Risk factors for offending: A developmental approach

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ABSTRACT

A plethora of research has been conducted to identify the risk and protective factors for offending in low-risk samples, particularly juveniles. However, to date this research has not extended to high security adult offenders who engage in serious offending behaviour, represent the most significant risk to society and are detained in conditions of high security. This thesis utilised previously researched risk factor models to identify how risk and protective factors develop throughout an individual's lifespan, to increase the likelihood of following an offending pathway in adulthood.

This thesis includes a systematic review and review of a psychometric tool, in addition to both an individual case study and a research paper, which identify specific factors relevant to types of high security offenders. The findings demonstrated that aggression and substance misuse were among the most common risk factors, which began in adolescence and continued into adulthood. Therefore, adult high security offenders could be partially retrospectively mapped onto established juvenile risk factor models, thus suggesting that the factors identified in high risk samples are primarily developmental in nature.

Further qualitative and quantitative research is recommended to develop these findings; however tentative results demonstrate that interventions with at-risk adolescents may be beneficial in reducing the risk of future high security offenders.

In conclusion, the findings support previous research, which suggests that experiences of increased risk factors in conjunction with few protective factors increases the likelihood of individuals being involved in offending behaviour. Therefore, pro-active and reactive measures should be targeted towards such at-risk individuals.

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INTRODUCTION

According to the HM Prison Service Population Bulletin (Ministry of Justice [MOJ], 2010) the total prison population on 12th March 2010 was 84,086, which indicates a rise of nearly five hundred from the same date in 2009 (MOJ 2009). This increase is also apparent within the high security prison estate, suggesting that the most high risk offences which cause the most concern to society are continuing to occur, despite lengthy sanctions. Although there is currently little consensus with regards to the causes of offending behaviour, at the basis of each theory is the assumption that the behaviour develops and that individuals are not, therefore, born offenders. Consequently, much research has been conducted to identify the most predictive risk factors for offending in a range of populations, including both juveniles and adults. This evidences a more proactive than reactive approach to tackling offending. From this an element of predictability is introduced, which can be utilised to target interventions to address dynamic risk factors and increase protective factors of at risk individuals.

This introduction aims to highlight the theories pertaining to offending behaviour and present the relevant research regarding risk and protective factors for offending. These factors are considered in both juvenile and low-risk samples, although a lack of research with adult high security samples is highlighted. The strengths and weaknesses of these theories are discussed and the rationale for the current thesis is discussed in relation to these. For the purpose of this thesis, high security offenders refer to the population of offenders who have been arrested and convicted of serious offences and have been detained in conditions of high security for the offence(s) which likely caused serious harm to the victim(s). Low security offenders are primarily defined as offenders who engage in offences such as minor assaults and thefts and may be detained in conditions of lesser security. Therefore for the purpose of this thesis, the security level of the prison the offender is detained in and the severity of the offence is used to define high security offenders, rather than the frequency of recidivism. Also as individuals

detained in high security prisons must be over the age of 18, only adults will be considered as high security offenders throughout this thesis.

1. Theories of Offending

In order to progress the understanding of offending behaviour, researchers have identified risk factors that have been found to be associated with the development and maintenance of offending behaviour. Many studies have focussed on one explanatory variable, such as a genetic cause (Lombroso, 1876), childhood aggression (Tremblay & LeMarquand, 2001), presence of psychopathology (Ullrich, Yang & Coid, 2010), antisocial peers (McCord, Widom & Crowell, 2001) or criminal parents (Jaffee, Moffitt, Caspi & Taylor, 2003). However, when considering the complexity of individuals who engage in offending behaviour, it is unlikely that one risk factor will adequately explain the development and maintenance of this behaviour.

Alternative theories have focussed on the importance of an individual's beliefs and experiences in the development of offending. For example, Sutherland (1939) argued that differential association in criminality encouraged individuals to learn offence supportive beliefs and criminal behaviours through their interactions with criminal others. This theory of learning through modelling others behaviour (Akers, 1998; Bandura, 1977) continues to gather support in the present day, as evidenced in its utilisation of modelling pro-social behaviour within offending behaviour programmes in the prison service. However, the modelling of pro-social behaviour relies on the presence of pro-social models and a desire to behave in a pro-social manner. From this it may be concluded that the individual has more of a choice in their behaviour than the differential association theory initially implies.

Catalano and Hawkins (1996) provided a social development model of offending whereby the key construct underpinning criminal behaviour was bonding to society. They argued that criminal careers and desistance was directly linked to the balance of societal bonding for the

individual, with those who were well bonded to society valuing societal norms and non-offence supportive beliefs. In contrast to Sutherland (1939), they recognised that the primary motivation for offending was a desire to seek satisfaction and follow self interests and thereby concluded that criminal behaviour was a rational decision. Although this model is theoretically justified it does not explain how to increase societal bonding and does not distinguish between different types of offenders. It is therefore somewhat limited in terms of its utility in changing individuals' behaviour and identifying who may be more likely to offend.

Farrington (2005) developed the Integrated Cognitive Antisocial Potential (ICAP) theory to explain increased offending specifically in lower class males. Antisocial potential was identified as the key construct related to antisocial behaviour and it was hypothesised that this was underpinned by impulsivity and association with antisocial models. Similarly to Catalano and Hawkins (2005) an element of choice of offending was apparent. However, it was identified that both risk and protective factors, including positive socialisation and significant life events, such as marriage had a mediating effect.

Conversely and more recently, Bouffard and Piquero (2010) utilised data from a 1945 Philadelphia birth cohort to empirically test the defiance theory proposed by Sherman (1993). This model proposed that imposed sanctions would either deter or promote offending depending on certain characteristics. For example, if the sanction was considered unfair, if the offender was poorly bonded, if the sanction was stigmatising and if the offender denied the shame that the sanction elicited they were more likely to reoffend. Although this model contributes to the understanding of criminal careers, it does not explain the cause of the primary deviance and is therefore, limited in its predictive ability of future offenders. Furthermore, investigation of the model and subsequent ability to predict re-offending requires the offender to provide honest responses regarding his perception of the sanction, which may not always be provided.

In summary, a variety of models of offending have been proposed with common themes relating to modelling antisocial behaviours, bonding to society and self satisfaction as possible explanations of individuals offending behaviour. However, the majority of these models are limited with regards to explanations of how these factors can be changed in order to reduce offending behaviour in society. Therefore, a risk factor approach may be more useful in identifying which factors are most predictive of certain types of offending, with a view to developing a model of how to reduce such factors.

2. Definitions of risk factors for offending

Risk factors are described as anything that increases the probability that a person will suffer harm (Wasserman & Miller, 1998). Within the context of serious offending, a risk factor is anything that increases the chances of an individual perpetrating an offence and can, therefore, include a multitude of variables. It is also worthy of note that what may generally be considered to be a protective factor (such as highly involved parents) may in fact be a risk factor for some individuals (for example, receiving over-controlled parenting). Therefore, the context and the individual's inferences regarding the factors should also be emphasised.

Much research has already been conducted to identify risk and protective factors for general offending (Farrington, Coid & Murray, 2009; Stouthamer-Loeber et al., 1993), childhood antisocial behaviour (Beyers, Loeber, Wikstrom & Stouthamer-Loeber, 2001; Wikstrom & Loeber, 2000) and reoffending (Lodewijks, de Ruiter & Doreleijers, 2010; Smith & Jones, 2008) suggesting an element of versatility in this approach. These studies have positively influenced the understanding of risk factors for offending; however they have focussed primarily on single risk factors and an outcome of lower risk offending or juvenile delinquency. Therefore, further research is required to assess the value of these risk factor models with high security offenders.

3. Definition of protective factors for offending

The focus of predictive factors of offending has primarily been in relation to risk factors, however more recently protective factors have received increased attention (Hoge, Andrews & Leschied, 1996; Pollard, Hawkins & Arthur, 1999). A protective factor is any factor that reduces the probability of offending, despite the presence of risk factors. The majority of research endorses the inclusion of protective factors in predictions of risk of offending; however there is some debate as to whether protective factors are better acknowledged as the absence of risk factors (cumulative approach) or as a distinctly different entity from risk factors (interactive approach). Hart et al. (2007) utilised an interactive approach whereby risk factors were investigated in combination with a number of protective factors including academic abilities (Blum, Ireland & Blum, 2003; Crosnoe, Erickson & Dornbusch, 2002), pro-social peers (Guo, Hill & Hawkins, 2002), access to a mentor (Beam, Chen & Greenberger, 2002), unfavourable attitudes towards weapons and violence (Jessor, Van den Bos, Vanderryn, Costa & Turbin, 1995) and participating in extracurricular activities (Orpinas, Murray & Kelder, 1999). Results from the analysis of variance (ANOVA) showed that an increase in protective factors did serve to reduce the chances of an individual offending, despite offenders and non-offenders experiencing similar amounts of risk factors. The mean number of protective factors for non delinquents, non-violent delinquents and violent delinquents were 7.35, 5.87 and 6.11 respectively. The mean numbers of risk factors were 1.85, 2.32 and 2.30 respectively. They therefore, concluded that increasing protective factors may be more beneficial in comparison to reducing risk factors.

Conversely, Sameroff et al. (1998) utilised a cumulative model of risk and protective factors and reported that child competence reduced as the number of risk factors increased for that individual child. They further argued that “at the highest accumulation of risk, personal protective factors appear to have no effect” (pp. 157). Therefore, they concluded that there is no single risk factor that is damaging per se, rather the accumulation of risk factors throughout

the life of any one individual is paramount. Focussing on increasing protective factors for individuals who experience a number of risk factors and negative life experiences may present as a more positive and encouraging mode of addressing their offending behaviour. This approach may also be more achievable than removing risk factors (over which the individual may have little or no control). However, the majority of research has highlighted that risk factors have a cumulative effect and therefore reducing the prevalence of an individual's risk factors would be most effective in reducing their risk of offending. Further research is therefore required to identify the specific interaction between risk and protective factors, with a view to enhancing the ability of at risk individuals to develop protective factors.

4. Limitations of risk factor research

Developments in the risk factor research have extended current understanding regarding what would make an individual more likely to become an offender. However, understanding predictive risk factors of populations does not equate to understanding which individuals who display such risk factors will begin or continue on an offending pathway. For this reason a combination of research with groups of individuals and single person case studies may provide the quantitative and qualitative perspectives to understand the contribution of this knowledge in practice.

A further limitation of the risk factor research is the routinely narrow and small sample sizes that are used. For example much of the research has been limited to primarily young, low risk/ delinquent males which reduced the generalisability to female and high security offenders. Consequently, there has also been limited research with convicted high security offenders despite research suggesting that they demonstrate a more prolonged and serious offending pathway and a more severe risk factor history (Delisi, 2005). As a result there have been few distinctions between the risk factors for offending in high security populations and it is currently unclear whether they reflect similar developmental offending pathways to less

serious offenders or whether they are a distinct heterogeneous group demonstrating distinctly different risk and protective factors.

Finally, the outcome measures and inclusion criteria utilised in each study can be so vast as to make comparison difficult, for example when considering a specific offence or antisocial behaviour as a whole. This lack of continuity reduces the generalisability between studies and to the represented population.

5. Findings from the risk factor research

5.1 Age as a risk factor

The Cambridge Study in Delinquent Development (CSDD) (Farrington, 2003) used longitudinal prospective methods to understand the development of offending and antisocial behaviour in 411 males. The findings demonstrated a strong association between early age of onset of any type of offending and subsequent violence. This association has also been supported by other research, which has suggested that between 2-45% of serious violent offenders at sixteen years of age showed initial violence in childhood (Domburgh, Loeber, Bezemer, Stallings & Stouthamer-Loeber, 2009; Nagin & Tremblay, 1999; Stoutheimer-Loeber, Loeber & Wei, 2002). However, the consistency of findings in these studies is large and requires further clarification. Other research has shown much support for the association between anti-social peers and delinquency in this age-group, suggesting that association with delinquent peers may contribute to a continued offending cycle (Guo, Hill & Hawkins, 2002; McCord, Widom & Crowell, 2001).

As is evident from the plethora of research, adolescents have routinely been hypothesised to be disproportionately responsible for crime. Consequently, much research has been conducted in the area (Farrington, 1986; Gottfriedson & Hirschi, 1990; Sampson & Laub, 1992) possibly at the expense of expanding the understanding of adult offenders. More recently researchers have considered risk factors in adult offenders, which has resulted in debate as to whether adult

offenders are inherently different to those who offend in adolescence or if they have similar risk and protective factors (Eggleston & Laub, 2002). Findings suggest that many youths with late-onset violence did not encounter the childhood risk factors responsible for early-onset violence (Huizinga et al., 1995; Moffitt et al., 1996; Patterson & Yoerger, 1997; Simons, Conger & Lorenz, Wu, 1994). For these youths, risk factors for violence emerged in adolescence and subsequently suggest a different developmental pathway or at least a delayed developmental pathway to violent behaviour; therefore exploration of risk and protective factors in relation to offence type may be more informative.

5.2 Childhood abuse as a risk factor

There is a common perception that individuals who have previously experienced abuse or neglect may be more likely to be perpetrators of abuse or neglect in the future. This was supported by Widom (1991) who proposed that experiencing childhood maltreatment and/ or witnessing violence as a child may be the primary cause of delinquency in adolescence. However, she qualified this by stating that this figure was still low, with about one out of every six individuals going on to abuse others. Lipsey and Derzon (1998) found only a small effect size (.09) between abusive parents and later delinquency, although it is recognised that many other variables may constitute child abuse. It is worthy of note that the majority of maltreated children do not become delinquent (O'Connell-Higgins, 1994) and it is therefore, likely that other factors mediate this interaction.

Much of the victim to victimiser research has focussed on sexual offenders with the majority of findings supporting a link between poor parent-child relations, previous abuse and subsequent offending (Hanson & Bussiere, 1998; Smallbone & Dadds, 1998). Craissati (2003) found that an affectionless, over-controlled parenting style was more prevalent among the parents of sexual offenders than non offenders, suggesting that the nature and interpretation of the risk factor also requires exploration.

In a high quality review of sexual offending and sexual paraphilias, White et al. (1998) suggested that the population and associated risk factors was more heterogeneous than initially considered. They acknowledged the focus of victim to victimiser (Burton, Miller & Shill, 2002; Jespersen, Lalumiere, & Seto, 2009; Riegel, 2005) but suggested that other developmental risk factors had consequently been overlooked. They highlighted a paucity of comparative research and suggested that this balance be readdressed particularly in relation to research originating in the UK.

5.3 Cognitive deficits as a risk factor

Cognitive characteristics in children, such as impulsivity and Attention Deficit Hyperactivity Disorder (ADHD) have also been found to be associated with adult violence (McDermott, Edens, Quanbeck, Busse & Scott, 2007; Walker, 2008), however caution is required when considering extraneous variables that may mediate this risk factor. For example, weak parent-child relationships may result in more attention seeking behaviours from the child. Alternatively, low IQ may increase the presence of disruptive school behaviour as a way of expressing frustration at a lack of understanding. Such occurrences may result in a search for, or provision of, cognitive deficits as a reason for these behaviours and therefore underlying contributing factors may not be fully explored and addressed. In a similar vein, a number of studies (Gomez-Smith, 2005; Hoge, Andrews & Leschied, 2006; Shader, 2003) have suggested that an above average IQ serves as a protective factor for some individuals. However, it is unlikely that later learning will prove as effective in protecting against future offending if mediated by other present risk factors.

5.4 Other risk factors

Other factors which were found to be predictive of later violence in the CSDD study (Farrington, 1995, 2003) included low family income, large family size, low IQ, poor parenting practices and early aggression and behavioural problems, which have all been

supported by further research (Domburgh, Loeber, Bezemer, Stallings & Stouthamer-Loeber, 2009; Guo, Hill, Hawkins, Catalano & Abbott, 2002; Jones, Van den Bree, Ferriter & Taylor, 2009; Tremblay et al., 2004). Having a parent with previous convictions was also found to be one of the stronger predictors of adult convictions. This was supported by Jaffee, Moffitt, Caspi and Taylor (2003) who used a linear regression model and found that the fathers antisocial behaviour significantly predicted elevated levels of child antisocial behaviour problems ($b=.32$, $p<.001$) but that this was not significant when fathers antisocial behaviour was controlled ($b= 1.80$, $p< 33$). However, it is likely that such factors may co-occur as it could be argued that a larger family size may result in lower income, increased stress and antisocial behaviour may result as an outlet for this. These risk factors may subsequently impact negatively on parenting practices, thereby highlighting the need for a dynamic, multifactorial risk factor model of offending.

More generally, there is a consensus within the research regarding the cumulative effect of risk factors of offending, in that an increased combination of risk factors, in conjunction with few protective factors is highly associated with future offending (Farrington, 2003; Hart et al., 2007; Herrenkohl et al., 2000; Stouthamer-Loeber et al., 2002). Despite this consensus, most studies emphasise the importance of slightly different factors, demonstrating that even multi-factorial models cannot accurately represent the risk of offending. For example, Hart et al. (2007) found an earlier age of first substance use and learning difficulties to be highly associated with violent juvenile offending, Lipsey and Derzon (1998) found social ties to be highly associated and Domburgh, Loeber, Bezemer, Stallings and Stouthamer-Loeber (2009) found social disadvantage to be highly associated. These differences may be more reflective of the nature of risk factors for each individual, as opposed to limitations of the presenting models per se, such as methodological and sample differences.

6. Risk factor models

6.1 Lipsey and Derzon meta-analysis of risk factors (1998)

Both Lipsey and Derzon (1998) and Hawkins et al. (2000) recognised that few risk factor studies had utilised serious violent behaviour as the outcome variable and instead focussed primarily on juvenile delinquency.

Lipsey and Derzon (1998) addressed this limitation by utilising a statistical meta-analytical approach with longitudinal studies of serious and violent juvenile offenders at ages 6-11 and 12-14 years. The definition of "physical aggression or the threat of physical aggression against persons" was applied to their analysis. Lipsey and Derzon (1998) noted that the majority of the studies included in their analysis originated in the United States and the sample sizes in individual studies were generally small (65-67% of the studies had less than 500 subjects) unless drawn from the general population. However, attrition rates within the studies were low (66-75% of studies had an attrition rate below 5%) and the coders' ratings were classified as "good to excellent", which increased the reliability of the studies overall.

From their analysis, Lipsey and Derzon (1998) found that many of the predictor variables at age 6 to 11 were relatively highly predictive of violent or serious delinquency (see Table 1). Thus, an element of prediction of offending behaviour at ages 15 to 25 was considered to be possible from observations made during the ages of 6 to11. Table 1 demonstrates that prior antisocial behaviour (such as general offending and substance use) was the best predictor of later antisocial behaviour; with this being more predictive in the younger age group. This may reflect the extreme cases of juvenile delinquency, whereby individuals as young as six years old who are involved in antisocial behaviour may be more likely to continue to be involved in more serious delinquency at fifteen years. In contrast, social relations were most predictive of offending within the older group; however this was much less apparent in the younger cohort. Interestingly, public perception often considers inadequate or abusive parents to be risk factors

for delinquency; however this was not supported by Lipsey and Derzon (1998) for either cohort. Consequently, general antisocial behaviour and negative peers may be more relevant when considering juvenile delinquency and the likelihood of this developing into adult offending behaviour.

