of childhood conduct disorder was obtained from clinical records and was recorded as present or absent. This was confirmed or disconfirmed by the participant during assessment interviews.

A history of childhood trauma (rejection, abandonment, physical, sexual abuse) was obtained from clinical records and interviews with the men and recorded as present or absent.

Histories of alcohol and substance abuse were also obtained from file records. Dependence and abuse were collapsed into a single category of substance misuse disorder and recorded as present or absent. This information was recorded in two categories, first, whether substance misuse was current and second a record of the substances used.

Medical disorders

Current and past medical records provided data on physical illnesses for which they had received treatment. The medical disorders if present were recorded and entered into the database.

Forensic and Legal characteristics

Previous convictions were extracted from the legal records in patient files and recorded as present or absent and then, as violent or non-violent. Convictions involving physical assault, and threat to be assaultive (e.g. robbery) were classified as violent convictions.

The charge that resulted in the admission to the forensic facility was labelled the index offence, and coded as having been violent or non-violent. If the participant had more than one offence, the most serious offence was recorded as the index offence. For the violent charges, the hierarchy of seriousness was as follows: murder, attempted murder, sexual assault, assault with intent to do grievous bodily harm, robbery and malicious damage to property.

Therapeutic programme, milieu and social support

The following information was gathered in relation to the therapeutic programme, milieu and social support:

Psychotherapy: Information regarding participation in psychotherapy intervention was extracted from patient records and recorded in the affirmative if patients had psychological intervention.

Psychological treatment ranged from individual short and long-term supportive, psychodynamic and cognitive-behavioural interventions as well as group psychotherapy, recovery and offender work, family and relationship counselling.

Occupational therapy: Participation in occupational-related activities were extracted from patient records and recorded in the affirmative if patients had participated in these activities. These activities

included vocational rehabilitation activities, social groups including beading, art, cooking and drumming.

Medication adherence: Psycho-pharmacological data were extracted and recorded including medication regimen, and whether participants were compliant on treatment.

Family (social) support: Social intervention information was extracted from patient records and interviews with participants. Two categories were identified namely Rejected (limited or no family support) and Supported (active support by family members including financial and emotional support).

Ward relations: This information was extracted from ward round entries regarding patient progress, behaviour and input accrued during usual ward round assessments. Participants were identified as having Good ward relations (rule compliant, treatment compliant, appropriate social engagement) or Conflictual ward relations (disruptive, argumentative, aggressive behaviour in the ward)

Parole privileges: Participants were identified as those receiving town parole (two hours out of the hospital), ground parole (access to the grounds in the hospital), occupational parole (attending OT groups and activities) or no parole (remain in the ward).

Community leave privileges: participants were identified as those receiving no leave into the community or various durations of leave such as a day out, weekends, one month and longer periods of leave between three to six months.

Treatment setting: The treatment setting was identified as an inpatient and outpatient setting. However, testing occurred within the facility whether or not participants were on leave of absence.

3.6 Psychometric measures

Seven measures were administered to the participants. Three of the seven measures were self-report inventories administered by the principal researcher that measured personality, attachment and the therapeutic alliance. The psychiatrist assessed the men on their level of risk, psychosis and psychopathy (practitioner-rated). An intelligence screen was administered by the research assistant. These tests were scored, recorded and entered into a database.

3.6.1 Attachment measure

Experiences in Close Relationships-Relationship Structures questionnaire (ECR-RS: Fraley et al., 2011)

The ECR-RS was developed by Fraley and colleagues (2011) to address several limitations of contemporary self-report measures. The ECR-RS is operationalised to consider the possibility that people attach differently to different attachment figures and it can therefore measure global attachment

as well as specific relational targets (Arbuckle, Berry, Taylor & Kennedy, 2012). The ECR-RS assesses the two basic attachment dimensions of anxiety and avoidance that underlie all self- report measures of attachment. The ECR-RS relates coherently to attachment theory (Mikulincer & Shaver, 2007). Fraley et al. (2011) tested the main psychometric properties of the ECR-RS in two studies and found the instrument to be a psychometrically sound measure of attachment anxiety and avoidance in all four relational domains used in their studies. Cronbach's alphas for ECR-RS range from .75 to .91 (mother, father, partner, friend) for attachment anxiety and α= .87 to .92 for attachment avoidance. (Fraley et al., 2011; Moreira, Martins et al., 2015).

The ECR-RS is brief and psychometrically robust and is designed to assess attachment styles across different attachment relationships (e.g. father, mother, partner, friend) in addition to a global attachment rating (Fraley et al., 2011). Attachment style can therefore be contrasted and compared across relationships in significant and meaningful ways with the further advantage that it is not limited to these four domains but could also be used to assess attachment in one or many other relationships including extended family members. Attachment anxiety relates to beliefs about self-worth (rejection and acceptance) whereas attachment avoidance relates to thoughts about others (approaching and avoiding) (Fraley et al., 2000, 2011).

The length of a test is particularly relevant in research settings where participants are required to complete several tests or when attachment to several figures must be assessed. The ECR-RS is a brief and easy to administer test that contains 9 items on a 7-point Lickert scale. For each item participants were asked to indicate the extent to which they agreed or disagreed with the item (1=strongly disagree; 7=strongly agree). The same 9 items were used to assess each of the relationships in the two dimensions of attachment-related anxiety and attachment-related avoidance. The anxiety score was computed by averaging items 7–9. The avoidance score was computed by averaging items 1–6 while reverse keying items 1, 2, 3 and 4. These scores are computed separately for each relationship domain. The participants were instructed to respond to the questions by considering their relationship with specific relational target and were given the option of choosing any three significant attachment relationships (mother, father, other). The category of other served to include all designated persons other than parents. If attachment figures were deceased they were instructed to respond by considering the way they felt when the person was alive. The global mean of anxiety and avoidance scores were computed by averaging the scores across 3 domains identified by the participants (father, mother, other).

These dimensional scores were entered into the statistical model as a continuous variable. Average attachment-anxiety and attachment-avoidance scores of 4 were considered to indicate insecurity of attachment. Subclinical scores ≥3.5 were considered significant. The test-retest reliability of the individual scales is approximately .65 for the domain of partner relationships and .80 in the parental

domain. According to norms identified, global anxiety scores for men are in the region of 2.42 and global avoidance is in the region of 3.34 (Fraley et al., 2000, 2011). Computations of high and low attachment anxiety and attachment avoidance can also be used to define the four categories of attachment styles developed by Bartholomew and Horowitz in 1991 (Fraley et al., 2011). Attachment styles were computed to classify the sample into global secure and insecure attachment categories. For example, a participant high in avoidance and low in anxiety would be classified as dismissive (avoidant) whereas a participant low in both avoidance and anxiety would be classified as secure.

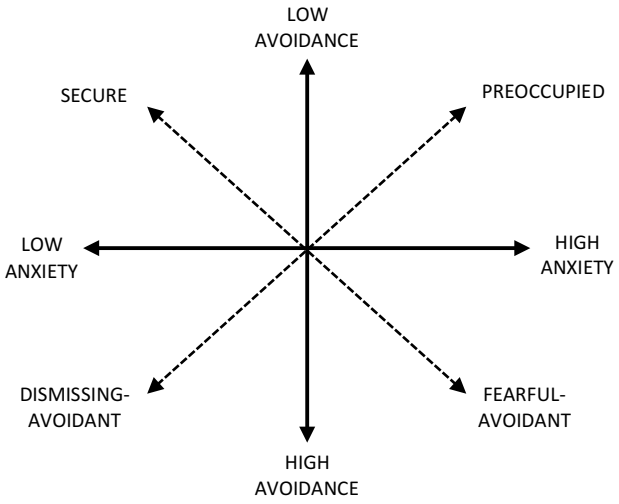

Fig. 1. The two-dimensional model of attachment styles (Bartholomew & Horowitz, 1991)

3.6.2 Therapeutic alliance measure

Dual-role Relationship Inventory-Revised (DRI-R: Skeem et al., 2007)

Conventional measures of the therapeutic alliance may poorly fit patients who do not choose to seek help and enter a relationship motivated to change (Skeem et al., 2007). Patients may also be subject to informal or formal pressure from others to adhere to treatment. As such, forensic and offender treatment environments require more than traditional clinical outcomes of treatment compliance and symptom amelioration. Measures that capture both the caring and controlling aspects of relationship quality may better predict these multifaceted outcomes than traditional measures of the alliance.

The DRI-R was developed to assess the dual-role relationship quality in mandated (involuntary) community treatment relationships and is currently the only validated therapeutic alliance measure that embodies principles of the therapeutic alliance (affiliation, bond) combined with concepts of procedural justice (firm and fair control) to measure relationship quality (strength) in probationer and mandated treatment settings (Skeem et al., 2007; Manchak et al., 2014). The DRI-R is operationalised to measure the quality of the dual-role relationship that includes relationship satisfaction, symptoms,

treatment motivation, rule compliance and within-session behaviour (e.g. counselling sessions). The measure was also found to predict future violations in mentally ill probationer populations and in general offender populations (Skeem et al., 2007; Kennealy et al., 2012; Manchak, Kennealy & Skeem, 2014). The instrument measures the alliance across three domains namely Fairness/caring, Trust and Toughness subscales. Better quality (strong) dual-role relationships are characterised by high scores on the first two domains and low scores on the Toughness (control) scale. It is also generally accepted in the literature and which has informed the administration of the present study, that participants' rating on the DRI-R predict outcomes more reliably than practitioner ratings (Skeem et al., 2007).

The DRI-R covaries with multiple domains more strongly than the Working Alliance Inventory suggesting that it better captures the nature and effect of relationship quality in mandated treatment. The WAI measures Bordin's conceptualisation of the alliance and research has shown strong support for the reliability of the WAI scales (α= .80) and its validity (Martin, Garske & Davis, 2000). The DRI-R compares favourably with the WAI and shows excellent internal consistency and theoretical coherence with measures such as the Working Alliance Inventory. The WAI and DRI-R correlated significantly with α= .82 for probationers and α= .80 for probation officers (Skeem et al., 2007). Similarly, for the subscales values of α= .96, .90, .87, .95 for Caring/Fairness, Toughness, Trust and DRI-R totals respectively were achieved (Skeem, et al., 2007).

The present study operationalised the therapeutic alliance as a dual-role relationship in a forensic setting by adopting the DRI-R instrument. The practitioner–patient relationship strength was assessed using the probationer version of the DRI-R. For the purposes of the study, the word 'probationer' was replaced by 'patient' and 'probation officer' by 'MDT member' with permission from the authors of the instrument. Participants were asked to rate a member of the MDT of their own preference (someone they would turn to in times of distress or someone they had the most positive feelings about) which was recorded anonymously by profession. The 30 items were rated on a 7-point Likert scale (1=never to 7=always). The three subscale scores (Fair/care, Trust and Toughness) and a total alliance score were recorded. The DRI-R total scores were calculated by summing the Fair/care and Trust scales with the inverse of the Toughness scale. The possible scores for the DRI-R range from 29–210 with 210 being the highest score that can be attained. The Fair/care subscale seeks to assess the participant's perception of level of alliance and fairness with staff. The possible scores range from 19–149 with 149 being the highest score that can be attained. The Trust subscale sought to gauge the participant's level of trust in the practitioner-patient bond. The possible scores range from 5–35 with 35 being the highest score that can be attained. The Toughness subscale sought to determine the participant's attitude towards disciplinary issues and compliance. The possible scores range from 5–35 with 35 being the highest score attainable. Normative scores to interpret what is high and low therapeutic alliance were not available at the time of the study, but preliminary results by the authors

of the instrument suggest that the average DRI-R scores (i.e. a total score/30) of less than five points is indicative of poorer alliance outcomes (risk.resilience.berkeley.edu/relationship-inventory; Skeem et al., 2007) (*Appendix D*).

3.6.3 Personality measure

Millon Clinical Multiaxial Inventory (MCMI-III: Millon et al., 2009)

The MCMI instruments have a 30-year history of use with diverse populations and are widely employed in many settings especially because of its strength in the assessment of personality disorders (Millon et al., 2009). The MCMI-III released in 2009, has gained increasing recognition and usage in the field of forensic evaluation, displaying sound reliability and validity (Bow et al., 2010). The MCMI-III is a self-report inventory derived from an integrated model of psychopathology and personality based on Millon's biopsychosocial-learning perspective on personality (Millon et al., 2009). Its items correspond closely with criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-lV, 4th edition; American Psychiatric Association, 1994). It is normed on a clinical population and enhances diagnostic efficiency by using base rate scores that take into account the prevalence of the specific disorder in the psychiatric population (Millon et al., 2009).

The MCMI-III is widely used in clinical and research settings locally and demonstrates sound psychometric properties with Cronbach's values of α= .84 for the personality scales and α= .83 for the clinical scales (Millon et al., 2009; Patel & Laher, 2013). A few local studies on representative samples in South Africa have been cited in the literature, which have indicated good criterion validity with Cronbach's alpha values for personality scales ranging from α= .66 to .90 and α= .80 for 20 of the scales. Test-retest reliability coefficients ranged from α= .82 to .96 (Patel & Laher, 2013). The instrument has satisfactory concurrent validity with a wide variety of other personality tests such as the MMPI-2. Overall, the reliability estimates for South African samples compares favourably with US statistics and considered appropriate for use in the present study (US and SA samples were α= .82) (Millon et al., 2009; Van Zyl & Van Rooyen, 2012). The test has limitations and strengths regarding its use in the local context most notably linguistic limitations that requires adequate comprehension of content and the use of interpreters that may also compromise standardisation and generate bias into the administration of the test. Its strengths are that it is psychometrically sound, simple to administer and can be used to screen for personality pathology. Any self-report instrument is, however, subject to acquiescence response bias and results must be interpreted with caution.

The MCMI-III consists of 175 true–false items measuring 14 personality disorders and 10 clinical syndromes. The scales identify personality traits/disorders and psychopathology. It can be used for individuals of 18 years or older; it takes 20–30 minutes to complete (Millon et al., 2009). The principal

researcher administered the paper and pencil version of the test inventory to all the participants in the study. Participants were required to indicate a True or False response to each item in the 175-item test.

Those participants who were identified as requiring assistance in completing the test (e.g. attention problems, language difficulty) were grouped together and provided with additional verbal input and an interpreter was employed to provide assistance to those men who requested to be tested in their first language. It is accepted practice and commonplace in most clinical settings that psychologists and researchers rely on other staff to assist with administration of tests if participants are not fluent in English. This may introduce bias and may compromise standardisation however, to limit potential bias participants were provided oral administration of the personality measure, were never left unsupervised and the researchers were available to clarify and explain instructions to ensure clarity, consistency and comprehension.

The MCMI-III data were captured on a spreadsheet (raw score conversions were first transformed into Base Rate (BR) scores by an independent research department. Combined gender norms from the fourth edition manual were used to convert raw scores to base rates although for research and correlations the use of raw scores is also recommended (Personal communication with Dr Taylor, JVR Research Dept. 2014). The diagnostic level of interpretation was used (first order interpretation) which examines which scales were elevated (Axis II scale elevations of BR75+ for moderate personality pathology to BR85+ for serious personality pathology were recorded). A basic level of interpretation is regarded as sufficient to accommodate the cost and time involved in administration of the test without compromising the degree of accuracy required for preliminary screening assessment procedures or research (Millon et al., 2009). Axis I syndrome scales were excluded from data analysis as the primary psychiatric diagnoses were established from participants' psychiatric records.

3.6.4 Intelligence measure

Raven's Progressive Matrices (RPM: Raven, J.C., 2000)

The Raven's Progressive Matrices (RPM) were originally developed by John C. Raven and first published in the United Kingdom in 1938 with a revised version being published in 1956 (Raven, 2000). The instrument was initially designed for research purposes only but because the test was independent of verbal and written skills and simple to administer and interpret, it quickly found widespread practical application at the time. Raven developed a method of directly measuring the eductive (meaning-making) component of Spearman's (1923) general intelligence (g) factor. The eductive component of general intelligence is defined as non-verbal intelligence and logical reasoning ability (Raven, 2000).

The Standard Progressive Matrices (SPM) and the Coloured Progressive Matrices (CPM) are widely used tests to measure general intelligence. It is regarded as a culture-fair, non-verbal intelligence test

that is an appropriate screening measure of intellectual functioning for diverse populations (Raven, 2000). Comprehensive standardisations and validation studies have been conducted all over the world.

The split-half reliabilities were r > .90 across diverse populations (people of different ages and backgrounds) in more than 40 studies. Correlations with other intelligence and ability tests vary between r = .20 and r= .80 (Raven, 2000). An internal consistency of between r= .77 and r= .96 were determined in various samples using the SPM (Raven, 2000). Factor-analytic calculations show high values in the g- factor up to r= .95 (Raven, 2000). These tests are made up of a series of multiple-choice designs of abstract reasoning with a missing component that the respondent is meant to identify. The SPM and CPM consist of 60 and 36 graphical puzzles respectively. These sets of puzzles become progressively more complex requiring greater cognitive capacity to encode and analyse. The SPM is appropriate for any age group while the CPM, which is a shorter test, is appropriate for use with the elderly and children, and is also appropriate for use with the intellectually and mentally impaired. If respondents exceed the limitations of the CPM, they are easily transitioned to the last three sets of the SPM.

Elderly participants in the present study and those with limited education were initially administered the Coloured Progressive Matrices. Those participants who exceeded the limitations of the CPM went on to complete the last three sets of the SPM as stipulated in the manual. The manual also makes provision to translate CPM scores into SPM scores for standardisation (Raven, 2000). The remainder of the sample were administered the SPM by a qualified clinical psychologist. The sum of the correct answers (with norm comparison) is the measure for general intelligence. The test can be completed in 10–45 minutes depending on the capacity of the participant. The test lends itself to a group format, which was implemented in this study. Scores were entered into a spreadsheet based on IQ categories as specified by the IQ classification in the DSM-IV Psychiatric Manual of Disorders (American Psychiatric Association, 1994). There is no local research on the validation of the SPM and CPM in forensic populations and norms developed by Jopie van Rooyen and Partners in 2008 (α= .88 - .95 for men) informed the present study (Van Rooyen, 2011).

A caveat: the majority of the sample participants have psychotic disorders and are on chronic antipsychotic medication that may influence attention and concentration and require cautious interpretation of results that will be discussed further in the limitation section (section 5.7) of the thesis.

3.6.5 Psychosis measure

The Positive and Negative Syndrome Scale (PANSS: Kay et al., 1987)

The PANSS has over the past few decades shown clinical utility in the assessment, treatment and management of psychotic disorders (Opler, Opler & Malaspina, 2006). The PANSS is used in the

assessment of symptom severity for schizophrenia, bipolar affective disorder and other psychotic illnesses. It is regarded as a reliable and valid severity symptom scale for schizophrenia. Data collected over eight years from more than 19 000 PANSS assessments in a multicultural, multilingual population suggest that the PANSS has adequate reliability and validity (Opler et al., 2006).

Kay et al. (1987) reported on psychometric testing of the PANSS in 101 inpatients with schizophrenia and scores on all subscales were reported to exhibit normal distribution suggesting suitability for parametric statistical analysis. Further internal consistency was demonstrated for the positive subscale Cronbach's α= .73, the negative subscale α= .83 and the general psychopathology subscale α= .79. Test-retest reliability was assessed with Pearson correlations (r = .80 and r = .68 and r = .60 for the subscales respectively were demonstrated).

The PANSS is a 30-item, semi-structured interview with seven positive symptom subscales (P1-P7), seven negative symptom subscales (N1–N7) and 16 general psychopathology subscales (G1-G16). The PANSS is a hand-scored instrument that uses a Lickert scale of 1–7 to indicate severity of symptomatology and in the present study, was administered by a psychiatrist trained in the use of the instrument. Summing the subscale scores derived a measure of the severity of the psychiatric symptoms. Positive scale scores, negative scale scores and general psychopathology scores were recorded. Stable outpatients usually score 60 to 80 and inpatient scores rarely exceed 80 to 150. A patient rated extreme may theoretically receive a total score of 210 (Opler et al., 2006).

3.6.6 Risk measure

Historical, Clinical, Risk Management-20 (HCR-20 version 1: Webster et al., 1997)

The Historical, Clinical, and Risk Management-20 measure (HCR-20) was developed by Webster, Douglas, Eaves and Hart (1997) and is commonly used to conduct violence risk assessments and develop and monitor risk management plans (Yang, Wong & Coid, 2010). The instrument has a strong empirical base across diverse settings and populations and findings support the validity of the measure for institutional and community violence with effect sizes in the region of .71 to .79 (de Vogel & de Ruiter, 2005; Doyle & Dolan, 2006; Dolan & Blattner, 2010; Yang et al., 2010). The HCR-20 is a preferred structured risk assessment tool among practitioners as it allows for some degree of clinical interpretation of scores and has shown utility for monitoring change in risk over time (Douglas & Ogloff, 2003; Skeem & Monahan, 2011; Hurducas et al., 2014; Monahan & Skeem, 2014). It is used as a guide to assist clinicians to evaluate 20 risk factors associated with violence. For research purposes, the total HCR-20 scores are derived from summing individual HCR-20 item scores which can be translated into a probability of risk and shows good predictive validity for violence. The instrument identifies empirically derived static or historical factors as well as clinical and risk factors and provides a 3-point rating scale where 0 = absent, 1 = possibly present, and 2 = definitely present

(Yang et al., 2010; Monahan & Skeem, 2014). Scores range from 0–40. Higher scores indicate higher future risk. The predictions based on the HCR-20 are only estimates of the likelihood of violence, and may be categorised into low or high probability of violence informed by the median score in the study.

A psychiatrist trained in the administration of the HCR-20 (Version 1) gathered qualitative information about the participants guided by the risk instrument. Historical factors were rated by reviewing the comprehensive background documents of the participants in the study and follow up interviews with the men were conducted to assess clinical domains such as insight into their behaviour. Historical domains included previous violence and age at first violent incident. The third area assessed was the level of risk the men posed (e.g. plans that lack feasibility) which also requires comprehensive knowledge of the participant as well as clinical judgment to rate adequately.

A caveat: The potential predictive bias in using a single rater is noted; however, the literature stipulates that the instrument need only be coded by an experienced forensic practitioner (de Vogel & de Ruiter, 2005) and furthermore, that a trained attending mental health professional with comprehensive knowledge of the patient assessed risk significantly more accurately than untrained or junior staff. It is argued that level of training is associated with greater accuracy of violence risk assessment (Teo, Holley & McNiel, 2012). The psychiatrist in the present study was deemed to meet the relevant requirements to make an informed assessment of the men based on the HCR-20 measure.

A caveat: Version 1 of the HCR-20 was utilised in the present study, which is directly comparable with Version 2 and should not have compromised the test in any way (Douglas & Webster, 1999).

3.6.7 Psychopathy measure

Psychopathy Checklist: Screening Version (PCl-SV: Hart, Cox, & Hare, 1995)

The Psychopathy Checklist-Screening Version (PCL-SV: Hart, Cox & Hare, 1995) and the extended PCL-R version are considered the strongest predictors of future violence in mainstream offender and forensic populations. The psychometric properties are well established with forensic and offender populations and scores on the PCL-R have consistently been associated with risk of violent behaviour in forensic and offender populations (Hurducas et al., 2014).The screening version of Hare's psychopathy checklist (PCL-SV) which is used to screen for psychopathy in forensic populations, provides a valid estimate of degree of psychopathy and has good agreement with the PCL-R (Skeem & Mulvey, 2001; Yang et al., 2010; Hurducas et al., 2014). PCL-SV scores correlate strongly with the PCL-R (weighted r = .80; Hart et al., 1995; Polaschek & Daly, 2013). Ideally, ratings on each tool are based on information from face-to-face interviews with the offender as well as collateral sources such as institutional records.

The PCL-SV is a clinical rating screen and not a self-report measure and is administered as a semi-structured interview or it can be scored based on patient file information alone. The tool measures the two dimensions of psychopathy, Part 1: interpersonal/affective dimension that includes features of callousness, deficient emotional connection, lack of remorse and empathy, lack of attachment to others as well as grandiosity, manipulativeness and arrogance and Part 2: antisocial/deviant lifestyle dimension characterised by antisocial, unstable behavioural traits of impulsivity, criminality and a generally irresponsible lifestyle (Yang et al., 2010; Hurducas et al., 2014). Most individuals in the general population score less than 3 on the PCL-SV, while the average score for criminals is 13, and a cut-off score of 18 and above is indicative of psychopathy (Babiak & Hare, 2006).

In the present study, the screening version was used which is a 12-item instrument designed to measure psychopathic traits. Part 1, with items 1–6, relates to interpersonal and affective characteristics and Part 2, with items 7–12, relates to antisocial and unstable lifestyle (Skeem & Mulvey, 2001). Each item is scored on a 3-point scale (0 = absent, 1 = possibly present, and 2 = definitely present) leading to a maximum score of 24. If the rater judges the participant to clearly have a given trait, then 2 points are awarded to the total, whereas 1 or 0 points are added should the trait be only partially applicable or not applicable. The psychiatrist completed the assessments based on in-depth clinical interviews of all participants as well as a review of collateral information in the patients' folders that included entry records of multidisciplinary psychiatric and psychological evaluations, police records, criminal history and family background. Scores above 18 were deemed to indicate high risk for psychopathy in the present study.

3.7 Data analysis

Data preparation (scoring, capturing, cleaning and initial coding) was conducted by the principal researcher. Dr Henk Temmingh (Department of Psychiatry and Mental Health, University of Cape Town) conducted the statistical analysis. The Biostatistics Department, UCT, assisted with the data analysis. Dr Nicola Taylor (Jopie Van Rooyen Research Department) was consulted on the administration and scoring of the MCMI-III and assisted with the conversion of raw scores to BR scores.

3.8 Statistical analysis

Demographic, clinical and psychometric data were scored, cleaned and coded before being entered into a spreadsheet in preparation for capture into a statistical programme for analysis. All analyses were conducted using Stata version 13 for Windows (StataCorp, 2013). Independent two-tailed tests were used throughout the analysis and a p-level of $p < 0.05$ denoted statistical significance.

The statistical analysis was reported as follows:

- The demographic, clinical, psycho-legal and therapeutic description of the study sample
- The determinants of the therapeutic alliance (*Part A*)
- The determinants of risk (*Part B*).

In both *parts A and B,* exploratory data analysis was conducted to determine the distribution of variables using histograms and boxplots as well as the Shapiro Wilk's test for normality. In bivariate analyses of non-normally distributed continuous data, non-parametric methods were used, namely the Wilcoxon Rank-sum test and the Kruskal-Wallis analysis of variance (ANOVA). For correlations between skewed variables, the Spearman's rank order correlation coefficient was used.