Table 1: Lipsey & Derzon (1998) Odds ratios for risk factors for violent and serious delinquency

Age 6-11 predictors	**Age 12-14 predictors**
Rank 1	
General offence (16.68)	Social ties (18.54)
Substance use (8.31)	Antisocial peers (15.09)
Rank 2	
Gender (male) (18.55)	General offences (6.20)
Family SES (5.39)	
Antisocial parents (5.04)	
Rank 3	
Aggression (4.40)	Aggression (3.85)
Ethnicity (4.12)	School attitude/ performance (3.85)
	Psychological condition (3.85)
	Parent-child relations (3.85)
	Gender (male) (5.17)
	Physical violence (3.61)
Rank 4	
Psychological condition (2.96)	Antisocial parents (3.16)
Parent-child relations (2.96)	Person crimes (2.77)
Social ties (2.96)	Problem behaviour (2.42)
Problem behaviour (2.59)	IQ (2.26)
School attitude/ performance (2.59)	
Medical/ physical (2.59)	
IQ (2.42)	
Other family characteristics(2.42)	
Rank 5	
Broken home (1.98)	Broken home (2.12)
Abusive parents (1.72)	Family SES (2.12)
Antisocial peers (1.38)	Abusive parents (1.98)
	Other family characteristics (1.84)
	Substance use (1.60)

6.2 Hawkins et al. risk factors for offending (2000)

Hawkins et al. (2000) utilised and supplemented the studies included in Lipsey & Derzon's (1998) meta-analysis to complete a systematic review of risk and protective factors for offending. They highlighted that they were primarily concerned with identifying the malleable risk and protective factors included in longitudinal studies, in contrast to Lipsey and Derzon's (1998) analysis of all factors. Consequently, the aim of the review was to identify and propose intervention strategies and policy improvements to address the identified risk factors for juvenile offending, with a view to reducing re-offending and adult offending.

Despite including twelve of the same studies as Lipsey and Derzon (1998) (30% of the total number of included studies) the findings were different in light of the different focus of the review and the three distinct age groups considered (10, 14, 16 years, in comparison to 6-11 and 12-14). The findings of Hawkins et al. (2000) echoed previous findings that general anti-social behaviour was more closely associated with younger delinquents, whilst peer related factors were more predictive of older delinquents. However, as shown in Table 2 Hawkins et al. (2002) also found that peer influence was predictive of delinquency to an extent in the younger cohort and that individual factors, such as early violence and risk taking were predictive of the middle cohort (age 14). Within the additional, older group (age 16) peer and community factors appeared to be more predictive and were not wholly dissimilar to the risk factors for the middle group. However, psychopathology was not prevalent within the Hawkins et al. (2000) study, despite it being in the third ranking for the older cohort in the Lipsey and Derzon (1998) analysis and much previous research supporting this as a risk factor for offending (McReynolds, Schwalbe & Wasserman, 2010; Moffitt, Caspi, Harrington & Milne, 2002). However, this may have been a reflection of the focus of a non-institutional sample in the review and perhaps requires further research with more forensic samples.

The findings from this review support previous research and make logical sense, in that younger children who engage in anti-social behaviour from an early age are at increased risk of continued offending and that peer influence is more pronounced than other forms in the adolescent years. This is perhaps not surprising considering that teenagers spend increased time with peers both in and out of school and may begin to rely more heavily on peers, and less on the family, in relation to discovering their own identity. These results may also suggest that risk factors identified by middle adolescence continue to be predictive of offending throughout the individual's young adulthood, whereby peer influence continues to be prevalent (age 16). However, it is not known whether these same factors would continue to be predictive of adult offenders.

Table 2: Hawkins et al. (2000) odds ratios for risk factors for juvenile offending

Age 10 (younger group)	**Age 14 (middle group)**	**Age 16 (older group)**
Antisocial behaviour (2.66)	Early violence (3.71)	Gang membership (4.58)
Male (2.31)	Gang membership (3.39)	Drug selling (4.55)
Peer delinquency (2.25)	Drug selling (3.34)	Peer delinquency (3.95)
Hyperactivity (2.17)	Risk taking (3.18)	Neighbourhood adults involved in crime (3.90)
	Neighbourhood adults involved in crime (3.15)	Risk taking (3.50)
	Peer delinquency (2.82)	Community disorganisation (3.16)
	Availability of drugs (2.63)	Availability of drugs (3.09)
	Poor family management (2.11)	School transitions (2.97)
	Community disorganisation (2.19)	Low academic performance (2.71)
		Residential mobility (2.69)
		Poor family management (2.63)
		Sibling delinquency (2.26)
		Family conflict (2.16)

7. Conclusions from the research

Figures from HM Prison Service (2010) demonstrate that the overall prison population is increasing, suggesting that harsher sentences are currently ineffective. Therefore, a risk factor model has been proposed by a number of researchers as a more proactive way of identifying offenders at the onset of their offending pathways. Such a model would also assist in targeting interventions to reduce the present risk factors and increase the protective factors.

Despite these developments, the majority of studies have focussed on juvenile and low-risk offenders, with relatively few studies concentrating on the most dangerous individuals to

society; high security adult males. There appears to be a general consensus that those individuals who present with antisocial behaviours such as general offending, substance misuse and aggression from a young age may be more pathological and thereby, more likely to continue offending. However, it would be beneficial to identify if these findings are represented retrospectively in adult offenders.

8. Aim of the thesis

In light of previous research, this thesis aims to identify the developmental risk and protective factors for types of offending. To achieve this aim, the following objectives have been highlighted:

- To investigate the role of psychopathology as a risk factor for offending in a sample of juvenile offenders.
- To investigate the ability of a psychometric assessment of psychopathology and personality to be utilised in understanding risk in forensic clients.
- To identify whether previously researched risk and protective factors are present in a qualitative single case study of a high security offender.
- To identify whether different types of high security offenders demonstrate different developmental risk and protective factors to those identified in the literature.
- To present established multi-factorial models of offending, with a view to mapping current findings to these.

9. Current thesis: Risk factors for offending: A developmental approach

The first chapter in this thesis is a literature review following a systematic approach. This aimed to investigate the identified risk factor of psychopathology to gain an understanding of how this is associated with offending in a sample of juvenile offenders. The findings from this review were then extracted and considered in a high security adult offender sample to identify the significant risk factors throughout the lifespan.

The second chapter is a critique of the Millon Clinical Multiaxial Inventory (Third Edition) (MCMI-III). The aim of this chapter was to identify the reliability, validity and practical utility of this tool within forensic settings. Attention was also be given to the relationship of psychopathology and personality traits in relation to risk of offending behaviour and how this fitted with the ethos of this psychometric tool.

A case study of a violent offender in a high security prison is presented in Chapter 3 with particular focus on the developmental risk and protective factors that were formulated to have contributed to his offending behaviour. This case study also aimed to identify at an individual level if specific personality traits, as assessed by the MCMI-III, were associated with the presence of violent behaviour and also aimed to utilise a more individualised approach to the consideration of risk factors of offending.

Finally, Chapter 4 presents a research paper which aimed to investigate the developmental risk factors for offending in a high security prison sample. More specifically, the research aimed to identify whether previously researched factors are different across different offender groups and whether this was related to cross-group offending. These findings were then mapped on to established risk factor models to identify whether high security offenders demonstrated a continued pathway from adolescent risk factors.

CHAPTER 1

A LITERATURE REVIEW FOLLOWING A SYSTEMATIC APPROACH: AN ASSESSMENT OF THE ASSOCIATION BETWEEN PSYCHOPATHOLOGY AND OFFENDING IN JUVENILE OFFENDERS

1.1. Abstract

This systematic review aimed to assess the association between psychopathology and offending in a sample of juvenile offenders. Preliminary searches were completed to assess the requirement of the current review. A literature review following a systematic approach was conducted to identify all relevant articles using electronic databases and specified keywords. Literature identified by this search was tested against prior agreed inclusion and exclusion criteria and included studies were synthesised using data extraction forms.

Nine studies were included in the review. The studies showed a strong association between psychopathology and juvenile offending, but causality could not be identified. However, the association is indicative of psychopathology as a risk factor for offending. Eight studies clearly reported an increased incidence of psychological disorders in female compared to male juvenile offenders and the majority of studies suggested that affective and internalising disorders were most prevalent in the female samples. Findings also suggested that juvenile offenders have increased psychopathology in comparison to normal populations, and that female juvenile offenders have the highest incidence. However, juvenile males demonstrated increased externalising disorders, which were considered to be more closely associated with offending than the internalising disorders displayed by juvenile females.

1.2. Introduction

Adolescents have consistently been hypothesised to be disproportionately responsible for crime and therefore, much research has focussed on this population with a view to progressing the understanding of the contributory risk factors (Farrington, 1989; 2003; Moffitt, Caspi, Harrington & Milne, 2002). Due to the complex nature of offending, an interplay of numerous risk factors are often more explanatory than single factor approaches. Combined with this is the often hormonal and difficult transition period that puberty presents to adolescents, further exacerbating the difficulty in predicting offending in this population. However, some variables have consistently been found to be highly associated with offending, particularly in juvenile populations; these include childhood aggression and behavioural difficulties (Hamerlynk, Doreleijers, Vermeiren, Jansen & Cohen-Kettenis, 2008; Tremblay & LeMarquand, 2001), substance misuse (Hart, O'Toole, Price-Sharps & Shafer, 2007) and personality disorder (Ullrich, Yang & Coid, 2010).

Research demonstrates that young females often have increased incidences of psychopathology (Adkins, Wang, Dupre, van den Oord & Elder, 2009), however research also highlights that males are consistently more likely to offend than females (Farrington, 2003; Ministry of Justice, 2010). In consideration of this, the link between psychopathology and offending within a juvenile offender population requires further exploration.

1.2.1 Definitions

Raine (1993) suggested that the behaviour of the most persistent offenders be described as psychopathological because, by its very nature, it is extremely unusual. Other studies define psychopathology as specific psychological issues or disturbances (for example depression, substance use and aggression) experienced by an individual who also offends (Machi, Schwalbe, Morgen, Gibson & Violette, 2009; Stuart, Moore, Coop-Gordon, Ramsey & Kahler, 2006). This definition will be utilised for the current study, whereby psychological

disorders such as personality disorder, mental illness, substance misuse and behavioural difficulties will be referred to as psychopathology.

Warner (2000) clearly defines a juvenile offender as a youth of thirteen to fifteen years of age who is charged and tried as an adult for committing one or more of 18 specific crimes. As such, undetected antisocial behaviour would not be included in this definition of juvenile offending. However, a different age bracket is used within HM Prison Service whereby individuals aged between fifteen and eighteen years are classified as juvenile offenders (young people). The population considered in this review will therefore consider individuals aged eighteen years and younger. Home Office statistics (2009) have shown that there are approximately 2,700 juvenile males and 80 juvenile females in custody. Although there is a significant difference in the prevalence between genders, the number of female juvenile offenders is shown to be steadily increasing and thereby raises concern for both future offending and suitable placements for this group (Howard & Sickmund, 2006; Ulzen & Hamilton, 1998).

1.2.2 Prevalence

Epidemiological studies have found a significant prevalence of mood disorders within adolescent populations generally, with about a third of these samples demonstrating at least one psychiatric disorder (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Coyle, 2001; Hyman, 2001; Steiner, 2009). Findings have also consistently reported that females demonstrate such psychopathology more frequently than age-matched counterparts, for example 92% of delinquent females compared to 88% of delinquent males demonstrated at least one psychiatric disorder (including substance abuse) in the study by Karnik et al. (2009). Adolescent offending populations have consistently been found to have a higher prevalence of psychopathology than non-offending juvenile samples, with studies suggesting between 17%

and 78% of these populations to have some form of mood or psychological disorder (Bickel & Campbell, 2002; Blader & Carlson, 2007; Goldstein, 2004; Kadzin, 2000).

1.2.2.1 Psychopathology and Offending Behaviour

In recent years, psychological disorders in juvenile offender populations have become a focus of both media and societal attention. Statistics (Ministry of Justice, 2009) show that juvenile offending is increasing, however the growing fear surrounding the problem may be more a reflection of the perceived increased risk of juvenile offenders with mental health needs. Therefore, a clear understanding of psychopathology (including behavioural difficulties, personality disorder, mental illness and substance misuse, as previously defined) as a risk factor for juvenile offending is required.

Increased prevalence and co-morbidity of psychopathology has commonly been linked with recidivism amongst incarcerated adults. For example Cottle, Lee, and Heilbrun's (2001) meta-analysis of 23 recidivism risk studies demonstrated that less severe psychopathology, such as anxiety and substance abuse increased recidivism by 0.305 and 0.149 respectively. These findings have also been supported to varying degrees by other studies of juvenile populations (Abram & Tepling, 1991; McReynolds, Schwalbe & Wasserman, 2010; Moffitt, Caspi, Harrington & Milne, 2002). Moffitt et al. (2002) argued that mental disorder was directly related to persistent offending as a third of the sample of all life-course-persistent and adolescent-limited male offenders sought treatment for mental disorder, in comparison to none of the non-offending group. In recent years, this hypothesis has garnered much attention in relation to juvenile offending, whereby research has found that psychopathology often emerges in early adolescence and that its presence can increase risk of future offending by 1.5 (Buck, Verhulst, Marle, & der Ende, in press; Moffitt, 1993; Moffitt et al., 1996).

1.2.2.2. Psychopathology in Juvenile Female Offenders

Research using non-clinical samples has routinely demonstrated that adolescent girls have a higher incidence of psychopathology than their male counterparts. Within this females tended to report more depressive symptoms than age-matched males, at a ratio of about 2-1 (Adkins, Wang, Dupre, van den Oord, & Elder, 2009; Allgood-Merten, Lewinshon & Hops, 1990; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2008). Research often demonstrates that violent crime amongst juvenile females is rising, with some suggesting that this has increased by up to 50% in the last 15 years (Bilchik, 2000; Howard & Sickmund, 2006; Office of Juvenile Justice and Delinquency Prevention, 1999). Consequently, studies utilising clinical samples have replicated previous findings, whereby juvenile female offenders have routinely been found to have an increased prevalence of depression, in comparison to both juvenile male offenders and non-clinical female populations. Maschi, Schwalbe, Morgen, Gibson, and Violette (2009) found that 209 females in comparison to 165 males aged between twelve and seventeen were referred for depression (odds ratio of 0.6).

Evidently, it appears that psychopathology as a risk factor for offending may have different gender pathways in that female offending is more commonly linked with internalising disorders, in comparison to male counterparts. It is worthy of note that Dixon, Howie and Starling (2004) argue that the actual figure of psychopathology in this population is likely under-represented, in reflection of the under-representation of the offender population as a whole.

It has been suggested that girls who have psychological disorders may evidence a more severe form of disturbance than similar aged males (Eme, 1992). This notion is comparable to the hypothesis of 'relative deviance' which suggests that those who display behaviour more deviant from their cultural and social norms, tend to have more serious psychopathology (Dembo, Williams & Schmeidler, 1994). However, it may be argued that society is more

accepting of male than female violence and this is reflected in societal and media interest of female juvenile offenders.

It is widely accepted that psychopathology in adolescence is the result of complex interactions between numerous risk and environmental factors that occur over time; however research has also shown that psychopathology itself serves as a perpetuating risk factor for continued offending behaviour. Therefore, identification and incorporation of risk and protective factors into a model of juvenile offending is required to ensure the strengths of individuals are recognised. Consequently, successful intervention and prevention strategies are likely to include both medical and judicial methods, in conjunction with a more holistic approach to address employment, education, life skills, coping strategies and other aspects relevant to each offender (Chitsabesan et al., 2006; Diamond & Butwell, 2003). In order to identify the extent of psychopathology experienced by individuals and subsequently consider interventions, a structured assessment measure is required.

1.2.3 Assessment Measures

Methodological problems are common-place within this area of research, primarily due to the small sample sizes of juvenile offenders available for study. A narrow selection of diagnoses is often considered, in addition to inappropriate comparison groups and inconsistent assessment measures being used. These issues serve to limit the generalisability of many of the findings from these studies, although general themes can be highlighted.

Although studies often find large differences in the prevalence of disorders, Otto, Greenstein and Johnson (1992) identified that some variation is related to the modes of data collection that are used. They found that studies which did not use interview methods resulted in mood disorder prevalence rates of between 2% and 22%, compared to those which utilised clinical interviews and found rates between 32% and 78%. This may be a result of inherent bias in the interview process or may in fact be a more accurate reflection of the presentation of the

individual, whereby their symptomatology is more clearly recognisable. Consequently, the data collection methods utilised in the studies will likely impact on the generalisability of findings and will therefore be considered in the current review.

1.3. Current Review

The current review aims to investigate the identified risk factor of psychopathology to gain an understanding of how this is associated with offending in a sample of juvenile offenders. It is hoped that by reviewing the data systematically, limitations acknowledged in previous studies will be minimised and the possibility to generalise from the findings will be increased.

1.3.1 Existing Review Assessment

Searches for previous systematic reviews of juvenile offending and psychopathology were conducted in DARE, Cochrane Library, ASSIA, Embase, Ingenta Connect, Science Direct, Medline, Psych Info, Web of Science and National Criminal Justice References on 13th April 2008 and were repeated in April 2010.

Systematic reviews were found relating to the treatment of juvenile offenders:

- A systematic review of treatment effectiveness in secure corrections (Garrido & Morales, 2007)
- A meta analysis of the prediction of delinquency among girls (Jones-Hubbard & Travis, 2002)
- Cognitive-behavioural treatment for antisocial behaviour in youth in residential treatment (Armelius & Andreassen, 2007)
- A review of mood disorders among juvenile offenders (Ryan & Redding, 2004)

However, no systematic reviews were found that focussed specifically onjuvenile offenders, nor on psychopathology as a risk factor for juvenile offending.

Taking the research into consideration, further exploration of psychopathology as a risk factor for juvenile offenders is required. It is clear that psychopathology within the juvenile female population is higher than that for similar-aged males; however this figure is dramatically increased in the juvenile offender population. As this population is seen to be increasing, it is felt that this review will go some way towards understanding the development and interactions of psychological disturbance and offending behaviour in this population. The current review is therefore, a warranted addition to the existing literature on juvenile offenders. It differs from previous reviews in that it focuses primarily on females (with male comparators) and considers a range of psychopathologies, including co-morbid disorders and their presence as a risk factor for co-occurring offending behaviour.

AIM: To investigate the role of psychopathology as a risk factor for offending in a sample of juvenile offenders.

HYPOTHESES: The hypotheses of this systematic review were as follows:

1. There will be a stronger association between psychopathology and offending behaviour in female juvenile offenders than in male juvenile offenders.
2. There will be a stronger association between internalising disorders and juvenile female offenders than with juvenile male offenders.
3. Psychopathology will be associated with offending behaviour in a sample of male and female juvenile offenders.

1.3.2 Sources of Literature

A search of electronic databases was conducted on 19th April 2008 and repeated in April 2010. Databases that were searched included, ASSIA (1990- to Week 16, 2008), EMBASE (1988 to Week 16, 2008), Science Direct (1989 to Week 16, 2008), Medline (1950 to Week 1, April 2008), Psych Info (including Journals@Ovid Full Text) (1985 to Week 2, April 2008), Web of

science (1990 to current, completed on 16th April 2008), Ingenta Connect (1990 to current, completed on 16th April 2008) and National Criminal Justice References (1990 to current, completed on 16th April 2008).

Searches of the gateways Cochrane CENTRAL and DARE were also employed on 13th April 2008 to search for existing reviews (1801-2008).

1.3.3 Search Strategy

An initial scoping search was employed to assess existing reviews and to gain an understanding of the data that was available in this area of research. The databases were accessed electronically, which allowed limits to be placed on the conducted searches. Searches were limited to articles that were written in English, primarily due to the financial and time constraints involved in translating foreign articles. Unpublished papers were omitted for similar reasons, although it is recognised that this may have excluded more recent findings. Editorials and opinion papers were also omitted to reduce the bias of individual perspectives that are not supported by current research and theory.

The same searches and terms were applied to all electronic databases, although relevant search tools for each database were applied, thereby creating some degree of variation in the output of these. From this, initial search results were filtered by hand, using the title and abstracts of articles to remove all studies that were irrelevant to the current review, or duplicates of included studies. The remaining studies were then saved.

Ideally, hand searches would have been conducted on specifically relevant journals where high volumes of relevant studies are published. However, time constraints did not permit this and the computer search delivered suitable data.

1.3.4 Search Terms

A process of mapping to subject headings and specifying keywords was utilised in order to access the most relevant studies. Specifying keywords dramatically increased the number of hits, and thereby duplicates, but also allowed for consistency in searches of different databases where the mapping option was not offered. Therefore, the terms 'mental illness' and 'personality disorder' were checked for their inclusion of specified mental illnesses and personality disorders within these headings. This ensured that a broader search was facilitated, as opposed to only the specific search terms being included in the articles. The following terms were entered into the search (for the recorded output of the searches of these electronic databases see Appendix 1):

(Juvenile) OR (Youth) OR (Young) OR (Adolescent) OR (Child) OR (Teenager) OR (Minor)

AND

(Offender) OR (Criminal) OR (Prisoner) OR (Delinquent)

AND

(Girl) OR (Female)

AND

(Mental Illness) OR (Personality Disorder) OR (Psychotic) OR (Substance Use) OR (Behavioural disorders)

1.3.5 Study Selection

Initial scoping searches of the databases and reviews of previous literature in this research area assisted the formulation of specific inclusion and exclusion criteria, as highlighted below.

Population:; Juvenile offenders; Female juvenile offenders; Male juvenile offenders; Aged 18 years and below

Exposure: Use of a structured assessment of psychopathology (avoiding self-report only)

Comparator: No mental health issues; Different types of mental health issue

Outcome: Diagnosis of specific mental health issue or personality disorder

Study Design: Cohort studies; Case control studies; Cross-sectional studies

Excluded studies: Male only, female only and adult only populations; No male comparator; Reviews; Opinion papers; Commentaries; Editorials; Non-English papers; Non-published papers; Case series.

This criteria was applied to all studies once the initial results had been hand searched, thereby leaving only potentially relevant studies in the selection. For studies whose abstracts did not provide enough information to apply the inclusion and exclusion criteria successfully, the full text article was accessed.

All articles which met the inclusion criteria or any of which the author was uncertain, were downloaded as full text articles. Any that could not be accessed in this manner were ordered via British Library Loans. There was one article that was unable to be retrieved.

Those studies which were excluded according to the identified criteria and reasons for these exclusions are listed in Appendix 2.

1.3.6 Quality Assessment

Following the sorting of studies against the inclusion and exclusion criteria, each included study was then quality assessed for methodological quality and significance of results(Appendix 3).

The key variables assessed were hypotheses of the study, study design, representativeness of the sample, validity and reliability of the measures used, attempts made to reduce bias, outcome quality, statistical analyses, reliability and applicability of results and appraisal of limitations.

Each item on the scoring sheets was assessed on a three point scale; a score of two was given if the item was present, one if the item was partially present and zero if the item was not present at all. An option for 'unclear' was also available, where extra qualitative information was required but a numerical value was not given. The total quality score was achieved by summing the individual item scores, giving a total score ranging 0-64 for cross-sectional studies.

Studies that met the outlined inclusion and exclusion criteria, but attained quality assessment scores lower than the cut off (60%) were excluded from the review. Previous research (Bisset, Paungmali, Vicenzino & Beller, 2004; Moher, Pham & Jones, 1998) suggests that papers rated less than 50% may be associated with an increased estimate of benefit and may therefore, result in misinterpretation of the results. Although excluding these studies may result in a level of selective bias, it is hoped that by using only the studies of the highest quality, any conclusions made will be more generalisable to the population as a whole and recommendations will therefore, be more applicable. It is also of note that all studies included in the revieware of a cross-sectional design. As participants are assessed at a single point in time, cross-sectional studies are only able to identify association and not a causal effect. Therefore, the cross-sectional study design is weaker than cohort designs but is necessary when considering the difficult nature of researching a forensic population.

1.4. Results

Initial searches of the electronic databases using the specified search terms yielded a total of 4624 studies. On reviewing the titles and abstracts of these studies 4438 were found to be

irrelevant or duplicates of other studies already viewed and were therefore, excluded on these grounds. One study was also unable to be retrieved within the time frame. The remaining 186 studies were then checked against the inclusion and exclusion criteria according to the PICO, whereby a further 169 studies were excluded (see Appendix 2). The remaining 16 studies were then quality assessed using the quality assessment tool. Four studies were excluded at this point (25%), due to poor quality and a further three studies were removed as they included only female samples and therefore had no comparator. The selection process yielded 9 studies which met both the inclusion criteria and were also considered to be of high quality. This process is displayed in Figure 1 and shows the number of studies excluded at each stage of the selection process.

Characteristics of included studies are shown in Table 3.

Figure 1: Data selection process

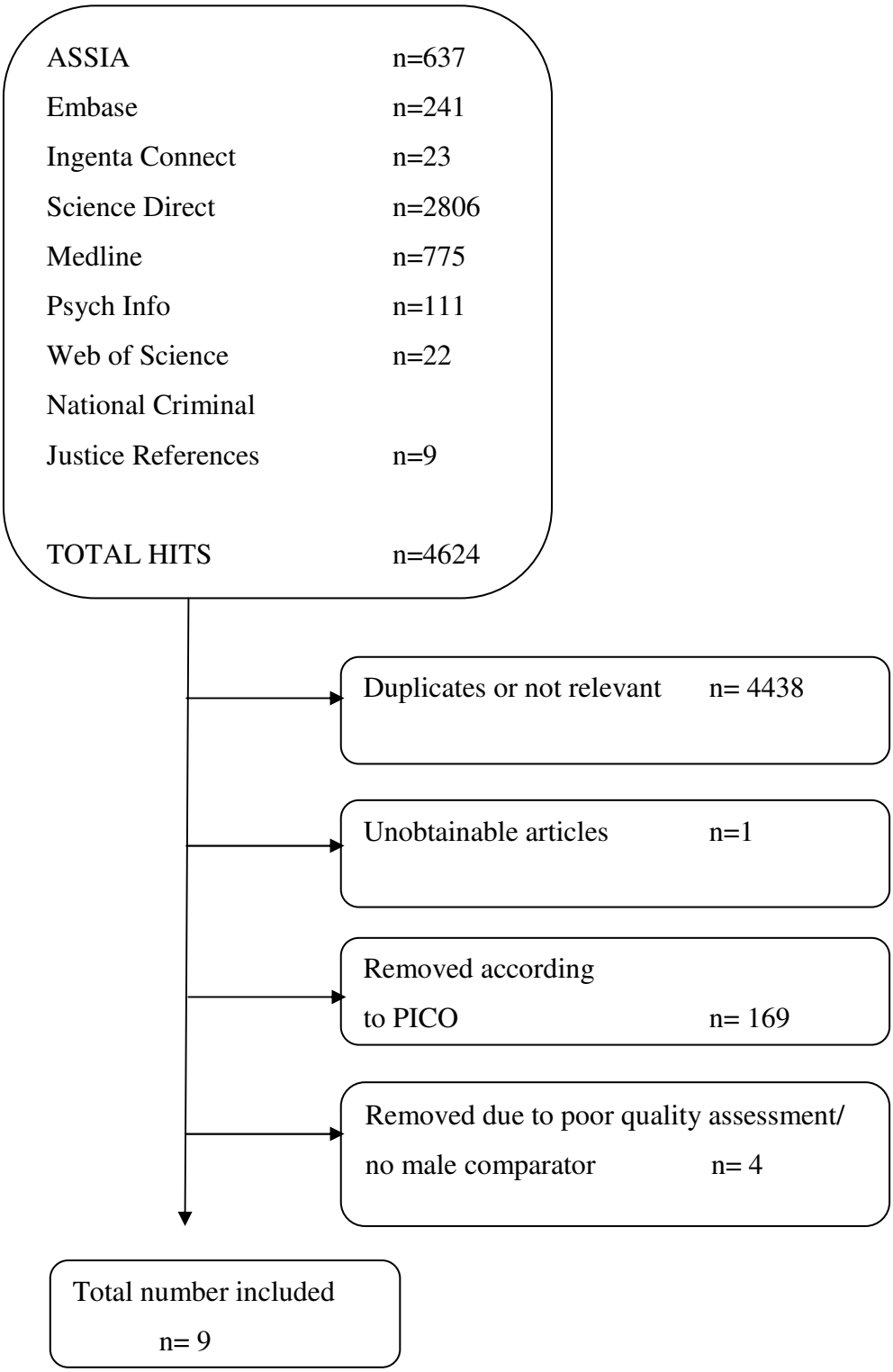


Table 3**:** Characteristics of Included Studies by quality assessment score

Authors/ Year/ Quality Ass Score	**Study Type**	**Hypotheses/ Aims**	**Sample Size**	**Psychopathologies**	**Comparison Group**	**Results**
Andrade, Silva & Assumpcao (2004) 62.5%	Cross-sectional	1. Study prevalence of psychiatric disorders in a sample of delinquent adolescents of both genders 2. To compare the prevalence of disorders between genders	N= 116 M=99 (85%) F= 17 (15%)	Attention deficit hyperactivity disorder (ADHD)/ Conduct disorder (CD)/ Oppositional defiant disorder (ODD)/ anxiety disorder/ depressive disorder/ drug abuse/ alcohol abuse	Male v Female	1. Only 4.3% of the sample did not have a disorder 2. No significant difference was found in the prevalence of disruptive disorders between genders (55% m, 53% f; p=.9 chi-square) 3. CD (77) and drug misuse (63%) were most common disorders across gender 4. Prevalence of CD 78% in males, 71% in females 5. Internalising disorders were more prevalent in females (depression m=54%, f=71%; anxiety m=52%,f= 82%).
Abrantes, Hoffman & Anton (2005) 65.63%	Cross-Sectional	1. Determine prevalence of mental health and substance use problems among male and female delinquent adolescents 2. Determine extent to which the severities of co-occurring disorders are correlated 3. Determine rates of victimisation and dangerousness to self and others	N =252 M= 218 (87%) F= 34 (13%)	Major depressive disorder/ Manic episode/ Panic attacks/ Post traumatic stress disorder (PTSD)/ CD/ ODD/ Substance dependence	Male juvenile offenders v female juvenile offenders	1. Higher rates of mental health conditions found in females (depression f=65, m=24) 2. Except for Conduct disorder- higher in males (m=82, f=74) 3. 52% of the sample were positive for multiple mental health conditions 4. Highest correlations in males between depression & mania, and Conduct disorder & oppositional deficit disorders 5. 24% of females and 18% of males report a history of more than one suicide attempt
Timmons-Mitchell, Brown, Schulz,	Cross-Sectional	1. Survey the prevalence of mental disorder in juvenile justice facilities 2. Compare mental needs of	N=173 M= 121 (70%) F= 52 (30%)	CD/ Substance abuse disorder/ ADHD/ Mood disorder/ Sleep disorder/ Anxiety disorder/	Male juvenile offenders v female juvenile offenders	1. Females had a greater prevalence of mental health needs than males (females= 84%; males= 27%; X=46.24, p(1) <0.001) 2. Males evidenced substance abuse disorders

Webster, Underwood & Semple (1997) 68.75		females and males		Psychotic disorder/ Eating disorder		significantly less often than did females (t=-2.25, p(162)<0.05) 3. Females had significantly higher elevations on 13 scales of MACI, in comparison to males higher on 4 scales 4. Conduct disorder, substance abuse disorder and ADHD were most prevalent across gender
Robertson, Dill, Husain & Undesser (2004) 70.31%	Cross-Sectional	1. Determine prevalence of mental health, substance abuse and co-occurring mental health and substance abuse disorders of juveniles held in detention centres and training schools. 2. Types of severity of problems by gender 3. Examine geographic differences and similarities in mental health and substance abuse disorders among incarcerated youth in Mississippi compared to other states.	578 youth approached, 482 volunteered to participate. 317 (juvenile detention centre) 165 (training schools). M= 292 (64.3%) F=190 (35.7%)	ADHD/ CD/ Adjustment disorder/ Substance abuse disorder/ Anorexia nervosa/ Bulimia nervosa/ Sleep disorder/ Somatisation disorder/ Panic disorder/ OCD/ Generalised anxiety disorder (GAD)/ Social phobia/ Separation anxiety disorder/ PTSD/ Major depression/ Dysthymic disorder/ Mania/ Depersonalisation disorder/ Schizophrenia	1. Gender- Male v Female 2. Sites- Juvenile detention centre v Training school 3. Assessment- Adolescent Psychopathology Scale (APS) v observations by interviewer	1. Statistically significant differences in mental health found between sites. 2. Significant gender differences for 16 of 20 of APS scales. 3. Males only higher on Conduct Disorder and Substance Abuse Disorder (m=51%, f=39% and m=40%, f=28% respectively) 4. Significant differences between results of two types of assessments used (disruptive disorder, 20% based on APS score and 23% based on interviewer judgement) 5. 71-82% categorised as having DSM-IV Axis I disorder.
Plizka, Sherman, Barrow, Irick (2000) 71.88	Cross-Sectional	1. Determine the prevalence of major mental disorders and substance abuse in adolescents admitted to a juvenile detention centre	N=50 M= 45 (90%) F= 5 (10%)	Affective Disorder (Mania/ Major depressive disorder/) ODD/ ADHD/ Alcohol dependence/ Drug dependence	No comparison group	1. 42% of sample had affective disorder 2. 20% of sample had mania 3. 20% of sample had major depressive disorder 4. 60% of the sample had CD 5. 24% did not meet criteria for any disorder
McCabe, Lansing, Garland & Hough (2002)	Cross-Sectional	Female delinquents would have higher rates of: 1. parent reported and self reported psychological symptoms 2. DSM-IV psychiatric and	N= 625 M= 513 (82%) F= 112 (18%)	DSM psychiatric and substance abuse disorders; Major depressive disorder/ Mania/ PTSD/ Separation anxiety/	Male v Female comparator	1. 3 of the 4 hypotheses at least partially supported- female delinquents having higher rates of parent and self reported psychological symptoms, higher rates of DSM-IV disorders and more likely to have a history of almost all forms of parental abuse and neglect.

71.88		substance use disorders 3. parent reported functional impairment 4. familial risks for delinquency		ADHD/ CD/ ODD/ any substance misuse disorder		2. CD in 38.2% F, 32.9% M 3. 69.4% of F, 52.7% M, diagnosed with one or more disorders 4. M and f did not differ sig on internalising problems scale (t1567=-1.74, NS)
Ulzen & Hamilton (1998) 73.44	Cross-Sectional	1. Determine prevalence of psychiatric disorders in a sample of incarcerated adolescents 2. Compare prevalence of psychiatric disorders among incarcerated adolescents with that among a community sample of adolescents 3. Determine the degree of psychiatric co-morbidity in incarcerated adolescents and its relationship to sociodemographic and family variables	N= 98 No info for community group M=38 F=11 Not distinguished from community group	Externalising disorders (ADHD/ ODD/CD/Mania) Non externalising disorders (Alcohol dependence/ Depression/ Overanxious disorder/ Separation anxiety disorder/ PTSD/ Dysthymia)	Community group matched on age and sex	1. More psychiatric disorders in the incarcerated sample, t=6.65, p<0.0001 (22.4% one disorder, 63.3% two or more disorders) 2. Multiple disorders= 63.3%, community sample= 12.2% 3. 72.7% of incarcerated females (IF) diagnosed with depression, in comparison to 18% of incarcerated males (IM) 4. 81.8% of IF had multiple disorders, higher than for IM (58%) 5. Alcohol dependence more prevalent in IF (64% v 2% for males) 6. Previous physical abuse had greater disorders than those not abused (X2 =10.25, p<.001)
Atkins, Pumariega, Rogers, Montgomery, Nybro, Jeffers & Sease (1999) 73.44	Cross-Sectional	1. Prevalence of major psychotic diagnosis amongst incarcerated versus community treated or psychiatrically hospitalised youth. 2. What is the caseness amongst these groups? 3. What is the symptomatic prevalence across the three groups? 4. What are the levels of behavioural symptomatology across the three groups?	N= 185 M= 134 (72%) F= 51 (28%) (IY= incarcerated youth; CY= community youth; HY= hospital youth)	Major psychiatric disorders: Anxiety/ Mood/ Psychosis/ Disruptive/ Substance Abuse/ Miscellaneous	Three groups: Incarcerated Hospitalised Community	1. DISC found 72% IY, 60% CY, 86% HY met criteria for at least one psychiatric disorder (X2(2, 185)=9.12, p=.01). 2. CBCL found 69.3% IY, 81.6% CY, 94% HY scored above clinical cut-off (x2(2, 185)=11.56, P=.003) 3. YSR found 41.3% IY, 58% HY, 40% CY scored above clinical cut-off (x2(1,185)=4.41, P=.11). 4. 40% IY, 15% CY, met criteria for CD (x2(2,185)=11.67, P=.003) 5. High co-morbidity, mean of 2.4 diagnosis IY, 4.2 diagnosis HY, 1.5 diagnosis CY (F(2,182)=12.63, P=.000).

Teplin, Abram, McClelland, Dulcan & Mericle (2002) 81.25%	Cross-sectional	No aims or hypotheses stated. Point of the study appears to be to assess the psychiatric morbidity among juvenile detainees	N= 1829 M= 1172 (64%) F= 657 (36%)	Major depressive episode/ Manic episode/ Dysthymia/ Psychotic disorders/ Panic disorder/ Separation anxiety disorder/ Overanxious disorder/ GAD/. OCD/ ADHD/ ODD. CD/ Any substance abuse disorder	Male v Female, ethnicity and age	1. Most prevalent disorders in both males and females were CD (37.8% males, 40.6% females), oppositional defiant disorder (15% and 18%) and substance use disorder (51% and 47%). 2. 18.7% males, 27.6% females met criteria for one or more affective disorders 3. Females more likely to have any disorder other than manic episode, psychotic disorder and substance abuse 4. Youngest age group (<13years) had lowest rates of any disorders.