A series of multiple linear regression analyses were conducted to determine firstly, the relationship between the primary independent variable of interest, attachment style (AS) measured by the ECR-RS scales (global attachment–avoidance and global attachment–anxiety scales) and the main dependent variable of therapeutic alliance (TA) as measured by the DRI-R; and secondly, to determine the relationship between the primary variable of interest, TA as measured by the DRI-R scale and the main dependent variable of risk as measured by the HCR-20.

The primary aim of the regression modelling was to control for any potential positive or negative confounders (suppressor variables) that may interfere with the relationship between the AS and the TA, and the relationship between TA (DRI-R) and risk (HCR-20). All variables that were associated with the TA in the bivariate analyses at $p<0.25$ were entered into an initial model (Maldonado & Greenland, 1993; Mickey & Greenland, 1989). These models were then reduced using a backward elimination procedure whereby variables were removed from the model one at a time to derive a final set of independent variables.

A hierarchical multiple linear regression model was constructed to determine the impact of covariates and change on the effect estimate of the primary predictor variables of interest (AS) and on the total variance of the outcome of TA (DRI-R total score) by adding blocks of variables in a stepwise fashion to attachment style (block 1: ECR-RS global avoidance and global anxiety scores), starting with blocks containing variables that are fixed, static, historical and less amenable to clinical intervention (block 2: age, employment at arrest, diagnosis, prior psychiatric history, violent crime at index presentation), (block 3: intelligence/IQ, childhood exposure to domestic violence, personality pathology), followed by variables such as psychotic symptoms (block 4: PANSS total symptom score) and other variables related to therapeutic intervention and milieu that are more amenable to clinical intervention (block 5: outpatient vs. inpatient treatment setting, ward relations, adherence to medication, parole privileges and key multidisciplinary practitioner involved in care.

To determine the impact of other variables on the relationship between TA (DRI-R total) and risk (HCR-20), a hierarchical multiple linear regression model was fitted. TA (DRI-R total score) was

added into the model (block 1) followed by variables less amenable to therapeutic interventions (block 2: education level, illness duration) then block 3 (intelligence, psychopathy) and finally variables potentially amenable to therapeutic interventions and change (block 4: out- vs. inpatient status, PANSS symptom score, privileges, i.e. leave of absence, and key multidisciplinary practitioner working with the patients).

Finally, using the same set of variables as derived from the original model, two additional models using DRI-R subscales (Fair/care, Trust, Toughness) were fitted instead of the total score as well as PANSS subscales (positive, negative and general psychopathology scales). Independent two-tailed tests throughout used a p-level of $p<0.05$, to denote statistical significance. Standardised beta coefficients were reported to compare the effect size of each predictor in the models. Robust standard errors are reported for all regression models.

As personality characteristics measured by the MCMI-III showed substantial overlap, with many participants having more than one clinically significant personality pathology (mean=6.45, sd=3.3) hierarchical multiple linear regression analysis was conducted to determine which of the elevated personality scales were significantly associated with the outcome of the therapeutic relationship as measured by the DRI-R. Following this procedure, only significant variables were carried over into the further models. Similarly, personality scales that were significantly associated with risk of violence were entered into a logistic regression model with the HCR-20 scores dichotomised into low and high risk (using a recommended cut-off score of >25). A quadratic term for intelligence (IQ2) as measured by the Raven's IQ test was added to the model as this variable showed a curvilinear relationship to risk (HCR-20) and to the TA (DRI-R), which led to a significant improvement in model fit. In addition, attachment as measured by global-avoidance was also non-linear in relation to TA subscales (Trust) and a quadratic term was fitted to the model (globalavoidance+globalavoidance2). In addition, as the subscale measures of the DRI R were positively skewed (Fair/care and Trust subscales) and negatively skewed (Toughness subscale), these outcome variables were transformed using a square transformation, y2 (Fair/care and Trust subscales) and a logarithmic transformation for the Toughness subscale. To determine whether the relationship between therapeutic alliance and risk is independent of attachment style, a model with an interaction term between therapeutic alliance (DRI-R) and the attachment style variable (ECR-RS global avoidance score) was fitted, which was included in the final full model.

As the HCR-20 contains as part of its composition aspects of the PCL-SV, to avoid a circular approach to estimating risk, a sensitivity analysis was conducted in which the PCL-SV was removed from the risk model and refitted using the same methodology of model building as described for the original model. The removal of the PCL-SV items provided an alternative model which included additional

significant variables such as conduct disorder, family support, treatment setting and medication compliance that showed strong correlation with risk (HCR-20).

3.9 Research ethics

Ethics approval to conduct the research was obtained from the Human Research Ethics Committee (HREC) of the University of Cape Town and from the Department of Health in the Western Cape. It is considered that all mental health care professionals abide by, and practice in accordance with their ethical codes of practice such as the Health Professions Council of South Africa (HPCSA) to provide 'competent health care with compassion and respect for human dignity' (Zabow & Kaliski, 2006:358). In any research, especially with vulnerable populations such as the mentally ill, ethical issues must be recognised and addressed. Commonly, the fiduciary relationship between treating clinician and patient is characterised by the principles of beneficence, non-maleficence, informed consent and confidentiality. However, it is also acknowledged that these ethical guidelines may not always be easy to interpret in the forensic mental health context (Zabow & Kaliski, 2006; Christopher & Dunn, 2015). Some of these ethical considerations will be addressed individually as they pertain to the present study:

3.9.1 Dual-agency

The principal researcher is a member of the multidisciplinary team in the forensic unit at which the research was conducted, as well as a member of staff at the University of Cape Town. The fiduciary relationship thus assumed an important ethical consideration in the study as the principal researcher held the dual role as treating clinician and researcher. It is considered in the literature that clinical relationships and research relationships should be kept separate because of the complexities of dual-agency, conflict of interest and issues of coercion and care (Adshead & Brown, 2003). Dual agency involves balancing the roles of treatment and risk assessment, where the practitioner is not always an advocate for the patient as the courts and broader society are part of the treatment relationship and to who the forensic practitioner remains accountable (Lindqvist & Skipworth, 2000; Zabow & Kaliski, 2006; Robertson, Barnao & Ward, 2011; Roychowdhury & Adshead, 2014). Patients perceive the forensic practitioner to be gatekeepers of their freedom and are cognisant of this power differential that may influence their autonomy and freedom.

An additional challenge to effective rehabilitation in the forensic context is how to motivate patients to change and to engage in therapy, despite the influence of control and surveillance which is mostly perceived as punitive (McCabe & Priebe, 2004; Ross, Polaschek & Ward, 2008). Conversely, and a counter argument to that, would be who better to conduct research; who has unique knowledge of the patient, his family, his dynamics and functioning than the forensic practitioner herself. Despite the valid concerns of dual-agency, the practitioner is still bound by a code of ethics and is still required to

maintain reasonable professional objectivity which should not be incompatible with a supportive, therapeutic stance (Heltzel, 2007). According to Heltzel (2007:127), practitioners whose required professional objectivity is impaired by an evaluative or biased stance 'is probably not fit to provide diagnostic services' and concludes that the two roles of therapist and assessor is considered to be compatible. In the present study, all assessment procedures formed part of standard forensic and psychological evaluations in a forensic mental health setting and a therapeutic frame was maintained with every contact between participant and researcher(s) to ensure no boundary violations ensued that would undermine long-standing treatment relationships (Zabow & Kaliski, 2006; Christopher & Dunn, 2015).

3.9.2 Autonomy and informed consent:

Research on populations where there is perceived coercion presents distinct ethical challenges. These challenges include chronic and serious mental illness and impaired intellectual functioning and lack of autonomy. Although these challenges may constrain the individual's capacity for informed consent, they do not necessarily impair their capacity to consent to research (Adshead & Brown, 2003). It is recognised, however, that the severity of these factors particularly in the case of severe intellectual deficits or active psychosis/mania) may impair capacity to consent to participate in research. Forensic patients are an especially vulnerable population not only because their autonomy is curtailed, but they are a confined study population, and potentially could be exploited. Their status as forensic patients may influence the quality of their consent because of the power differential and gatekeeper status of the assessors (Levinson, 1997).

Adherence and respect for autonomy compels researchers to obtain informed consent before an assessment or research is considered (Zabow & Kaliski, 2006). The elements of voluntariness, competency and disclosure should be met. Voluntariness implies that consent is given without coercion and with trust and that the patient always has the right to withdraw consent even after it has been given. Essentially, the principle of respect for autonomy is manifested by the need to obtain consent. Labelling all psychiatric patients as 'non-autonomous' because of their deficits is 'unhelpful' and the 'capacity to consent should be decided according to the patient's functional ability' (Stone, 1997:255). Given the constraints on autonomy in the forensic environment, obtaining consent requires greater vigilance on the part of the researcher because there is always the danger that coercion and acquiescence may be at play even if unintentionally (Christopher & Dunn, 2015).

In the present study, informed consent was a written statement read and signed by the patient. To give consent to research, the patient is choosing to take a risk that he or she will not be harmed and may benefit from the research or that others may benefit from the research. However, their external and internal constraints must be taken into consideration. The perception of power dynamics was noted, and caution was exercised when informing patients about the benefits and risks of participation so as

not to exert undue influence. In this study, potential participants were invited to attend information sessions about the research. Participants were informed individually and in groups, both verbally and in writing, about the broad objectives of the study and the assessment process involved. They were informed of the time frame of the assessment period and the research team that would be involved in the study. They were given opportunities to pose questions and to refuse to participate from inception up until the study was in progress. Participants were reassured that they would be neither advantaged or disadvantaged by their participation in the study. The written consent forms provided for participants were easy to understand (Appendix B); it outlined the purpose of the research and the potential benefits and risks of participating. Each participant provided consent by signing the informed consent form. Their competence to consent was assessed by two members of the clinical team, who also acted as witnesses.

3.9.3 Competence

Competence is the capacity to understand and make informed decisions for a 'required task at a particular time and in a certain situation' (Zabow & Kaliski, 2006:371). Even those who suffer from serious psychiatric disorders may be competent to understand and communicate their decisions (Christopher & Dunn, 2015). However, there are constraints such as the involuntary status of these patients that may constrain their autonomy and voluntariness to consent to the study. It is however argued in the literature that the involuntary status of the population has negligible impact on the competency to engage in research and instead, identifies the proficiency of the researcher as important in establishing competency (Adshead &Brown, 2003; Christopher & Dunn, 2015). In other words, the researcher should demonstrate the ability and flexibility to rely on concrete and even colloquial language to explain testing to ensure that the unsophisticated test-taker is sufficiently and adequately informed to consent to participate (Magwaza, 1995; Foxcroft, 2011). Competence was assessed clinically in the present study to ascertain whether the participant understood the information presented to him and could communicate his decision to consent. The informed consent process did not include any patient in the final sample (n=131) who was unable to demonstrate an adequate understanding of the process to which he was invited to participate. According to South African law, competency for informed consent is based on functional capacity as opposed to intellectual capacity (Kaliski, 2006).

3.9.4 Confidentiality

Confidentiality and trust may be severely compromised in a dual-role alliance and patients' disclosure of problems relevant to risk to self or to others is likely to have adverse consequences, for example, a change in leave status or discharge plans. Heltzel (2007) commented on the compatibility of the therapeutic relationship and forensic roles and contends that the ideal of complete confidentiality as a feature of any therapeutic relationship is simply not capable of being guaranteed and that all therapy

carries inherent risks to confidentiality because of legal requirements. It follows that the risks related to limited confidentiality cannot reasonably render treatment or research for that matter an unethical professional activity, provided that participants are well informed and give consent regarding these risks to confidentiality. As reiterated by Stone (1997:256), 'confidentiality must be respected to the extent that the forensic context allows.' To this end patient confidentiality was protected by coded identification of data to ensure anonymity.

3.9.5 Anonymity

The identity of the participants was protected by a coded identification system and only the research team was privy to the sample that participated in the study. The principal researcher and doctoral supervisor had access to the complete set of data. The research assistant (a qualified psychologist) and the statistician had access only to information that was relevant to their participation in the collection and analysis of data respectively. At completion of the study, all hard copy data were stored in a locked cabinet in the supervisor's office. Data generated by the study were kept separate from daily inpatient and outpatient records as well as from the MDT in the wards. Dissemination of the research findings were generalised in quantitative results that did not identify a specific participant or disadvantage that participant in daily evaluation of treatment and risk. The remaining information was held in clinical files that were subject to usual measures of confidentiality.

3.9.6 The ethics of forensic assessment and research

The forensic expert is obliged to always act ethically and adhere to the professional standards of practice that provide guidance about the importance of the accuracy of opinions and the consideration of individual difference including socio-economic disparities when forming an opinion. Zabow and Kaliski (2006) posit that ethical guidelines are never easy to interpret in the forensic mental health context particularly with respect to dual-agency and the dialectical roles professionals are required to meet. As previously defined, dual agency involves balancing the roles of treatment and risk, care and control, and accountability to the patient as well as the courts and broader society (Lindqvist & Skipworth, 2000; Skeem et al., 2007; Robertson, Barnao & Ward, 2011; Roychowdhury & Adshead, 2014). Confidentiality, trust, autonomy and freedom are constructs severely tested in the dialectic of dual agency. Justification for treatment and/or clinical research, requires a balance between 'fundamental ethical principles' and advancing research for its value in enhancing clinical service delivery and importantly, its clinical value in the treatment and recovery of psychiatric patients. (Christopher & Dunn, 2015:954). As Logan (2003:83) argues, 'Ethically sensitive risk assessment practice should always be closely allied to risk management and/or risk reduction'. Essentially, what is assessed should ideally be what is capable of change with commensurate reduction in risk.

Overall, this study intended to explore variables that are present in the usual rehabilitative programme that could be used primarily for improving risk management strategies particularly strategies that include autonomy-building, transparency and accountability within the forensic population and its service. Consequently, forensic patients were not exposed to harm and were allowed to withdraw at any time during the study. It is hoped that this conferred greater autonomy on a group who would otherwise probably feel disempowered (Adshead & Brown, 2003; Kaliski, 2006; Christopher & Dunn, 2015). The mental health professionals strived to maintain their usual fiduciary responsibilities throughout this endeavour.

CHAPTER 4 RESULTS

Therapeutic alliance, attachment and risk for violence in forensic psychiatric patients

4.1 Background

The study examined the association between the therapeutic relationship, attachment security and risk for violence in a sample of (n=131) forensic patients in a secure forensic facility It was hypothesised that there would be a relationship between therapeutic alliance and violence risk, and that attachment security might be associated with the therapeutic alliance and with risk of institutional and community violence. The hypotheses were tested by studying the statistical relationship between rating of different factors including personality pathology, intellectual level, attachment avoidance and anxiety with the therapeutic alliance using the DRI-R and risk using the HCR-20.

4.1.1 Demographic and clinical characteristics

The study population was comprised of male forensic patients (n=131). The mean age was 33.6 (sd= 9.9; range= 18- 75) with most patients falling within the 25 to 34 age group (43.5%, n=57).

Most men were single (87.7%, n=115), and a significant number of the men (61.8%, n=81) had obtained between 8 to 12 years of education. At the time of the arrest for their index offence, 63.4% (n=83) of the sample were not employed; over half the men (68.7%, n=90) were not employed at the time of the study. However, the majority were inpatients (67.9%, n=89) at the time of the study and those on varying periods of leave (week/months) from the hospital (49%, n=64) would have been supported by a state disability grant.

Table 1. Demographic characteristics

	Total sample N–31	
Age	**n**	**%**
18–24	22	(16.7)
25–34	57	(43.5)
35–44	33	(25.1)
45–75	19	(14.5)
Marital status		
Not married	115	(87.7)
Married of cohabiting	16	(12.3)
Education		
0–7 years	38	(29)
8–12 years	81	(61.8)
>12 years	12	(9.2)
Employment at time of arrest		
Employed	48	(36.6)
Unemployed	83	(63.4)
Treatment setting		
Inpatient	89	(67.9)
Outpatient	42	(32.1)

All patients had a primary diagnosis of a serious mental illness with schizophrenia spectrum disorders (51.9%, n=68) being the most prevalent diagnosis followed by bipolar mood disorder (22.1%, n=29), schizoaffective disorder (20.6%, n=27); other diagnoses accounted for 5.3% of the patients. Most of the men (78.6%) had no known psychiatric history before entering the forensic service and 23.6% had more than 6 prior psychiatric hospitalisations. The median illness duration of the sample was 17 years with an interquartile range of 15 and at the time of the study, these patients had spent between 1 to 15 or more years in the forensic unit with most falling within the 8 to 15-year time frame (38.9%, n=51). The majority of men (92.4%, n=121) had a known history of substance misuse.

4.1.2 Forensic and psycho-legal characteristics

As depicted in Fig. 2, just over half of the state patients (50.4%, n=66) had a criminal conviction prior to their index forensic admission and 22.1% (n=29) had a prior conviction for violent crime. The majority of the men (87.8%, n=115) had a violent forensic index offence and the most common offences were Assault (29.7%, n=39) and Murder (23.6%, n=31). Sexual offences accounted for 18.3% (n=24).

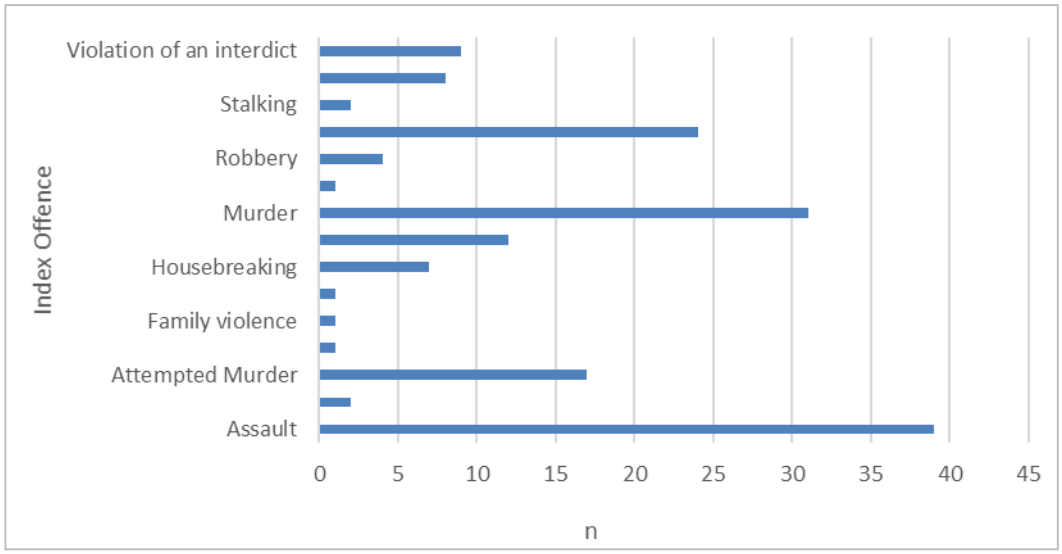

Fig. 2. Index offence at time of admission to forensic unit

4.1.3 Therapeutic programme, milieu and social support

More than half the sample (67.2%, n=88) had been exposed to psychological intervention during the period leading up to the study and most of the men (82.4%, n=108) were engaged in occupational therapy activities at the time. Just over half the men (53.4%, n=70) were reported to be adherent to their medication regimen and more than half (54.2%, n=71) demonstrated non-conflictual ward relations. With regard to ward privileges, a small minority (14.5%, n=19) of the men had earned parole privileges such as a day outside the facility. Approximately a third (36.6%, n=48) were attending

vocational rehabilitation or spending leisure time on hospital grounds while 48.8% (n=64) of the patients were confined to the wards. Just over half the patients (51.1%, n=67) reported poor support from family which often prevented them from going home. With regard to leave privileges, 40.4% (n=53) had no leave into the community and 32.1% (n=42) were out on leave of absence for up to 6 months. The remainder of the patients (16.9%, n=22) were out on monthly vacation leave. Most of the men (79.4%, n=104) had a history of childhood trauma that included abuse and neglect. Just under half of the men (45.8%, n=60) reported exposure to domestic violence in childhood and just over half of the men (53.4%, n=70) met the criteria for conduct disorder in childhood that was obtained from patient records.

4.1.4 Personality characteristics of the sample

All patients in the sample (n=131) were diagnosed with personality pathology on the MCMI-III with many of the men presenting with an overlap of clinically significant pathology. This high prevalence can be explained by the inclusion of a range of moderate (BR>75+) and severe pathology dimensions in the dataset (> 84+) and/or the potential for over-reporting of symptoms by the sample. High prevalence rates have been recorded in the literature review (e.g. Duggan et al., 2007). Clinically significant elevations in the sample included dependent (74.8%), avoidant (70.2%), depressive (61.8%), schizoid (54.2%) and narcissistic personality pathology (51.1%); 45% of the men were assessed with antisocial personality pathology and 26.7% were assessed with borderline personality pathology.

4.1.5 Descriptive characteristics of PCL-SV

Of the sample, 29.7% met the cut-off for psychopathic personality traits on the screening version of the PCL (PCL-SV >18). The median score for psychopathy was 14 (iqr= 8).

4.1.6 Descriptive characteristics of the RPM

IQ scores ranged from 50(38) to 128 (median= 96, sd= 19.4, iqr= 24). Of the patients, 12.2% scored low on the Raven screen. The single score of 38 obtained by one of the participants is regarded as an anomaly given that the patient's clinical presentation and level of education (Gr11) are not commensurate with the level of intellectual impairment inferred by such a low score. Caution is advised in the interpretation of the score which may have been a methodological error in calculation. Alternatively, an abnormal score could be secondary to lack of motivation, fatigue and impaired concentration due to intoxication or psychosis at the time of the test.

4.1.7 Descriptive characteristics of the PANSS

The median for PANSS total score was 70 with an interquartile range of 32. For both PANSS positive and negative scale scores, the median was 18 and the interquartile range was 12. For PANSS general

scale scores the median was 34 and interquartile range was 14. Stable outpatients usually score 60 to 80 and inpatients score between 80 to 150 for PANSS total. A patient-rated extreme may theoretically receive a total score of 210 (Opler, et al., 2006).

4.1.8 Descriptive characteristics of the ECR-RS

54.9% of the sample were considered to have an insecure attachment style (attachment category) as measured on the ECR-RS. On the dimensional attachment scale (ECR-RS ≥4), the mean global attachment-related avoidance score was 3.25 (sd= 1.08) and the mean global attachment- related anxiety score was 3.73 (sd= 1.55). Sub-threshold scores ≥3.5 were seen as clinically significant and representative of an insecure attachment style.

Attachment-related anxiety mean scores were significantly raised (≥3.5) and were fairly homogenous for all relational targets whereas, for attachment-related avoidance the mean scores were highest for father (3.54) and lowest for partner (2.73). For relationship-specific attachments, 129 men identified mothers as attachment figures (relational target), 121 chose fathers, 37 identified partners as attachment figures and 79 chose other attachment figures that include grandparents, siblings and extended family *(Table 6)*.

4.1.9 Descriptive characteristics of the HCR-20

Risk for inpatient and outpatient violence (harm to others) was measured using the HCR-20 (version 1). The mean total HCR-20 score was 22.5, (sd = 6.7); low risk: <20: n = 41, 31.3%; medium risk: 20–24: n = 31, 23.7%; high risk: ≥25: n = 59, 45%.

4.1.10 Descriptive characteristics of the DRI-R

The therapeutic alliance (total DRI-R scores) was calculated by adding the subscale scores of Fair/care and Trust and the inverse of the Toughness subscale scores. The mean total DRI-R score was 165.2 (sd= 32.5); the median total DRI-R score was 171 (iqr= 41); range (60–210). In the absence of formal norms, it is recommended by the authors (Skeem et al., 2007) that an average total DRI-R >5 is indicative of a good outcome (a robust therapeutic relationship). This is calculated by dividing the total DRI-R score by 30. If both the mean and median of the total DRI-R are calculated in this way, the average DRI-R score is 5.56 and 5.7 respectively which is considered a robust alliance. (risk.resilience.berkeley.edu/relationship-inventory).

Table 2. Descriptive characteristics of therapeutic alliance – Dual Relationship Inventory-Revised (DRI-R)

n=131	Mean	(sd)	Median	(iqr)	Range
DRI-R Total score	165.2	(32.5)	171	(41)	60 – 210
Fair/care subscale	109.6	(24.2)	114	(29)	31 – 140
Trust subscale	28	(6.2)	29	(9)	6 – 35
Toughness subscale	12.4	(6.7)	11	(10)	4 – 35

Note. *sd=standard deviation, iqr= interquartile range*

The patients rated their therapeutic relationship with a practitioner (anonymously) that they would generally turn to in times of distress (or felt most positively about). See Table 3 below. 26.7% chose a psychiatrist, 25.2% chose a psychologist, 23.6% chose nursing staff, 15.3% chose an occupational therapist and 9.2% chose social workers.

Table 3. Preferred key practitioner rating	
Key practitioner type	**n (%)**
Psychology	33 (25.2)
Psychiatry	35 (26.7)
Nursing	31 (23.6)
OT	20 (15.3)
Social work	12 (9.2)

4.2 Determinants of the therapeutic alliance (DRI-R)

4.2.1 Bivariate results of demographic and clinical characteristics associated with DRI-R

Age was strongly associated with the therapeutic alliance (p=0.044) with the older age group (45– 75 years) demonstrating the highest median alliance scores in the sample. The youngest age group (18–24) was associated with the lowest median therapeutic alliance scores on the DRI-R. The level of education obtained was significantly associated with the therapeutic alliance (p=0.048). Those patients with an average of 8–12 years of education showed higher median therapeutic alliance scores in the sample compared with lower education levels. Therapeutic alliance scores were higher for those who were employed prior to admission to the forensic facility (p=0.031). Psychiatric diagnosis in relation to therapeutic alliance approached significance at the 5% significance level (p=0.064) with bipolar mood disorder showing a higher median alliance score in comparison to the other diagnoses. Duration of psychiatric illness was not shown to be statistically significant in relation to the therapeutic alliance however, a prior psychiatric history was significantly associated with the therapeutic alliance (p=0.004). Patients with a previous psychiatric history showed lower median therapeutic alliance scores than those without a psychiatric history. A history of substance misuse was not associated with the therapeutic alliance. The length of hospital stay did not reach statistical significance although median DRI-R scores were raised for those patients who were longest in the hospital.