M= Male; F= Female; MACI= Millon Adolescent Clinical Inventory; DISC= Diagnostic Interview Scehdule for Children; CBCL= Child Behaviour Checklist; YSR= Youth Self Report

1.5. Data Extraction

A pre-defined data extraction form was designed by the researcher and used to extract relevant data from each study included in the review. The form allowed for both general and specific information to be considered, to enable an unbiased and reliable approach to reporting of conclusions. The data extraction form can be found in Appendix 3 and covers the following items:

- Applicability to PICO criteria
- Study Design
- Population: such as characteristics, recruitment procedures
- Type of exposure (structured assessment)
- Type and prevalence of psychopathology and identification as a risk factor (outcome)
- Steps taken to enhance validity and reliability of measures
- Length of follow up period (if utilised)
- Attrition rates
- Clarity of reporting of study
- Analyses of the study: such as confounding variables and statistical analyses
- Limitations of the study

It was not possible to report all the information gathered, as some items such as attrition rates, were frequently indecipherable from the study material alone. In such cases items were recorded as 'unclear' as no further information was available to the researcher. The authors of these studies could have been contacted to provide further clarification regarding these items; however this would not have impacted on the score cut-offs.

Table 4: Data Extraction of Included Studies

Authors/ Year	Sample Methods	Assessments Used	Assessment Conditions	Attrition Rate	Statistical Analysis
Andrade, Silva & Assumpcao (2004)	Informed consent from youth and guardian, no other information	1. Schedule for Affective Disorders and Schizophrenia for School Age Children- Present and Lifetime (KSADS-PL)	All interviews conducted by a single researcher to avoid methodological bias	No information	Parametric and non-parametric tests used, Chi square test.
Abrantes, Hoffman & Anton (2005)	Administered to consecutive commitments at the detention centres,	Practical Adolescent Dual Diagnostic Interview (PADDI)	Administered as part of routine clinical assessment by staff	No information As routine assessment, possibly not permitted to refuse	Used SPSS No further information, significance of results was recorded
Timmons-Mitchell, Brown, Schulz, Webster, Underwood & Semple (1997)	Selected randomly from one male and the sole female institution. Pp's selected for DISC interviews based on availability, the sub-sample was selected randomly due to duration of assessments	1. Diagnostic Interview Schedule for Children (DISC) 2. The Symptom Checklist-90-Revised (SCL-90-R) 3. Millon Adolescent Clinical Inventory (MACI)	Gained consent from parents and youths and study explained in writing to both parties. Interviews conducted individually with youth. Tests were administered to some youth individually and to others a s group	No information	Independent samples t-test, Levenes test, Chi Squares, Yates Correction
Robertson, Dill, Husain & Undesser (2004)	Pp's at Training school (TS) approached by researchers in groups due to limited access, at detention centre (DC) approached individually	1. Adolescent Psychopathology Scale (APS) 2. Juvenile Detention Interview	DC: MSc level mental health counsellors visited weekly, approached new admissions and assessed on individual basis, also noted clinical impressions. TC: Groups of youths bought to classroom by security, assessments administered to those who agreed to participate. Some assessments not completed due to time constraints	TS: 20.5% of F refused, no M did TS: 11.5% refusal DC: 15.2% refusal over all Overall refusal, 16.6%	Univariate descriptive statistics, Chi Square, ANOVA
Plizka, Sherman, Barrow, Irick (2000)	Adolescents consecutively admitted to the detention centre, all interviewed within four days of their admission	1. Diagnostic Interview Schedule for Children, version 2.3 (DISC)	Interview administered by an examiner using a laptop, who read each question to the subject and entered the response. If a symptom was endorsed, further questions were then asked	Given opportunity to refuse but none did	Pearsons Chi Square test Fishers exact test

McCabe, Lansing, Garland & Hough (2002)	Random sampling techniques employed and stratified by race/ ethnicity and high/low restrictiveness of treatment setting. Pp's were a subsample of POC respondents, adjudicated during 1997-2000	1. Diagnostic Interview Schedule for Children, version 2.3 (DISC) 2. Composite International Diagnostic Interview- Substance Abuse Module (CIDI-SAM) 3. Service Utilisation and Risk Factors Interview 4. Childhood Trauma Questionnaire- Short Form (CTQ) 5. Child Behaviour Checklist (CBCL) 6. Youth Self Report (YSR) 7. Columbia Impairment Scale	Primary caregivers interviewed about the child and paid $40, youths self-reported psychological symptoms, paid $15.	No information	Post stratification weighting procedure used to ensure data reflective of characteristics of total population
Ulzen & Hamilton (1998)	Age and sex matched samples of incarcerated (IY) versus community sample (CY). IY informed by designated staff or study's investigators. CY recruited through advertisements in newspaper, school bulletin and youth employment offices	1. Diagnostic Instrument for Children and Adolescents-Revised (DICA-R) 2. Semi-structured interview questionnaire designed specifically for the study	Assessment administered by research assistant. No other information	No information	Chi Square analysis and t-tests used to compare demographics and diagnostic characteristics of the 2 groups
Atkins, Pumariega, Rogers, Montgomery, Nybro, Jeffers & Sease (1999)	1. Incarcerated youth (IY): Randomly selected from monthly rosters. Youths who had been incarcerated for over 6 months were excluded to control for the psychological impact of long term incarceration. Hospital youth (HY): Randomly selected from	1. Diagnostic Interview Schedule for Children (DISC) 2. Child Behaviour Checklist (CBCL) 3. Youth Self Report (YSR)	Parent rating scales completed in person or by mail, with assistance if required. Youth interviewed in the settings by trained interviewer (social workers/ nurses/ medical students).	IY: 17% refused HY: 50% refused CY: 44% refused	Chi Square analysis One way ANOVA with Bonferroni corrections for repeated measures

	case rosters. Community Youth (CY): Recruited from serial admissions				
Teplin, Abram, McClelland, Dulcan & Mericle (2002)	Randomly sampled from intake to the detention centre, sample was stratified by sex/ race/ age/ legal status. All were eligible to participate regardless. Used random numbers table to select names in each stratum	Diagnostic Interview Schedule for Children, version 2.3 (DISC)	Project staff approached Participants on units, explained study, confidentiality and consent	4.2% refused (34 youth, 62 parents/guardians) Clearly explains reasons for non participation	Weighted all prevalence estimates to reflect distributions of variables. All significances corrected for design characteristics with Taylor series linearization. 2-tailed tests used

M= Male; F= Female

1.6. Descriptive Data Synthesis

Egger, Schneider and Smith (1998) argue that meta-analyses of observational epidemiological studies can produce misleading statistics, due to confounding variables and heterogeneity of the factors being studied. The results of the included studies within this review were therefore, not statistically combined for quantitative data synthesis because of the particular heterogeneity of the chosen samples, the recruitment procedures, the assessment measures utilised and the psychopathologies that were considered within each study.

All included studies were instead considered from a qualitative perspective, thereby allowing for the heterogeneity both within aspects of each study and between all studies individually. Therefore, an understanding of quality was achieved by considering individual qualitative aspects of each study, as shown in Table 4.

1.6.1 Study populations

The total number of participants varied considerably between studies, ranging from 50 (Plizka, Sherman, Barrow & Irick, 2000) to 1829 (Teplin et al., 2002) although the majority of studies had less than 200 participants. The total number of subjects included in this review is 3810 with the average number of participants across all studies recorded as 423.

Of the 9 studies included in the review, seven were conducted in the USA, , one in Canada and one in Brazil. None of the studies utilised a European population and the impact of this will be considered.

The samples included within all of the studies were recruited from juvenile justice detention centres, training schools, secure custody centres or departments of correction. In essence, each sample was drawn from an institution where juveniles were sent against their will as a result of committing an offence, however no primarily clinical settings (such as secure hospitals) were included. The samples were recruited from a range of locations, such as different juvenile

detention centres (Timmons-Mitchell et al. 1997), training schools (Robertson, Dill, Husain & Undesser, 2004), community mental health populations and psychiatrically hospitalised populations (Atkins et al. 1999).

Sample methods also varied between the studies. Five studies utilised a form of random sampling method, three studies were not randomised having usually recruited consecutive admissions and one study did not provide enough information to accurately identify the sampling methods (Andrade, Silva & Assumpaco, 2004). Although, it is possible that this resulted in a degree of sampling bias, it is hoped that this was accounted for through thorough qualitative analysis of the collateral information.

1.6.2 Gender

There was a large disparity in the ratio of males to females in the studies, with the number of female participants being considerably lower. This may have impacted on the reliability and generalisability of the information gathered, specifically in relation to female offenders. However, the qualitative nature of the systematic approach used within this report will have acknowledged this bias by highlighting the limitations and utilising qualitative analysis to consider individual findings from studies.

The reasons for vastly different gender ratios were not always clearly specified, however it is possible that male offenders were more prevalent and therefore, easier to access for research purposes. As males form a larger proportion of all juvenile offenders it is also possible that this subgroup may have been considered more of a risk and therefore, in more need of further research and understanding of the risk factors associated with their offending behaviour.

1.6.3 Assessments

A variety of assessments were used in the studies, however, only those assessing psychopathology are discussed in this section to reflect the aims and objectives of the current review.

The most common measure used was the Diagnostic Interview Schedule for Children (DISC) which was used in five of the nine studies (Atkins et al., 1999; McCabe, Lansing, Garland & Hough, 2002; Plizka, Sherman, Barrown & Irick, 2000; Teplin et al., 2002; Timmons-Mitchell et al., 1997). Other assessments used were the Schedule for Affective Disorders and Schizophrenia for School Age Children-Present and Lifetime Version (K-SADS-PL) (Andrade, Silva & Assumpcao, 2004), Adolescent Psychopathology Scale (APS) (Robertson, Dill, Husain & Undesser, 2004), Practical Adolescent Dual Diagnostic Interview (PADDI) (Abrantes, Hoffman & Anton, 2005), Symptom Checklist 90-Revised (SCL-90-R) (Timmons-Mitchell et al., 1997), Millon Adolescent Clinical Inventory (MACI) (Timmons-Mitchell et al., 1997) and Diagnostic Instrument for Children and Adolescents-Revised (DICA-R) (Ulzen & Hamilton, 1998) which were each used in one study only. This evidences the variability of assessment methods used, which may reflect differences in the anticipated findings of researchers as a result of the choice of psychometric tool utilised within each study.

Although psychometric assessments are often used in conjunction with clinical judgement, the assessments within this review rely somewhat on self report information from the participants themselves. However, assessments based only on self-report and thereby, not utilising standardised psychometric measures were excluded from this review. The level of additional clinical judgment was often unclear and therefore, caution needs to be given in relation to the accuracy of such psychometric assessments when completed with forensic clients who may manipulate the truth in some way. Furthermore, the assessments were conducted in different conditions for each of the studies, for example alone or in the presence of others, which may

have impacted on the individual's responses. This aspect also requires consideration with regards to the reliability and generalisability of the findings.

1.6.4 Psychopathology

The studies described in this review assessed a variety of psychopathologies including conduct disorder (CD) Attention Deficit Hyperactivity Disorder (ADHD), substance abuse, anxiety, depression, schizophrenia, Post Traumatic Stress Disorder (PTSD) and panic disorder. However, not all studies clearly reported the psychopathologies being assessed in the methodology (Andrade, Silva & Assumpcao, 2004; Plizka, Sherman, Barrow & Irick, 2000; Robertson, Dill, Husain & Undesser, 2004) and therefore data were sometimes extracted from the reported results. More frequently, DSM criteria and the subsequent relevant diagnoses were utilised to specify which psychopathologies were included.

Similar to previous research, seven studies found conduct disorder to be the most common disorder within the offending population (between 20% and 60% of each sample) (Abrantes, Hoffman & Anton, 2005; Andrade, Silva & Assumpcao, 2004; McCabe, Lansing, Garland & Hough, 2002; Plizka, Sherman, Barrow & Irick, 2000;Robertson, Dill, Husain & Undesser, 2004; Teplin et al., 2002; Timmons-Mitchell et al., 2005). Interestingly, three of these studies found CD to be more prevalent within the male offender population (Abrantes, Hoffman & Anton, 2005; Andrade, Silva & Assumpcao, 2004; Robertson, Dill, Husain & Undesser, 2004) and two studies reported CD to be more prevalent within the female sample (McCabe, Lansing, Garland & Hough, 2002 found 38.2% in females and 32.9% in males; Teplin et al., 2002 found 40.6% in females and 37.8% in males). It is possible that these findings reflect an increased prevalence of co-morbid disorders in females compared to males. However, the findings may also reflect the sample used, in that there may have been a generally higher incidence in all disorders within more forensic populations (incarcerated offenders). However,

these two studies also had some of the highest quality assessment scores (71.88 and 81.25 respectively) and may therefore be a more accurate reflection of the findings.

1.6.5 Affective Disorders

Findings from the studies included in the review replicated previous findings, whereby females had more affective and internalising disorders than their male counterparts (Andrade, Silva & Assumpcao, 2004). Abrantes, Hoffman & Anton (2005) found a significantly higher prevalence of anxiety and depression in female offenders, whilst the only disorder that was significantly more prevalent in males was psychosis. Ulzen & Hamilton (1998) also found externalising disorders such as CD, ADHD and mania to be more prevalent in males. It would therefore appear that there is a gender distinction in the prevalence of affective and externalising disorders.

None of the studies specified the offences that the samples were detained for and therefore, it is not possible to identify which of the disorders (internalising or externalising) is more closely associated with more severe forms of offending. The findings support an association between psychopathology and offending, however further research is required to identify the direction of psychopathology as a risk factor for offending.

1.6.6 Co-Morbidity

A high rate of co-morbidity was found in both males and females. Abrantes, Hoffman & Anton (2005) found that 52% (n=131) of the total participants were positive for multiple mental health conditions, whilst Ulzen & Hamilton (1998) found 63.3% (n=62) of their juvenile offender sample had multiple disorders. Atkins et al. (1999) identified a mean of 4.2 diagnoses within their included sample. Previous studies have highlighted an association between psychopathology and offending. Results from the current review demonstrate a high rate of co-morbidity and therefore, implies that co-morbidity may be a risk factor for offending behaviour. However, the impact of co-occurring risk factors, for example psychopathology in

relation to previous abuse and other negative childhood experiences was not explored and therefore, the direction of this association remains unclear.

1.6.7 Psychopathology in Juvenile Female Offenders

Both studies that compared mental illness and psychiatric diagnoses in both offender and non offender samples (Atkins et al., 1999; Ulzen & Hamilton, 1998) found that diagnoses were more prevalent in the offender populations than non-offending controls, for example Atkins et al. (1999) found that incarcerated youth had a mean of 2.4 diagnoses in comparison to only 1.5 diagnoses in community youth. Within these studies, CD was more prevalent and as reported in previous research, this was found to be more common in male populations.

Eight studies clearly reported that the female juvenile offenders had a much higher prevalence of mental illness and psychiatric diagnoses than the male juvenile offenders. Timmons-Mitchell et al. (1997) used Chi Square analysis to compare the frequency of mental health needs of the male and female participants and found that females had significantly more needs than their male counterparts (χ^2 (1) =46.24, $p<0.001$). They also found that gender was the most significant factor when other contributing factors were controlled for using ANOVA. Teplin, Abram & McClelland (2002) reported an odds ratio of 1.43, indicating that females in the sample were almost 1.5 times more likely to have any psychological disorder than the males included in the study. Atkins et al. (1999) did not consider psychopathology by gender and these results are therefore, inconclusive with regards to the gender differentiation of psychopathology as a risk factor for offending.

The studies included in the review indicate conclusive results that juvenile female offenders experience psychological disorder more frequently than their male counterparts. However when considering the risk posed to others, juvenile male offenders who experience externalising disorders presented an increased risk of offending against society due to the

nature of their disorders. This therefore, requires further research to identify effective interventions with this population.

1.7. Discussion

1.7.1 Main Findings

The aim of this review was to investigate the role of psychopathology as a risk factor for offending in a sample of juvenile offenders. Three main objectives were identified:

1.7.1.1 There will be a stronger association between psychopathology and offending behaviour in female juvenile offenders than in male juvenile offenders.

The included studies support the initial hypothesis of this review. Eight studies reported an association between being a female juvenile offender and experiencing a psychological disorder. The remaining study did not directly evaluate this. This finding is in consensus with other research regarding female psychopathology (Goldenson, Geffner, Foster, & Clipson, 2007) and highlights the need for increased screening of psychological disorders in juvenile female offenders. However, despite female offenders more frequently demonstrating psychopathology, support was also found for a prevalence of psychological disorders in juvenile male offenders, specifically conduct disorder and substance abuse. This area requires further exploration as its value appears to have been ignored in contrast to research with female offenders. As a result of this, male offenders' appear to be more often reported as being responsible for their behaviours, whereas offending by females is more commonly perceived to be related to their previous experiences and current mental state. Recognition of this distinction is required in order that all juvenile offenders are treated with equality and are able to access the required support and intervention to address both their offending and mental health needs.

Previous research suggests that females are more likely to be victims of all types of abuse, from childhood to adulthood (Bentsson & Tops, 2007; Dembo, Williams & Schmeidler, 1993).

Furthermore, research has highlighted that these negative experiences may result in the victims resorting to substance misuse to cope with these issues (Lansford, Dodge, Petit & Bates, 2010; Walrath et al., 2003) and that consequently, their positive lifetime opportunities may suffer. A co-occurrence of such negative lifetime factors may contribute to the likelihood of young females developing psychological disorders; however this is not a definitive approach. However, it is worthy of consideration that many individuals who experience negative circumstances in childhood do not go on to develop psychological disorders and commit offences therefore, protective factors such as academic abilities (Blum, Ireland & Blum, 2003), authoritative parenting (Mounts & Steinberg, 1995) and resiliency need to be considered to gain a more accurate picture of this issue.

Overall, the evidence from this review suggests a strong link between the experience of psychological disorders and offending behaviour. The exact nature of the psychopathologies experienced in relation to the offending behaviour of the sample of juvenile offenders is also worthy of consideration.

1.7.1.2 There will be a stronger association between internalising disorders and juvenile female offenders than with juvenile male offenders.

The majority of studies identified a higher prevalence of internalising disorders within female juvenile offenders, with males experiencing more externalising disorders. Consequently, the most common disorder found in females across all studies was depression, followed by anxiety and PTSD; whereas their male counterparts more frequently reported CD followed by substance abuse and manic symptoms.

These findings suggest an observable difference of psychological disorders between male and female juvenile offenders. One possible explanation for this is the alternative lifestyle pathways that are common for males and females who experience difficult childhoods. As previously mentioned, females may be more likely to suffer abuse, particularly repeated and

sexual abuse and research suggests that this may lead to internalising of emotions (Bebbington et al., 2009; Scarpa & Kolko, 1995). This may be a consequence of victims blaming themselves for the abuse and thereby, directing hurt and anger at themselves as opposed to others. In considering this explanation it is possible that this response could be more detrimental to long-term mental well being, as others may be less able to recognise individuals' suffering and therefore, offered support may be minimal. This may be reflected in the samples included in the current review, whereby the participants have had access to assessment and support regarding their offending and psychopathology only once they have been arrested and come to the attention of professional services.

Additionally, research suggests that males who experience significant life stressors, more commonly act out aggressively against the world and others (Khan, Jacobson, Gardner, Prescott & Kendler, 2005). This perspective was supported in the current review and is to an extent reflected in the diagnostic labels given more frequently to males than females, such as conduct disorder. A possible explanation for externalising of emotions and behaviours in males is the societal view regarding masculinity, whereby males are not encouraged to be overtly emotional. This may lead males who experience difficulties to portray their emotions as a more socially acceptable anger, in the form of verbal or physical aggression which may gain further support from peers and thereby perpetuate their externalising of emotions and offending behaviour.