Treatment setting was significantly associated with the therapeutic alliance (p=0.005) with outpatients demonstrating higher alliance scores than inpatients. PANSS scores showed a significant negative association with the alliance both at the subscale scores ($p < 0.001$) and for the total PANSS scores (Spearman's $r_s = -0.36$, $p < 0.001$) (*Table 4).*

Table 4. Sample demographic and clinical characteristics and bivariate associations with therapeutic alliance (DRI-R)

	Total sample n=131		Therapeutic Alliance (DRI-R)		Test Statistic (df)	p value
	n	(%)	Median	(iqr)		
Age, n (%)						
18-24	22	(16.7)	163.5	(51)	Kruskal-Wallis ANOVA, χ^2=8.07 (3)	**0.044**
25-34	57	(43.5)	165	(42)		
35-44	33	(25.1)	177	(38)		
45-75	19	(14.5)	190	(45)		
Marital status, n (%)						
Not married	115	(87.7)	171	(43)	Kruskal-Wallis ANOVA, χ^2=0.74 (1)	0.389
Married of cohabiting	16	(12.3)	171	(34.5)		
Education, n (%)						
0-7 years	38	(29)	155	(50)	Kruskal-Wallis ANOVA, χ^2=6.07 (2)	**0.048**
8-12 years	81	(61.8)	175	(36)		
>12 years	12	(9.2)	170	(34.5)		
Employment at time of arrest, n (%)						
Employed	48	(36.6)	181	(46.5)	Kruskal-Wallis ANOVA, χ^2=4.63(1)	**0.031**
Unemployed	83	(63.4)	165	(38)		
Diagnosis n (%)						
Schizophrenia spectrum disorder	68	(51.9)	164	(43)	Kruskal-Wallis ANOVA, χ^2=7.26(3)	0.064
Schizoaffective disorder	27	(20.6)	171	(53)		
Bipolar mood disorder	29	(22.1)	180	(30)		
Other	7	(5.3)	150	(20)		
Substance use disorder n (%)						
Yes	121	(92.4)	171	(42)	Wilcoxon rank-sum test, z=1.07	0.280
No	10	(7.6)	171	(28)		
Psychotic symptoms, median(iqr)						
PANSS positive scale	18	(12)	-	-	Spearman's r_s= -0.28	**<0.001**
PANSS negative scale	18	(12)	-	-	Spearman's r_s= -0.34	**<0.001**
PANSS general scale	34	(14)	-	-	Spearman's r_s= -0.29	**<0.001**
PANSS total	70	(32)	-	-	Spearman's r_s= -0.36	**<0.001**
Illness duration (years), median (iqr)	17	(15)	-	-	Spearman's r_s= -0.01	0.894
Length of hospital stay, n (%)						
1-4 years	12	(9.2)	160.5	(46.5)	Kruskal-Wallis ANOVA, χ^2=0.73(3)	0.865
>4-8 years	46	(35.1)	168.5	(40)		
>8-15 years	51	(38.9)	171	(45)		
>15 years	22	(16.8)	176	(45)		
Prior psychiatric history, n (%)						
Yes	28	(21.4)	165	(41)	Wilcoxon rank-sum test, z=2.82	**0.004**
No	103	(78.6)	188.5	(33.5)		
Number of prior psychiatric hospitalisations, n (%)						
None	40	(30.5)	176	(46.5)	Kruskal-Wallis ANOVA, χ^2=2.04(2)	0.359
1-5	60	(45.8)	165	(35)		
>6	31	(23.6)	166	(33)		
Treatment setting, n (%)						
Inpatient	89	(67.9)	163	(44)	Wilcoxon rank-sum test, z= -2.79	**0.005**
Outpatient	42	(32.1)	183	(32)		

*Note. statistical significance denoted in bold *p<0.05, **p<0.001*

4.2.2 Bivariate results of forensic and legal characteristics associated with DRI-R

A criminal conviction prior to the index forensic admission was not statistically significant in relation to the therapeutic alliance. A criminal conviction for a violent crime prior to the index offence demonstrated no significant association with the therapeutic alliance. A violent index offence however, was significantly associated with the therapeutic alliance (z= 3.18, p=0.001). Patients with a violent index offence showed significantly lower median alliance scores on the DRI-R than those with non-violent index offences *(Table 5*).

Table 5. Sample forensic and legal characteristics and bivariate associations with therapeutic alliance (DRI-R)

	Total sample n=131		**Therapeutic Alliance (DRI-R)**		**Test Statistic (df)**	**p value**
	N	**(%)**	**Median**	**(iqr)**		
Criminal conviction prior to index forensic admission, n (%)						
Yes	66	(50.4)	172	(46)	Wilcoxon rank-sum test, z= 0.28	0.775
No	65	(49.6)	171	(36)		
Prior conviction-violent crime, n (%)						
Yes	29	(22.1)	163	(44)	Wilcoxon rank-sum test, z= 0.33	0.739
No	102	(77.9)	171	(37)		
Violent index offence, n (%)						
Yes	115	(87.8)	165	(41)	Wilcoxon rank-sum test, z= 3.18	**0.001**
No	16	(12.2)	194	(34)		

*Note. statistical significance denoted in bold *p<0.05 **p<0.001*

4.2.3 Bivariate results of attachment measures (dimensions and categories) on the ECR-RS associated with DRI-R

The summary of correlations, means, medians and the interquartile range for relationship structures, avoidance and anxiety scores in each relational domain (p <0.05) is presented in Table 6 below.

Table 6. Developmental, psychological and psychopathological measures and bivariate associations with therapeutic alliance (DRI-R)

	Total sample n=131		Therapeutic Alliance (DRI-R)		Test Statistic (df)	p value
			Median	(iqr)		
Attachment dimensions: ECR-RS, mean (sd)						
Global attachment related avoidance	**3.25**	(1.08)	-	-	Spearman's rs= -0.24	**0.005**
Global attachment related anxiety	**3.73**	(1.55)	-	-	Spearman's rs= -0.23	**0.007**
Relationship-specific attachment styles						
Avoidance (mother), n=129	**3.17**	(1.41)	-	-	-	-
Avoidance (father), n=121	**3.54**	(1.52)	-	-	-	-
Avoidance (partner), n=37	**2.73**	(1.23)	-	-	-	-
Avoidance (other), n=79	**3.14**	(1.15)	-	-	-	-
Anxiety (mother), n=129	**3.62**	(1.74)	-	-	-	-
Anxiety (father), n=121	**3.76**	(1.83)	-	-	-	-
Anxiety (partner), n=37	**3.72**	(2.03)	-	-	-	-
Anxiety (other), n=79	**3.81**	(1.77)			-	-
Attachment styles (ECR-RS dimensions ≥4), n (%)						
Insecure (fearful, dismissive, preoccupied)	72	(54.9)	161.5	42.5	Wilcoxon rank-sum test, z= -2.26	**0.023**
Secure (Secure)	59	(45.1)	176	36		

*Note. Statistical significance denoted in bold *p<0.05*

Attachment dimensions: global attachment-related dimensions of avoidance and anxiety were both significantly negatively associated with the therapeutic alliance (global avoidance: rs= -0.24, p=0.005; global avoidance: rs= -0.23, p= 0.007). Fig. 3.

Attachment styles: Attachment insecurity as a broad category (preoccupied, dismissive and fearful attachment styles) demonstrated a significant negative association with the alliance (z = -2.26, p=0.023). Those patients with an insecure attachment style showed lower median alliance scores on the DRI-R.

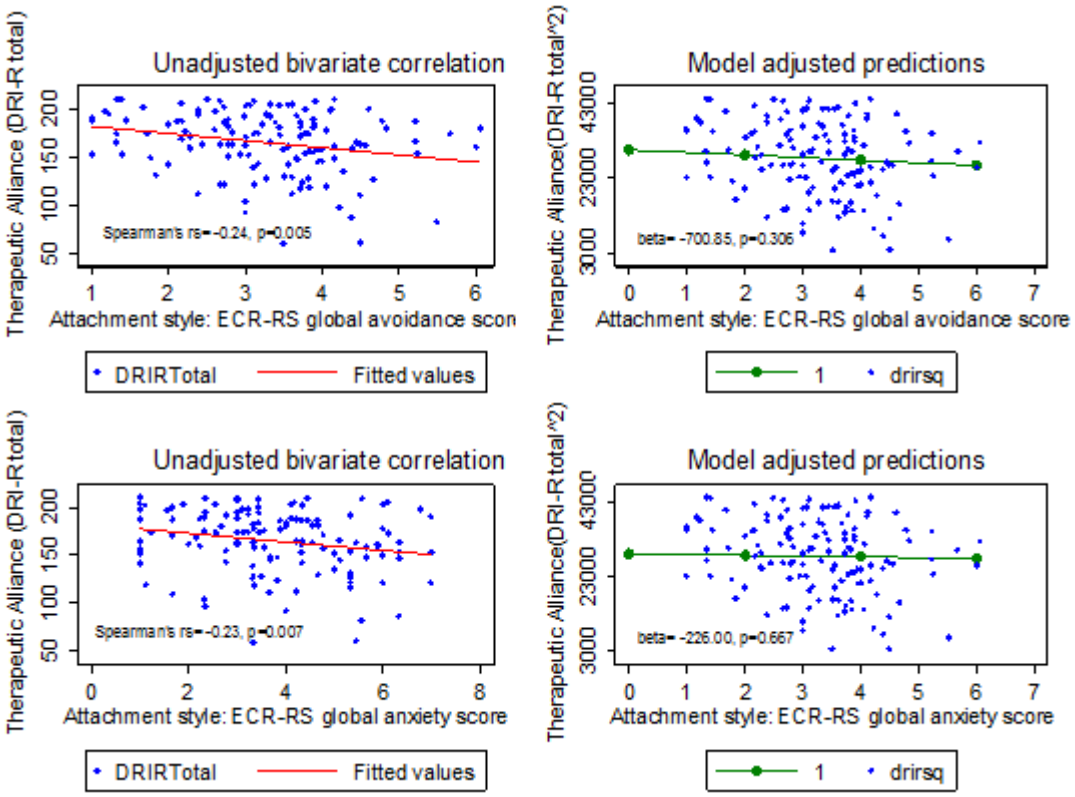

Fig. 3. Unadjusted Spearman correlations and adjusted models for attachment dimensions and DRI-R

4.2.4 DRI-R scores for personality pathology on the MCMI-III and significant predictors of the DRI-R after multiple linear regression modelling

Bivariate analysis showed significant associations between the DRI-R scores and narcissistic personality, borderline personality and schizoid personalities. Further regression modelling showed no further association with borderline and narcissistic personality and the alliance. Schizoid personality pathology remained moderately negatively associated with the alliance scores on the DRI-R. The data are presented in Table 7 below.

Table 7. Descriptive statistics DRI-R scores for various clinically significant personality elevations on MCMI-III, and significant predictors of DRI-R after hierarchical multiple linear regression modelling

MCMI-III scores (>cut-off)	Total sample n=131		Therapeutic Alliance (DRI-R)		Hierarchical multiple linear regression model					
	n	%	Med	(iqr)	β coef††	(SE)	Beta	F (df)	R2	ΔR2
Borderline	35	(26.7)	158	(54)	**-4753.96†**	(2681.12)	-0.21	8.02 (1, 129)**	0.058	-
Narcissistic	67	(51.1)	175	(41)	**3776.13***	(1796.39)	0.19	5.64(1, 128) *	0.098	0.039
Antisocial	59	(45)	159	(39)	-869.14	(2431.83)	-0.04	1.01 (1, 127)	0.105	0.007
Histrionic	3	(2.2)	197	(52)	-2203.49	(6014.18)	-0.03	0.27 (1, 126)	0.107	0.001
Schizoid	71	(54.2)	163	(52)	**-4223.37***	(2075.05)	-0.21	4.55 (1, 125)*	0.138	0.031
Schizotypal	32	(24.4)	161	(57.5)	-348.99	(2918.21)	-0.01	0.36 (1, 124)	0.141	0.002
Paranoid	44	(33.5)	167	(39.5)	2789.81	(2567.56)	0.13	1.93 (1, 123)	0.154	0.013
Aggressive	49	(37.4)	165	(42)	1579.70	(2655.80)	0.07	0.33 (1, 122)	0.156	0.002
Passive-aggressive	66	(50.3)	164.5	(41)	435.95	(2367.11)	0.02	0.01 (1, 121)	0.156	0.000
Avoidant	92	(70.2)	163	(44)	-2635.72	(2754.73)	-0.12	1.24 (1, 120)	0.165	0.008
Depressive	81	(61.8)	163	(42)	561.82	(2367.94)	0.02	0.02 (1, 119)	0.165	0.000
Dependent	98	(74.8)	164.5	(42)	33.06	(2709.02)	0.00	0.00 (1, 118)	0.165	0.000
Compulsive	17	(12.9)	188	(21)	2231.54	(2843.06)	0.07	0.62 (1, 117)	0.170	0.004

*For ΔR2: *p<0.05, ** p<0.01, †p=0.079†† variables with p<0.25 in full multivariable model:* ***borderline****,* ***narcissistic*** *and* ***schizoid*** *Note. Statistical significance denoted in bold*

4.2.5 Bivariate results of personality and related psychological measures associated with the alliance (DRI-R)

Psychopathy category (median =14) and dimensional scores (PCL-SV >18) were not associated with the alliance. Participants who scored low on the Raven intelligence screen demonstrated significantly lower alliance scores on the DRI-R (z=3.45, p<0.001). Childhood trauma, childhood conduct disorder and exposure to domestic violence were not significantly associated with the therapeutic alliance. The data are presented in Table 8 below.

Table 8. Personality and related psychological measures and bivariate associations with therapeutic alliance (DRI-R)

	Total sample		Therapeutic Alliance (DRI-R)		Test Statistic (df)	p value
	n=131		Median	(iqr)		
PCL-SV, median (iqr)	14	(8)	-	-	Spearman's r_s= -0.09	0.257
Psychopathy (PCL-SV score>18), n (%)						
Yes	39	(29.7)	(165)	(42)	Wilcoxon rank-sum test, z= 0.80	0.422
No	92	(70.2)	(173.5)	(38)		
IQ≤70, n (%)						
Yes	16	(12.2)	(144)	(28)	Wilcoxon rank-sum test, z= 3.45	**<0.001**
No	115	(87.8)	(175)	(38)		
Childhood trauma), n (%)						
Yes	104	(79.4)	(165)	(42.5)	Wilcoxon rank-sum test, z= 1.26	0.207
No	27	(20.6)	(175)	(28)		
Childhood conduct disorder), n (%)						
Yes	70	(53.4)	(162.5)	(46)	Wilcoxon rank-sum test, z= 1.49	0.134
No	61	(46.5)	(175)	(31)		
Exposure to domestic violence, n (%)						
Yes	60	(45.8)	(165)	(41.5)	Wilcoxon rank-sum test, z= 1.44	0.148
No	71	(54.2)	(174)	(39)		

*Note. DRI-R=Dual-role Relationship Inventory PCl-SV= psychopathy Checklist-Screening Version Statistical significance denoted in bold *p<0.05 **p<0.001*

4.2.6 Bivariate results of the therapeutic programme, milieu and social support associated with DRI-R

Variables related to therapeutic programme, milieu and social support were analysed for correlation with the therapeutic alliance. Privileges of leave from the hospital approached significance with the alliance ($\chi2$=6.98(3), p=0.072). Those patients who had long leave of between 3 to 6 months demonstrated higher median alliance scores on the DRI-R and the lowest scores were computed for those who were receiving between one day to a weekend leave from the hospital.

Psychotherapy, occupational therapy, family support, medication adherence, current employment and parole privileges were not significantly associated with the alliance. Analysis showed a significant association between key practitioner type and the therapeutic alliance ($\chi2$ = 20.72(4), p<0.001).

Psychology and psychiatry showed the highest median therapeutic alliance scores for practitioner type with social work recording the lowest median alliance rating on the DRI-R. The data are presented in Table 9 below.

Table 9. Variables related to therapeutic programme, milieu and social support and associations with therapeutic alliance (DRI-R)

	Total sample n=131		Therapeutic Alliance (DRIR)		Test Statistic (df)	p value
	n	**(%)**	**Med**	**Iqr**		
Privileges: leave of absence						
No leave of absence	53	(40.4)	163	(44)	Kruskal-Wallis ANOVA, χ^2=6.98(3)	0.072
Weekday or weekend	14	(10.6)	160.5	(22)		
Month	22	(16.9)	169.5	(43)		
3- or 6-month leave	42	(32)	183	(31)		
Key member multidisciplinary team (DRI-R)						
Nursing staff member	31	(23.6)	152	(52)	Kruskal-Wallis ANOVA, χ^2=20.72(4)	**<0.001**
Psychiatrist	35	(26.7)	178	(35)		
Psychologist	33	(25.2)	186	(32)		
Occupational therapist	20	(15.3)	164	(36.5)		
Social worker	12	(9.2)	142	(44)		

*Note. Statistical significance denoted in bold **p<0.001 Med=median, iqr=interquartile range*

4.2.7 Hierarchical multiple linear regression model of significant variables and alliance (DRI-R) [modelling relationship between attachment style (ECR-RS) and alliance (DRI-R)]

The regression model, represented in Table 10, contains a stepwise addition of five blocks of variables:

- **Block 1**: Only the ECR-RS dimensional measures were added in block 1. Both global attachment-related avoidance and global attachment-related anxiety were significantly negatively associated with the therapeutic alliance and explained a significant amount of variation in the DRI-R score (9%), F=7.80(128), p<0.001).
- **Block 2**: Age, employment at arrest, diagnosis, prior psychiatric history and violent index offence at presentation were added to the regression model. Age, prior psychiatric history and a violent index offence were significantly associated with the alliance. The addition of these variables to the model, led to an 18% increase in the variance explained in the therapeutic alliance (DRI-R) (ΔR2=0.18), which is a significant increase in total variance explained. Attachment measures no longer demonstrated an association with the DRI-R.
- **Block 3**: Intelligence (IQ), schizoid, narcissistic and borderline personality pathology and exposure to domestic violence were the variables added to block 3. Intelligence (IQ), schizoid personality pathology and narcissistic personality pathology explained 14% of the variance in the alliance (14%), F=5.67(113), p<0.001). IQ was not significantly associated with the alliance in the regression model. Narcissistic and borderline personality pathology no longer demonstrated an association with the alliance in the final model.

- **Block 4**: In block 4, only the PANSS total score was added to the model which was not associated with a significant variance in the alliance.
- **Block 5**: Treatment setting, medication compliance, ward relations, parole privileges and key practitioner type were entered into block 5 of the model. The final full model accounted for 55% of the total variance of the therapeutic alliance (DRI-R), ($F(27, 103) = 8.15$, $p<0.001$, adjusted $R2=0.43$). Significantly lower alliance scores were associated with a prior psychiatric history, a violent index offence and schizoid personality pathology. For key practitioner type in the final model, using nursing as a reference category, psychologists and psychiatrists were associated with significantly higher alliance scores on the DRI-R.

Table 10. Hierarchical multiple linear regression model, modelling relationship between attachment style and outcome of therapeutic alliance (DRI-R^2) adjusted for covariates

		Block 1		Block 2		Block 3		Block 4		Block 5: Final full model			
Variables		**Bcoef**	**Se**	**Bcoef**	**Se**	**Bcoef**	**Se**	**Bcoef**	**Se**	**Bcoef**	**Se**	**beta**	**p value**
Attachment styles													
ECR-RS global avoidance scale		**-1878.33***	(727.86)	-1175.16	(689.16)	-695.39	(647.81)	-685.39	(661.69)	-700.85	(681.44)	-0.08	0.306
ECR-RS global anxiety scale		**-1135.34***	(562.98)	-721.58	(544.27)	-245.62	(499.17)	-72.78	(526.55)	-226.00	(523.55)	-0.04	0.667
Age:	18-24 (ref)			(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
	25-34			1982.35	(2278.69)	2967.01	(2178.56)	3063.15	(2086.60)	2080.24	(1990.46)	0.10	0.298
	35-44			**4655.49***	(2280.40)	**5616.25***	(2188.23)	**5315.57***	(2133.21)	4422.38	(2231.48)	0.19	0.050
	45-75			5043.74*	(2822.54)	**7116.13***	(2798.04)	**6403.58***	(2932.09)	5883.50	(2990.09)	0.21	0.052
Employed at time of arrest				-1382.39	(1901.18)	-224.18	(1732.03)	6.14	(1704.68)	-1015.33	(1477.07)	-0.05	0.493
Diagnosis:	Schizophrenia spectrum			(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
	Bipolar disorder			**4818.41****	(1838.03)	**5081.82****	(1790.91)	**4255.43***	(1757.80)	3283.78	(2029.59)	0.14	0.109
	Schizoaffective disorder			558.83	(2289.26)	342.37	(1995.40)	-1.65	(1966.43)	364.45	(1830.96)	0.01	0.843
	Other			-2938.19	(2160.55)	1392.84	(2549.95)	-89.95	(2487.65)	-1155.79	(2466.21)	-0.03	0.640
Prior psychiatric history				**-5736.66****	(2016.41)	**-6613.08****	(2108.61)	**-6378.69****	(2119.59)	**-5412.88***	(2070.06)	-0.23	**0.010**
Index crime violent				**-6572.23****	(2356.23)	**-6652.71****	(2263.83)	**-6811.94****	(2327.54)	**-5835.97****	(2197.19)	-0.19	**0.009**
Intelligence (IQ)						**591.78***	(275.93)	**531.22***	(269.86)	**511.88***	(244.70)	1.01	0.039
IQ^2						**-3.41***	(1.57)	**-3.11***	(1.55)	**-3.09***	(1.44)	-1.08	0.034
Exposure to domestic violence						-1586.40	(1557.86)	-1385.68	(1543.18)	-1921.61	(1448.84)	-0.10	0.188
Schizoid personality disorder						**-5263.95****	(1562.54)	**-4783.64****	(1629.42)	**-4717.97****	(1572.28)	-0.24	**0.003**
Narcissistic personality disorder						**3669.97***	(1466.51)	**3495.65***	(1491.68)	2016.03	(1456.61)	0.10	0.169
Borderline personality disorder						-3674.24	(1974.28)	-3243.44	(1928.34)	-1750.73	(1879.28)	-0.08	0.354
PANSS total score								-67.27	(42.53)	-58.58	(38.27)	-0.12	0.129
Treatment setting (out vs. inpatient)										**5195.29***	(2538.90)	0.25	0.043
Medication compliance (good vs. poor)										-1115.76	(1539.57)	-0.06	0.470
Ward relations (good vs. conflictual)										-635.09	(1961.12)	-0.03	0.747
Privileges:	no parole (ref)									(ref)	(ref)	(ref)	(ref)
	ground or OT									**5010.58****	(1859.89)	0.25	**0.008**
	Town									1238.68	(2213.63)	0.04	0.577
MDT	Nursing (ref)									(ref)	(ref)	(ref)	(ref)
	Psychiatrist									**7419.22*****	(2036.53)	0.33	**0.000**
	Psychologist									**5456.37***	(2258.95)	0.24	**0.017**
	Occupational therapist									3907.64	(2942.19)	0.14	0.187
	Social worker									2797.95	(2552.20)	0.08	0.276
		R^2=0.09		R^2=0.27		R^2=0.41		R^2=0.42		R^2=0.55			
		ΔR^2=0.09		ΔR^2=0.18		ΔR^2=0.14		ΔR^2=0.01		ΔR^2=0.13			
		F=7.80(128)		F=4.74 (119)		F=5.67 (113)		F=2.5 (112)		F=4.04 (103)			
		p<0.001		p<0.001		p<0.001		p=0.116		p<0.001			

*Final full model: F (27, 103) = 8.15, p<0.001, adjusted R^2=0.43; ***p<0.001, **p<0.01, *p<0.05; beta= standardised beta coefficients, se= robust standard errors*

4.2.8 Multiple linear regression model of the relationship between attachment styles (AS) and the dependent variables of therapeutic alliance on DRI-R subscales (Fair/care, Trust, Toughness)

In the model depicted in Table 11, global avoidance was significantly negatively associated with the Trust subscale scores of the DRI-R (p=0.009). Older age groups in comparison to the youngest age group were significantly positively associated with the Trust subscale scores (35–45 years, p=0.028; 45–75 years, p=0.013). Bipolar mood disorder was significantly positively associated with the Trust subscale scores (p=0.011). Schizoid pathology showed a negative association with the Fair/care subscale scores (p=0.005). A violent index offence was significantly negatively associated with 2 subscales on the DRI-R (Fair/care, p=0.044; Trust, p=0.001) and significantly positively associated with the Toughness subscale of the alliance (p=0.003). A prior psychiatric history was significantly negatively associated with both Fair/care and Trust subscales of the alliance (p=0.013; p=0.002).

Intellectual functioning (IQ) was positively associated with Trust scores (p=0.002) and exposure to domestic violence showed a significant negative association with Trust scores (p=0.004). Ground parole privileges were positively associated with the Fair/care subscale (p=0.011). Key practitioner types (MDT) showed a strong correlation with the Toughness subscale of the DRI-R (p<0.001).

Table 11. Multiple linear regression modelling the relationship between attachment styles and the dependent variables of Therapeutic Alliance on DRI-R subscales

		Model 1: Fair/care total[2]				Model 2: Trust-total[2]				Model 3: Tough-total-log-scale			
Variables		**Bcoef**	**Se**	**Beta**	**p value**	**Bcoef**	**Se**	**Beta**	**p value**	**βcoef**	**Se**	**beta**	**p value**
ECR-RS global avoidance scale		-201.61	(368.58)	-0.05	0.586	**-263.66****	(99.48)	-0.90	**0.009**	0.06	(0.04)	0.11	0.218
ECR-RS global avoidance[2]		-	-	-	-	**38.59***	(15.26)	0.87	0.013	-	-	-	-
ECR-RS global anxiety scale		-145.03	(278.23)	-0.05	0.603	8.43	(17.80)	0.04	0.637	-0.00	(0.03)	-0.00	0.978
Age:	18-24 (ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
	25-34	1083.82	(1020.02)	0.11	0.290	126.02	(70.58)	0.20	0.077	0.01	(0.12)	0.01	0.928
	35-44	2030.88	(1103.91)	0.18	0.069	**185.19***	(83.25)	0.25	**0.028**	-0.04	(0.16)	-0.04	0.779
	45-75	2413.47	(1438.96)	0.18	0.097	**244.39***	(96.89)	0.27	**0.013**	-0.16	(0.18)	-0.10	0.387
Employed at time of arrest		-533.39	(818.26)	-0.05	0.516	0.37	(47.71)	0.00	0.994	0.01	(0.10)	0.01	0.918
Diagnosis:	Schizophrenia spectrum	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
	Bipolar disorder	1989.49	(1196.27)	0.17	0.099	**162.30***	(62.44)	0.21	**0.011**	0.11	(0.12)	0.09	0.337
	Schizoaffective disorder	137.47	(893.51)	0.01	0.878	-1.67	(62.91)	-0.00	0.979	-0.12	(0.11)	-0.09	0.259
	Other	-640.40	(1246.88)	-0.03	0.609	176.19	(124.91)	0.12	0.161	0.45	(0.25)	0.19	0.075
Prior psychiatric history		**-2578.09***	(1024.34)	-0.22	**0.013**	**-192.70****	(60.30)	-0.25	**0.002**	0.12	(0.12)	0.09	0.290
Index crime violent		**-2290.83***	(1122.68)	-0.16	**0.044**	**-205.88*****	(57.46)	-0.21	**0.001**	**0.38****	(0.13)	0.23	**0.003**
Intelligence (IQ)		-22.41	(22.00)	-0.09	0.311	**23.19****	(7.46)	1.42	**0.002**	-0.00	(0.00)	-0.03	0.783
IQ[2]						**-0.14****	(0.04)	-1.47	**0.003**				
Exposure to domestic violence		-865.31	(767.55)	-0.09	0.262	**-138.74****	(46.55)	-0.22	**0.004**	0.04	(0.09)	0.03	0.677
Schizoid personality disorder		**-2474.23****	(869.62)	-0.26	**0.005**	-99.46	(52.06)	-0.16	0.059	0.12	(0.09)	0.11	0.167
Narcissistic personality disorder		1168.30	(769.29)	0.12	0.132	77.50	(50.67)	0.12	0.129	0.03	(0.09)	0.03	0.732
Borderline personality disorder		-494.89	(995.79)	-0.05	0.620	-5.66	(62.46)	-0.01	0.928	0.11	(0.11)	0.09	0.322
Hospital setting (out vs. inpatient		2056.42	(1280.13)	0.20	0.111	94.33	(75.06)	0.14	0.212	-0.25	(0.15)	-0.22	0.099
PANSS total score		-36.28	(20.32)	-0.15	0.077	-1.24	(1.24)	-0.08	0.320	0.00	(0.00)	0.09	0.277
Medication compliance (good vs. poor)		-956.14	(810.69)	-0.10	0.241	-51.68	(53.86)	-0.08	0.340	-0.11	(0.10)	-0.10	0.255
Ward relations (conflictual vs. good)		-783.56	(948.68)	-0.08	0.411	-66.21	(57.38)	-0.10	0.251	-0.04	(0.10)	-0.04	0.705
Privileges:	No parole (ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
	Ground or OT	**2513.59***	(966.27)	0.25	**0.011**	83.65	(65.86)	0.13	0.207	-0.16	(0.11)	-0.15	0.148
	Town	551.76	(1178.79)	0.04	0.641	-0.65	(81.26)	-0.00	0.994	-0.05	(0.15)	-0.04	0.717
MDT:	Nursing (ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
	Psychiatrist	**2440.47***	(1158.34)	0.23	**0.038**	**218.66****	(66.62)	0.31	**0.001**	**-0.51*****	(0.12)	-0.42	**<0.001**
	Psychologist	1861.58	(1269.48)	0.17	0.146	25.82	(68.86)	0.04	0.708	**-0.57*****	(0.13)	-0.46	**<0.001**
	Occupational therapist	679.12	(1549.05)	0.05	0.662	46.50	(91.61)	0.05	0.613	**-0.56*****	(0.15)	-0.38	**<0.001**
	Social worker	440.25	(1315.77)	0.03	0.739	-56.50	(96.07)	-0.05	0.558	**-0.72*****	(0.19)	-0.39	**<0.001**
R^2		0.47				0.53				0.44			
adjusted R^2		0.34				0.40				0.30			

*Model 1: F(26, 104) = 5.97, p<0.001; Model 2: F(28, 102)= 9.50, p<0.001; Model 3: F(26, 104) = 4.51, p<0.001; ***p<0.001, **p<0.01, *p<0.05, beta=std. beta, se= robust se*

4.3 Determinants of Risk (HCR-20)

4.3.1 Bivariate results of demographic and clinical characteristics associated with risk (HCR-20)

Age showed no significant association with risk on the HCR-20. Marital status approached significance with risk (p=0.060) with single men showing higher risk scores on the measure. Education was significantly associated with risk ($\chi 2$=6.78(2), p=0.033) with low education levels demonstrating significantly higher risk scores. Employment at time of arrest was not statistically significant. Substance misuse was significantly associated with risk (z= -2.59, p=0.009) with higher risk scores prevalent in substance users. Illness duration (p=0.079) and diagnosis (p=0.079) approached significance in relation to increased risk. Length of hospital stay, a prior psychiatric history and the number of hospitalisations were not significantly associated with risk. Treatment setting however was significantly associated with risk (z=5.94, p<0.001) with outpatients showing significantly lower risk on the HCR-20 than inpatients. In relation to psychosis, the PANSS scores showed a significant positive association with risk (HCR-20) both at the subscale level (p< 0.001) and for total PANSS scores (Spearman's rs= 0.53, p< 0.001). Patients with high total scores on the PANSS had significantly higher risk for violence. The data are presented in Table 12 below.

Table 12. Sample demographic and clinical characteristics and bivariate associations with risk (HCR-20)

	Total sample n=131		Risk (HCR-20)		Test Statistic (df)	p value
	N	(%)	Median	(iqr)		
Age, n (%)						
18-24	22	(16.7)	25.2	(7)	Kruskal-Wallis ANOVA, χ^2=3.69 (3)	0.296
25-34	57	(43.5)	22	(11)		
35-44	33	(25.1)	23	(8)		
45-75	19	(14.5)	23	(8)		
Marital status, n (%)						
Not married	115	(87.7)	24	(9)	Kruskal-Wallis ANOVA, χ^2=3.53 (1)	0.060
Married or cohabiting	16	(12.3)	18.5	(9)		
Education, n (%)						
0-7 years	38	(29)	26.5	(5)	Kruskal-Wallis ANOVA, χ^2=6.78 (2)	**0.033**
8-12 years	81	(61.8)	22	(10)		
>12 years	12	(9.2)	20.5	(12.5)		
Employment at time of arrest, n (%)						
Employed	48	(36.6)	21.5	(12)	Kruskal-Wallis ANOVA, χ^2=2.21(1)	0.136
Unemployed	83	(63.4)	24	(9)		
Diagnosis n (%)						
Schizophrenia spectrum disorder	68	(51.9)	23.5	(9)	Kruskal-Wallis ANOVA, χ^2= 6.76	0.079
Schizoaffective disorder	27	(20.6)	24	(9)		
Bipolar mood disorder	29	(22.1)	24	(8)		
Other	7	(5.3)	15	(14)		
Substance use disorder n (%)						
Yes	121	(92.4)	24	(9)	Wilcoxon rank-sum test, z= -2.59	**0.009**
No	10	(7.6)	17	(7)		
Psychotic symptoms m(iqr)						
PANSS positive scale	18	(12)		(12)	Spearman's r_s= 0.56	**<0.001**
PANSS negative scale	18	(12)		(12)	Spearman's r_s= 0.33	**<0.001**
PANSS general scale	34	(14)		(14)	Spearman's r_s= 0.46	**<0.001**
PANSS total	70	(32)		(32)	Spearman's r_s= 0.53	**<0.001**
Illness duration (years), median (iqr)	17	(15)		-	Spearman's r_s= 0.15	0.079
Length of hospital stay, n (%)						
1-4 years	12	(9.2)	20.5	(9)	Kruskal-Wallis ANOVA, χ^2=5.71(3)	0.126
>4-8 years	46	(35.1)	24	(8)		
>8-15 years	51	(38.9)	25	(9)		
>15 years	22	(16.8)	24	(12)		
Prior psychiatric history, n (%)						
Yes	28	(21.4)	24	(9)	Wilcoxon rank-sum test, z= -1.73	0.083
No	103	(78.6)	21	(10.5)		
Number of prior psychiatric hospitalisations, n (%)						
None	40	(30.5)	22.5	(10)	Kruskal-Wallis ANOVA, χ^2=1.36(2)	0.506
1-5	60	(45.8)	22.5	(9)		
>6	31	(23.6)	25	(10)		
Treatment setting, n (%)						
Inpatient	89	(67.9)	26	(8)	Wilcoxon rank-sum test, z= 5.94	**<0.001**
Outpatient	42	(32.1)	17	(10)		

*Note. Statistical significance denoted in bold *p<0.05 **p<0.001, HCR-20= Historical, Clinical Risk management 20 scale*

4.3.2 Bivariate results of forensic and legal characteristics associated with risk (HCR-20)

A criminal conviction prior to the index forensic admission was significantly associated with higher risk scores on the HCR-20 (z= -2.77, p=0.005). A prior conviction for a violent crime was similarly statistically significant and associated with increased risk (z= -2.22, p=0.025). A violent index offence that accounted for the admission to the forensic unit was not significant in relation to risk at the 5% significance level. The data are presented in Table 13 below.

Table 13. Sample forensic and legal characteristics and bivariate associations with risk (HCR-20)

	Total sample		HCR-20 score		Test Statistic (df)	p value
	n=131		Median	(iqr)		
Criminal conviction prior to index forensic admission n (%)						
Yes	66	(50.4)	25	(8)	Wilcoxon rank-sum test, z= -2.77	**0.005**
No	65	(49.6)	21	(12)		
Prior conviction for violent crime						
Yes	29	(22.1)	26	(5)	Wilcoxon rank-sum test, z= -2.22	**0.025**
No	102	(77.9)	22	(11)		
Violent index offence n (%)						
Yes	115	(87.8)	24	(9)	Wilcoxon rank-sum test, z= -0.29	0.770
No	16	(12.2)	21.5	(9.5)		

*Note. Statistical significance denoted n bold *p<0.05, HCR-20=Historical, Clinical, Risk management-20 measure*

4.3.3 Bivariate results of developmental, psychological and psychopathological characteristics associated with risk (HCR-20)

The global dimension of attachment-related anxiety was significantly associated with risk (rs= 0.24, p=0.004) and global attachment-related avoidance approached significance (p=0.078). Attachment category (secure vs insecure attachment) was not associated with risk at the 5% significance level (p=0.115).

The median PCL-SV score was significantly positively associated with risk on the HCR-20 using Spearman's rank test (rs =0.75, p<0.001) and dimensional scores (PCL-SV >18) were similarly significantly positively associated with risk (z= -6.89, p<0.001) at the bivariate level.

A caveat: Caution is advised in the interpretation of this correlation given that the risk measure contains an item related to the psychopathy measure. This caveat similarly applies to substance misuse and treatment compliance that are items on the HCR-20.

A history of childhood trauma and exposure to domestic violence was not associated with risk on the HCR-20 (p=0.113; p=0.238). Childhood conduct disorder however, was significantly associated with

risk (z= -5.26, p<0.001). Men who had a history of conduct disorder in childhood had significantly higher risk scores than those who had no record of childhood conduct disorder. The data are presented in Table 14.

Table 14. Developmental, psychological and psychopathological measures and bivariate associations with risk (HCR-20)

	Total sample		HCR-20 score		Test Statistic (df)	p value
	n=131		med	(iqr)		
Attachment dimensions: ECR-R mean(sd)						
Global avoidance	3.25	(1.08)	-	-	Spearman's r_s= 0.15	**0.078**
Global anxiety	3.73	(1.55)	-	-	Spearman's r_s= 0.24	**0.004**
Attachment styles (ECR-R dimensions ≥4)						
Insecure n(%)	72	(54.9)	25	(8)	Wilcoxon rank-sum test, z= 1.57	0.115
Secure (Secure) n(%)	59	(45)	21	(11)		
Psychopathy (PCL-SV) median, (iqr)	14	(8)	-	-	Spearman's r_s= 0.75	**<0.001**
Psychopathy (PCL-SV score>18) n(%)						
Yes	39	(29.7)	29	(4)	Wilcoxon rank-sum test, z= -6.89	**<0.001**
No	92	(70.2)	21	(9)		
Intelligence (IQ), median (iqr)	96	(24)	-	-	Spearman's r_s= -0.25	**0.003**
Intellectual disability (IQ<70) n(%)						
Yes	16	(12.2)	25.5	(7.5)	Wilcoxon rank-sum test, z= -0.79	0.426
O	115	(87.8)	23	(9)		
History of childhood trauma n (%)						
Yes	104	(79.4)	24	(9)	Wilcoxon rank-sum test, z= -1.58	0.113
No	27	(20.6)	21	(9)		
History of childhood conduct disorder						
Yes	70	(53.4)	27	(7)	Wilcoxon rank-sum test, z= -5.26	**<0.001**
No	61	(46.5)	19	(10)		
History of domestic violence n (%)						
Yes	60	(45.8)	25	(9)	Wilcoxon rank-sum test, z= -1.18	0.238
No	71	(54.2)	23	(10)		

*Note. Statistical significance denoted in bold *p<0.05 ** p<0.001, ECR-RS =Experiences in Close Relationships-Relationship Structures questionnaire*

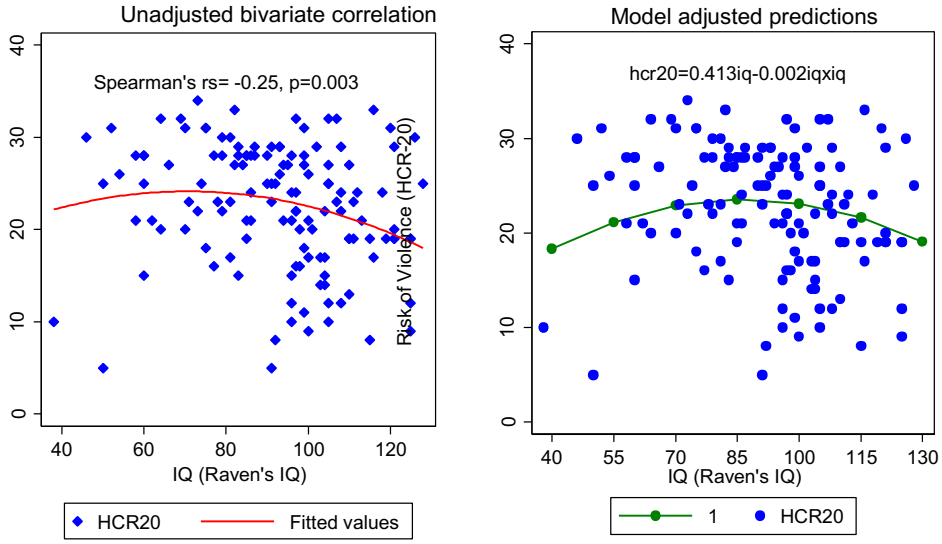

Fig. 4. Unadjusted Spearman correlations and adjusted models for IQ and HCR-20

Median IQ scores were significantly negatively associated with risk scores (rs = -0.25, p=0.003). Intellectual disability (IQ<70) was not associated with risk scores at the bivariate level (p=0.426) however, intellectual functioning showed a curvilinear relationship to risk (HCR-20). As IQ decreased (IQ<80), risk scores significantly increased. As IQ steadily increased, risk decreased *(Fig.4 above*).

4.3.4 Therapeutic Alliance (DRI-R) and bivariate associations with risk (HCR-20) and key practitioner type (DRI-R) and bivariate associations with risk HCR-20).

As depicted in *Table 15* and *Fig. 5*, the DRI-R total score was significantly negatively associated with risk scores (rs= -0.25, p=0.003). As DRI-R scores increased, risk scores decreased. All three subscale scores were significantly associated with risk.

The DRI-R Fair/care subscale was significantly negatively associated with risk (rs= -0.20, p=0.016); Trust subscales approached significance (p=0.063) and the Toughness subscale showed a significant positive association with risk (rs = 0.29, p<0.001).

Key practitioner type (MDT) was significantly associated with risk scores ($\chi 2$ =9.78(4), p=0.044) and median risk scores on the HCR-20 were highest for the social work category compared with the other professions in the MDT.

Table 15. Therapeutic alliance (DRI-R) and key practitioner type and bivariate associations with risk (HCR-20); key practitioner type and risk (HCR-20)

	Total sample		HCR-20 score		Test statistic (df)	p value
	n=131		median	(iqr)		
Therapeutic Alliance TA (DRI-R), median (iqr)						
Fair/care	114	(29)	-	-	Spearman's r_s= -0.20	**0.016**
Trust	29	(9)	-	-	Spearman's r_s= -0.16	0.063
Toughness	11	(10)	-	-	Spearman's r_s= 0.29	**<0.001**
Total Score	171	(41)	23	(9)	Spearman's r_s= -0.25	**0.003**
DRI-R key practitioner, median (iqr)						
Nursing staff	31	(23.6)	26	(11)	Kruskal-Wallis ANOVA, χ^2= 9.78 (4)	**0.044**
Psychiatrist	35	(26.7)	22	(11)		
Psychologist	33	(25.2)	22	(8)		
Occupational therapist	20	(15.3)	20.5	(6.5)		
Social worker	12	(9.2)	28	(7.5)		

*Note. Statistical significance is denoted in bold *p<0.05 **p<0.001 iqr=interquartile range*

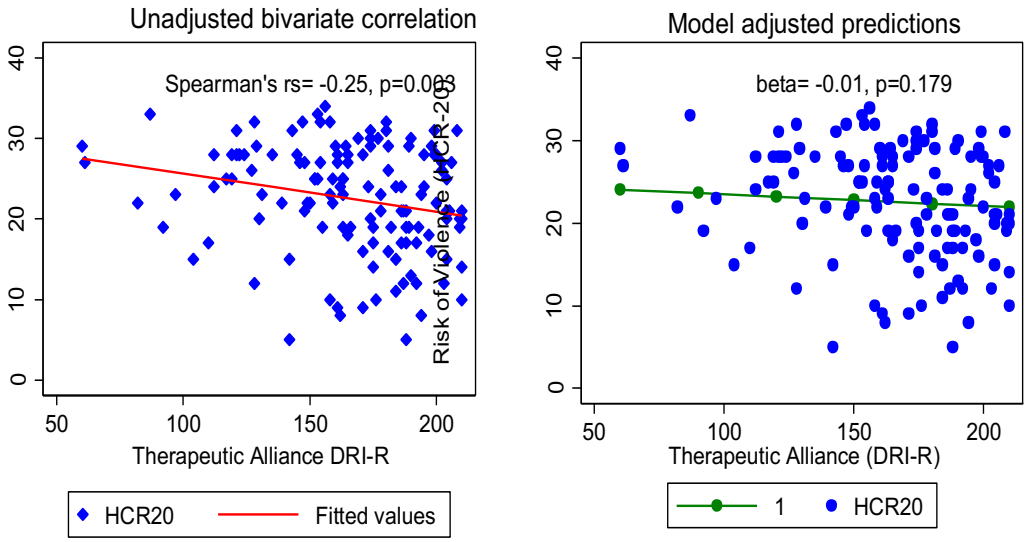

Fig. 5. Unadjusted Spearman correlations and adjusted models for alliance and HCR-20

4.3.5 Bivariate results of the therapeutic programme, milieu, and social support associated with risk (HCR-20)

In relation to psychotherapy, the median risk scores on the HCR-20 for those patients who had exposure to psychotherapy displayed marginally lower risk compared to those with no psychological intervention. This association approached significance (z=1.88, p=0.059).

Medication adherence was significantly associated with risk (HCR-20) with higher median risk scores recorded for non-adherence (z=3.65, p<0.001).

The association between family support and risk was statistically significant with reported poor family support associated with higher risk scores (z=2.36, p=0.017).

Ward relations was significantly associated with risk (z=-3.34, p<0.001) with conflictual ward relationships associated with higher risk.

The association between current employment and risk was significant with higher median risk scores shown for those who were not employed at the time of the study (z= 4.08, p<0.001).

Parole privileges were significantly associated with risk ($\chi 2$=21.89(2), p<0.001). Higher median risk scores were associated with ground/occupational therapy parole. Leave of absence privileges were significantly associated with risk ($\chi 2$= 26.72(3), p<0.001) with patients out on leave of absence of between 3 to 6 months demonstrating lowest risk of violence. The data are presented in Table 16 below.

Table 16. Variables related to therapeutic programme, milieu and social support and associations with risk (HCR-20)

	Total sample n=131		HCR-20 score		Test Statistic (df)	p value
	N	(%)	Med	(iqr)		
Psychotherapy						
Yes	88	(67.2)	22	(10.5)	Wilcoxon rank-sum test, z= 1.88	**0.059**
No	43	(32.8)	25	(9)		
Occupational therapy (group and individual)						
Yes	108	(82.4)	24	(9)	Wilcoxon rank-sum test, z= -2.65	0.007
No	23	(17.6)	18	(15)		
Medication adherence						
Poor	61	(46.6)	27	(8)	Wilcoxon rank-sum test, z= 3.65	**<0.001**
Good	70	(53.4)	21	(9)		
Family support						
Poor support	67	(51.1)	24	(9)	Wilcoxon rank-sum test, z= 2.36	**0.017**
Good support	64	(48.8)	21.5	(10.5)		
Ward relations						
Conflictual	60	(45.8)	25.5	(8.5)	Wilcoxon rank-sum test, z= -3.34	**<0.001**
Good	71	(54.2)	21	(11)		
Current employment						
Yes	41	(31.3)	19	(10)	Wilcoxon rank-sum test, z= 4.08	**<0.001**
No	90	(68.7)	25	(8)		
Privileges: parole						
No parole	64	(48.8)	20	(10)	Kruskal-Wallis ANOVA, χ^2=21.89(2)	**<0.001**
Ground or occupational therapy parole	48	(36.6)	27	(6.5)		
Town parole	19	(14.5)	24	(10)		
Privileges: leave of absence						
No leave of absence	53	(40.4)	25	(8)	Kruskal-Wallis ANOVA, χ^2=26.72(3)	**<0.001**
Weekday/weekend	14	(10.6)	27	(5)		
Month	22	(16.9)	27	(8)		
3- or 6-month leave	42	(32.1)	17.5	(10)		

*Note. Statistical significance denoted in bold *p<0.05 **p<0.001 Iqr=interquartile range*

4.3.6 The therapeutic alliance (DRI-R) and its relationship to risk as dependent variable (HCR-20)

Table 17 models the therapeutic alliance (DRI-R) and its relationship to risk (HCR-20) as dependent variable.

This hierarchical multiple linear regression model contains a stepwise addition of four blocks of variables.

- **Block 1**: In the first stepwise addition of variables to the model with HCR-20, only the DRI-R was added. A one unit increase in the alliance as measured by the DRI-R was associated with a 0.05 unit decrease in HCR-20 risk score, a significant reduction (p<0.01).
- **Block 2**: Variables less amenable to therapeutic intervention such as education and illness duration were entered into the model and keeping all variables constant, there remained a

significant negative association between the DRI-R (TA) and risk (HCR-20) with a one unit increase in the alliance score resulting in a 0.04-unit reduction in the risk score ($p<0.05$).

- **Block 3**: Intellectual functioning (IQ) and psychopathy were entered into the model. There remained a significant negative association between the alliance and risk (HCR-20). Intellectual functioning (IQ) showed a curvilinear relationship to risk. As IQ increased above 80 (IQ>80), risk scores decreased ($p=0.002$), and as IQ dropped below 80 (IQ<80), risk increased ($p=0.003$).
- **Block 4:** Variables more amenable to therapeutic intervention were added in block 4 such as outpatient versus inpatient status, symptom score, leave privileges and the key MDT practitioner variable. In the final model, after adjusting for all other variables psychopathy and psychosis were associated with the most risk on the HCR-20 ($F(18, 112)=27.74$, $p<0.001$, adjusted $R2=0.73$). For psychopathy, holding all other variables constant, a one unit increase in psychopathy score was associated with a 0.77-unit increase in risk on the HCR-20, which is a statistically significant increase ($p<0.001$). Psychosis severity as measured by the PANSS total score, showed that a one unit increase in the PANSS score was associated with a 0.08 unit increase the HCR-20 score, a statistically significant increase ($p<0.001$). The interaction terms between attachment (ECR-RS) and the therapeutic alliance (DRI-R) was not significant in relation to risk (HCR-20), which suggests that the alliance and attachment constructs are independent.

A caveat: Caution is advised in the interpretation of PCL-SV, treatment compliance and substance misuse associations with risk as these items are in the HCR-20 measure.

Table 17. Hierarchical multiple linear regression model, modelling therapeutic alliance (DRI-R) and its relationship to risk as dependent variable (HCR-20)

		Block 1		Block 2		Block 3		Block 4 Final Full Model				Model with interaction term			
VARIABLES		**Bcoef**	**Se**	**Bcoef**	**se**	**Bcoef**	**se**	**Bcoef**	**Se**	**beta**	**p value**	**βcoef**	**se**	**beta**	**p value**
Therapeutic Alliance (DRI-R total score)		-0.05**	(0.02)	-0.04*	(0.02)	-0.03**	(0.01)	-0.01	(0.01)	-0.07	0.179	-0.00	(0.03)	-0.00	0.995
ECR-RS Global Avoidance subscale						0.67*	(0.33)	0.41	(0.30)	0.07	0.174	1.09	(1.54)	0.18	0.479
ECR-RS x DRI-R interaction												-0.00	(0.01)	-0.12	0.647
Education	0-7 years (ref)														
	8-12 years			-1.98	(1.30)	0.55	(0.85)	0.42	(0.80)	0.03	0.603	0.43	(0.80)	0.03	0.588
	>12 years			-3.54	(2.15)	-1.53	(1.40)	-1.01	(1.52)	-0.04	0.506	-0.95	(1.51)	-0.04	0.530
Illness duration in years				0.11	(0.06)	0.06	(0.04)	0.08*	(0.04)	0.11	0.027	0.08*	(0.04)	0.11	0.027
Intelligence (IQ)						0.42**	(0.13)	0.41**	(0.14)	1.20	0.003	0.41**	(0.14)	1.19	**0.004**
IQ^2						-0.00**	(0.00)	-0.00**	(0.00)	-1.23	0.002	-0.00**	(0.00)	-1.22	**0.002**
Hare Psychopathy Checklist (PCLSV)						0.97***	(0.07)	0.77***	(0.07)	0.58	0.000	0.77***	(0.07)	0.58	**<0.001**
Hospital setting (out vs. inpatient)								-1.50	(1.25)	-0.10	0.232	-1.41	(1.28)	-0.10	0.271
PANSS total score								0.08***	(0.02)	0.25	0.000	0.09***	(0.02)	0.25	**<0.001**
Medication compliance (good vs. poor)								-0.73	(0.71)	-0.05	0.305	-0.72	(0.71)	-0.05	0.310
Privileges	No leave of absence														
	Weekend or weekday							-0.12	(0.95)	-0.01	0.901	-0.10	(0.94)	-0.00	0.914
	Month							0.43	(0.92)	0.02	0.640	0.41	(0.93)	0.02	0.663
	3 to 6 month							-1.75	(1.07)	-0.12	0.107	-1.83	(1.11)	-0.13	0.102
MDT	Nursing (ref)														
	Psychiatrist							-0.02	(0.98)	-0.00	0.982	-0.03	(0.99)	-0.00	0.974
	Psychologist							0.62	(1.01)	0.04	0.537	0.59	(1.02)	0.04	0.562
	Occupational therapist							0.23	(1.08)	0.01	0.828	0.24	(1.08)	0.01	0.828
	Social worker							-0.63	(0.98)	-0.03	0.520	-0.66	(0.96)	-0.03	0.493
		R^2=0.05		R^2=0.10		R^2=0.67		R^2=0.76				R^2=0.76			
		ΔR^2=0.0		ΔR^2=0.05		ΔR^2=0.56		ΔR^2=0.09				ΔR^2=0.0			
		F=9.71		F=2.53		F=65.80		F=4.43				F=0.21			
		p=0.002		p=0.060		p<0.001		p<0.001				p=0.646			

*Block 4: Final Full model: F(18, 112)=27.74, p<0.001, adjusted R^2=0.73; ***p<0.001, **p<0.01, *p<0.05, beta=standardised beta coefficients, se= robust standard errors*

4.3.7 Multiple linear regression models of PANSS subscales and DRI-R subscales with risk (HCR-20) as dependent variable

Additional modelling of the PANSS and DRI-R subscales with risk (HCR-20) as a dependent variable provided the results outlined below.