These findings may go some way to explaining the significant differences in prevalence of juvenile male and female offenders. It may be hypothesised that females are less likely to harm others as a result of their experiences of psychological disorders, whereas increasing externalising of behaviours in young males may result in them more frequently coming to the attention of police. Therefore, such disorders may need to be considered in relation to the increased risk of harm that they may pose to others.

1.7.1.3 Psychopathology will be associated with offending behaviour in a sample of male and female juvenile offenders.

Previous research (Fergusson, Horwood & Lynskey, 2006; McCord, Spatz Widom & Crowell, 2001) suggested that some psychopathologies are so inter-linked with offending, for example in conduct disorder, that the presence of such a disorder is likely to increase offending in individuals. This theory was explored and the hypothesis that psychopathology would be associated with offending behaviour in the current review was supported. As previously discussed an increased prevalence of psychological disorder was found in offenders compared to non-offender samples. Furthermore, a gender distinction was found in the type of disorders experienced by juvenile offenders, suggesting a general association between psychopathology and juvenile offenders. However, due to the cross-sectional nature and small sample sizes utilised within this review, a causal direction could not be identified. In addition, although the studies included in the review utilised samples of juvenile offenders from different detention facilities, they did not clearly identify the level of seriousness of the offences committed and also did not specify whether the presence of psychopathology served as a risk factor for continued offending in these populations. Therefore further research is required to identify a pathway of psychopathology and offending, however tentative explanations for these findings are proposed.

In explaining these findings it is possible that juvenile offenders experience a range of previously identified risk factors, such as inconsistent parenting, negative peer influences and poor school attitudes which results in them continuing on an offending pathway as a consequence of these experiences. It is therefore proposed that these individuals develop psychological disorders as a result of their negative early life experiences and continued offending behaviour, for example in the presence of childhood substance misuse. Using this explanation, psychopathology would not present as a risk factor for initial offending however may still be predictive of continued offending behaviour. Conversely, juveniles may

experience risk factors, such as familial abuse which results in them developing psychological disorders (such as conduct disorder prior) to their development of offending behaviour. This pathway would suggest that offending is subsequent to the development of psychopathology, which would support the notion of psychopathology being a risk factor to offending. The studies included in this review did not identify whether psychopathology was present prior to offending behaviour and therefore, the direction of the relationship is not clear and requires further research to explore this fully.

Although female offenders with internalising disorders have demonstrated the ability to offend violently, the findings from this review suggest that externalising disorders would increase an individual's risk of offending violently. Furthermore, as the current review identified that juvenile male offenders had the highest prevalence of externalising disorders it may be assumed that this population would be most at risk of offending by acting out aggressively at others. This conclusion highlights the need for increased scanning of psychological disorders of all juvenile offenders and subsequent provision of support and intervention to address these needs. Identification and intervention in psychological disorders early on in an individual's offending career may serve to reduce their risk of both harm to self or others whilst in custody and also reduce the risk of future offending.

1.7.2 Strengths and Limitations

All studies included in the current review recruited participants from a type of juvenile justice facility as opposed to simply juveniles with delinquent behaviour. Therefore, the included samples are clinically relevant to the research question and allow for generalisability to other juvenile offenders. All studies included a male comparator, thereby allowing for a distinction between the psychopathology of young male and female offenders. These findings add to the developing understanding of this group of offenders, as opposed to merely listing the prevalence of specific disorders within a sample of the target population. Furthermore, a

variety of disorders are considered within this review, thereby allowing a more coherent and reliable picture of the prevalence and nature of specific disorders in relation to gender and juvenile offending.

Limitations arise due to the small sample sizes utilised in some studies, which may lead to skewed results and limited generalisability to the population of juvenile offenders. Additionally, only studies available in English were included in this review; although none of these studies utilised a British sample. This may impact on the generalisability of these findings to British juvenile offenders and suggests the need for further research in this area.

Randomised allocation was not used in all studies; instead some studies recruited participants from consecutive admissions to facilities. Furthermore, assessment conditions were slightly different in all studies. In some cases this was due to external restraints such as limited access to the participants and security precautions; however this resulted in some participants completing assessments individually, whilst others were assessed in groups. This may have impacted on their responses, particularly as many of the studies relied solely on self-report measures. In addition, some participants were assessed by trained researchers whilst others were assessed by facility staff. Trained staff may have been skilled in interviewing techniques which may have resulted in accessing specific information, whereas participants may have felt pressured to respond in a socially desirable manner if interviewed by facility staff. It is likely that all of these factors may have had some impact on the results of each study and therefore, the outcome and recommendations drawn from these should be considered with caution.

In light of the population being studied it is possible that a level of dishonesty or exaggeration may have occurred, particularly if they were interviewed by known individuals or in the presence of others. Furthermore, the participants may not have been fully aware of their symptoms of psychological disorders and may have therefore, been unable to provide a truly reflective account of their experiences. This may have resulted in an unintentional

underreporting of symptoms. Alternatively, symptoms and experiences may have been exaggerated by some, for example as a cry for help. These possibilities are worthy of consideration when interpreting such findings and applying recommendations.

1.7.3 Methodological Considerations

Comprehensive and inclusive search strategies were utilised in this review alongside effective quality assessment tools. These enabled the researcher to highlight specifically relevant information, such as sampling procedures, attrition rates, specific psychopathologies and assessment tools used within the studies. The inclusion and exclusion criteria and quality assessment tools were reviewed by a systematic review tutor to ensure all items were clear and relevant.

All studies included in the review were of a cross-sectional design. This limited their value due to the inability to report cause and effect, however an association between factors was observed. The studies included in the review were considered to be the most methodologically robust of those identified from the search procedure. Although valuable data from excluded lower quality studies may have been lost, the review is less prone to other forms of bias introduced by including methodologically weak studies and thereby, drawing misguided conclusions. In addition, all systematic reviews have the possibility of publication bias, however this may be reduced by having recognised this as a possibility and being aware of this throughout the review process.

The observational nature of both the population and the recorded data resulted in a further methodological weakness due to the heterogeneity of statistical analyses used. As a result no quantitative analyses could be conducted and therefore, the ability to report overall statistical significance levels was reduced. However, a systematic and qualitative approach minimised the problems associated with this.

1.7.4 Interpretation of Findings

The results of this systematic review suggest that psychopathology in juvenile offenders is highly prevalent, but that there is a distinction in the expression of such psychopathologies between juvenile males and females. Due to the cross-sectional nature of the included studies, it is difficult to disentangle the factors that contribute to significant psychopathology in this population and therefore, predictive ability is limited. The variation of the participants included in studies, for example from the community, hospitals and juvenile justice facilities increases this overlap and exacerbates the difficulty in unpicking the link between psychopathology and offending. However, the findings suggest that there is a relationship between psychopathology and juvenile offending. Forensic populations are frequently found to have histories of trauma and abuse, deprived upbringings and proportionately lower levels of intellectual ability than other populations. These factors likely contribute to both the development of psychopathologies and offending behaviour, however due to such close associations their impact is unclear at present.

Analyses of the studies included in this review support the hypothesis of an increased prevalence of psychological disorder in juvenile females compared with juvenile males. An increased prevalence was also found in offending samples in comparison to non-offending samples, which suggests that young female offenders are the population most at risk of experiencing significant mental health problems. Although a clear link is apparent between offending behaviour and increased psychopathology, studies have so far failed to identify which occurs first. Therefore, future research is recommended in this area to enhance the current knowledge base and address the root cause of juvenile offending and mental health.

The current review highlighted that specific disorders, such as CD, ADHD and substance abuse, were more common in the overall population of juvenile offenders. Reasons for these findings are unclear at present however it is possible that diagnoses of CD and ADHD may be

a reflection of current society, whereby working parents look for medical opinion to explain their children's poor behaviour. Substance use is likely to be a coping response for a number of juveniles who have limited coping strategies and have experienced stressful life events. This association may be considered likely when understanding the negative life experiences of a significant proportion of this population and may suggest benefit in working to develop their positive coping responses.

1.7.5 Applicability of Findings

The findings of this review are applicable to the population of juvenile offenders as some large sample sizes were used in the studies (N=3810). Furthermore, all participants were recruited from a form of juvenile justice institution and can be generalised to juveniles who have been arrested for their offending behaviour. However, many juveniles evidence delinquent behaviour but are not convicted for this. Consequently, the findings from this review may not be generalisable to such a population as those convicted may engage in higher risk offending or have more severe mental health issues, which would result in them being a distinct group from those juveniles who are not convicted. The offences committed and the range of diagnoses included in the review allows for comparison to further populations, including male juvenile offenders and perhaps young adult female offenders. However, none of the studies included in this review were conducted in Europe and therefore the findings are based on non-British samples, which may not be generalisable to British juvenile offenders.

1.7.6 Conclusions and Recommendations: Practical Implications

Findings from the current review highlight a prevalence of internalising disorders in female offenders and externalising disorders in male offenders. The developmental pathways for such disorders are unclear at present and further research is recommended to identify these and target the contributing risk factors accordingly. Despite this, the research suggests that female offenders are at more risk of harm to self, whereas male offenders are more likely to display

violence to others. This may partially explain the increased prevalence of young males in prison as a punishment for their emotional release, whereby more females may be managed by mental health services. Consequently, it may be argued that there is increased need for mental health screening amongst all juvenile offenders, in addition to the development of training for staff to conduct such screening assessments. Furthermore, the form of assessment used (self-report and discussion, in comparison to structured psychometric assessment) should also be considered, as much variation in prevalence was noted when different assessment measures were utilised. From this, individualised interventions could be developed to address the underlying emotions that are linked to both male and female juvenile offending.

The cost of implementing such recommendations may be high and this is recognised as a limitation. However, when considering the costs of juvenile offending and mental health per se, for example in relation to self harm, harm to others through offending, risk of teen pregnancy and a resulting increased workload for health and justice workers, the costs of addressing psychopathology in juvenile offenders and reducing the resulting psychological distress of victims may be considered worthwhile. Therefore, the benefits of providing specialised treatment and addressing the issues that face juvenile female offenders will far outweigh the costs, if reoffending and further relapses are prevented or minimised.

An association between psychopathology and offending in a sample of juvenile female offenders has been ascertained in this review. Studies clearly demonstrated a gender distinction in psychopathology, whereby internalising disorders were more prevalent in females and externalising disorders were more prevalent in males. Consequently, in light of the considered risk to society, it is concluded that more focus is required to understand the developmental risk and protective factors for male offenders. It is hoped that by enhancing this understanding a developmental model can be applied in practise to reduce the risk of the most dangerous males in the country and thereby increase the safety of the public.

Therefore, future research aimed at identifying the developmental risk and protective factors in a sample of high security males would be beneficial, with a view to developing interventions to reduce future risk both at a pro-active juvenile level and a responsive adult level.

Rationale for Chapter 2

This systematic review has highlighted the association between psychopathology and offending behaviour in a sample of juvenile offenders. Consequently, a structured form of assessment is required in the early stages of care, to identify any psychopathology that may be present within the individual and may present as a risk factor for future offending. Certain characteristics, such as aggression or behavioural difficulties may be noted from observation and discussion with the individual, however a more structured, standardised measure allows for consistency in reliability and validity in such a complex population. As juvenile offending often continues into adulthood the Millon Clinical Multiaxial Inventory (Third Edition) (MCMI-III) will be critiqued in the next chapter, as this is an assessment of psychopathology which is routinely utilised in adult forensic settings.

CHAPTER 2

CRITIQUE OF A PSYCHOMETRIC ASSESSMENT

MILLON CLINICAL MULTIAXIAL INVENTORY (THIRD EDITION) (MCMI-III)

2.1. Introduction

Research has shown that a single factor theory of offending is ineffective; instead a multi factorial model is more commonly used in practice. As such, psychologists continue to utilise psychometric tools to assess a number of risk factors that have been found to be associated with offending, including psychopathology and personality traits. Previous research has identified a strong association between an individuals' psychopathology and the likelihood of being involved in different types of offending behaviour (Dixon, Howie & Starlin, 2004; Teplin, Abram & McClelland, 1996; Ulzen & Hamilton, 1998). More recently, research has also highlighted associations between specific personality disorders and harm to self and/or others (Johnson et al., 2000; Paris, 2005; Taylor, 2003; Warren et al., 2002) whilst also considering the impact of increased psychological distress (American Psychiatric Association, 1994).

Consequently, a number of assessment tools are used within a range of forensic settings to ensure that individuals with psychological disorders who are at increased risk of continued offending and harm to others are identified at the earliest opportunity. From this, subsequent formulations and effective treatment plans can be developed to manage such risks. When considering the nature of forensic populations, it is likely that a measurement of such personality traits when formulating an individual's risk would be highly valuable. Furthermore, for use with forensic clients such an assessment would need to have been normed on a clinical as opposed to non-clinical population. Therefore, this review examines the Millon Clinical Multiaxial Inventory (Third Edition) (MCMI-III), as opposed to the Minnesota Multiphasic Personality Inventory (Second Edition) (MMPI-II) with specific reference to its development, previous research and overall utility in clinical practice with the aim of identifying the relative strengths and limitations of this popular psychometric tool (Strack, 1999).

2.2. Theoretical Development of the MCMI-III

Theories of personality have continued to develop over the decades (Allport, 1937; Eysenck & Eysenck, 1969; Millon, 2000) although psychometric measures of personality have not always been guided by such theory. The Millon Clinical Multiaxial Inventory, Third Edition (MCMI-III) (Millon, 1994) is inherently different as it was initially developed from Millon's (1969/ 1983) behavioural theory of personality disorder (Millon, 1977; 1987). This theory surmised that individuals' behaviour was shaped through natural development and interactions with others, and thereby credited both biological and environmental factors.

Millon (1990) later reconceptualised this theoretical framework of personality and shifted to a more evolutionary model, which postulated that each living organism must survive, must adapt to its environment and must reproduce. Personality disorders were therefore, hypothesised to serve as a means to achieve these aims and fundamentally survive in an environment that did not encourage survival. As such, personality disorders could arise as a result of an adaptive or passive attempt at coping, with a continuum (as opposed to a dichotomy) of normality and pathology suggested. Despite the popularity of Millon's theory of personality and the MCMI-III, this model has received criticism from researchers (Mullins-Sweatt & Widiger, 2007). Mullins-Sweatt & Widiger (2007) demonstrated that the dimensional model of personality proposed by Millon (1990) which considers six polarities (pleasure, pain, active, passive, self, other) does not align with the properties and scales of the MCMI-III. This is of concern as the MCMI-III was developed upon the personality theory of Millon, thereby implying that both theory and assessment should marry.

2.3. Overview of the MCMI-III

The MCMI-III consists of 175 True/ False self-report items that measure fourteen personality patterns and ten clinical syndromes, in line with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (American Psychiatric Association, 1994) (see

Table 5 for details of these). In addition, the MCMI-III also has one validity index and three modifying indices, which detect response biases. These scales decipher between the responder's level of disclosure (willingness to disclose personal information), desirability (attempt to portray self in a positive light) and debasement (attempt to present as more emotionally disturbed than the individual may be in reality) and add a qualitative level to the reporting of the MCMI-III profile. However, clinical judgement is always required to formulate why individuals may score highly on the modifying indices and if such clinical judgment and interpretation may not always be evidenced in practice, this may subsequently increase the ratio of false positives.

Although the MCMI was not initially designed to align with DSM classifications, updated versions have become more consistent with the criteria of the DSM-IV (APA, 1994), thereby adding strength and validity to the utility of the MCMI-III in clinical practice. Millon's model of psychopathology theorised that various personality types and clinical syndromes were related to each other in a predictable manner. Consequently, such theoretically related scales share certain items of the MCMI-III, although the weight of items vary (a score of two is assigned to primary items and a score of one to less definitive items) to reflect this balance. However, the weights of these scores were developed by Millon as opposed to mathematical procedures and it could therefore be argued that the author may have biased the assessment towards supporting the underlying theoretical structure that he had previously developed. Continued research is required to assess the utility of such procedures. As a result, some of the items of the MCMI-III overlap and analysis of positive responses to these items assists with the reporting of the resulting profile. For example, individuals who score highly on the drug dependency scale are more likely to score highly on the antisocial personality scale, as theoretically these items are associated. However, the MCMI-III questions also present as somewhat repetitive, whereby similar questions are rephrased and repeated. This increases the correlations of sub scales and also affects the scores for individuals where they respond

positively to numerous items measuring the same factor. In practice, such repetitive questions can be problematic for less intellectually able or disinterested clients, whereby they may respond in the direction that they have done previously without considering the specific focus of the question. These results may therefore result in an over-pathologising of individuals in addition to a lack of attention and engagement from the client.

The MCMI-III can be used with adults aged eighteen years and older who are being evaluated or treated in a mental health setting and as such, should not be used with individuals younger than eighteen, nor with non clinical cases. The Millon Adolescent Clinical Inventory (MACI) and MMPI should instead be used with these populations. The MCMI-III is also designed for adults with at least eighth grade reading ability. Despite this, in practice the MCMI-III is such a popular psychometric tool that it may be used without consideration for its utility in a specific population. For example, just because a client is eighteen years old does not guarantee they have the intellectual ability to understand and respond to the items. In such instances, other assessments of personality, such as the Inventory of Interpersonal Problems (IIP-32) (Horowitz, Alden, Wiggins, & Pincus, 2000) may be used. However, in practice such guidelines are not always followed due to the reliance by professionals on the MCMI-III. Additionally, the MCMI-III has four invalidation criteria, a) twelve or more omitted or double marked responses, b) a true response to two or more of the validity items, c) a raw score of less than 34 or greater than 178 on the disclosure index and d) base rate (BR) scores of less than 60 for each of the clinical personality patterns.

2.4. Norms of the MCMI-III

The normative sample used in the development of the MCMI-III consisted of 998 psychiatric patients from the United States and Canada. Although the manual states that this represented a broad range of demographic characteristics in terms of gender and variety of settings, 80% were between the ages of 18 and 45 years, 82% had completed high school education and

86% were white. Forensic populations are often between the age of 18 and 45 years, however many do not complete secondary/ high school and many may be from ethnic minorities. In addition, the MCMI-III is often used with a primarily forensic sample such as in assessments of prisoners, which may evidence different norms to those detained in the normative sample of psychiatric patients. Although research suggests that between one half to three quarters of prisoners have personality disorders (Singleton, Meltzer, Gatward, Coid, & Deasey, 1998) the severity of these may be less than those observed in a psychiatric sample. Although, much research has supported the use of the MCMI-III in forensic settings, including its use in meeting the standards required in criminal courts (Ahlmeyer, Kleinsasser, Stoner, & Retzlaff, 2003; Blackburn, 1998; McCann & Dyer, 1996) these initial statistics may have resulted in a misrepresentation of the nature of a forensic sample in the United Kingdom and controversy regarding this has been noted in the literature (Lally, 2003; Rogers, 2003).

As the MCMI-III was normed on a clinical population it uses base rate (BR) scores (range from 0 to 115) as opposed to frequently used t-scores, which assume a normal population. The BR scores reflect the diagnoses of the normative sample and are therefore, more reflective of clinical prevalence rates. These base rate scores are used to signify personality *traits* or the *presence* of clinical syndromes (BR score of 75-84) versus personality *disorders* or the *prominence* of clinical syndromes (BR scores of 85 and above). The ability to distinguish between levels of a disorder or syndrome signifies the close association with the criteria of the DSM-IV. However a major limitation of the MCMI-III is its inability to identify pathology below a base rate of 75; thereby implying that individuals who score below 75 have no pathology. This is problematic when considering the variety of individuals assessed in forensic services.