Model 1 PANSS subscale scores and DRI-R total scores

In model 1: the PANSS positive score is significantly associated with risk (HCR-20) and keeping all other variables in the model constant, a one unit (1 point) increase in the PANSS positive subscale is associated with a 0.24-unit increase on average in the HCR-20 risk score, which is a significant increase ($p<0.001$). Neither increase in the negative or general subscales of the PANSS is significantly associated with an increase in risk.

A one unit increase in the score on the PCL-SV is associated with a 0.77 increase in the HCR-20 score, which is statistically significant ($p<0.001$).

In the final model after adjusting for all other variables, the PANSS positive subscale and the PCL-SV are most significantly associated with risk as measured by the HCR-20 ($F(20, 110) = 27.19$, $p<0.001$).

Model 2 PANSS total scores and DRI-R subscale scores

Two of the DRI-R subscale scores (Fair/care; Trust) were negatively associated with risk and the Toughness subscale (control, authority) correlated positively with risk. This suggests that an increase in the total alliance (DRI-R) is associated with a decrease in risk on the HCR-20.

When PANSS is entered as a total score, a one unit increase in the total PANSS score is associated with a 0.08-unit increase in the HCR-20 on average, a significant positive association ($p<0.001$).

CHAPTER 5 DISCUSSION

5.1 Profile of the forensic patient

The socio-demographic profile of the state patients in the study was generally consistent with that found in the literature (e.g. Barret et al., 2007; Wang et al., 2007; Strydom et al., 2011; Marais & Subramaney, 2015). The study population (n=131) was drawn from an all-male state patient facility in South Africa, so the findings may not be generalisable to female forensic patients who were not included in this study for pragmatic reasons identified before. The men ranged in age from 18–75 years with a mean age of 33.6 years. The majority of the men were single (including divorced, separated, widowed) and over half of them had primary and secondary school education which is fairly consistent with local and international studies (Calitz et al., 2006; Skeem et al., 2007; Wang et al., 2007; Kazadi et al., 2008; Marais & Subramaney, 2015). From a local perspective, any disparity in levels of education could be indicative of greater access to education in certain provinces in SA although a Dutch study also cited more than half of the sample as having no education beyond primary school (de Vogel & de Ruiter, 2010). The majority of men were not employed at the time of their index offence which, is in keeping with the literature (Calitz et al., 2006; Barrett et al., 2007; Skeem et al., 2007; de Vogel & de Ruiter, 2010; Strydom et al., 2011; Marais & Subramaney, 2015). Most were not employed at the time of the study, which may be indicative of the high rate of unemployment in South Africa in the general population. Conversely, a greater proportion of the men were inpatients at the time of the study and those on leave from the hospital would have been supported by a state disability grant. Furthermore, a psychiatric diagnosis is often reported as a reason for being unemployed (Skeem et al., 2007). All patients were tested in the wards whether or not they were out on leave from the hospital.

5.2 Recovery milieu

More than half the sample had been exposed to psychological intervention during the period leading up to the study and many of the patients were engaged in occupational therapy activities at the time. Most men were reported to be adherent to their medication regimen and generally demonstrated non-conflictual ward relations. This suggests that the majority of the men were able to engage appropriately with each other and with staff without undue aggression. A small minority of the men had earned parole privileges such as a day outside the facility. Approximately a third were attending vocational rehabilitation or spending leisure time on hospital grounds while just under half of the patients were confined to the wards. A majority of the sample reported poor family support, which limited their leave privileges. Families are often the victims of relational violence and have difficulty living with a mentally ill, aggressive relative (Lindqvist & Skipworth, 2000; Dorkins & Adshead, 2011). Just under a third of the men were going out on long leave of absence of up to six months from the hospital.

The majority of men were diagnosed with a psychotic disorder (51.9%) and consistent with local and international studies, schizophrenia was the most common diagnosis found (48.5%) (Barret et al., 2007; Strydom, Pienaar et al., 2011; Marais & Subramaney, 2015). Most of the men in the study had a history of substance misuse which is consistent with studies in forensic populations (Timmerman & Emmelkamp, 2001; Skeem et al., 2007; Strydom, Pienaar et al., 2011; Marais & Subramaney, 2015).

Less than a third of the patients had a history of mental illness prior to their admission as a forensic state patient and the median length of their illness was in the region of 17 years. The overwhelming majority of the men had spent more than a decade in the forensic unit.

5.3 Developmental and behavioural factors

Impoverishment and adversity including abuse and witnessing of domestic violence in childhood were prevalent in the histories of the majority of men in the study and more than half of the men had conduct disorder in childhood which is consistent across forensic studies (e.g. Bradley, 1997; Pfafflin & Adshead, 2004; Murray & Farrington, 2010). Psycho-social deprivation is typically reported in a third of most general populations internationally but rates above 70% are the norm in forensic settings (Coid, 1992). Murray and Farrington (2010) cite significant statistics of disproportionate numbers of children with conduct disorder who come from low socio-economic families often with unemployed parents who live on social welfare grants. According to these authors, gang membership was also identified as a significant risk factor that increased offending and antisocial behaviour of the individual. Although gang affiliation was not measured in the present study it is speculated that many patients with histories of conduct disorder and who come from impoverished communities would have had some exposure to gang-related activities.

Fonagy and colleagues (1997) similarly view early childhood adversity, especially neglect, as a significant risk factor for the development of relational pathology (insecure attachment and personality disorders) and where childhood conduct disorder is considered to be a significant precursor to antisocial personality disorder and psychopathy (Murray & Farrington, 2010). Arguably in the present study population, substantial risk factors associated with high levels of conduct disorder seem to be parental neglect and abuse, domestic violence and high crime neighbourhoods that is common to most of the men in the study.

All patients in the study were assessed with clinically significant personality pathology and there was significant overlap of both sub-threshold disorders and serious personality disorders across the sample. Methodological limitations related to self-report inventories must be considered as contributory factors to high comorbidity. On the other hand, the inclusion of dimensions of severity in the analysis may have contributed to high comorbidity, however diagnostic demarcations based on theoretical cut-off scores often neglect the clinical significance of sub-threshold disorders with its related functional implications

(Millon et al., 2009:141). Alternatively, it may be explained by the severity of pathology in this population and is not an uncommon occurrence in forensic mental health populations. For example, in forensic services and prisons, the prevalence rates of personality disorders are as high as 70% (Adshead & Sarkar, 2012), which is significantly higher than in the general population (4–12%). Hildebrand and de Ruiter (2004) quote prevalence rates of up to 80% in some European forensic psychiatric samples and comorbidity is significantly high for serious mental illness, substance misuse and multiple personality disorders (Duggan et al., 2007; Newton-Howes et al., 2010). As stated in the literature review, one study cited up to 64 personality disorder diagnoses in only 22 subjects in male offenders in a forensic institution (Van Ijzendoorn et al., 1997).

According to Adshead and Sarkar (2006, 2012) patients with impaired attachment and who require containment in a secure facility, typically fulfil criteria for several personality disorders. The literature suggests that personality disorders common in forensic populations are paranoid, antisocial, borderline and narcissistic personality disorders (Coid, 1992; Adshead & Sarkar, 2012). In the present study, prevalent personality pathologies included dependent personality (74.8%) with comparable rates of schizoid (54.2%) and narcissistic personality pathology (51.1%). Just under half (45%) the sample were assessed with antisocial pathology. Dependent personality is arguably uncommon in forensic samples although the present data are in keeping with the diagnostic and statistical manual (DSM-IV) that cites a preponderance of dependent personality pathology in outpatient and inpatient facilities with prevalence rates in some studies exceeding 25%. Similarly, narcissistic personality pathology reaches prevalence rates of 25% in prison psychiatric populations (Esbec & Echeburua, 2010) as well as significant prevalence in forensic populations (Hildebrand & de Ruiter, 2004). The significance of schizoid pathology in relation to the therapeutic alliance in the present study, could be associated with the underlying attachment deficits prevalent in this personality structure, and in psychotic disorders, such as social detachment, apathy and difficulty forming and maintaining relationships (Craig, 2002). 29.7% of the sample fulfilled the criteria for psychopathic pathology, which is consistent with the literature of between 15–30% among samples of forensic patients (Doyle et al., 2002; Hildebrand & de Ruiter, 2004). High rates of psychopathy in the study could also be attributed to the use of a screening measure (PCL-SV), which may have inflated the scores. However, the median psychopathy score of 14 in the study is similar to the average score of 13 in criminal samples and expectedly higher than in the general population (PCL-SV≤3) (Babiak & Hare, 2006).

5.4 Psycho-legal and forensic factors

Over half the men had a criminal conviction prior to their index forensic admission whereas just under a third had previous convictions for violent offences. This is similar to the 25% previous conviction rate among forensic samples (e.g. Douglas et al., 2003; Skeem et al., 2007; de Vogel & de Ruiter, 2010). The majority of the men had a violent forensic index offence (for which they had been designated state

forensic patients) whereas, a small minority had non-violent offences such as theft. Defendants charged with non-violent offences can be committed as state patients at the court's discretion and pertinent to the defendant's history of habitual crime or multiple admissions to psychiatric facilities. The foremost offences were against persons including assault, murder, sexual offences and attempted murder .The kinds of offences committed are generally consistent across the forensic literature (Skeem et al., 2007; de Vogel & de Ruiter, 2010) although sexual offences were slightly less prevalent in the present study than in some local studies (Calitz, van Rensburg et al., 2006; Barrett, du Plooy et al., 2007; Strydom, Pienaar et al., 2011; Marais & Subramaney, 2015), whereas prevalence rates of murder were slightly elevated in the present study.

5.5 Determinants of the therapeutic alliance (DRI-R)

5.5.1 Demographic and clinical factors and therapeutic alliance

The forensic environment is nuanced by the complexities of treatment and risk prevention that potentially alter the nature and perspective of the therapeutic alliance and may well have influenced relevant outcomes. Various interpretations of the data are therefore possible. The first is that older patients have a stronger therapeutic relationship with the members of the MDT than younger men, and men who are more educated, from middle school to higher education, have more robust therapeutic relationships with their practitioners. This relationship also held for trust, with older men more likely to be more trusting of their relationship with their practitioners. This is consistent with the literature in which older patients had small to moderate positive associations with the alliance (McCabe & Priebe, 2004; Barrowclough et al., 2010). Similarly, men who were employed prior to their involuntary admission in the forensic unit, had stronger alliances with their practitioners. This finding can be interpreted to suggest that men with superior premorbid functioning, sophisticated social networks and better socio-economic circumstances may present with less relational disturbance, and that healthier premorbid factors serve to protect them from further social and functional decline.

The duration of stay in the hospital was surprisingly not significant in relation to a strong therapeutic relationship, although median alliance scores were marginally higher for those patients whose stay in the hospital exceeded 15 years. The lack of statistical significance is somewhat counter-intuitive given that patients should develop stronger relationships with staff over a longer period of time and often become more securely attached to the institution (Pfafflin & Adshead, 2004; Blackburn et al., 2010). Although, in the Donnelly et al. (2011) study, findings were inconsistent and patients who had been longest in the hospital rated their alliances with nurses more positively, although with weak correlations, but the same did not hold true for their ratings of psychiatrists. An alternative interpretation of the present findings is that patients may become disheartened and demotivated by lengthy and prolonged detention, and may come to view their stay as punitive and in turn blame and resent their practitioners, which could impact negatively on their relationship with the MDT members. Institutional settings as

posited by Ross and colleagues (2008), are important in relation to the alliance and forensic environments may either enhance or limit the development of strong therapeutic relationships. This is particularly relevant in the present system in which psychiatrically stable patients continue to remain in hospital due to poor social support in the community or because risky behaviour such as substance misuse and personality pathology impact on their interpersonal functioning (Kaliski & de Clercq, 2012; Kaliski, 2013; Marais & Subramaney, 2015).

The men who were out on leave from the hospital (outpatients) showed stronger alliances with staff than those in the more therapeutically secure wards. In the present forensic system, patients succeed in obtaining leave of absence based on their stable mental state and the willingness of family to accommodate them (strong family support) and not on formal risk assessment. Those on leave into the community are arguably more likely to have the capacity for stronger therapeutic alliances. Cross-sectional studies, however, cannot distinguish between alternative possibilities that the alliance may improve for individuals because they progressed to least restrictive settings or that those with better alliances are selected to progress from the more therapeutically secure wards to leave from the hospital. The findings could also be interpreted to mean that inpatients in general view their relationship with the team members more negatively and have the least trust in their practitioners, while those out on leave and have the least restrictions view their relationship with staff more favourably, which is consistent with previous research (e.g. Donnelly et al., 2011).

Encouragingly, and similar to other studies (e.g. Barrowclough et al., 2010), in the present study, substances misuse did not constrain or hinder the formation of a good alliance. Similarly, conduct disorder, childhood trauma and exposure to domestic violence in childhood although prevalent in forensic populations (Coid, 1992) and commonly known contributors to the development of impaired object relations and interpersonal difficulties (Fonagy et al., 1997), did not constrain the development of a strong therapeutic alliance with the MDT. It could be argued from an attachment perspective, that patients become more securely attached to their practitioners and/or the institution over time which could ameliorate or modify relational deficits to improve therapeutic relationships (Pfafflin & Adshead, 2004).

5.5.2 Personality pathology and therapeutic alliance

Personality pathology (impaired object relations/insecure attachment) is known to challenge the alliance process (Gask, Evans & Kessler, 2013), but there is limited evidence to support the premise that positive alliances cannot be established with this cohort of patients (Ross et al., 2008). The prevalence of schizoid pathology and its negative correlation with the therapeutic alliance may in part be influenced by a dismissive attachment and its close association with schizophrenia spectrum pathology in this setting (Craig, 2002; Ross et al., 2008).

This personality style is characterised by a pervasive pattern of social detachment with a restricted range of emotional expression and poor interpersonal and social skills that may significantly hinder the establishment of interpersonal trust in a therapeutic relationship (Ross et al., 2008; Millon, 2012). Furthermore, it is argued that it is the lack of emotional responsiveness often synonymous with these individuals that may impact negatively on the alliance. Responsivity implies having the metacognitive capacities of mentalisation and reflective functioning that are essential to engaging in a therapeutic relationship i.e. being able to access and communicate one's own and others' thoughts and feelings (Ross et al., 2008). Fonagy (1998) describes significantly lower reflective functioning capacities in personality-disordered forensic patients and that establishing a relationship with these patients is particularly problematic because they tend to disparage both the treatment relationship and the practitioner (Dozier et al., 2001; Sarkar & Adshead, 2006; Adshead & Sarkar, 2012). Various authors have in fact described a prevalence of avoidant/dismissive attachment styles in forensic populations (Fonagy, 2004; Pfafflin & Adshead, 2004). The literature suggests that there is a link between personality pathology and attachment history which manifests in interpersonal difficulties making these patients more difficult to treat (Adshead & Sarkar, 2012; Gask, Evans & Kessler, 2013). The association between personality pathology and a weak alliance may well be explained by attachment theory which identifies an avoidant attachment style as a key component of this personality structure (Dozier et al., 2001; Ross et al., 2008; Millon, 2012). The implication is that the personality style of forensic patients should be assessed routinely to determine firstly their likelihood of forming strong alliances and secondly, which therapeutic modalities would be most effective in their recovery.

Psychopathy which is defined as a severe personality disorder (Skeem, Polaschek, Patrick et al., 2013) was not associated with the strength of the alliance in the present study in line with many other studies in the literature review (e.g. Polaschek & Ross, 2010). According to Ross and colleagues (2008), there is surprisingly little evidence to support the view that patients with strong psychopathic traits (PCL-SV>18) are unable to form therapeutic relationships with their practitioners although their motivation to form alliances may vary. Findings in the present study support the premise that this cohort is able to establish positive treatment alliances with practitioners and who neither perceive their relationships to be unduly unfair or uncaring and untrustworthy. This contrasts somewhat with fairly consistent clinical evidence to the contrary as to why psychopaths fail to establish positive alliances (Kozar & Day, 2012). Furthermore, there is posited to be a link between dismissing attachment styles and psychopathy with resultant interpersonal difficulties that are synonymous with personality disorders and psychopathy in particular. However, these men can present as hostile, evasive and less motivated to change (Frodi et al., 2001; Polaschek & Daly, 2013). Conversely, psychopathy can generate strong negative countertransference that could also compromise the treatment relationship. According to Ross et al. (2008:466), patients with 'intractable difficulties', and violent behavioural histories can generate therapeutic nihilism that impacts significantly on developing and maintaining strong alliances.

5.5.3 Psychosis and therapeutic alliance

The PANSS scores showed a significant association with the alliance at the subscale level ($p < 0.001$) and for total PANSS scores ($p < 0.001$) but did not reach statistical significance in the final regression model. Previous studies have similarly reported inconsistent findings in this regard and whereas Donnelly et al. (2011) found a significant association between the alliance and PANSS total and subscale scores, Couture et al. (2006) and Barrowclough et al. (2010) regard symptom severity to be unrelated to the therapeutic alliance, and only lack of insight (impaired awareness of psychiatric condition) on the PANSS general psychopathology scale to be significantly associated with the alliance. These inconsistencies in research suggest that psychosis may not necessarily constrain the patient's capacity to engage in a therapeutic relationship as was indicated in the study. However, the findings could be interpreted to mean that the severity of symptoms experienced by the patient may well interfere with his ability to engage therapeutically with his practitioner. Hence, symptom reduction remains an important aim in treatment of forensic patients.

Following from this, patients with a known previous psychiatric history prior to their committal to the forensic system showed significantly weaker alliances with staff than those without a psychiatric history. There may be many factors that coalesce to constrain the capacity of these patients to form and develop positive alliances. There is consensus from a clinical perspective that a history of psychiatric illness may be associated with poor social and interpersonal functioning that adversely affects the capacity of patients to form therapeutic relationships. These patients may be socially withdrawn with generally more negative symptoms that are often resistant to treatment. They may be more likely to lack motivation and to perceive their relationship with their practitioner more negatively, which could manifest in poor treatment and medication compliance (Berry et al., 2007; Berry & Drake, 2010). Negative symptoms would seem to be inversely correlated with the therapeutic alliance. Similar to previous studies, poor medication adherence, poorer social functioning and greater autistic preoccupation were found to be associated with lower alliances (Barrowclough et al., 2010).

Expectation of symptom relief and outcome may also be an under-investigated factor in the literature in relation to the therapeutic relationship. Incomplete or numerous treatment episodes may negatively impact prospective alliances (Ross et al., 2008). These factors may well present significant challenges to the alliance and therapeutic process. These are patients who are perhaps not encouraged sufficiently to engage in activities, or programmes may be pitched beyond their functioning capacities and their perceived lack of interest may bias practitioners to their participation in programmes (Ross et al., 2008). They are often categorised as those who fall through the cracks because they do not demand attention, unless or until they present with acute symptoms or they act out at some point. Ross and colleagues (2008:468) are of the opinion that institutional experiences affect the patient's 'interpersonal abilities, expectations and motivation for change.' In sum, men with a history of psychiatric illness may have been ill for longer, may experience negative symptoms and lack motivation to engage in therapeutic

activities or at the least, the chronicity or severity of their symptoms impact negatively on interpersonal and therapeutic relationships. Conversely, better premorbid functioning may act as a protective factor against social and functional decline in those with serious mental illness.

5.5.4 Forensic factors and therapeutic alliance

Psycho-legal factors such as previous convictions for crimes did not impair the capacity of patients to form a therapeutic relationship with staff. However, patients who had committed a violent index offence had significantly weaker alliances than those with non-violent offences. One possible interpretation of this finding is that the commission of a violent act may be associated with conceivable deficits in interpersonal relationships, particularly attachment relationships and subsequent impairment in theory of mind (e.g. meta-cognition, mentalisation, empathy). In fact, Elbogen and Johnson (2009) suggest that individuals with serious mental illness are more vulnerable to their past attachment histories which may be activated in the therapeutic relationship with resultant dysregulation of affect and rupture of the alliance. The findings in the present study suggest that these patients were also more likely to view their relationship with the MDT negatively. This negative relationship also held for perceived lack of fairness and caring in the therapeutic relationship, for less trust in the relationship and a view that staff are authoritarian and controlling (the toughness subscale). On the other hand, as posited earlier, patients who have committed reprehensible offences can generate strong negative countertransference on the part of the practitioner that could also compromise the treatment relationship (Ross et al., 2008). From a clinical perspective, patients who commit violent offences (e.g. murder, sexual assault) are a fairly heterogeneous group and it becomes difficult to pinpoint commonalities among them. Their diagnoses are varied, and a patient with schizophrenia may have committed murder prompted by psychotic symptoms, whereas an individual with intellectual impairment may have committed the same offence but the motivation or cause may be the result of poor impulse control. How these men process and make sense of their violent past, often referred to as offender recovery, poses significant challenges to the treatment process and the alliance and coming to terms with having committed a violent offence is as much a recovery task as overcoming mental illness or any other psychological difficulties (Drennan & Alred, 2012). Patients often fear talking about their forensic index offence and particularly so when the victim is a significant family member or caregiver. Having to accept this reality and take responsibility for it is a profoundly significant aspect of the recovery process and deeply anxiety provoking. Patients may be highly defended against any interaction or intervention that will entail a sustained and concerted effort to uncover the feelings and thoughts that accompany their past offence. Importantly, psychosis can be 'sustained as a defence against knowing what one has done' (Drennan & Alred, 2012:15). For example, Berry et al. (2007) and Berry and Drake (2010), reviewed several studies that demonstrate an association between insecure attachment and recovery from psychosis. There are two kinds of recovery styles in psychosis, namely integrative and 'sealing-over' recovery styles (Berry et al., 2007:468). An integrative recovery style is associated with lower relapse rates and improved social functioning and

involves the patient's willingness and capacity to explore the links between previous psychotic experiences and present experiences in an endeavour to gain insight and accept responsibility for his actions. Alternatively, a 'sealing over' recovery style is associated with poor ego strength and impaired internal security that serves to protect the patient from the overwhelming affect related to his violent behaviour. Patients may resort to denial or minimisation of the offence and its impact on themselves and their relatives. Insecurity of attachment and sealing-over recovery styles are generally associated with poorer treatment engagement (Berry & Drake, 2010).

5.5.5 Intellectual functioning and therapeutic alliance

A significant source of variance in the alliance was the level of intellectual functioning of the men in the study. Intellectual functioning was significantly positively associated with the alliance i.e. as IQ scores increased so did the DRI-R scores. The relationship between intelligence and the therapeutic relationship was however curvilinear and as intellectual functioning increased significantly (IQ>80), it became inversely associated with the alliance. A possible explanation for this tendency is that patients who are higher functioning become less satisfied with the members of the team and view them less positively. This relationship also held for the Trust subscale that suggests their trust in their practitioner also decreased. It has been argued that insecurity of attachment, ubiquitous in this population, is commonly associated with a pervasive lack of trust in attachment objects (Ansbro, 2008). Alternatively, it can be argued that that the agenda of the forensic programme impacts on the establishment of the alliance. Lack of intellectual stimulation in the forensic environment, boredom and perceived loss of autonomy coupled with prolonged incarceration despite a stable mental state can be argued to impact significantly on the alliance (Ross et al., 2008). Conversely, those patients at the lower spectrum of intellectual functioning who displayed weaker alliances may also perceive practitioners to be less fair and caring, not trustworthy and more controlling in their interaction with them. Cognitive functioning is considered to play an important role in the formation of a strong alliance and particularly when theory of mind is considered to be fundamental to relational capacity, lower cognitive capacity may therefore influence how the patient responds to therapy and to the treatment relationship. Ross et al. (2008:472), argue that treatment interventions for lower functioning patients that are 'too demanding' and pitched above their intellectual ability (or in terms of a learning disorder, language or communication barriers) may adversely affect their capacity to engage effectively with the treating team and actively contribute to therapeutic outcomes. Patients may struggle with treatment expectations and unachievable treatment goals and failure to meet these expectations, may in turn damage the alliance and result in decreased motivation and poorer treatment outcomes (Ross et al., 2008). Lunsky and colleagues (2011) claim that low functioning forensic patients generally fare more poorly on global measures of functioning and are a complex cohort of patients requiring specialised treatment and services that are currently absent in forensic mental health services. Therapeutic programmes should ideally be pitched at levels appropriate to this cohort of patients that can prevent attrition and/or therapeutic ruptures (Ross et al., 2008; Lunsky

et al., 2011). Essentially, this can be interpreted to mean that at either end of the IQ spectrum, intellectual functioning may be significantly influential in establishing and maintaining a positive therapeutic relationship.

Higher functioning patients may experience the members of the MDT as punitive and controlling and the system to be holding them back from their potential to live autonomously. They may have wider social networks and support from significant attachment relationships and are therefore less dependent on treatment relationships (Manchak, 2011; Manchak et al., 2014). Lower functioning patients on the other hand, may perceive their alliances more negatively from a deficit perspective (learning disorders, communication deficits). Both groups of men may therefore benefit from additional intervention pertinent to their needs and functioning to improve their alliances with staff, i.e. a strength-based approach to forensic treatment that is person-centred (individualised), and that enhances patient strengths rather than deficits (Ross et al., 2008).

5.5.6 Attachment security and therapeutic alliance

The premise that attachment insecurity would predominant in the forensic sample was fully supported in the study with more than half the men assessed with an insecure attachment style. This is consistent with the literature on attachment in clinical and forensic populations with levels as high as 60–70% cited in some studies (Fonagy et al., 1997; Frodi et al., 2001; Pfafflin & Adshead, 2004; Bernecker et al., 2014). Dimensional scores across attachment figures were fairly homogenous and indicated subclinical levels of attachment-related avoidance and anxiety (ECR-RS ≥3.5). Furthermore, the premise that global attachment security was substantially associated with the therapeutic alliance (DRI-R) was moderately supported in the present study. Bivariate analysis showed a significant correlation between global insecurity of attachment and the therapeutic alliance in the sample ($p=0.023$) and specifically for attachment-related avoidance ($p=0.005$). Men with insecure attachment (preoccupied, dismissive, fearful) manifested weaker therapeutic alliances. Furthermore, those with high attachment avoidance and /or high attachment anxiety on the dimensional scale, rated their alliance with their practitioners more negatively than those patients with low attachment avoidance and/or low attachment anxiety. Early childhood attachment experiences have consistently been shown to impact on later adult interpersonal relationships, especially attachment relationships that involve a degree of dependency and/or intimacy (Bowlby, 1977, 1988; Adshead, 1998; Dozier et al., 2001).

Mental representations of early attachments are activated during therapy (Bowlby, 1977, 1988) and are considered to influence the therapeutic relationship (Adshead, 1998; Dozier et al., 2001; Daniel, 2006). One of the ways these findings can be interpreted is that avoidant/dismissive patients are not willing to rely on others or may find it difficult to engage with treatment and actively disengage to manage their distress. This could manifest as apathy, distrust or less self-disclosure within the therapeutic relationship (Adshead, 1998; Ansbro, 2008; Smith et al., 2010; Bernecker et al., 2014).

This association also held for significantly poorer trust in the relationship with the MDT. Conversely, the anxiously attached patient may experience intense anxiety in relation to the practitioner but may counteract his distress by becoming overly demanding and dependent on the practitioner and the relationship. More often than not, the relational histories of insecurely attached patients are interspersed with attachment disruptions, so it is not surprising that their trust in a consistent and secure therapeutic attachment relationship is severely compromised (Adshead, 2001). In contrast, securely attached patients are generally more committed and more compliant with treatment and form stronger therapeutic relationships with their practitioner (Brennan, Clark & Shaver, 1998; Daniel, 2006; Smith et al., 2010). It can therefore be argued that insecure men may experience difficulty in establishing and maintaining an alliance with their practitioner for different reasons (Smith et al., 2010) and particularly in their manner of eliciting care which may reinforce negative alliances (Adshead, 2001; Horvath, 2001).

In the final analysis, an insecure attachment style exerted a moderate degree of influence on the alliance which is in keeping with previous reviews, many of which have found negligible to small associations between the alliance and insecure attachment (Ma, 2007; Goldman & Anderson, 2007; Smith et al., 2010). Although these correlations are small, they contribute notable outcomes that are theoretically and clinically relevant (Adshead, Moore et al., 2013; Bernecker et al., 2014). It can also be argued that the therapeutic alliance and attachment security are two separate constructs that may have minimal influence over each other (Horvath & Luborsky, 1993).

5.5.7 Key practitioner type and therapeutic alliance

The forensic setting is a complex environment in which to develop positive alliances. There are many additional factors that threaten the therapeutic alliance such as the secure nature of the service and the custodial role of the practitioner that is dual-agency (Skeem et al., 2007; Ross et al., 2008; MacInnes et al., 2014; Manchak et al., 2014). Therapeutic alliances were generally shown to be fairly robust and suggest that patients are able to establish affiliative alliances (Fair/care, Trust) with their practitioners, which is consistent with the literature on mandated treatment relationships where a strong element of control (Toughness) is present in the dual-role relationship (Skeem et al., 2007; Manchak, 2011; Manchak et al., 2014).

Key practitioner type and strength of the alliance were significantly correlated ($p<0.001$) which suggests that patients' rating of the therapeutic relationship is relevant to positive outcomes and, which is consistent with the extant literature that identify patients' perception of practitioner qualities as important (Horvath, 2001; Ross et al., 2008). Patients rated the MDT differentially across professions which may reflect that various components of the alliance are expressed and emphasised differently to accommodate the therapeutic frame and outcomes sought (Moore, 2012). Psychology and psychiatry were represented more frequently and were rated more positively than other professionals in the team. Social work received the least alliance ratings and the lowest alliance scores on the DRI-R. The

interpersonal qualities of the practitioner and the manner in which he or she exercises authority were also shown to be significant in relation to the strength of the alliance. Practitioners who were rated as punitive and confrontational with hostile control did not encourage a positive alliance with patients, which is known to impact negatively on therapeutic progress and clinical outcomes (Horvath & Luborsky, 1993; Horvath, 2001; Skeem et al., 2007:407).

The literature suggests that these perceptions are largely influenced by the personal and professional qualities of the practitioner and which in turn significantly influence the therapeutic relationship. These qualities are particularly relevant when interacting with difficult patients (e.g. those with relational difficulties, psychosis) (Adshead, 1998; Horvath, 2001). It is further posited that the personal history, attachment style and influence of training and clinical experience/skill of the practitioner may have substantial clinical implications for the development and maintenance of the therapeutic alliance (Horvath & Symonds, 1991; Horvath, 2001; Ross et al., 2008; Moore, 2012). Similarly, Berry and colleagues (2008) suggest that patient and staff attachment styles interact to influence the therapeutic relationship and that more securely attached practitioners are associated with more positive alliances (Moore, 2012) while other theorists perceive attachment to be an important but separate construct from the alliance that may or may not influence the alliance and outcome (Bernecker et al., 2014).

The key qualities of an effective practitioner that contribute to effective alliances include attributes of warmth, empathy, authenticity over and above professional skills (Ross et al., 2008). It is argued in the literature that the more skilled the practitioner, the more likely he or she is to form better alliances with difficult patients and to anticipate failures in the alliance (Horvath, 2001; Safran et al., 2001). This implies that the practitioner must be vigilant in monitoring subtle or overt changes in the alliance that could signal potential behavioural or interpersonal difficulties. The professional and personal aspects of practitioners were however not investigated in the study and the impact of these factors on the alliance is an area for future research in this population.

5.6 Determinants of risk (HCR-20)

5.6.1 The therapeutic Alliance (DRI-R) and risk of violence (HCR-20)

The critical premise of the present study was to establish that a relationship exists between the therapeutic alliance and risk of violence in a forensic setting. Essentially there was a direct association between the dual-role relationship and risk that is, men with a strong (positive) alliance have a lower risk for violent behaviour. The strength of this relationship applied to institutional (inpatient) violence and community (outpatient) violence. The therapeutic relationship was significantly negatively associated with risk in the bivariate analysis ($p=0.003$) and for every unit increase in the alliance score on the DRI-R there was an associated 0.05 unit decrease in risk in the regression analysis ($P<0.001$), which is a significant reduction. It is widely accepted in the literature that negative alliances between

patient and practitioner may compromise treatment outcomes in most contexts (Beauford et al., 1997; Daffern & Howells, 2002; Skeem et al., 2007). Notably, the findings in the present study have demonstrated that in addition to treatment outcomes, compromised dual-role relationships are closely associated with increased violence risk in a forensic setting.

Men assessed as high risk were significantly more likely to have weak (negative) alliances both at total DRI-R score and subscale levels (Fair/care, Trust, Toughness). The Toughness subscale in particular, which is inversely associated with the total DRI-R (dual-role relationship), showed a significant positive association with risk of violence ($p<0.001$).

The Toughness subscale reflects dual-role relationships that are characterised by in-session conflict and authoritarian or punitive control that is associated with increased violence risk as demonstrated by the current findings. According to Skeem and colleagues (2007), these relationships are generally associated with reduced relational fairness and poor trust between practitioner and patient. On the other hand, the men in the study who rated their practitioners high in relational fairness and trust and low in control were less likely to be violent. As elucidated in the previous section, it is also the patient's perception of practitioner qualities of fairness and caring (procedural justice), trust and bond that related meaningfully to reduced violence risk in the study.

Overall, the men in the study rated their relationships with their practitioners as fairly robust; and perceived their relationships to be generally affiliative (fair and caring), trustworthy and not unduly authoritarian despite the level of control inherent in these relationships. However, compromised alliances characterised by conflict, high control and poor trust increased the risk of violence.

It can be argued that positive ratings of the alliance in the study may alternatively relate to social response bias particularly because patients are fully aware of the control that staff can exercise with respect to their privileges and freedom. It is also possible, however, that forensic patients regard their relationships with practitioners as more affiliative because they have developed strong attachment bonds with them. In many instances, the secure forensic setting and its practitioners are the only stable attachment figures in the lives of these men (Schuengel & van Ijzendoorn, 2001; Adshead, 2004; Manchak, Skeem & Rook, 2014).

As stated in section 5.5.7, the men rated their relationship with staff differentially across the professions with psychology and psychiatry associated with stronger alliances. Most notably the strength of this relationship translated to the level of risk the patient posed. This finding extended to reflect a weaker therapeutic relationship with social workers with a related increase in risk potential.

To this effect, the findings in the study demonstrate that key practitioner type substantially mediated the potential risk patients posed ($p=0.044$). The differences across ratings for the professions may be related to the nature of the alliance that develops and, the nature of the roles of different professionals in

relation to their patients (Moore, 2012). In the present study, one possible explanation for potential negative alliances that develop between social workers and patients, is that they are seen to represent the final hurdle to freedom and financial support (e.g. access to disability grants). Similarly, weaker alliances between patients and nurses may be related to prolonged and intense exposure to patients (e.g. 11-hour shifts) which can erode healthy therapeutic relationships through increased levels of stress and negative critical countertransference (Moore, 2010). A reliance on a custodial interaction rather than therapeutic engagement with patients is often a common recourse for emotionally stressed practitioners that can lead to less favourable therapeutic outcomes. In comparison, psychologists, who interact sessionally with patients and where the alliance is integral to the treatment process and outcomes, may promote bonded and more contained secure relationships (Moore, 2012) that are shown to reduce risk of violence in the present study.

Thus, it can be said that men who have a more robust (positive collaboration) therapeutic relationship with a member(s) of the MDT may be less at risk of being violent in the ward and out in the community compared to those men who have weak alliances and who perceive their therapeutic relationships to be less affiliative and more controlling. This finding is consistent with previous studies that highlight the importance of an empathic and collaborative stance in the alliance (Moore & Drennan, 2013; Manchak et al., 2014) and that establishing an environment of fairness and regard for patients may well act as a deterrent for offending behaviour and reduce patient aggression and violence (MacInnes et al., 2014).

These results are in keeping with the concept of relational security that has been foregrounded in the literature review and which emphasises that a collaborative and robust therapeutic relationship, underscored by thorough knowledge of the patient, is a critical aspect of risk management and assessment in forensic mental health care (Appleby, 2010; Moore, 2012; Tighe & Gudjonsson, 2012). Further studies on the impact of the practitioner's theoretical perspective of the alliance may also yield valuable information regarding risk evaluation.

5.6.2 Attachment (ECR-RS) and risk of violence (HCR-20)

Traumatic histories were overwhelmingly commonplace among the men in the study in keeping with several studies which cite high levels of psycho-social impoverishment in forensic samples (Frodi et al., 2001; Fonagy, 2004; Pfafflin & Adshead, 2004). The prevalence of insecure attachment styles as measured by the ECR-RS in the sample, is not surprising given the extent of childhood adversity and deprivation prevalent among these patients that is consistent with similar levels of childhood abuse and neglect in the forensic literature (Coid, 1992). Attachment styles are the external expressions of these early childhood experiences which become mental representations of attachment- related experiences, also called internal working models (Bowlby, 1977, 1988). These internal working models and attachment experiences are considered to be linked to significant developmental features such as affect

and arousal regulation and mentalising processes that are also associated with potential violence risk (Schore, 2001, Fonagy, 2004; Sarkar & Adshead, 2006; Adshead et al., 2013).

In the present study, the global attachment-related dimension of anxiety was significantly associated with risk at the bivariate level. Insecure attachment categories (preoccupied, dismissive, fearful) demonstrated less significance to risk than expected in the present study, which mirrors the mixed findings in other studies of small to moderate associations (e.g. Fonagy, 2004; Pafflin & Adshead, 2004). A possible interpretation of these inconsistencies across studies and in the present study in particular is the potential for amelioration and modification of insecure attachment styles through the process of therapeutic intervention (Adshead, 1998, 2004). Some therapeutic relationships with key practitioners may be construed as attachment relationships in which a strong bond has developed, that may provide the secure base required to contain the patient's distress and modulate arousal and anxiety (Adshead, 1998, 2004). This interpretation is supported by Willmot and McMurran (2014:2) who claim that deficits in mentalisation and affect regulation may be repaired by addressing insecure attachment behaviour in the treatment relationship. This argument has been extended to include the influence of the forensic institution as similarly providing a safe and secure attachment base that is containing for the patient and, which may explain why counter-intuitively, so many patients prefer to remain in the hospital despite their stable mental state.

The ECR-RS operationalised attachment insecurity to be differential across relational targets (Fraley et al., 2011), which suggests that patients may become securely attached to practitioners and/or the institution but remain insecurely attached to relatives or partners with continued potential for violent behaviour in those contexts. Furthermore, the literature does argue that patients who have a secure attachment style may have better internal resources to cope with stress and rely less on psychological defences that contribute to interpersonal conflict (Mikulincer & Shaver, 2007:143). Conversely, those patients with an insecure attachment style seek attachment relationships to regulate their arousal and distress that they cannot do on their own. Theory postulates that cognitive bias and poor information processing regarding attachment related experiences impair their coping strategies (avoidance or anxiety) in dealing with distress (Mikulincer & Shaver, 2007; Owens, Haddock & Berry, 2013). Alternatively, Fonagy (2004) argues that inadequate and abusive experiences in the developmental years of the child have a significant impact on the capacity for self-reflection and mentalisation. Without a capacity to 'understand one's own mind and the mind of others' and a reduced capacity to manage one's distress, may catapult an individual into violent behaviour (Adshead, 2001, 2004; Ansbro, 2008). Furthermore, an interaction between innate vulnerability (Schore, 2001) and a hostile environment may produce psychopathology and an increased risk for offending and violent behaviour (Adshead, 2001; Frodi et al., 2001). For this persuasive argument to hold true, that violence is the outcome of a failure of mentalisation, is to assume that attachment insecurity is the underlying cause (Adshead, 2004).

However, not all insecurely attached patients resort to violence even though there is a propensity to resort to immature and pathological defences that is evident in their behaviour along with a lack of empathy for others (Pfafflin & Adshead, 2004; Adshead, 2008; Yakeley & Adshead, 2013). Insecure states of mind can therefore be regarded as one of many risk factors for violent behaviour and perhaps 'too non-specific for risk prediction' (Adshead, 2004: 262).

The moderate association between attachment insecurity and risk in the present study is consistent with this argument and a more plausible explanation is that insecure states of mind potentiate risk for violence in some populations and at certain times. Attachment theory may nevertheless provide forensic mental health care with a viable explanatory model for mental illness and violence (Fonagy, 2004; Pffaflin & Adshead, 2004; Adshead, Moore et al., 2013). Addressing attachment deficits in a population in which insecure states of mind outweigh secure attachment styles may be useful in risk assessment and management (Elbogen & Johnson, 2009).

5.6.3 Developmental factors and risk

Childhood conduct disorder was significantly associated with violence risk ($p<0.001$) and this relationship was particularly emphasised with the removal of the PCL-SV from the model. Patients with a history of childhood conduct disorder had elevated risk scores on the HCR-20 approximately 4.02 units higher compared to those without a history of childhood conduct disorder. Conduct disorder in childhood and subsequent antisocial personality is consistently linked to risk in the offender literature (Murray & Farrington, 2010; Millon, 2012). It is also considered to be closely associated with the course of schizophrenia and may elevate the risk of violence independently of psychotic symptoms (Volavka, 2014). Research describes a positive and consistent association between adversity in childhood and conduct disorder, which includes aggression, cognitive deficits, impulsivity, academic difficulties, low intellectual functioning and psychiatric problems, as common predictors of delinquency and violence in adulthood (Mulvey & Lidz, 1984; Ansbro, 2008; Murray & Farrington, 2010). Conduct disorder can be explained by an attachment theory perspective in which secure attachments (secure base and containment) in early childhood promote resilience and where conversely, a failure of attachment security can result in failure to mentalise (to recognise one's own mental states and that of others) and failure to manage arousal states without 'losing control' (Ansbro, 2008:232). As stated earlier in the literature, the patients' experiences of childhood trauma and exposure to domestic violence are arguably substantial contributors to the development of insecure attachment, interpersonal difficulties and personality pathology (Fonagy et al., 1997; Adshead; Moore et al., 2013).

Attachment insecurity is not deterministic and may be one of many risk factors that interact with the temperament of the individual and the environment to predispose them to maladaptive attachment strategies including violence (Fonagy, 2004; Pfafflin & Adshead, 2004). Alternatively, social learning theories posit that parents reinforce antisocial behaviour by their own behaviour.

Violence is often learned within the family system, particularly in environments where parental punishment is physical, harsh and inconsistent (Murray & Farrington, 2010; Millon, 2012). Parents themselves may be personality disordered which according to Adshead (2015), impacts on the development of prosocial skills and personality in the child. Furthermore, according to Adshead (2015:16) 'high levels of antisocial personality disorder in both mothers and fathers have been found in studies of parents of children diagnosed with conduct disorder' and as the findings in the present study concur, conduct disorder alongside psycho-social deprivation are signifiers of high risk (Offord et al., 1986).

5.6.4 Psychopathy and risk

Patients with high psychopathy scores (PCL-SV>18) on the screening version of the psychopathy measure were assessed as being significantly more at risk of violent behaviour in the study ($p<0.001$). In the regression analysis, a one-unit increase in psychopathy score was associated with a 0.77-unit increase on the HCR-20, which is a significant increase in risk, however as noted before, significance must be interpreted with caution as the two measures share common items. Psychopathy as a severe personality disorder, is closely associated with violence and considered one of the strongest single risk factors for antisocial and violent behaviour in forensic and offender populations (Skeem & Mulvey, 2001; Doyle & Dolan, 2006; Pemment, 2013). The finding that psychopathy was significantly correlated with increased risk in the present study is therefore consistent with previous studies (e.g. Skeem & Mulvey, 2001; Doyle & Dolan, 2006; Volavka, 2014).

From an attachment perspective, studies have linked psychopathy with insecure attachment and resultant interpersonal difficulties that are synonymous with personality disorders in general and psychopathy in particular (Polaschek & Ross, 2010; Skeem, Polaschek, Patrick et al., 2013). Parallels have also been drawn between early attachment difficulties and later delinquency (Pffaflin & Adshead, 2004; Ansbro, 2008; Murray & Farrington, 2010). Psychopathy is considered to be mediated by a genetic predisposition, arising from extreme deprivation and brutalisation of attachment bonds in early childhood. Bowlby (1941) spoke of the 'affectionless psychopath' characterised by a lack of concern for others and an inability to form reciprocal relationships. Esbec and Escheburia (2010:259) argued that 'instrumental violence was associated with psychopathic and antisocial personalities whereas impulsive violence related more to borderline personality and bipolar mood disorder'.

A caveat: The PCL instruments have extensive empirical support for predicting violence, but it is not without controversy. The debate has centred on whether its predictive efficacy should be attributed more to Factor 1 (interpersonal/affective component) or Factor 2 (antisocial/deviant lifestyle component). A review by Yang et al. (2010) suggests that Factor 2 rather than Factor 1 of the PCL-R predicts violence. Skeem and Mulvey's (2001) findings concur that the antisocial behaviour factor of the PCL-SV predicts violence with greater accuracy than the emotional detachment factor, which adds little predictive power.

Studies were conducted in civil psychiatric settings and therefore may change in different contexts. If interpersonal and affective psychopathy traits are not linked to future violence, this could have important clinical and treatment implications. Treatment interventions that emphasise the core personality features or traits of psychopathy may not be as effective in reducing risk and therefore, practitioners should be more attentive to high scores on the antisocial factor rather than the psychopathic traits (Skeem & Mulvey, 2001). Psychopathy scores are therefore not a sufficient basis for violence risk assessment and should be regarded as a component of data gathering in risk assessment (Fazel, Singh et al., 2012). Notwithstanding the debate, psychopathy remains a personality disorder strongly associated with violence risk in offender populations and is clinically relevant in forensic settings in relation to assessment, management and treatment processes of high risk patients (Pemment, 2013).

5.6.5 Psychosis and risk of violence

The study found no prominent relationship between psychiatric diagnosis and violence, which is consistent with previous research in forensic settings (e.g. Doyle & Dolan, 2006; Grann, Danesh & Fazel, 2008). Rather, and more importantly, men assessed as being psychotic were associated with increased violence risk. Psychosis severity as measured by the total PANSS score showed that a one-unit increase in the PANSS score was associated with a 0.08-unit increase in risk, a statistically significant increase ($p<0.001$). In particular, violence was shown to be significantly associated with positive psychotic symptoms rather than negative symptoms with a one-unit increase in the PANSS positive subscale associated with a 0.24-unit increase in risk ($p<0.001$). In the present study, increases in the negative or psychopathology subscales were not significantly associated with an increase in risk, which is consistent with other studies (e.g. Douglas & Skeem, 2005; Elbogen & Johnson, 2009; Adshead et al., 2013; Resnick., 2013; Volavka, 2014).

The findings support the well-established premise that patients who are acutely psychotic and present with hallucinations, delusions or psychotic confusion are at significantly greater risk of behaving violently compared with patients who are stable (apsychotic) or who present with negative symptoms and/or general psychopathology (Daffern & Howells, 2002). Psychosis and violence has been extensively debated in the literature and despite mixed evidence on the extent to which positive psychotic symptoms predict violence, research generally supports the premise that acute psychotic symptoms such as paranoia and impaired reality testing increase the risk of acting violently (Elbogen & Johnson, 2009; Esbec & Escheburia, 2010; Volavka, 2014).

Daffern and Howells (2002) argue that despite the prominence of psychosis in the commission of violence, often only a small proportion of the behaviour is directly driven by delusions and hallucinations. Furthermore, it is argued by some theorists that having experienced psychosis in the past should not bear any relation to future violence unless and only in the sense of relapse and risk of a current disorder (Monahan, 1992).

As such, when acute symptoms abate, the patient should no longer pose any threat (Binder, 1999; Douglas & Skeem, 2005). One interpretation of the relationship between psychosis and risk is that when patients are acutely psychotic, protective factors such as social or family support may be absent or depleted and the therapeutic alliance with the MDT may be rejected. Patients may avoid seeking help or may have no insight into the need for treatment (Douglas & Skeem, 2005:363). Violence risk may therefore increase because these support structures are no longer accessible. Alternatively, patients with persecutory delusions may feel overwhelmed by their beliefs and become anxious or frightened and act on their beliefs. A dysphoric state (agitation, hostility, anger, suspiciousness) associated with delusions may be linked through loss of conscious controls (distortion of reality, disinhibition) with subsequent violent behaviour or indirectly by mediating the effect of other risk factors for violence (Binder, 1999; Douglas & Skeem, 2005; Resnick, 2013; Volavka, 2014).

Following from this, patients were assessed as being more at risk of violence when non-adherent on their medication. This relationship in the study was statistically significant with risk at the bivariate level ($p<0.001$) and research has shown that non-adherence predicts re-admission to hospital (Douglas & Skeem, 2005) as well as elevated risk for violence among psychiatric patients (Monahan, 1992; Binder, 1999). As argued by Barker (2012:23), 'risk may also mean not taking medication' and 'relapse may all too often be seen as a precursor to more serious acts of risky behaviour'. Medication adherence is therefore considered to ameliorate or reduce risk by suppressing acute symptoms known to be relevant to high risk behaviour. Treatment compliance to ensure control of positive symptoms therefore remains an important aspect of risk management of forensic patients. However as noted before, significance must be interpreted with caution as treatment compliance is an item on the HCR-20 which may inflate significance.

5.6.6 Substance misuse and risk

Despite the high comorbidity of substance misuse in the men (92.4%), substance use was not as prominent a risk factor for violence as predicated in some studies (e.g. Binder, 1999; Monahan et al., 2001). However, the result was statistically significant at the bivariate level of analysis ($p=0.009$) and supported by previous studies (e.g. Doyle & Dolan, 2006; Grann, Danesh & Fazel, 2008). In the present study, men assessed as more predisposed to violence were more likely to misuse substances than those who abstained. The lack of statistical significance in the final model may in part relate to Buchanan and colleagues' (2013:1025) argument that causal inferences cannot be drawn if the temporal relationship between these variables cannot be confirmed. While their study identified an association between substance use and violence in the same month, substance use in that month could have occurred subsequent to the offending behaviour. What they could confirm was that much of the violence was related to mood state or 'subjective feelings of irritability'. These conflicting findings in the literature may also be due to methodological differences that include diversity of samples (forensic vs civil) and differences in sources of information (collateral vs self-reports) (Doyle & Dolan, 2006).

5.6.7 Forensic factors and risk

Men assessed as more violent in the study were more likely to have had previous criminal convictions for violent and other offences prior to their admission to the forensic service. This relationship was statistically significant at the bivariate level (p=0.025) and (p=0.005) respectively which is consistent with other studies (Grann, Danesh & Fazel, 2008) and suggests that patients with criminal histories and antisocial behaviour may continue to present with some risk for recidivism in the absence of psychosis or any other mental illness (Volavka, 2014).There was no remarkable association between a violent index offence on admission to the forensic service and future violence risk which raises certain considerations that the method of risk assessment used before admission may not be valid for evaluating progress during rehabilitation (recovery) and caution is advocated against an over-reliance on static or historical factors which are argued to be reductionist and which, according to Barker (2012), may not necessarily present a true reflection of the future risk potential of the patient. Risk may also escalate precisely because of inappropriately restrictive security measures (e.g. poor risk assessment methods) that increase patient frustration and escalate violent and aggressive behaviours (Ross et al., 2008).

5.6.8 Demographic factors and risk

Demographic factors such as age were not a prominent risk factor in this study although a few studies have identified younger men to be more violent than older men (e.g. McCabe & Priebe, 2004). The level of education of the men in the study was statistically significant (p=0.027) with less educated men showing increased risk for violence. The significance of this correlation should be interpreted with caution. In the current context, low education levels may be secondary to general psycho-social impoverishment (e.g. poor access to schools, trauma, poverty). Alternatively, higher levels of education may correlate with increased verbal reasoning, social support and healthier relational skills (e.g. mentalising capacity) that serve as protective factors against violence.