2.5. Psychometric Properties

Kline (1986) describes a psychological test to be a good test if it possesses certain characteristics, including at least interval level data, reliability, validity, ability to discriminate and appropriate norms. These characteristics are discussed in turn in relation to the MCMI-III.

2.5.1 Reliability

Reliability refers to the extent to which a psychometric tool measures a construct accurately, consistently and with minimal error. Although the use of psychometric tools aims to increase the scientific basis of psychology and reduce the level of error, it must be acknowledged that within every psychometric tool is some level of error. Cronbach's alpha (Cronbach, 1951) has been referred to as the preferred coefficient in measuring reliability, such that a minimum of 0.7 is required to represent an 'adequate' test (Nunnally, 1978).

2.5.1.1 Internal Consistency

Internal consistency is a measure of the reliability of different items intended to measure the same characteristic. Relatively little research has been completed with regards to the internal consistency of the MCMI-III scales. However, Millon (1994; 1997) found that the Cronbach alpha coefficients exceeded .80 for twenty of the twenty-six scales, with a high of .90 for the Depression scale and a low of .66 for the Compulsive scale. However, it is worthy of consideration that publication bias may result in only the authors positive findings being published; therefore evidence from other sources should also be evaluated. Furthermore, Millon (1990) reported a Cronbach's alpha of .66 for the compulsive scale which is below that recommended as adequate by Nunally (1978) suggesting that this scale is perhaps an 'inadequate' measure of this trait.

Further research (Blais et al., 2003) utilising a sample of individuals diagnosed with DSM-IV anxiety disorders, found the avoidant personality scale to be highly reliable (r=.89) and the anxiety scale to be moderately reliable (r=.78). Blais et al. (2003) concluded that the MCMI-

III showed good reliability and validity and that the anxiety and avoidance scales were consistent with other measures of these constructs. Dyer & McCann (2000) reviewed the reliability and validity of the MCMI-III in forensic settings and noted that as the majority of personality disorder scales have internal consistency reliabilities above .80, the MCMI-III should be considered a reliable measure. In light of aforementioned research, Beutler & Groth-Marnat (2003) argue that the reliability co-efficients of the MCMI-III are amongst the highest of all psychometric personality assessments. However, such positive reports regarding the internal consistency of the MCMI-III may lead professionals to fit the outcome of assessment to the individual, as opposed to formulating the individual and then incorporating the results of assessments. This could result in misrepresentation or over-pathologising of individuals.

2.5.1.2 Test-Retest Reliability

Test-retest reliability refers to the reliability of the test to achieve similar results over multiple completions. The correlation coefficient between two sets of responses is often used as a quantitative measure of the test-retest reliability. Craig (1999) summarised three data sets ranging from five days to six months and found the median reliability to be .78 for personality scales and .80 for clinical syndrome scales. The MCMI-III manual (Millon, 2006) reported a higher result of .91t over an interval of five to fourteen days; however the possibility of publication bias is worthy of consideration and the shorter time-frame that was assessed. Both long term and short term studies of test-retest reliability have shown similarly consistent results, with Lenzenweger's (1999) four year time scale yielding alpha co-efficients between .73 and .59. It is worthy of note that because the personality scales theoretically represent more enduring characteristics, it is arguable that they would have greater stability than the clinical scales. However, few differences between the two have been frequently reported (Craig, 1999; Millon 1994; Piersma & Boes, 1997) suggesting that both are reliable, although this deviates somewhat from Millon's theory of enduring personality disorders.

2.5.2 Validity

2.5.2.1 Concurrent Validity

Concurrent validity refers to the extent to which the tool correlates with previously validated measures of the same construct. Research has shown the MCMI-III personality scales to have fared well in terms of concurrent validity, when measured against other self-report measures of personality (Choca & Van Denburg, 2004; Craig, 1999; Retzlaft & Dunn, 2003). Rossi, Van den Brande, Tobac, Sloore, & Hauben (2003) noted consistent improvements in validity with each new version of the MCMI and found the best concurrent validity to be between MCMI-III personality scales and Minnesota Multiphasic Personality Inventory, Second Edition (MMPI-2) personality scales. In their sample of 477 patients and prisoners who completed a Dutch version of the MCMI-III, correlations were found to be between .56 and .75 on the personality scales. Again, considering Nunally's (1978) view of 0.7 as acceptable 0.56 does not meet the criteria and could not be considered to have strong concurrent validity; however, this may be as much a reflection of the weaknesses of the MMPI as a comparator to the MCMI-III. Rossi, Van den Brande, Tobac, Sloore, & Hauben (2003) found that The compulsive scale did not correlate positively with any of the MMPI-2 scales and it was suggested that this reflected a different conceptualisation of the compulsive scale by Millon, in comparison to other test developers. However the low correlation may have resulted from language interpretation difficulties or cultural differences when comparing Dutch and American assessments. Validity studies with the MCMI-III are ongoing and further research is required to present an accurate account of the concurrent validity.

2.5.2.2 Predictive Validity

Predictive validity refers to how well the scores on the tool predict the outcome of another measure. Considering the MCMI-III is routinely used in the assessment of personality and psychopathology and its close alignment with the DSM-IV, predictive validity is expected to be high. The MCMI-III has also been proven useful in relation to other issues, such as

substance abuse (Craig, 1997; Flynn & McMahon, 1997), post traumatic stress disorder (Craig & Olsen, 1997), domestic violence (Gondolf, 1999) and violence risk assessment (Kelln, Dozois & McKenzie, 1998). Consequently, the MCMI-III is a powerful tool for psychologists when used as part of a formulation of presenting issues and risk of an individual.

The MCMI-III is used in a variety of forensic settings; however Will (1994) argues that the MCMI-III should not be used in child custody cases as its construct would likely increase the rate of false positives of parents being reported as pathological. This may result from attempts by the parents to present themselves favourably and the fact that many parents would not meet the clinical criteria for assessment using the MCMI-III. This is in contrast to child protection cases, in which the MCMI-III would have utility due to the forensic nature of the investigation and possible underlying psychopathological concerns. Furthermore, the MCMI-III manual also notes that the tool should not be used in assessing normal populations, although this rule is not always adhered to. For example, Lampell (1999) evaluated the use of the MCMI-III in child custody cases and found that 64% of individuals had significant elevations on the defensiveness scales, but the reports continued to be interpreted. Lampell (1999) concluded that litigating parents were inherently different to the non clinical population and suggested caution when using the MCMI-III in parenting assessment cases.

2.5.2.3 Content Validity

Content validity refers to the extent to which the items of the MCMI-III measure the construct under consideration; which for the purpose of the MCMI-III would be personality. Rogers, Salekin & Sewell (1999) criticised the content validity of the MCMI-III due to the absence of controlled inter-rater studies of the similarities between the personality scales of the MCMI-III and their correspondence with the DSM-IV. However, as the MCMI-III was partly developed to reflect amendments to the DSM-IV, the content validity of the MCMI-III is

largely self-evident. Utilising the data presented in the MCMI-III manual, Dyer (1997) concluded that the content validity of the MCMI-III against the DSM-IV was superior to any other leading assessment of personality and supported its use within a range of forensic settings. However, this reporting may be considered biased due to the use of data already presented in the manual, therefore externally developed research may be useful.

Furthermore, in developing the constructs of the MCMI-III, six out of eight clinicians independently and blindly agreed on the assignment of items to scales (Millon, Davis & Millon, 1997). This level of expert judgement suggests high content validity, highlights the ease of use of the MCMI-III by suitable clinicians and supports the use of the MCMI-III in assessing psychopathology.

2.5.2.4 Construct Validity

Construct validity refers to the extent to which the tool correlates with variables hypothesised to be related to the construct under consideration. When considering the construct validity of the MCMI-III, the association between specific symptomologies, such as anxiety and the construct of personality itself is the focus. Although the construct validity of the MCMI-III has been criticised for being low and unrelated to, for example, the legal criteria of insanity (Rogers, Salekin, & Sewell, 1999) Dyer and McCann (2000) highlight the importance of the role that Millon played in the development of the DSM-III-R and DSM-IV. However, research relating to the contributing factors of personality disorders is ongoing and findings are not currently conclusive. Numerous factors are related to personality disorder and psychopathology and it is unlikely that one assessment would correlate highly with all of these. Whilst recognising this limitation, both the MCMI-III and the DSM-IV reflect Millon's (1981) evolutionary theory of personality, which is therefore suggestive of a strong association between the construct of personality and variables related to this construct.

2.6. Use of the MCMI-III with high security offenders

The popularity of the use of the MCMI-III within prison establishments has dramatically increased, primarily due to the reliability of the measure and the ease of utility (Camara, Nathan & Puente, 2000). The MCMI-III has also been used in a variety of forensic research to identify a) the prevalence of specific personality disorders in such populations (Wilson, 2004), b) the relationship between personality traits and violence within prison environments (Kelln, Dozois & McKenzie, 1998) and c) the relationship between MCMI-III profiles and the risk of re-offending (Charles, 2003). Consequently, the research to date suggests that the MCMI-III is valid and reliable with low and medium risk offenders as well as those detained in conditions of high security.

Wilson (2004) utilised the New Zealand Corrections Department primary risk assessment tool to identify all inmates at New Zealand's largest prison with a 70% risk of serious recidivism. This score is the cut-off score used by the parole authorities to classify high-risk offenders and is therefore different to the concept of high security offenders considered throughout this thesis. Wilson (2004) found that as anticipated, the majority of prisoners (60%) had elevations on the antisocial personality scale of the MCMI-III. However, less anticipated were the elevated scores for the severe personality pathology, including the presence of paranoid personality disorder (35%), borderline personality disorder (27%) and schizotypal personality disorder (16%). However, only 4% of the sample indicated the prominence of severe clinical syndromes, such as major depressive disorder, thought disorder or delusional disorder. Similar results were also found in the study by Retzlaff, Stoner & Kleinsasser (2002) whereby prisoners with elevations on the antisocial and sadistic MCMI-III scales were equalled in terms of their engagement in violent institutional behaviour by those prisoners with elevations on the schizoid, avoidant, depressive and delusional disorder scales.

Such findings suggest that there is an increased prevalence of personality disorders in prison populations and that those disorders identified in high security prisoners are not necessarily in the expected direction. However, when considering the paranoid nature, fluctuation in mood and emotions and seemingly bizarre behaviours of individuals with these respective disorders, it becomes clear that the confinement and rigidity of the prison system may result in them resorting to violence in order to manage these difficult circumstances. Retzlaff, Stoner & Kleinsasser (2002) report that these findings support the use of the MCMI-III in correctional settings, both to identify who may be more likely to be aggressive in custody and to also respond effectively to such personality characteristics in these circumstances. However, in practice staff resources can impact negatively on the completion of psychometrics, particularly in light of recent cuts to the prison service staffing. Difficulties in completing the MCMI-III in practice are further highlighted in the following chapter.

When considering the use of the MCMI-III in high security offender populations, the literature relating to personality and psychopathy may also be considered, due to the often high risk nature of individuals who score highly on the PCL-R (Hare, 2003). Although the MCMI-III was designed to assess personality in relation to the DSM-IV, two scales (antisocial and narcissistic) are similar to those of the PCL-R and may be acknowledged in relation to risk. However, Charles (2003) highlights that although the MCMI-III is a good measure of the behavioural aspect of psychopathy; it fails to adequately assess the affective and interpersonal characteristics of the disorder. Consequently, the MCMI-III is possibly best used in conjunction with the PCL-R to identify both personality disorders and the presence of psychopathy, in order to devise a management plan for challenging prisoners detained in conditions of high security.

It is worthy of consideration that those offenders who are detained in high security prisons and who evidence significant personality traits and disorders may be more inclined to

disengage with professionals and the assessment procedure, thereby limiting the ability to identify such personality characteristics initially. If prisoners do engage in this process, they may also be more likely to distort the results of the assessment procedures, for example by invalidating the measures. Therefore, although the use of the MCMI-III in such settings is promising, there are limitations to its utility and value in practice.

2.7. Limitations of the MCMI-III

The MCMI-III has a number of significant strengths in that it is one of the few psychometric assessments which is derived from clinical theory and heavily supported by research. Furthermore, it reflects diagnostic criteria used in the DSM-IV and has diagnostic accuracy as a consequence of using the BR of a normative sample. Finally the MCMI-III is easy to administer, brief and compact in design, permitting regular use in a number of settings and gaining much support in use with forensic clients.

However, the MCMI-III is limited by the imbalance of true and false items which can result in increased positive endorsements. The MCMI-III is also relatively weak in assessing minor personality pathology or psychotic disorders, which is considered a major flaw in light of the basic premise and theoretical construct of the tool. Further to this, Reich & Noyes (1987) found a reduction in significant scores on the MCMI when the assessment was completed in the recovery stage, as opposed to the admission stage of an individual's care. Such findings thereby undermine the premise of Millon's theory of personality which suggests that such traits are stable over time. This finding suggests that the timing of completion of the assessment and external factors that may impact on the responses of the individual also require consideration.

In contrast, the MCMI-III may also be completed and interpreted in situations where the specific personality traits although significant, may not be considered to be dysfunctional. For example, narcissistic and antisocial personality traits may be recorded as significant on the

MCMI-III, but could result in functional behaviour, such as highly driven and competitive business persons. Therefore, the MCMI-III may be found to over-pathologise in some instances, whilst not being fully reflective of the situational context of the individual being assessed. The MCMI-III also fails to highlight the strengths as well as the weaknesses of clients, further presenting them in a negative light.

Another limitation of the MCMI-III is the over-reliance on the tool by professionals. Bow, Flens & Gould (2010) found that a high percentage of forensic psychologists reported using both the MCMI-III and MMPI in relation to child custody cases without adequate knowledge of the measures. The study also found that the responding forensic psychologists also exhibited an over-reliance on computer generated interpretive reports, in addition to a lack of verification of the data they had received. These findings evidence the tendency of clinicians to over-rely on the MCMI-III and also the tendency of the MCMI-III to over-pathologise (Schute, 2000). These findings further highlight the need to consider contextual information in such settings, for example recognising a likely increase in social desirability in parents involved in child custody cases in addition to limited corroborative evidence in such cases. Finally, despite the strong theoretical base of the MCMI-III, few validity studies have been conducted to verify this with much of the research utilising small sample sizes resulting in underrepresentation of minority groups. Finally, Choca (1999) argued that little research has been conducted to examine the effects of culture on the completion of the MCMI-III. They recommend that this research be completed and until such time, consideration should be given to culture when interpreting results of the MCMI-III in practice.

2.8. New developments of the MCMI-III

In 2009 amendments were made to the existing MCMI-III in relation to updated norms and scoring procedures. Grossman Facet Scales were included for the clinical and severe personality scales, which identified the most salient clinical domains of the test-taker (see

Table 5). This approach enhances the individualised nature of the MCMI-III and also assists in guiding the practitioner towards specific therapeutic modalities.

Table 5: Modifications to the MCMI-III scales

Scale	Description	Additional Grossman Facet Scales
Clinical personality patterns		
1	Schizoid	1.1 - Temperamentally Apathetic 1.2 - Interpersonally Unengaged 1.3 - Expressively Impassive
2A	Avoidant	2A.1 - Interpersonally Aversive 2A.2 - Alienated Self-Image 2A.3 - Vexatious Representations
2B	Depressive	2B.1 - Temperamentally Woeful 2B.2 - Worthless Self-Image 2B.3 - Cognitively Fatalistic
3	Dependent	3.1 - Inept Self-Image 3.2 - Interpersonally Submissive 3.3 - Immature Representations
4	Histrionic	4.1 - Gregarious Self-Image 4.2 - Interpersonally Attention-Seeking 4.3 - Expressively Dramatic
5	Narcissistic	5.1 - Admirable Self-Image 5.2 - Cognitively Expansive 5.3 - Interpersonally Exploitive
6A	Antisocial	6A.1 - Expressively Impulsive 6A.2 - Acting-Out Mechanism 6A.3 - Interpersonally Irresponsible
6B	Sadistic (Aggressive)	6B.1 - Temperamentally Hostile 6B.2 - Eruptive Organization 6B.3 - Pernicious Representations
7	Compulsive	7.1 - Cognitively Constricted 7.2 - Interpersonally Respectful 7.3 - Reliable Self-Image
8A	Negativistic (Passive-Aggressive)	8A.1 - Temperamentally Irritable 8A.2 - Expressively Resentful 8A.3 - Discontented Self-Image
8B	Masochistic (Self-Defeating)	8B.1 - Discredited Representations 8B.2 - Cognitively Diffident 8B.3 - Undeserving Self-Image
Severe personality pathology		
S	Schizotypal	S.1 - Estranged Self-Image S.2 - Cognitively Autistic S.3 - Chaotic Representations
C	Borderline	C.1 - Temperamentally Labile C.2 - Interpersonally Paradoxical C.3 - Uncertain Self-Image
P	Paranoid	P.1 - Cognitively Mistrustful P.2 - Expressively Defensive P.3 - Projection Mechanism

Developments in the MCMI have closely followed those of the DSM and consideration should therefore be given to how these current developments of the MCMI-III will map onto the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) which is expected in 2013. A significant reformulation of the approach to diagnosing personality disorders is expected, which may include five levels of personality functioning, five types of personality disorder, inclusion of trait domains and trait facets and a new general definition of personality disorder. In light of these changes the convergence between the MCMI and the DSM may be reduced and the practical utility of the MCMI-III may consequently be bought into question.

2.9. Conclusions

Collectively, studies have supported the robustness of the MCMI-III in terms of its reliability and validity, particularly within forensic settings. However, further research would be beneficial in relation to more relevant norms of UK forensic populations, whilst considering the cultural impact as suggested by Choca (1999). Theoretically, a number of risk factors may increase the likelihood of experiencing significant psychopathology and personality disorders, which in turn may increase the likelihood of subsequent offending. This has been recognised by the NHS and Ministry of Justice (MoJ) in relation to the current guidelines regarding Dangerous and Severe Personality Disorder (DSPD) services and therefore, the MCMI-III is considered a current and relevant psychometric tool.

Inexpensive and less time-consuming self-report measures of psychopathology such as the MCMI-III are likely to be more widely and frequently used, despite whether they are the most appropriate. However, the MCMI-III like any psychometric measure is valid for use only in appropriate populations, and interpretation must be limited to the research base. For example, it would be inappropriate for a professional to use the measure in isolation to arrive at a

clinical diagnosis. Professionals utilising the MCMI-III should consider the discussed limitations, particularly applying consideration to the context of the assessment.

As highlighted in the previous chapter, psychopathology and personality disorder is closely associated with offending behaviour, although the direction of this association is unclear at present. Consequently, the MCMI-III serves to provide clinicians with highly relevant information regarding the presence of personality traits that are related to violence and offending behaviour in individuals in forensic settings. Subsequent formulations would highlight these risks and identify suitable interventions which consider the learning style, engagement and responsivity of individuals, as evident from their personality style.