5.6.9 Intellectual functioning and risk

The association between intellectual functioning and risk of violence in the study was curvilinear so that as scores increased (IQ>80), risk decreased. Increased violence was associated with lower intellectual functioning, i.e. as scores dropped (IQ<80), risk increased. Increased risk for violence may well lie in a fairly discrete intellectual range which has important clinical and management implications for forensic services. This is in keeping with other studies that show low functioning patients to be more behaviourally disturbed (Calitz, van Rensburg et al., 2006; Volavka, 2014) and furthermore relate this to poor supervision and recovery methods that increase their continued involvement in crime. Present findings may be interpreted in a number of ways, one of which is that low functioning patients are a vulnerable group that have cognitive and relational deficits (e.g. insecure attachments) which may

constrain effective communication and help-seeking behaviours to manage their distress and escalate their risk of violent behaviour (Schuengel & van Ijzendoorn, 2001; Ross et al., 2008).

The relationship between cognitive functioning and risk however remains relatively understudied, although aggressive behaviours have been noted among patients with neurological impairments, dementias and intellectual disabilities (Lunsky et al., 2011). It has been argued by Lunsky et al. (2011) that services developed for the general forensic population may not suffice for an intellectually impaired forensic cohort. Mentally ill patients with intellectual impairment and forensic involvement could therefore represent a more complex category of forensic patient with respect to behaviour monitoring and management that may require additional and more specialised interventions including non-verbal therapies (Lunsky et al., 2011).

A caveat: IQ scores in general, and in the present study in particular, should be interpreted with caution and may be explained by multiple causality. For example, low IQ scores may be related to relational deficits (e.g. insecure attachment) and other metacognitive processes such as the capacity to mentalise which may constrain effective communication and help-seeking behaviours resulting in impulsivity, low frustration tolerance and violent acting out behaviours. Low scores in general may be subject to test-taking limitations such as learning disorders, anxiety, intoxication, psychotic processes, medication or lack of motivation to do well.

5.6.10 Recovery milieu and risk

Treatment setting ($p<0.001$) and leave of absence ($p<0.001$) were both significantly associated with increased risk potential at the bivariate level. Outpatients on extended periods of leave (3–6 months) from the hospital were assessed as having lower risk for violence than those who remained in the wards. This could be argued to imply that those patients with the least restrictions have lower risk of violent behaviour than those patients who are more restricted (i.e. in more secure wards with less parole and leave privileges). It can also be reasoned that the appropriate group of patients are assigned leave out compared with those that do not yet enjoy such privileges; or that these are the patients that have traversed the system, received therapeutic intervention and have made the requisite corrective relational shifts (Douglas & Skeem, 2005). It can also be inferred from the present study that low-risk patients are mentally stable, more likely to be compliant on treatment, have positive therapeutic relationships with the MDT and report strong family support. Conversely, inpatients may have increased risk of violence because of acute symptomatology, conflictual treatment alliances and poor motivation, or other risk factors may be at play such as antisocial attitudes and personality pathology that may increase their risk potential. It does seem at the least that those who are living mostly in the community represent a positive outcome that was correctly assessed by the MDT.

To this end, patients who had supportive family relationships were assessed as having lower risk for violence than those who reported limited or no family support at all. Risk scores on the HCR-20 were

2.37 units lower for those patients who had supportive families which is a significant reduction in risk. Limited family support was therefore strongly associated with increased violence risk; a finding supported by previous studies in forensic settings (e.g. Lindqvist & Skipworth, 2000; Kruger & Rosema, 2015). In the present study, family support included the provision of emotional and financial support including accommodation, meals and social inclusion. Conversely, it can be argued that sending men home to visible support (home, meals etc.) may be counterproductive should they have conflictual relationships with members of the family. Histories of mental illness and offending behaviour often lead to the erosion of family ties (Binder, 1999) and caring for a violent relative is fraught with emotional, relational and social problems; having to live with an assaultive patient erodes even the most caring interpersonal relationships (Volavka, 2014). According to Douglas and Skeem (2005), and Lindqvist and Skipworth (2000), high levels of family conflict may in fact increase the risk of violence. Furthermore, the most likely victims of community violence are those closest to the patient (e.g. caretakers) and those who set limits for them (Binder, 1999). On the other hand, families may act as key socialising agents in the development and maintenance of violence (Mulvey & Lidz, 1984). Studies that have examined how patients adjust to living in the community, have however consistently revealed that family support is a critical factor in the successful transition into society. Paradoxically, discharge into the community is both a significant sign of recovery and progress, but also a potential destabiliser that can trigger relapse with subsequent clinical and risk implications (Mulvey & Lidz, 1984). Interventions that include family therapy particularly in the context of increased support may be effective strategies for intervention given the present findings linking violence to real or perceived poor family support.

Men who were employed at the time of the study were shown to have lower risk of violent behaviour than those men who were not employed. This association was statistically significant at the bivariate level ($P<0.001$). Employment status can be argued to represent a significant protective factor against violence consistent with findings in other studies (Elbogen & Johnson, 2009). Ground parole privileges were counter-intuitively associated with significantly increased risk potential ($p<0.001$), which could be indicative of a more systemic problem unique to the forensic service in which the study took place. As stated earlier, formal risk assessment is not practiced in the present system and men in the low secure recovery wards have unrestricted access to hospital grounds irrespective of their level of risk.

Additional therapeutic and milieu factors including psychotherapy interventions, ward relations and parole privileges, presented noteworthy correlations with violence risk in the study. For example, patients who had exposure to psychological intervention tended towards less violence ($p=0.059$). The key function of any psychotherapy is in the amelioration of insecure attachments and the development of greater mentalisation that minimise affect dysregulation and subsequent reactive violence (Fonagy & Adshead, 2012).

Patients who displayed difficult behaviour in the wards were associated with increased violence risk ($p<0.001$). There are numerous contextual factors that are known to contribute significantly to conflict

and levels of aggression and violence between patients and staff and among patients themselves. According to a number of authors (e.g. Daffern & Howells, 2002), noteworthy contributors to ward-related aggression and violence (over and above internal constraints) include staff factors as well as the ward factors. It is considered that patients react negatively to overcrowding in the ward, noise, lack of privacy, poorly structured ward activities and boredom. Patients may not always comply with the operational rules and regulations in the ward which may impact negatively on patient–staff relationships, and in particular, inexperienced staff are known to resort to a more controlling custodial role to alleviate their own anxieties. As noted in the present study, an increase in the Toughness subscale of the DRI-R correlates with an increased risk of violence. Rapid staff turnover, including the use of non-permanent staff members, destabilise the ward environment and contributes to high levels of stress and conflict (Lindqvist & Skipworth, 2000; Adshead, 2004; Ross et al., 2008). For example, many therapeutic relationships are construed as attachment relationships and often staff are the only attachment or relational figures patient have. Threats to these relationships such as separation from a staff member may trigger attachment behaviours that include aggression and violent acting out (Berry & Drake, 2010). Furthermore, staff with interpersonal difficulties, insecure attachment styles, and poor therapeutic relationships may contribute to an aggressive ward milieu in which there is an implicit tolerance for using aggression to manage conflict that escalate levels of violent behaviour in the ward (Daffern & Howells, 2002; Adshead, 2004). It is further argued that negative staff-patient interactions on the ward can also be understood in terms of the interaction between the attachment histories of both patient and staff (Adshead, 2001; Berry, Shah et al., 2008). Staff-related factors and their association with the alliance and risk were not investigated in the present study and have been identified for future research in forensic mental health settings. Overall, the findings in the study point to a complex relationship between internal and external variables that contribute to therapeutic relationships and violence risk in this population of mentally-ill offenders.

5.7 Study limitations

The methodological caveats are outlined below:

5.7.1 Study design and general limitations

The sample size although statistically acceptable, limited the inclusion of additional variables of interest in the data analysis and modelling. Conversely the inclusion of additional variables may have resulted in an unwieldy study beyond the scope of this dissertation. The limitation presented by any cross-sectional design is noted and it would be valuable to examine the temporal relationship between the dual-role relationship and violence risk.

A limitation of any cross-sectional study is that it cannot distinguish between the alternative possibility that the therapeutic alliance improves for patients because they progress from secure to less secure

wards or that those with stronger alliances progress to low secure wards i.e. a temporal relationship (e.g. Donnelly et al., 2011). It is recommended that future studies follow a cohort of state patients longitudinally. It is worth noting that the quality or strength of the alliance is not a function of time and that positive alliances and outcomes are better depicted by a fluctuating rupture-repair cycles (Horvath & Symonds, 1991; Safran et al., 2001).

Furthermore, the study was not able to explore the consistency of the patients' perception of the dual-role relationship with their practitioners, and the actual behaviour and engagement of the practitioners which could have been addressed with repeated testing. Similarly, the attachment style of the MDT members is one of many practitioner characteristics that was not assessed in this study, that may have impacted on the therapeutic relationship and rating of risk potential. This would be a consideration for future research as staff variables including their attachment styles are considered to influence the development of positive therapeutic alliances (Berry et al., 2008; Ross et al., 2008) and violent recidivism (Adshead, 2004).

Practitioner ratings of the therapeutic alliance were not considered in this study for pragmatic reasons that may have contributed unique and additional data related to the alliance and risk. However, evidence in the literature does affirm the patient's rating as a more critical predictor of the therapeutic alliance than that of the practitioner (Skeem et al., 2007; Donnelly et al., 2011) and that most alliance measures are validated from the patient's subjective perspective (Horvath, 2001) whereas the practitioner's rating of the alliance would be informed by a more theoretical perspective.

It was not possible to control for the different types of therapy, disciplines and expertise of the various members of the MDT that provide therapeutic services to the patients in the facility. It was considered pragmatic and of interest to broadly define and operationalise the dual-role relationship across the various members of the team rather than limit it only to psychology (principal researcher, psychology trainees) in the forensic unit. This was a quantitative study and it was therefore not within the scope of the study to qualitatively describe the dynamics of the transference secondary to various demographics such as the gender and culture of the participants, staff and the researchers. The study took place in an all- male forensic unit and findings may not be generalisable to female forensic patients.

5.7.2 Inter-rater reliability

As there was only one rater for each set of instruments (e.g. HCR-20, PCL-SV, PANSS), inter-rater reliability was not required. Single clinician ratings were utilised for pragmatic reasons one of which is bias with respect to content expertise that could be introduced by staff who are untrained in the administration and interpretation of these instruments. The potential predictive bias in using a single rater is noted; however, the literature stipulates only that the instrument be coded by an experienced forensic practitioner (de Vogel & de Ruiter, 2005). Furthermore, only one psychiatrist trained in the use of these tools, administered the HCR-20, PCL-SV and PANSS to retain a degree of consistency in

ratings across these three measures. Similarly, the self-report measures of the ECR-RS, DRI-R and MCMI-III were administered by the principal researcher (psychologist) and the Raven IQ screening measure was administered by the research assistant (psychologist) to maintain a degree of consistency across these measures.

5.7.3 Bias

The study relied mostly on self-report data derived from various measures such as the DRI-R and ECR-RS. These measures were administered by the principal researcher, which may potentially have increased the probability of social desirability bias. Given the element of control inherent in these relationships and the gatekeeper role of the practitioner, this may have encouraged a more affiliative response from the patient for fear of reprisals. Skeem et al. (2007) addressed the concern of halo effects and reported that offenders' DRI-R ratings are shown to correlate independently with observer ratings including confrontational within-session behaviour by both practitioner and patient, which suggests that cognitive biases do not appear to be significant in the patients' ratings of their practitioners (Kennealy, Skeem et al., 2012). According to Manchak, Skeem and Rook (2014), even with the element of high control in mandated relationships, the aspect of affiliation is retained quite robustly in the dual-role relationship.

To limit bias, for example in the administration of the DRI-R, patients were instructed to choose a profession from the MDT of their preference (to whom they would turn in times of distress or feel positively about) rather than to indicate a key relational target and to keep the specific person in mind in their responses. In this way, a degree of anonymity was afforded the men to encourage a more unbiased response. Despite these limitations, the results of the present study are paralleled by relevant past research using the DRI-R (Skeem et al., 2007; Kennealy, Skeem et al., 2012; Manchak et al., 2014).

5.7.4 Fair test practices:

Limitations with regard to test bias and standardisation of measures have been extensively explicated in Chapter One and will only be briefly summarised here. Socio-economic status, education, cultural background and language are recognised as important moderators of test performance and is an important consideration in research protocol and, which requires sensitive application and cautious interpretation in these contexts (Magwaza, 1995; Shuttleworth-Jordan, 1996; Foxcroft, 1997, 2011). It is argued that in light of these recognised constraints in psychometric testing, the performance of the individual may not necessarily be a true reflection of his true potential and that test-taking factors such as high levels of anxiety especially for those for whom testing is a novelty may skew the data generated. In the mental health arena, these social limitations are compounded by acquiescence, suggestibility and medication effects. The reliability of any information provided by patients is therefore subject to bias and should be treated with caution (Levinson, 1997; Allan, 2006). According to Magwaza (1995),

Swanepoel and Kruger (2011) and Foxcroft (2011), introducing a fair, familiar and democratic assessment environment augmented with increased supervision and practice examples may be required along with clear unambiguous terminology to reduce testing bias. In the present study testing was implemented in the wards and the familiarity of the test setting, clinical assessments and a familiar research team, played an important role in reducing performance anxiety. The use of concrete terminology and descriptions and instructions relayed in short simple sentences are particularly relevant when assessing linguistically diverse participants or that may have intellectual or learning difficulties.

The presence of the rater/researcher in facilitating comprehension for the patients was argued to reduce potential bias. As suggested by Blackburn et al. (2010:574) 'researcher administration may be useful in facilitating comprehension for patients with cognitive or literacy difficulties'. The research team (principal researcher, psychiatrist and research assistant) tested patients individually and independently and did not consider any of the 131 men to have experienced difficulties in completing the battery of tests. Importantly, there are many causal factors other than intellectual functioning that influence extraordinary scores on a test. Notably, low scores on a single isolated test may be more an indication of unwillingness to co-operate on the day of testing; it may be a direct consequence of intoxication or psychotic processes or at the least, a lack of motivation. A case in point was the poor outcome of one individual's score on the Raven measure that was considered an anomaly in light of his high education level and excellent functioning across all other tests. Notwithstanding the limitations presented for lower functioning participants (scores based on intelligence tests) for which there may be multiple causal factors (e.g. mental state at time of testing, performance anxiety, education level) patients are capable of providing a narrative of their feelings, thoughts and behaviour (Allan, 2006). Furthermore Allan (2006) argues that the fundamental ethical principles of testing individuals with intellectual deficits should not differ from the general principles and ethics of testing but that these limitations be considered, and findings always interpreted with caution. It is not always possible to identify that a patient has intellectual deficits without formal testing and, according to Allan (2006), it is often the case that the assessor may 'fail to detect that people have an intellectual disability because many of them deny their impairments and/or try to hide it'. This is particularly cogent when the intellectual deficits are not overt or severe and for those who are fairly well-socialised or 'street-smart', these deficits are often masked by a 'cloak of competence' particularly in an environment that is structured, familiar and non-threatening (Allan, 2006:289).

A caveat: English is generally taught in schools from grade 1, and from grade 5 onwards, education is delivered in English along with a second mother tongue language (e.g. Afrikaans, Xhosa, Zulu) (Shuttleworth-Jordan, 1996; Foxcroft, 1997). English, which is the lingua franca of education and government, was not regarded as an insurmountable limitation in the study.

5.7.5 Standardisation of relevant psychometric tests

The utility of MCMI-III does not come without controversy most notably the lack of empirical studies in the literature, particularly in forensic psychiatric samples as well as limited validation studies (Craig, 2002). The test has been standardised locally with a representative sample and recommended for research purposes (van Zyl & van Rooyen, 2012). The high overlap of personality pathology in the sample could be explained as a methodological limitation. MCMI profiles may not be the most suitable for categorical diagnosis, thus data are best interpreted on a continuum of severity which may have significantly influenced the high mean prevalence of personality pathology in the sample. As such the interpretation of data is treated with caution especially with respect to DSM-IV categories of personality disorders. In addition, over-generalising prevalence data on the basis of study populations and service settings is also noted to be misleading due to selection bias (Craig, 2002). The scoring and base rate transformations were conducted independently by an independent research division and the sample was considered to be valid.

Formal standardised norms for the DRI-R and ECR-RS were unavailable at the time of the study particularly in relation to a forensic population. This was addressed in discussion with the relevant authors of these instruments and subsequent references were provided (e.g. risk.resilience.berkeley.edu/relationship-inventory). Until such time that DRI-R norms become available to interpret high and low therapeutic alliance scores, the authors advise that average DRI-R scores <5 are indicative of weaker alliance outcomes (Skeem et al., 2007; Manchak, Kennealy & Skeem, 2014). Preliminary post-hoc validity studies of the DRI-R (alliance) and ECR-RS (attachment style) already show concordance across projective tests and clinical records. In the present study, the DRI-R showed excellent internal reliability with Cronbach's α=.93. Notwithstanding these limitations, the study, which was largely exploratory in nature, generated valuable data that are reflected in the concluding chapter below.

CHAPTER 6 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Forensic mental health practitioners have two essential imperatives: to treat and assist in the recovery of patients from mental illness, and to minimise their risk of further violence. The competing demands of risk and recovery and the challenges of dual agency and authority are assumed to influence treatment outcomes including future violence risk (e.g. Pfafflin & Adshead, 2004; Skeem et al., 2007). Dual agency involves balancing the roles of care (affiliation and bond) with control (behaviour monitoring and influence) and where the treatment relationship includes the judiciary and broader society (e.g. Lindqvist & Skipworth, 2000; Robertson, Barnao & Ward, 2011; Manchak et al., 2014; Roychowdhury & Adshead, 2014).

The key forensic issue examined in the study was the significance of the therapeutic relationship in secure forensic settings in addressing these complex treatment and security needs and, to the knowledge of the author, this is the first local study to empirically examine the relationship between the therapeutic alliance and risk for violence in forensic mental health. Given the paucity of literature pertaining to risk and recovery in this population, the study has successfully gathered significant clinical and contextual data on the therapeutic alliance and the factors that are a source of variance in the relationship and how this may impact on violent recidivism. The relational framework within which risk has been conceptualised in the study resides firmly within the ambit of a person-centred, secure recovery approach as illustrated in the literature review (e.g. Appleby, 2010; Tighe & Gudjonsson, 2012). This approach emphasises the critical importance of a robust therapeutic alliance in secure settings that offers both a collaborative and a transactional lens on risk management.

The study set out to determine whether the therapeutic relationship conceptualised as a dual-role relationship could be considered as a proxy measure of violent recidivism based on extensive literature that regards the therapeutic alliance as a consistent predictor of therapeutic outcomes across therapeutic modalities and populations (Martin et al., 2000; Skeem et al., 2007). Furthermore, the study examined the limitations of current risk assessment practices particularly in relation to the local context of under-resourced services as well as risk assessment instruments that are insensitive to measuring therapeutic progress. The theory of attachment provided a psychodynamic perspective on relational violence in attempting to understand the propensity of violent offending behaviour in this population of psychiatric patients. It was also hypothesised that most of the men in the sample would have insecure attachment styles (adverse childhood attachment histories) and that insecure attachment histories would negatively influence the therapeutic relationship with staff and would render the men more vulnerable to violent behaviour. This is based on the assumption that insecure attachment histories impair the development of mentalisation and other meta-cognitive processes including affect and arousal regulation that can impel individuals to react violently to perceived threat (e.g. Schore, 2001; Adshead, 2004; Fonagy, 2004;

Adshead et al., 2013). Contextual and personal factors such as treatment setting, family relationships, practitioner factors as well as personality and intelligence were some of the additional factors examined for correlation with the alliance and risk. It is argued in the literature that many of these factors contribute significantly to aggression between patients and staff and among patients themselves (e.g. Daffern & Howells, 2002). The findings have been extensively addressed in the results and discussion chapters of the thesis and a brief explication of the findings are re-iterated below.

Patients remain in the forensic system for several years and develop long and enduring relationships with the multi-disciplinary mental health professionals. In the present study, most of the men had been in the system for more than a decade and similarly so were many of the practitioners in the team.

Consistent with the work of Manchak and colleagues (2014), these patients were generally able to develop strong dual-role relationships with staff which suggests that affiliation (bond, care) is not compromised by the element of control (behaviour monitoring, influence) inherent in these dual-role relationships. It is also possible that forensic patients regard their relationships with practitioners as more affiliative because they have developed strong attachment bonds with them and in many instances the secure forensic setting and its practitioners are the only stable attachment objects in the lives of these men (Schuengel & van Ijzendoorn, 2001; Adshead, 2004; Manchak et al., 2014). Additionally, in the present study the men rated the alliance differentially across professions with psychology and psychiatry receiving the most ratings and the highest alliance scores compared with other mental health practitioners. A potential explanation for these differences across ratings may be due to the nature of the alliance that develops and, the nature of the roles of different professionals in relation to their patients (Moore, 2012). Furthermore, various components of the alliance are expressed and emphasised differently to accommodate the different therapeutic frames and outcomes sought (Moore, 2012). For example, negative alliances develop between staff with prolonged and intense exposure to patients that may erode healthy therapeutic relationships through increased levels of stress and negative critical countertransference (Moore, 2012). A reliance on a custodial interaction rather than a therapeutic engagement with patients is often a common recourse for emotionally-stressed practitioners, which, in the present study, correlated with risk for violent behaviour.

As hypothesised, men with a strong therapeutic alliance have lower risk for violent behaviour in the institution and in the community. In addition, on the basis of the current findings, it can be fairly strongly argued that practitioners' use of hostile control and patients' perception of this authoritarian approach, increase conflict and violence and significantly impair the strength of the therapeutic relationship. Key practitioner type is therefore considered to be significant in influencing the strength of the alliance and, it is the quality of the dual-role relationship that may effectively militate against the level of risk that forensic patients pose (e.g. Skeem et al., 2007; Ross et al., 2008; MacInnes et al., 2014).

Notably, however, the therapeutic relationship is a transactional one between the patient and practitioner and it is acknowledged that staff introduce to the relationship a set of personal and contextual factors that also contributes to the alliance, such as their own attachment histories (e.g. Berry et al., 2008; Ross et al., 2008). Countertransference issues according to Adshead (2008:574) 'can lead to boundary violations' such as rejecting and punitive behaviour towards patients. Furthermore, although not explored in the study, practitioners may rate the alliance from a theoretical perspective based on predetermined criteria for what constitutes a positive alliance which may differ from the more subjective ratings by patients (Horvath, 2001). Patient ratings of the alliance are nonetheless considered to be a more reliable and consistent reflection of the alliance than practitioner ratings (e.g. Skeem et al., 2007; Ross et al., 2008).

As elaborated in the literature review, insecure attachment styles are the external expression of Bowlby's (1988) internal working models or internal mental representations of early dysfunctional relationships that is argued to influence adult relationships as well as the therapeutic relationship. In saying this, insecure attachment styles were ubiquitous among the forensic patients which is to be expected given that most of these men have histories of impoverishment and psycho-social deprivation which is consistently found across forensic populations worldwide (e.g. Frodi et al., 2001; Fonagy, 2004; Pfafflin & Adshead, 2004). In the present study, these enduring relationships were moderately negatively influenced by the insecure attachment history of the patient (and potentially that of the practitioner), which also translated to moderate increases in risk potential. The small to moderate association between attachment and the alliance and attachment and risk of violence is consistent with previous studies and possible explanations for these inconsistencies have been posited in the literature. For example, the ECR-RS operationalised attachment insecurity to be differential across relational targets (Fraley et al., 2011), which suggests that patients may become securely attached to practitioners and/or the institution but remain insecurely attached to relatives or partners with continued potential for violent behaviour in those contexts. Furthermore, attachment histories may only be triggered within the therapeutic relationship some of the time and only in certain contexts, for example when a strong bond has developed. This suggests that insecure attachment styles may influence the alliance when the attachment bond is triggered and escalate the risk of violence when this occurs (e.g. Fonagy, 2004; Pafflin & Adshead, 2004; Adshead et al., 2013). It can be also argued that the lack of strong statistical significance may be due to the potential for modification of these insecure attachment styles through the process of therapeutic intervention, which has been posited by several authors such as Blackburn and colleagues (2010) and Shaver and Mikulincer (2010). In such instances, the practitioner is able to provide a secure base for the amelioration of disturbed internal mental representations of early dysfunctional relationships (e.g. provides a corrective emotional experience for the patient) that allows for the containment of the patient's distress, arousal and anxiety (e.g. Adshead, 1998, 2004; Blackburn et al., 2010). This interpretation is supported by Willmot and McMurran (2014) who claim that deficits in mentalisation and affect regulation may be repaired by addressing insecure attachment behaviour in

the treatment relationship. Consequently, men who have secure states of mind may have better internal resources to cope with stress and rely less on psychological defences that contribute to interpersonal conflict whereas, men with insecure states of mind have deficits in mentalising and self-reflection and seek attachment relationships to regulate their distress that make them more vulnerable to violent behaviour (Fonagy, 2004; Mikulincer & Shaver, 2007; Fonagy & Adshead, 2012).

This argument has been extended to include the influence of the forensic institution as similarly providing a safe and secure attachment base (Berry & Drake, 2010; Blackburn et al., 2010) that is containing for the patient and, which may explain why, counter-intuitively, so many patients prefer to remain in the hospital despite their stable mental state. For this persuasive argument to hold true, that violence is the outcome of a failure of mentalisation, is to assume that attachment insecurity is the underlying cause (Adshead, 2004). However, not all insecurely attached patients resort to violence and a more reasonable explanation is that insecure states of mind potentiate risk for violence in some individuals and only at certain times, which need not negate the importance of addressing these attachment deficits as a means of monitoring and managing risk in this population (e.g. Elbogen & Johnson, 2009; Yakeley & Adshead, 2013).

Treatment in forensic mental health not only seeks to provide symptomatic relief from mental illness but also the amelioration of additional risks that these men present to themselves and others. Forensic patients present with serious psychiatric impairment but also demonstrate a history of criminal behaviour and a high prevalence for personality pathology and substance use which was evident in the present study and consistent with the forensic literature (Shinkfield & Ogloff, 2014). Findings in the present study suggest that psychosis may not always constrain alliances, depending on the severity of symptoms, which may impact negatively on the capacity for insight into the need for treatment. Furthermore, in the present study positive symptoms of psychosis significantly increased risk of violence rather than negative symptoms or general psychopathology. These findings support the well-established premise that patients who are acutely psychotic and present with hallucinations, paranoia or psychotic confusion are at significantly greater risk of behaving violently (e.g. Grann, Danesh & Fazel, 2008; Elbogen & Johnson, 2009; Esbec & Escheburia, 2010; Resnick, 2013; Volavka, 2014). The literature posits various explanations to account for this association and according to Daffern and Howells (2002), when patients are acutely psychotic they may avoid seeking help or may have no insight into the need for support or treatment (Douglas & Skeem, 2005). Alternatively, patients experiencing active symptoms such as persecutory delusions and auditory hallucinations may become anxious or frightened and act on their beliefs (e.g. Resnick, 2013; Volavka, 2014). Importantly, when symptoms abate, and, in the absence of hallucinations and delusions, so should the threat of violence (Douglas & Skeem, 2005; Barker, 2012). To this effect, men in the present study were considered to be more at risk for violence when non- adherent to their medication; hence, symptom reduction and treatment compliance to ensure control of positive symptoms remain an important aim in the treatment

and risk management of forensic patients. Residual symptoms may however continue to pose concern for recidivism.