Rationale for Chapter 3

The link between psychopathology and offending behaviour in samples of juvenile offenders has been explored and externalising disorders were proposed to have had a closer association with offending, from child to adulthood. Chapter 2 identified the theoretical ability of the MCMI-III to map psychopathology to psychiatric diagnoses in clinical populations, as provided by the DSM-IV. Chapter 3 subsequently provides an individual case study of a high security violent offender and considers the presenting psychopathology and offending behaviour thereby highlighting the theory-practice links of Chapters 1 and 2. Formulations will also be drawn to evidence how individual personality characteristics impact on offending behaviour and the ability to engage in interventions to address such behaviour.

CHAPTER 3

IDENTIFICATION OF RISK FACTORS FOR VIOLENT OFFENDING IN A HIGH SECURITY OFFENDER:

A CASE STUDY

This chapter is not available in the digital version of this thesis.

Consequently, I was able to reflect on the theory of such risk factors and consider the impact of these in professional practice. This assisted in developing my ability to empathise with Mr X and likely improved the therapeutic relationship as a consequence.

Rationale for Chapter 4

This case study has evidenced the multiplicative effects of a range of risk and protective factors in relation to a violent high security offender. Some consideration has also been given to the risk factors experienced as a child, whereby Mr X could have been perceived as a victim, but the lifetime development of these variables impacted on his behaviours and resulted in him being perceived as an offender. In light of the risk and protective factors apparent from the literature, Chapter 4 aims to extrapolate the findings from this single case study to a sample of high security offenders to consider how such factors can be retrospectively studied to predict different types (sexual, violent and other) of high security offending.

CHAPTER 4

PREDICTIVE RISK AND PROTECTIVE FACTORS OF VIOLENT, SEXUAL AND OTHER OFFENDING IN A HIGH SECURITY PRISON POPULATION

4.1. Abstract

Risk and protective factors for offending, which were identified from the literature, were studied in a sample of adult male offenders in a high security prison in England (N=90). The offenders were allocated to three groups (violent, sexual and 'other') (n=30 in each) to investigate whether developmental risk factors identified from the juvenile delinquency literature predicted high security offender type.

Six childhood risk factors were found to be highly associated with the three offender groups, with five of these risk factors being significantly associated with violent offenders compared to sexual 'other' offenders. Only having had a juvenile sentence was not more common in violent offenders, with the multi nomial logistic regression showing that 'other' offenders were fifteen times more likely to have had a juvenile sentence. Overall, a cumulative effect of risk factors was supported in this research and this was particularly prevalent in relation to the violent offender group. Therefore, the hypotheses of the research were supported and the risk factors identified in the juvenile delinquency literature could be partially retrospectively mapped on to types of high security adult offenders.

This research has extended the knowledge of risk factors for offending to a high security sample. The conclusions presented take the limitations of a small sample size and the lack of a control group into account when discussing the practical application of the findings. Further research is therefore recommended to continue to develop a model of risk and protective factors for offending in high security populations, with a view to understanding and minimising the risk that such offenders present.

4.2. Introduction

Statistics from the Ministry of Justice (MoJ, 2009) report that the population in prison custody on 30 June 2009 was 83,500, which indicates a rise of 260 from the same date in 2008 and 300 from June 2007. These figures suggest a year-on-year increase in the prison population. Within this, the male prison population was found to have increased by 1%, whilst the female prison population decreased by 5%. Further, the number of longer sentences including life sentences and Indeterminate sentences for Public Protection (IPP) increased by 10%, whilst sentences of twelve months or less reduced by 13%. Amongst the sentenced prison population, offences of violence against the person, sexual offences and robbery increased by 5%, whilst less serious offences, such as motoring offences and thefts reduced by up to 20%. These figures highlight an increase of male, long-term, serious offenders in custody. Therefore, identifying the predictive risk and protective factors for such offenders may assist in reducing the re-offending rate of serious crime.

4.2.1 Multiplicative effects of risk factors

As has already been highlighted throughout this thesis, the understanding of risk and protective factors for offending has continued to develop. Much research has focussed on singular factors to identify how well each predicts offending in specific samples of offenders (Jaffee, Moffitt, Caspi & Taylor, 2003; Jespersen, Lalumiere & Seto, 2009; Thornberry, 1998), although these findings have often been extrapolated to more explanatory multifactorial models (Beyers, Loeber, Wikstrom & Stouthamer-Loeber, 2001; Hawkins et al., 2000; Hoge, Andrews & Leschied, 2006).

Although there has been debate between child, adolescent and adult onset offending (Eggleston & Laub, 2002; Farrington, 2003; Hawkins et al., 2000; Moffitt, Caspi, Harrington & Milne, 2002) it is clear that as a child ages, they will have more opportunity to experience risk factors. For example, individual and family related risk factors may be present from birth,

whereas other peer and community related factors may not be present until later in childhood. This difference in the cumulative impact of risk factors may be the key to understanding the development of offending behaviour and may also suggest that high security adult offenders will demonstrate a range of risk factors, as each factor is accumulated throughout the life-course. Although there are exceptions to this model, in relation to adolescent-limited and adult-onset offenders, it may be suggested that high security adult offenders will demonstrate a severe risk factor history throughout their lifespan. However, it is important to note that risk factors are not pre-requisites to offending and offending is not inevitable. This perspective therefore implies that intervention is possible.

Table 9 provides an overview of the most predictive risk factors found in some of the multi-factorial studies. These studies demonstrate common findings of early substance misuse, peer delinquency in adolescence and an element of familial risk throughout the lifespan. However, the majority of research has utilised low risk, juvenile delinquent samples, with none of the identified studies investigating the predictive risk and protective factors for adult high security offending. This therefore remains a continued area for research.

Table 9: Overview of predictive risk factors included in studies

Studies	**Adolescent/ Low risk offenders**	**Adult offenders**	**High security offenders**
Lipsey & Derzon (1998)	Focussed on a review of risk factors for adolescent and early adulthood violent or serious delinquency. Used two age groups (6-11; 12-14). General offences and substance use found to be more predictive of younger group in comparison to social ties and antisocial peers for older group.	Risk factors identified for violent juvenile delinquents only. However, considered how these would serve as risk factors for continued offending in adulthood.	Considered violent and serious delinquency, therefore more serious than some studies, but not high security offending.

Hawkins et al. (2000)	Considered risk factors for juvenile delinquents (aged 10, 14 and 16 years) living in the community. Found individual risk factors were more predictive at age 10, whereas peer factors were increasingly predictive in the older groups.	The study did not consider adults.	The sample lived in the community and behaviour was delinquency, therefore did not consider high security offenders.
Stouthamer-Loeber, Loeber & Wei (2002)	Two groups of 7-13 and 13-19 years living in the community. Focussed on antisocial behaviour. Increased risk factors, in conjunction with less protective factors was found to increase delinquency. More risk factors were found in disadvantaged neighbourhoods.	Only considered two groups, both of which would be classed as juvenile offenders for purpose of the study.	Considered 'serious persistent offenders' however concept was antisocial behaviour.
Farrington & Painter (2004)	Considered boys throughout lifespan, initially from age 8 to 32 years, but study focussed on sibling offending. Most predictive risk factors were low family income, large family size and attending highly delinquent school.	Considered siblings of all ages; therefore some findings can be linked to adult offending.	All offences were considered, however found that low risk offences such as shoplifting and theft were more common, therefore did not focus on high security offending.
Hart, O'Toole, Price-Sharps & Shaffer (2007)	Aged 14 to 18 years. Focussed on delinquency utilising 3 school samples and juvenile offender sample. Non-delinquents found to have more protective factors. Most predictive risk factors were substance use, age of first substance use and learning difficulties.	Adult data were excluded from the analysis; therefore not considered.	Offender sample were juvenile delinquents, therefore not high security offenders.
Van Domburgh, Loeber, Bezemer, Stallings, Stouthamer-Loeber (2009)	Age range of 7 to 20 years. Focussed on serious, moderate and desister groups of delinquents. Serious offenders exposed to more risk factors and less protective factors. Childhood disruptive behaviour, individual deviancy and social	Some participants were over 18 years, however not considered as adults for purpose of this study.	Considered some serious delinquency, however community based study; therefore not high security offenders

	disadvantage were found to be most predictive risk factors.		

4.2.2 Specialisation of offending

In light of the range of risk and protective factors that can impact on an individual and their offending behaviour, it is likely that these factors may also have some influence on the versatility or specialisation of such offending. For example, substance misuse is linked to impulsivity and may therefore be more associated with versatile offending, whereas higher intellectual functioning may be associated with more planned and specialised types of offending (Sullivan, McGloin, Pratt & Piquero, 2006).

Delisi (2005) highlighted that 70% of crimes are committed by only 10% of the population and that this figure increases to 97% when considering severe crimes (such as murder, rape and armed robbery). Research suggests that these career criminals demonstrate a range of anti-social behaviours in childhood that continue to be reflected in their varied offending in adulthood (Domburgh, Loeber, Bezemer, Stallings & Stouthamer-Loeber, 2009; Farrington, 2003; Hart et al., 2007) and it is therefore, likely that they have more risk factors present in their developmental history.

Wright, Travis, Pratt and Delisi (2008) argue that although general opinion appears to be that offenders (specifically multiple homicide offenders) are specialised, the literature suggests otherwise. They instead highlight an abundance of literature that supports the notion of versatility in both low risk and serious violent offenders (Brame, Mulvey, & Piquero, 2001; Piquero, 2000; Piquero, Farrington, & Blumstein, 2007). Despite this, research also suggests that offenders become more specialised as they age, whereby criminals stick with offences they are more comfortable with (Piquero, Farrington & Blumstein, 2003; Piquero, Paternoster, Mazerolle, Brame, & Dean, 1999; Simon, 1997). Consequently, the debate of specialisation

versus versatility in offending is ongoing and further research is required, specifically in relation to high security offenders.

4.2.3 Limitations of the risk factor research

The development in research of risk factors for offending has extended current understanding regarding what would make an individual more likely to become an offender. However, there are still areas that require clarification due to the limitations of previous research. Firstly, small sample sizes and variation in samples have been limited to primarily young, low risk/ delinquent males, as highlighted in Table 9, which has reduced the generalisability to female and high security offenders. There has also been limited research with convicted high security offenders and it is hypothesised that they may demonstrate a more severe risk factor history in light of the severity of their offending. Furthermore, much of the risk factor research in relation to sexual offending focuses on the role of victim to victimiser without considering other developmental factors. This was echoed by Lee, Jackson, Pattison and Ward (2002) who argued that previous studies had not investigated a comprehensive range of adverse childhood experiences. Finally, the majority of risk factor research is based on self-report, which serves to invite an element of bias, particularly in relation to previous offending behaviours. When considering the high rates of denial and under-reporting of offences particularly in relation to sexual offending (Hood et al., 2002; Nicholas et al., 2007) it is possible that such methodologies may result in skewed findings.

4.2.4 Conclusions

Many studies have investigated adolescent offending and concluded that a level of antisocial behaviour is 'normal' and that the significant majority of such individuals desist after adolescence. However, in light of the increasing population of adult prisoners particularly those who are the most dangerous to society and who are held in conditions of high security, it is clear that not all offenders desist. Previous juvenile delinquency research has identified a

number of variables which serve as risk factors to offending; however risk factors for the most severe and dangerous types of offending in high security individuals is an under-researched area. It is currently unclear whether this population demonstrates risk factors similar to those already identified for juvenile offenders (such as antisocial peers or juvenile offending) or if they are a systematically different group with inherently different risk factors. Therefore the primary aim of the current study is to identify whether different types of high security offenders (violent, sexual and 'other') demonstrate different developmental risk and protective factors to those identified in the literature.

The following hypotheses are considered:

1. There will be significant differences in the experience of childhood risk factors between the groups of violent, sexual and 'other' high security offenders.
2. There will be significant differences in the patterns of previous offending between the three groups in relation to offending outside of their index offence category.
3. There will be significant differences between the predictive risk and protective factors for violent, sexual and 'other' high security offender groups.

4.3. Method

4.3.1 Design

This study utilised a cross-sectional design to provide a snapshot perspective of a sample of violent, sexual and 'other' offenders in a high security prison in England, by retrospectively identifying risk and protective factors in their histories. A cross-sectional design was chosen as it enabled a comparison of these three groups with the potential to generalise findings to larger samples of high security offenders. This design also met the time, financial and ethical restrictions of conducting research within a high security prison setting.

4.3.2 Group Allocation

The sample used within this study was taken from the majority of the 600 prisoners incarcerated in a Category A high security dispersal prison in England. Category A dispersal prisons are so called because they disperse the most violent and dangerous prisoners for whom escape should be impossible, across a number of establishments rather than concentrating them in one place. Prisoners included in this study had the possibility of being located on the vulnerable prisoner (VP) wings, segregation unit or normal location. However, prisoners held on the detainee unit were excluded from the current study as they are often held under the anti-terrorist legislation and may not have been convicted of a criminal offence. Noteworthy prisoners were also excluded from the study as access to their files required further security clearance, which was not requested for the purpose of the study. Consequently, approximately 550 prisoners were eligible for inclusion in the current research.

All prisoners eligible for inclusion within the research were identified using a search of the Local Inmate Database System (LIDS). At the time of conducting this research, LIDS was the electronic system used by the prison service to provide routinely updated and accurate basic details of all prisoners within the United Kingdom. From this database, a list of all prisoners within the research establishment was printed off and sorted into three categories based solely on their index offence; violent index offence, sexual index offence and 'other' (neither sexual nor violent) index offence. Some 'other' offences (for example armed robbery) had been coded as violent in previous studies. However, the use of physical violence was key for this study and it was therefore considered that had physical violence been used this would have been reflected in the index offence, for example attempted murder instead of armed robbery. Consequently, all violent offences included physical harm to the victim, all sexual offences involved a sexual element to the offence and the remaining offences that were neither violent nor sexual were classified as 'other', as shown in Table 10. For this reason the 'other' group was less homogenous in terms of index offence type.

Table 10: Categories of offences

Violent Offences	Sexual Offences	Other Offences
• Murder • Manslaughter • Attempted Wounding • Grievous Bodily Harm (GBH) • Actual Bodily Harm (ABH) • Kidnap • Cruelty to Children	• Rape • Rape of a Child (Under 16) • Indecent Assault on a Child • Buggery	• Robbery; Conspiring to Rob • Possession of Firearm With Intent • Importing Drugs • Conspiring to Supply Drugs • False Imprisonment • Conspiring to Cause Explosions • Terrorism Offences

The corresponding prison numbers of each of the identified prisoners were then placed individually into three boxes representing each of the three offence groups. The first thirty prison numbers pulled out of each of three boxes became the experimental group. A power analysis calculated the required sample size for a multiple regression model of 5 factors, an alpha level of 0.05, a medium anticipated effect size and a statistical power level of 0.8. The required sample size was 91.

Ninety participants was considered to be the most effective sample size as identified by the power analysis, but also in practice in relation to adhering to the practical constraints of collecting and analysing file data from a high security prison population.

A control group of prisoners with none of the identified risk factors present in their history was not used in this study as in light of the high risk nature of the population, the group would have been too small to allow for comparison. Instead, the findings were compared to the risk and protective factors highlighted in previous research with low risk offenders (for example

Hawkins et al., 2000 and Lipsey & Derzon, 1998) and as such the risk factors for high security offenders were qualitatively compared to those previously found to be predictive of lower risk offending. The study also allowed for comparison of the risk and protective factors between different sexual, violent and other offenders.

4.3.3 Participants

Participants in the study (N=90) consisted of three groups (violent, sexual and other) of 30 individuals (n=30) detained in a high security prison in England. A pre-requisite of prisoners in the research establishment is that they are over the age of eighteen years old and have a minimum sentence of four years, which results in a moderately static population.

The age of the total sample ranged from 21 to 68 years old, with the mean age being 42 years old. The majority of the sample was of white ethnicity (n=69, 66%), heterosexual (n=86, 96%) and of average intelligence (n=37, 41%). A database within the psychology department was used to provide a limited number of Wechsler Adult Intelligence Scale, Third Edition (WAIS-III) scores which were then categorised for the purpose of this study; however the majority of participants were categorised only from reports stating the range of their IQ. In these cases no exact WAIS-III scores were provided.

4.3.4 Procedure

A coding frame was designed to facilitate the recording of data in relation to the risk and protective factors that had been highlighted from the literature review (for coding frame see Appendix 10). Firstly, the coding frame allowed for the inclusion of information relating to sixteen demographic and offence related variables (such as age, ethnicity, number of previous convictions and length of sentence), twenty-five childhood risk factors (including, poor attitude to schooling and childhood abuse) and thirteen adult risk factors (such as general offending and poor employment history) identified from the previous literature. Additionally

nine protective factors including, pro-social associates and an above average IQ were incorporated in the coding frame.

The data were gathered from the prisoners' files, psychology databases and the Offender Assessment System (OASys) which is an electronic database that assesses a number of key areas for each offender. The OASys is developed by the prisoner's offender manager through interview with the prisoner and is therefore, largely based on self-report and corroborated with other information, such as the Police National Computer (PNC). The psychology database recorded scores for completed psychological assessments, such as the Millon Clinical Multiaxial Inventory, Third Edition (MCMI-III) and Psychopathy Checklist, Revised (PCL-R) scores. However, only those MCMI-III profiles which were over 85 were recorded on this database and the raw scores were not provided; therefore for the purpose of data collection only the presence or absence of a profile was known. Other file information included legal papers, court transcripts, psychiatry and psychology reports and pre and post sentencing reports; therefore much information is based on interview, self-report and professional opinion and there is consequently limited factual information. No additional qualitative information from professionals or the prisoners was collected. Therefore, for a risk or protective factor to be coded as present, the information had to be clearly identifiable from the file documentation alone without requiring any level of interpretation or corroboratory evidence.

All study variables were retrospectively coded from the prisoners' files by the researcher. Any information that was unidentifiable from the files was recorded as 'unknown' and analysed as such. Due to the resource limitation within the prison very few prisoners have a full psychological assessment. Consequently, there were very few recordings of MCMI-III and PCL-R scores to include in the data collection.

Another trainee psychologist at the prison coded 10% (n=9) of the allocated files and recorded their findings on the coding frame to check for inter-rater reliability. When compared with the

findings of the same file by the researcher, the inter-rater reliability was found to be high (>95%), with no more than two differences in recordings for each completed coding frame (an example of a difference was recording a response as 'no' instead of 'unknown' when the information was not available).

4.3.5 Data Analysis

Prior to statistical analysis, the data were extracted using the coding frame and entered into SPSS for data analyses. The linear data were found to be normally distributed and a one-way ANOVA was completed to identify whether each of the three groups (violent, sexual and other) were significantly different from each other. Post hoc procedures utilising the Levene's test demonstrated that the assumption of homogeneity of variances had been violated and therefore, the Welch F statistic was used to identify which of the three groups was significantly different. All other data were amalgamated into categorical variables and bivariate analyses utilising Bonferroni corrections were completed (see Appendix 11).

A multi-nomial logistic regression was completed with the most significant risk factors from the Lipsey and Derzon (1998) and Hawkins et al. (2000) models to identify whether these factors were also predictive of high security offenders.

4.3.6 Ethical Considerations

The design and data collection procedures for this study were presented to and approved by the Governor of the prison, representing the Home Office, and by the University of Birmingham, College of Life and Environmental Science Ethics Committee (for consent form see Appendix 12). The study therefore achieved the ethical standard required by the prison service and the University, as well as the British Psychological Society (BPS).