Men who screened positive for psychopathic traits were able to maintain positive alliances with their practitioners that is contrary to the prevailing view that hostile, remorseless individuals are contraindicated for therapy (Frodi et al., 2001; Polaschek & Daly, 2013). Conversely, psychopathy can generate strong negative countertransference from the practitioner that could also compromise the treatment relationship. Ross et al. (2008) refer to therapeutic nihilism that often emanates from engaging with patients who have perverse pathologies and violent behavioural histories that impact significantly on developing and maintaining positive alliances with them (Welldon & Van Velsen, 1997). Men assessed as more violent in the study were, more likely to have a history of childhood conduct disorder, psychopathic personality pathology and were more likely to have previous criminal convictions. This suggests that patients with criminal histories and antisocial behaviour may continue to present with some risk for recidivism in the absence of psychosis or any other mental illness (e.g. Volavka, 2014)

It may be that a focus of intervention should be to target the antisocial component of psychopathic personality more so than the affective traits to achieve behaviour change (see Yang et al., 2010; Polaschek & Daly, 2013). Despite high comorbidity of substance misuse in the sample, this did not hinder the formation of a positive alliance, and was not as prominent a risk factor for violence as predicated in some studies, i.e. it showed a significant association with risk in the bivariate analysis but not in the final model (e.g. Monahan et al., 2001. Doyle & Dolan, 2006; Grann, Danesh & Fazel, 2008). Those men in the study assessed as more predisposed to violence were, however, more likely to misuse substances than those who abstained. Contrasting findings in the literature may be due to methodological differences that include diversity of samples (forensic vs. civil) and differences in sources of information (collateral vs. self-reports) (Doyle & Dolan, 2006).

The level of intellect of the men in the study exerted moderate influence on the therapeutic relationship and lower functioning patients were more vulnerable to compromised therapeutic relationships with an increased propensity for violent behaviour. Furthermore, increased risk for violence appeared to lie in a fairly discrete intellectual range below 80. Notably, men with above average intelligence began to show decreased relationship satisfaction and a speculative interpretation for this finding is that high functioning patients may come to experience staff as punitive and controlling and the system to be holding them back from their potential to live autonomously which has a negative impact on the therapeutic relationship. Furthermore, these men may be more socially skilled with wider social networks and support from significant attachment relationships that make them less dependent on treatment relationships (e.g. Manchak, 2011; Manchak et al., 2014). Negative responses to the therapeutic milieu and increased violence risk associated with lower functioning patients may be explained by relational and social deficits and other metacognitive processes as well as learning or communication difficulties. This is in keeping with previous studies that show low functioning patients

to be more behaviourally disturbed and furthermore relate this to inadequate supervision and recovery methods that increase their continued involvement in offending behaviour (e.g. Calitz, van Rensburg et al., 2006; Volavka, 2014). Both groups of men may therefore benefit from interventions pertinent to their needs and functioning to improve their alliances with staff, i.e. a strength-based individualised approach that accounts for deficits and strengths to enhance patient recovery and reduce risk of further offending behaviour (e.g. Ross et al., 2008).

Strong family support and employment status are considered to be significant protective factors against violent recidivism in the study consistent with many previous studies (e.g. Elbogen & Johnson, 2009; Kruger & Rosema, 2015). In the present study, conflictual ward relations were also associated with increased violence risk and, according to a number of authors (e.g. Daffern & Howells, 2002), noteworthy contributors to ward-related aggression and violence include the interaction of ward as well as staff factors. Patients react negatively to overcrowding in the ward, to constant noise, to a lack of privacy and to poorly structured ward activities that can lead to boredom and offending behaviour. Furthermore, patients are not always compliant with the rules and regulations in the ward particularly when alliances are constrained (high control and related disaffiliation). For example, inexperienced staff are known to resort to a more controlling custodial role to alleviate their own anxieties which can lead to increased levels of violence in the wards (e.g. Ross et al., 2008; Manchak et al., 2014). In this study, outpatients living in the community on long leave of absence (3–6 months) were inclined to have stronger alliances and lower risk for violence than those men who remained in the wards with minimal leave into the community. Bearing in mind that no formal risk assessment is administered in the hospital, it can be interpreted that those men with the least restrictions have more robust alliances and lower risk for violence than those men who are more restricted (i.e. in more secure wards with less parole and leave privileges). It is also reasonable to argue that the appropriate group of patients is assigned leave out compared with those that do not yet enjoy such privileges; or that these are the patients that have traversed the system, received therapeutic intervention and have made the requisite corrective relational shifts (Douglas & Skeem, 2005). Cross-sectional studies however cannot generally distinguish between cause and effect which can be considered a limitation in the study. However, literature purports that the curative effect of the alliance is not necessarily related to temporal progression, i.e. the quality and outcome of the therapeutic relationship is not a direct function of time. It is described more as rupture-repair cycles that are signifiers of therapeutic outcomes (Horvath & Symonds, 1991; Safran et al., 2001). Alternatively, findings could be interpreted to mean that the more restricted the environment (e.g. risk-averse practices, lengthy admissions) the greater the chance of negative alliances developing with increased negative perceptions of the practitioner that correlates with increased violence risk (e.g. Donnelly et al., 2011). Ground parole privileges were counter-intuitively associated with significantly increased risk potential which could be indicative of a more systemic problem unique to the forensic service in which the study took place. As stated earlier, formal risk assessment is not practised in the present system, and men in the low secure recovery wards have

unrestricted access to hospital grounds irrespective of their level of risk, which suggests that more stringent methods of granting ground parole privileges should be implemented in the unit.

The duration of stay in the hospital was not significant in relation to a strong therapeutic relationship which is somewhat counterintuitive given that patients should develop stronger relationships with staff over a longer period of time and often become more securely attached to the institution (Adshead, 1998, 2004; Pfafflin & Adshead, 2004). However, this does correlate with other results in the study such as the decline in relationship satisfaction experienced by patients who are stable and high functioning, but due to family and other socio-economic limitations, are unable to live outside. This has been identified in previous studies where a lack of community resources and limited family support impact negatively on the patient's recovery and re-integration into society (Lindqvist & Skipworth, 2000; Dorkins & Adshead, 2011). There was no statistical association between length of stay and risk which suggests that indefinite and lengthy incarceration of state patients is no guarantee of better risk outcomes.

From the present study, a tentative profile of a low-risk patient emerged that is described as an older, more educated man with minimal or no history of violent convictions prior to his index offence, and without an extensive psychiatric history. Furthermore, he would generally be mentally stable (in remission), more likely to be compliant on treatment, to be higher functioning, more often than not employed and to report strong family support. His intact relational and social skills (theory of mind) would strengthen therapeutic alliances with staff based on the formation of a strong bond characterised by relational fairness, and trust in the therapeutic relationship and the treatment process. The therapeutic relationship or in this case the dual-role relationship is therefore posited to be a significant protective factor against violent recidivism.

To conclude: the study shows firstly that compromised dual-role relationships measured by the DRI-R are closely associated with increased risk of violence and secondly that key practitioner type substantially mediates the potential risk patients pose. The DRI-R measure has not been used before in a sample of forensic state patients (psychiatric patients who by reason of mental illness are diverted from the criminal justice system into the mental health system). The dual- role relationship is conceptualised and defined somewhat differently from the traditional therapeutic alliance (Skeem et al., 2007) to address not only the bond, trust and care that is intrinsic to the treatment alliance but the additional component of control and influence that is operationalised by the Toughness subscale of the DRI-R. It is the opinion of the present author that the DRI-R instrument and its unique operationalisation of the dual agency relationships in forensic treatment settings, addresses several limitations raised by Shinkfield and Ogloff (2014) concerning the scarcity of effective risk outcome measures (ROMs) in forensic services globally. Their review of current risk assessment instruments concludes that very few fulfil the forensic brief of assessing risk and recovery and most notably do not adequately inform appropriate interventions and treatment pathways. An ethical imperative as argued by Logan (2003) and Roychowdhury and Adshead (2014) is for risk assessment to be followed by treatment plans to reduce

that risk. For example, while the PANSS is useful for assessing psychotic symptoms and the HCR-20 assesses risk of violence, neither tool necessarily informs domains of recovery and pathways of care and furthermore its administration is often limited to psychiatrists and psychologists. Shinkfield and Ogloff (2014) recommend that ROMs should be brief and possible for a single practitioner to use regardless of discipline and that it should demonstrate sound psychometric properties and importantly demonstrate the capacity to yield quantitative data. The DRI-R is a simple and brief measure that is easy to administer and score electronically and can be assessed from both patient and practitioner perspective. The measure has demonstrated excellent levels of reliability in the present study (α=0.93) and makes provision for a patient-centred perspective of the treatment relationship and may add value to routine clinical and risk decisions. Importantly, in the present study, the alliance as measured by the DRI-R correlates with violent recidivism in a forensic psychiatric sample.

6.2 Recommendations and future research

Further validation of the DRI-R has been identified for future research and already, preliminary post-hoc validity screening of the DRI-R and ECR-RS has demonstrated strong correlation with projective tests and clinical records.

Notably, the current findings have implications for forensic treatment programmes:

Improving the alliance with patients to reduce risk is supported. A strength of the present study is the identification of high-risk men who are likely to benefit from specific interventions which target relational deficits and enhance protective factors in their recovery. Forensic mental health practitioners contribute significantly to the nature and strength of the therapeutic relationship that develops with patients and should remain vigilant of their impact on the levels of violence risk patients may pose in the institution and in the community. Several authors in the literature have attested to the significant role of the practitioner in facilitating positive alliances with patients and the adverse effects when these alliances are compromised. For example, Ross et al. (2008) speculate that practitioners who have unrealistically high or low therapeutic expectations, or who are punitive and more confrontational with their patients, may damage the alliance and increase the potential for aggressive or violent behaviour. Similarly, Mann et al. (2014) argue that forensic staff have a natural tendency to revert to custodial and restrictive practices especially when thoughtful and reflective practice is not encouraged. Moore (2010) recommends that staff acquire requisite relational skills to form positive attachments. The importance of providing practitioners with additional training on how to develop and maintain therapeutic relationships is therefore supported by the present study.

The importance of relational fairness (procedural justice) and autonomy-promoting relationships within the limitations of a secure service is strongly recommended by the findings in the study. Realistically, not all patients are able to form a therapeutic alliance or make use of an alliance to change, but with

proper selection criteria, thorough clinical assessment and appropriate intervention, forensic patients are able to actively contribute to their own recovery.

The study has demonstrated that the alliance and security risk are influenced to some degree by attachment insecurity. Attachment theory argues that pathological attachment in childhood (abuse and neglect) affects psychological functioning in adulthood and is a relevant risk and treatment factor for psychopathology, personality pathology and violence (Adshead & Jacob, 2009). These are patients who have insecure internal representations of the world (disturbed object relations) and are incapable of modulating their own anxiety and arousal, which can manifest in increased aggressive and violent behaviour. Using attachment theory as a framework for intervention implies that an important goal of the practitioner (and institution) is to provide a secure base for the patient and to help modulate his distress (Adshead, 1998). This can be implemented at ward level and individual level and facilitated in a few simple ways: first, the practitioner is able to contain intense affect and arousal through empathic listening, by providing information in a non-threatening manner, and by establishing trust through consistent interaction. In essence, this is a collaborative process in which the practitioner and patient form a temporary attachment bond which is thought to provide a corrective attachment experience for developing more functional relational behaviour. (see Appleby, 2010; Fonagy & Adshead, 2012; Adshead et al., 2013). Future studies should also consider the influence of staff attachment histories on the alliance (see Berry et al., 2008).

Forensic patients with intellectual impairment generally fare more poorly on global measures of functioning and are a complex cohort of patients requiring specialised treatment and services that are currently absent in forensic mental health services (see Allan, 2006; Lunsky et al., 2011). It is therefore recommended that therapeutic programmes should ideally be pitched at levels appropriate to these patients to prevent treatment attrition and/or therapeutic nihilism that may serve to perpetuate high recidivism risk.

Among men with serious mental disorders and violent offending behaviour, anti-psychotic medication remains an essential pharmacotherapy intervention for recovery and for reducing potential violence risk. Men rated with acute symptoms and who are high risk require interventions that develop insight and meta-cognitive functioning as well as interventions that promote treatment adherence. Patients with criminal histories and antisocial behaviour may continue to present with some risk for recidivism in the absence of psychosis or any other mental illness and would therefore benefit more from interventions to enhance prosocial behaviour. It is recommended, and studies concur, that ward relational conflict can be reduced by addressing over-crowding in the ward and by developing and implementing well-structured ward activities that actively prevent boredom and promote prosocial activities (e.g. Daffern & Howells, 2002).

Essentially, all therapeutic endeavours in the forensic setting whether psychological, pharmacological, occupational or social are required to address the individual's capacity for violence as well as his mental illness. Establishing trusting therapeutic relationships in a forensic system milieu that actively promotes secure recovery and protects against violent recidivism is integral to effective forensic mental health care. Equally important will be research evaluating the influence of different alliance perspectives such as that of the practitioner and how practitioner ratings concur with risk using the DRI-R as both a promising measure of the therapeutic alliance and as a proxy measure of violent recidivism.

APPENDICES

Appendix A: 'Racial profiling in medical research: what are we measuring?'

The above caption was taken from a 2007 article published in the South African Medical Journal (SAMJ) by Dr Ncayiyana, the then editor of the journal.

Institutionalised racism based on racial classification is something that South Africans are painfully familiar with and that continues to proliferate on the back of once plausible rhetoric of transformation and redress. However, what has transpired post-apartheid is an entrenchment of race-based mind-sets and race-based attitudes (Ncayiyana, 2007:1225) formalised through current census forms and other legal records, that is insidious in re-affirming the 'validity of race classification' and superiority of one 'race-group' over others. For a country struggling to redress the aftermath of social engineering, it is disconcerting at the least that alternative systems of monitoring social inclusiveness have not been devised as a national imperative. The Netherlands, an example of a multicultural society, does not impose racial classification on its citizens and are still able to generate reliable census statistics (Ncayiyana, 2007).

The issue of race, ethnicity and culture remain sensitive and contentious issues in South Africa in general and in the context of research, there appears to be on-going debate and divided opinion regarding the use of race as a variable in medical research and the conflation of these constructs with which to hypothesise, analyse and define research. Furthermore, racial profiling in medical research which remains ubiquitous in research today, serves to perpetuate, discriminate and legitimise a racially structured view of society. According to Ellison and de Wet (1997:1672), it is 'ill-conceived, misleading and divisive' without legitimate scientific or scholarly justification for its use in research and how it affects the study.

In the apartheid era, racial profiling was practiced routinely by clinical researchers in what can only be described as 'mindless compliance with the prevailing socio-political mindset of the time' (Ellison & de Wet, 1997; Ncayiyana, 2007). In the 1990s, a new progressive editorial policy was implemented at the SAMJ that promoted refrainment from any unwarranted reference to race in research. This is borne out by the new constitution which promulgates a non-racial society devoid of discriminatory practice (Ellison & de Wet, 1997; Ncayiyana, 2007). Other peer-reviewed international journals followed suit with similar policies that denounced the use of race and ethnicity as explanatory variables when the 'underlying constructs are variables that can and should be measured directly' such as level, employment status, poverty and other socio-economic measures (Ncayiyana, 2007).

That SA is culturally and linguistically diverse is not contested by this argument, but neither is it a tacit acceptance of the notion of race as a legitimate and valid construct where even its 'soft use' as a descriptor in research acts to legitimise its 'hard use' as validating the existence of distinct human races (Ellison & de Wet, 1997:1677). The point being is that people differ based on social formations of shared culture, descent, values, language, religious practice, gender and sexual orientation and which

according to Dr Ncayiyana (2007), remains ‘fluid and open-ended’ so that one can be African, western, female, heterosexual, multi-lingual, and ‘all at the same time’ (Ncayiyana, 2007:1226). Furthermore, what the general research fraternity often overlooks, particularly so internationally, is the universality and fluidity of an African culture that is perhaps more salient to the South African context than international perspectives of cultural diversity (Kaliski, 2006). Researchers are encouraged to examine the social and political impact of their work that may potentially continue to promote racist ideology in contemporary mental health research. Importantly, it is fully acknowledged that in any society where there is socio-economic disparity the researcher remains ethically obliged to consider how social factors influence research (Foxcroft, 1997, 2011) therefore, in the present study socio-economic indicators are addressed in the analysis, which is argued to represent a more ethical , scientifically legitimate and politically palatable consideration in research rather than race and ethnicity that is aligned with and perpetuates the unscientific and separatist doctrines and ideology of the apartheid paradigm.

Appendix B: Informed Consent Form

Participant Name …… Participant Number……

HREC REF: 289/2012

THE THERAPEUTIC ALLIANCE AS A COMPONENT OF RISK MANAGEMENT AND ASSESSMENT IN FORENSIC MENTAL HEALTH

Valkenberg Psychiatric Hospital
Department of Psychiatry & Mental Health
University of Cape Town

CONSENT FORM

I have read the information sheet explaining the study and why I have been invited to participate in it.

Yes/No

I have been allowed the opportunity to ask questions that relate to the present study and they have been answered in a way that is understandable to me

Yes/No

I voluntarily agree to participate in the present study

Yes/No

In addition, I voluntarily agree to undergo additional psychometric assessments for research purposes only.

Yes/No

I am aware that participation in this study will not influence my process of rehabilitation through the forensic unit.

Yes/ No

I have been fully informed of the treatment programme in the forensic unit that I will participate in even if I do not participate in the study

Yes/No

I..... (Participant's full name) am voluntarily participating in the present study and am aware that at any point I may stop participating in the present study. If I stop participating, there will be no impact (effect) on my current or future medical treatment.

Participant's signature …… Date: DAY/MONTH/YEAR

Participant's email and/or contact number: ……

I…….. (Staff's full name) have gone through the consent form and answered any questions that the participant has asked

Staff signature …… Date: …… /. ……/ 2013

HREC REF: 289/2012

INFORMED CONSENT INFORMATION SHEET

Participants will be informed about the broad objectives of the study and will be given opportunities to refuse to participate from inception till while the study is in progress. It is possible that participants may perceive that participation may assist them progress through the programme more rapidly. It will be made clear to them that this may not occur.

WHY THE RESEARCH IS BEING DONE and WHAT IS IT TRYING TO FIND OUT

Dear Participant:

The study wants to find out whether your engagement in the therapeutic programme will assist you to recover from your mental illness, improve your psychosocial functioning and thereby lower your risk of relapse and re-offending in the community.

The study will also assist us to find out whether the therapeutic programme implemented in the unit provides you with the interventions necessary to facilitate your recovery.

The research will aid the clinical team in making a more informed and fair assessment when deciding on privileges such as ground parole, town parole as well as leave to visit your family.

WHY THE PARTICIPANTS ARE INVITED TO PARTICIPATE?

As a state patient, you will be expected to participate in the therapeutic ward programme as usual. However, the only difference is that this study will attempt to track your progress through the programme and in this way, we will be able to determine how your treatment benefits you or not and whether we need to make any changes to your treatment in the unit.

Your participation in this study will remain confidential, except for the primary investigator (Tania Swart Barbour), the research assistant (Maryam Abbas) and Prof Kaliski who will know your name and

demographics. However, any assessment information pertaining to the study will be labelled with a code so that your name remains confidential to the rest of clinical team. These folders will be locked up for safekeeping and will only be accessible to the persons involved in the research.

HOW LONG THE RESEARCH WILL TAKE?

The research should take a year depending on how you progress through the therapeutic programme in the unit. It will however not necessarily prolong your stay in the unit.

HOW MUCH OF THE PARTICIPANTS TIME WILL BE REQUIRED?

Participation in the study should not take up any extra time over and above the general ward programmes that you will be involved in. The initial and final psychometric assessments that are required to establish baseline functioning and then importantly to determine any change in functioning after a year will be the only added activities that you will be required to complete. This will be incorporated into the ward programme.

WHAT ARE THE RISKS AND DISCOMFORTS OF PARTICIPATING IN THE RESEARCH?

The study will not impact negatively on you or cause you any discomfort or risk. Any sensitive information that may be revealed during the assessment will remain confidential and anonymous from the multidisciplinary team other than the investigator and supervisors. Your participation in this study is completely voluntary and will include no financial compensation, and you may withdraw from the study at any time without it impacting negatively on your treatment and progress through the forensic unit.

ARE THERE BENEFITS TO PARTICIPATING?

Participation in this study is entirely voluntary and you will receive no financial benefits for your participation, however, you will be adding to the knowledge that will improve our assessment of yourself and other state patients.

The study will better inform the team how to manage your recovery more effectively as well increase our knowledge of risk assessment for your safety, safety of the staff and your families and community. You will be assisting us to relieve overcrowding in the wards and increase discharges from the unit.

- *Your signature indicates that you have read and understand the above information and that you have had the opportunity to ask questions about the study and your participation and that you agree to participate in the study*.

INFORMATION ABOUT THE INVESTIGATORS – ***If you have any questions and/or concerns, please do not hesitate to contact Tania Swart Barbour (Principal Investigator). You may also contact the HREC. Copies of your consent form will be kept separate and confidential from ward files and be readily accessible to you.***

Contact details and affiliations:

1 Principal investigator: Ms T Swart Barbour

Senior Clinical Psychologist/Lecturer (joint-appointment)
Valkenberg Hospital
Department of Psychiatry & Mental Health. UCT
Rm 10 Education Centre
021 440 3287/ 021 440 3111 (w)

2 **PhD Supervisor: Associate Professor Sean Kaliski**

Principal Psychiatrist
Head: Forensic Psychiatry
Valkenberg Hospital
021 440 3195 (w)
Department of Psychiatry and Mental Health
University of Cape Town

3 Contact details of the HREC

Faculty of Health Sciences
Human Research Ethics Committee (HREC)
021 406 6626/ shuretta.thomas@uct.ac.za
Rm E52-24 Groote Schuur Hospital, Old Main Building
Observatory, 7925

4. Informed Consent will be obtained by the following persons:

Tania Swart Barbour (o) 021 4403 287

Assoc. Professor Kaliski (o) 021 4403 195

Ms Abbas (Clinical Psychologist/Research Assistant) (o) 021 440 3138

Registered nurses in the respective wards (o) 021 4403 138/223/240

Two additional independent clinicians to act as witnesses

Appendix C: Demographic data code sheet

	CODES TO BE ENTERED ON DATA SHEET	
CASE NUMBER		
NAME: CODED		
PATIENT NO:		
DATE OF CERTIFICATION:		
DATE OF ADMISSION		
INDEX OFFENCE		
WARD:		
AXIS 1 DIAGNOSIS:		
OTHER AXIS 1		
AXIS 2 – COGNITIVE		
AXIS 2 – PERSONALITY		
MEDICATION:		
AXIS 3 (CURRENT MEDICAL ILLNESS)		
MEDICAL HISTORY		
AGE:		
BIRTH ORDER:		
HLOE (years)		
HLOE (type)		
ORIGIN:		
EMPLOYMENT: (at time of arrest)		
RELATIONSHIP STATUS:		
CHILDREN:		
CHILDHOOD TRAUMA/ABUSE/NEGLECT:		
SEXUAL ABUSE:		
DOMESTIC VIOLENCE		
CONDUCT DISORDER		
CRIMINAL CONVICTIONS (BEFORE ADMISSION)		
CRIMINAL CONVICTIONS FOR VIOLENT OFFENCES BEFORE ADMISSION		
PSYCHIATRIC HISTORY		
DURATION OF PSYCHIATRIC DISORDER		
NUMBER OF PREVIOUS ADMISSIONS		
SUBSTANCE ABUSE HISTORY		
SUBSTANCES ABUSED		
WARD FUNCTIONING		
PRIVILEGES (in past 6 months):		
LOA: Leave of absence		
FAMILY RELATIONSHIPS		
WARD RELATIONSHIPS		
MEDICATION COMPLIANCE		
SUPPORTED EMPLOYMENT		
OTHER EMPLOYMENT		
OT		
GROUP ACTIVITIES		
PSYCHOTHERAPY:		
PHYSICAL EXERCISE:		

Appendix D: Dual-role Relationship Inventory-Revised questionnaire

Dual Role Relationship Inventory: Revised
Form Patient
Instruction Page

On the following pages, there are sentences that describe some of the different ways a person might think or feel about his MDT (multi-disciplinary team). Which of the MDT (psychology, psychiatry, social work, nursing, occupational therapy) do you feel you have the most positive feelings about. As you read the sentences, mentally insert the name of the MDT in the blank space

[_____]

Below each sentence inside there is a seven-point scale:

1	2	3	4	5	6	7
Never	**Rarely**	**Occasionally**	**Sometimes**	**Often**	**Very Often**	**Always**

If the statement describes the way you **always** think or feel circle the number 7; if it **never** applies to you circle the number 1. Use the numbers in between to describe the variations between these extremes.

This questionnaire is **CONFIDENTIAL**: the MDT will not see your answers. **Please answer honestly.** Work fast; your first impressions are the ones we would like to see. (PLEASE DON'T FORGET TO RESPOND TO **EVERY** ITEM). Thank you for your help.

The questions that comprise the Fair/care scale include: (6 of 20 questions provided as an example)

- My therapist cares about me as a person.
- My therapist explains what I am supposed to do and why it would be good to do it.
- My therapist tries very hard to do the right thing by me
- When I have trouble doing what I am supposed to do, my therapist talks with me and listens to what I have to say.
- If I break the rules, my therapist calmly explains what has to be done and why.
- My therapist is enthusiastic and optimistic about me

The questions that comprise the Trust scale include:

- I feel free to discuss the things that worry me with my therapist.
- I feel safe enough to be open and honest with my therapist.
- My therapist trusts me to be honest with him/her.
- My therapist knows that he/she can trust me.
- My therapist is someone that I can trust.

The questions that comprise the Tough scale include:

- My therapist talks down to me.
- My therapist puts me down when I've done something wrong.
- I feel that my therapist is looking to punish me.
- My therapist makes unreasonable demands on me.
- My therapist expects me to do all the work alone and doesn't provide enough help.

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