The participants in the research were the selected sample of prisoners. However, as the file information utilised in this study is the property of the prison as opposed to the prisoners, only

the consent of the Governor was required. These files were accessible to specified staff including the researcher and were stored in locked filing cabinets in a locked office within the prison establishment. Each file had to be signed out by the researcher when accessing it and signed back when returned, to ensure traceability at all times.

Confidentiality of all participants was maintained in line with the Data Protection Act (1998) as each participant was allocated a research number and was referred to by this number at all times. No other identifiable information such as name or prison number was recorded and as such, the data could not be traced back to the prisoner without the list of corresponding prison numbers and research numbers. This list was stored on a password protected computer and was accessible only by the researcher. Additionally, the completed coding frames for each participant were also stored in a locked filing cabinet within the prison and the identity of each participant was not identifiable to anyone other than the researcher.

Once complete, the data from the coding frames was transferred to an Excel spreadsheet on a password protected computer. The excel spreadsheet was removed from the prison for statistical analysis with the permission of the Security Governor, prior to being exported into SPSS.

4. Results

4.1 Sample

Ninety adult males (N=90) divided into three equal groups (n=30) were included in this study. The average age of the offenders was 42 years old (range from 21 to 68 years) with the sexual offenders being the oldest group on average (51 years in comparison to 38 and 37 for violent and 'other' groups respectively). The average age of first convictions was 22 years old (range from 9 to 63 years) however the sexual offender group had a much older age of first conviction of 31, in comparison to both violent and 'other' offenders (17 and 18 respectively). When considering the sample as a whole (N=90) the average number of previous convictions

was 19 (range from 0 to 91 previous convictions) with the 'other' offenders demonstrating the most prolific offending (average of 30 previous convictions) and the sexual offender group having the least previous convictions (average of 6 previous convictions). The average sentence length was 14 years (range from 4 to 40 years) although there was little variance in the average sentence lengths between the groups.

Table 11: Frequency data for the three offender groups (N=90)

		Mean	**Standard Deviation**	**Standard Error**	**Minimum**	**Maximum**
Current Age	Violent	37.83	11.78	2.15	22	62
	Sexual	50.67	13.09	2.39	21	68
	Other	37.03	10.51	1.92	23	64
	Total	41.84	13.29	1.40	21	68
Age at first offence	Violent	17.43	5.27	0.96	9	31
	Sexual	31.13	17.10	3.12	12	63
	Other	17.50	5.75	1.05	11	31
	Total	22.02	12.53	1.32	9	63
Sentence length	Violent	16.33	6.71	1.22	4	40
	Sexual	12.03	2.94	0.54	4	18
	Other	14.80	6.64	1.21	3	30
	Total	14.39	5.92	0.62	3	40
No. Of previous convictions	Violent	21.60	22.20	4.05	0	76
	Sexual	6.43	9.21	1.68	0	35
	Other	30.20	26.39	4.82	0	91
	Total	19.41	22.65	2.39	0	91

A one-way ANOVA was initially conducted on the linear data (current age; age at first conviction; number of previous convictions; sentence length) to identify whether the three groups were significantly different. The Levene's test was significant (<0.05) demonstrating that the variances between the groups were different and the Welch F statistic was therefore considered. The groups were found to be significantly different on all variables (Current age $F(2)=11.27$, $p<0.001$; Age at first conviction $F(2)= 9.01$, $p<0.001$; Number of previous convictions $F(2)=14.81$, $p<0.001$; Sentence length $F(2)= 6.34$, $p<0.005$). Post hoc comparisons were completed using the Games-Howell procedure as the Levene's test of homogeneity of variances had demonstrated a violation of the assumptions of ANOVA. This procedure showed significant differences (<0.005) between the violent and 'other', and sexual and

'other' groups on all four factors. These findings suggest that the sexual offender group is significantly different to both the violent and 'other' offender groups.

4.2 Hypothesis 1: There will be significant differences in the experience of childhood risk factors between the groups of violent, sexual and other high security offenders

Previous research has focussed on a range of risk factors that have been found to be associated with juvenile delinquency and low risk offending. Therefore the childhood risk factors were investigated in this study to identify whether they were associated with types of high security offenders.

Bivariate analysis showed significant associations between ten childhood risk factors and the offender groups ($p<.05$). However, after the Bonferroni Correction was applied only six childhood risk factors were significant ($p<0.005$). Analyses of the protective factors were not taken forward as none were found to be significantly associated with the offender types, therefore six risk factors (history of aggression, aggression against peers, antisocial peers, childhood substance misuse, childhood hyperactivity and juvenile sentences) were explored further (see Appendix 13 for non significant associations). Table 12 shows the chi-square analyses between significant risk factors and the offender groups, demonstrating that a history of aggression and antisocial peers were most closely associated with the types of offending. Notably, the violent offender group had the highest rates of five of the six childhood risk factors, with the exception of juvenile sentences ('other' group). Table 13 then highlights the post-hoc analyses that were completed subsequently.

Table 12: Chi-square analyses of childhood risk factors by offender group types (N=90)

Risk/ Protective factor	**Total n (%)**	**Violent Group (n=30) n (%)**	**Sexual Group (n=30) n (%)**	**Other Group (n=30) n (%)**	**Sig.**
Childhood risk factors					
History of aggression (n=84)	32 (38%)	20 (69%)	3 (12%)	9 (31%)	.000
Aggression against peers (n=85)	28 (33%)	16 (55%)	3 (11%)	9 (31%)	.002
Antisocial peers (n=84)	41 (50%)	20 (71%)	4 (15%)	17 (59%)	.000
Childhood substance misuse (n=86)	27 (31%)	14 (48%)	3 (11%)	10 (35%)	.005
Childhood hyperactivity (n=83)	17 (21%)	12 (41%)	1 (4%)	4 (14%)	.002
Juvenile sentences (n=82)	15 (18%)	3 (11%)	2 (7%)	10 (39%)	.005

As can be seen in Table 12, of the total sample (N=90) 38% (n=32) had a history of aggression; within the violent group 69% had a history of aggression compared to 12% and 31% of the sexual and 'other' offenders respectively (χ^2 (2) =20.11, p<.001). Similar results were found for aggression against peers whereby 33% (n=28) of the total sample had demonstrated this behaviour, but a greater proportion was found in the violent group (55%, n=16) in comparison to 11% and 31% of the sexual and 'other' offenders respectively (χ^2 (2) =12.36, p<.01). This suggests a strong association between previous aggressive behaviour and later violent offending.

Furthermore, 49% (n=41) of the sample had antisocial peers in childhood. 71% of the violent offenders and 59% of 'other' offenders had antisocial peers, in comparison to only 15% (n=4) of the sexual offender group (χ^2 (2) =19.34, p<.001). Similarly, only 11% (n=3) of the sexual offender group had misused substances in childhood compared to 47% (n=14) of the violent group and 35% (n=10) of 'other' offenders (χ^2 (2) =9.53, p<.01). These results highlight

significant differences in the early antisocial behaviours between the three groups, with more violent offenders showing general antisocial behaviour.

Additionally, 41% (n=12) of offenders within the violent group had a history of childhood hyperactivity (χ^2 (2) =12.74, p<.01) in comparison to only 14% and 4% of the 'other' and sexual offenders respectively. However, of the total sample only 18% (n=15) had received juvenile sentences. Within the 'other' group 39% (n=10) of the offenders had received juvenile sentences, in comparison to only 11% and 7% of violent and sexual offenders respectively (χ^2 (2) =10.48, p<.01). This suggests that although violent offenders had increased levels of antisocial behaviour in childhood, they were not always convicted for this and received fewer juvenile sentences than 'other' offenders.

Post hoc 2x2 comparisons of the six significantly associated childhood risk factor variables were completed to identify which groups were significantly different on each of the variables. Table 13 shows the significance of the 2x2 comparisons that were completed for each of the risk factors.

Table 13: Post hoc chi-square analyses (3 2x2 level)

	Violent v Sexual	Sexual v Other	Other v Violent
Juvenile sentences	Ns	0.007	Ns
Aggressive to peers	0.001	Ns	Ns
Antisocial peers	0.000	0.001	Ns
Childhood substance abuse	0.002	Ns	Ns
History of aggression	0.000	Ns	0.004
Childhood hyperactivity	0.001	Ns	Ns

Ns= not significant; Significant= <0.008 after Bonferroni Correction

Table 13 shows that violent and sexual offenders had the most significant differences in relation to the six risk factors, particularly in relation to antisocial peers and having a history

of aggression. The 'other' and violent offender types had the least significant differences, whereby only a history of aggression significantly differentiated between the two groups. Therefore, violent offenders had a higher prevalence of childhood risk factors; however the risk factor of having had a juvenile sentence was the key factor associated with the high security 'other' offender group. These findings suggest that there is a strong distinction between the violent and sexual offender groups, but that the 'other' offenders have some risk factors that are similar to those demonstrated by both the violent and sexual offender groups. This relates to the 'other' offenders having a less severe aggressive history than the violent offenders, but a more antisocial history than the sexual offenders.

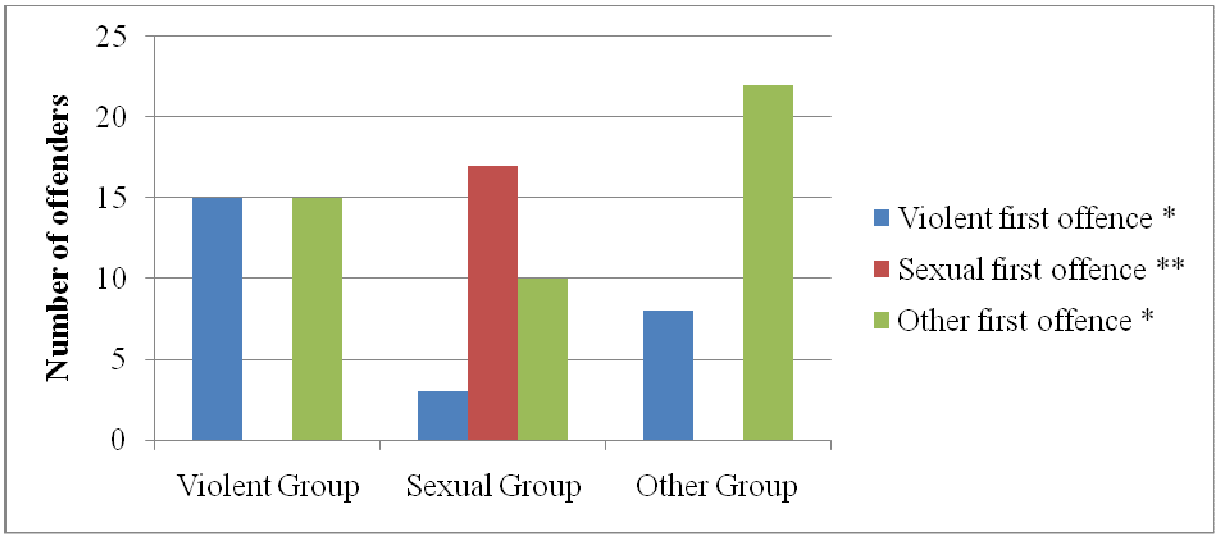
4.3 Hypothesis 2: There will be significant differences in the patterns of previous offending between the three groups in relation to offending outside of their index offence category

The second hypothesis was concerned with the pattern of previous offending between the three groups, to identify whether the groups offended outside of the category of their index offence. A one-way ANOVA was completed and showed that all three groups were significantly different when considering the prevalence of offending outside the of their index offence category.

Results from the one-way ANOVA showed that there were significant differences between all three groups in relation to the type of first offence (Violent first offence $F(2)=6.56$, $p<0.005$; Sexual first offence $F(2)=37.92$, $p<0.000$; 'Other' first offence $F(2)=6.24$, $p<0.005$). Figure 3 shows that there were individuals within all offender groups whose first offences were classified as either violent or 'other'; however only those currently classified in the sexual offender group were recorded as having a first offence that was sexual (n=17; 57%). Although offending outside of the current offence group was observed (violent (n=15) 50%; sexual

(n=13) 43%; 'other' (n=8) 27%) the majority of first offences were reflective of the current offence type for each offender group.

Figure 3: Comparison of violent, sexual and other offenders on type of first offence (N=90)



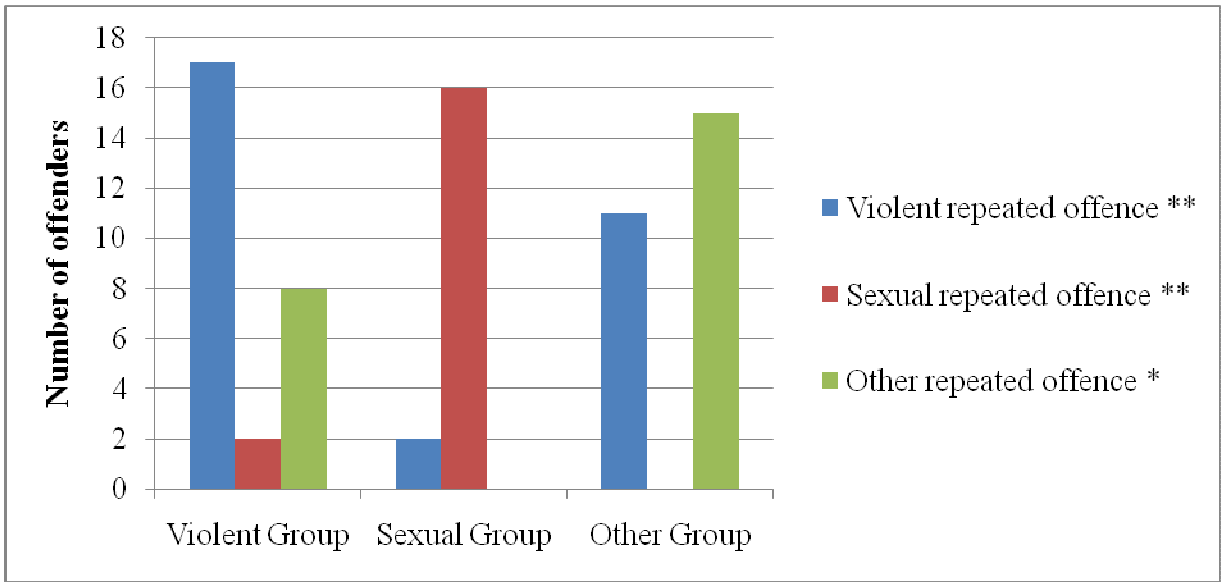
*=p<0.005; **=p<0.001

Results of the one-way ANOVA showed that the three groups were significantly different in relation to repeated offending (Repeated violent offences $F(2)=6.81$, $p<0.000$; Repeated sexual offences $F(2)=43.23$, $p<0.000$; Repeated 'other' offences $F(2)=4.79$, $p<0.05$). Figure 4 demonstrates a degree of homogeneity of offending in the group types, whereby most repeated offending was the same as the offending group type. This was most distinguished in the sexual offenders with 73% (n=16) of repeated offences being sexual, in comparison to 63% (n=17) of repeated violent offences in the violent group and 58% (n=15) of repeated 'other' offences in the 'other' group.

Although the sexual offender group most commonly had repeated sexual offences, they also demonstrated inter-type offending, with 9% (n=2) of repeated offences being violent and 18% (n=4) being 'other' offences. Violent and 'other' offenders appeared similar when considering repeated offence patterns with considerable overlap between repeated violent offences (42% (n=11) for 'other' offenders) and 'other' offences (30% (n=8) for violent offenders). This may

suggest that sexual offenders are a more homogenous group, whereas violent and 'other' repeated offending is more heterogeneous.

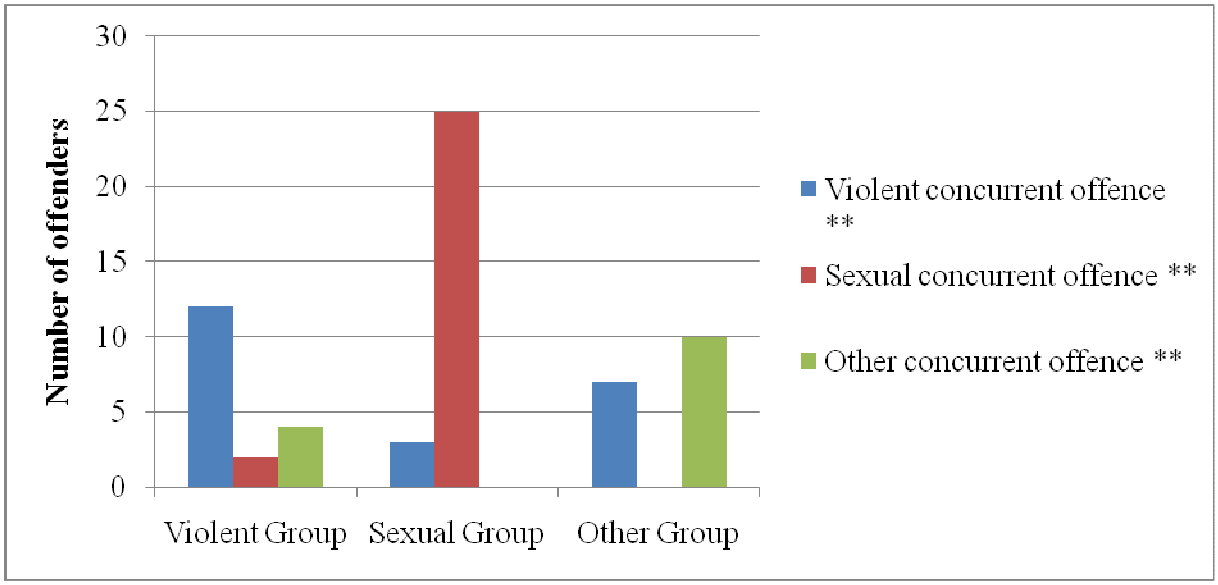
Figure 4: Comparison of violent, sexual and other offenders with a prior conviction by type of repeated offence (N=75)



*=p<0.05; **=p<0.01

The results of the one-way ANOVA show that there are significant differences between violent, sexual and 'other' offenders in relation to types of concurrent offences (Violent concurrent offences $F(2)=9.79$, $p<0.001$; Sexual concurrent offences $F(2)=73.87$, $p<0.001$; 'Other' concurrent offences $F(2)=15.19$, $p<0.001$). Figure 5 highlights a similar pattern to that demonstrated in the previous figures, where there is a consistency in the type of concurrent offending in relation to the offender group type (67% (n=12) for violent; 89% (n=25) for sexual; 59% (n=10) for 'other'). However, violent and 'other' offenders overlap in relation to concurrent offences, in that 22% (n=4) of violent offenders had 'other concurrent convictions and 41% (n=7) of 'other' offenders had violent concurrent convictions. Of note, is that there is no overlap between sexual and 'other' offenders, in relation to the converse concurrent offences.

Figure 5: Comparison of violent, sexual and other offenders with a concurrent conviction on type of concurrent offence (N=63)



In summary, the majority of results demonstrate a strong element of homogeneity of offending within the offending groups. However, there is a degree of overlap primarily between the violent and 'other' offender group. These findings are different to those in Hypothesis 1, which suggest that the violent offender group is significantly different from the sexual and 'other' group as the violent offenders experienced significantly more childhood risk factors. However, the similarities between the violent and 'other' offenders in Hypothesis 1 were in relation to antisocial behaviours, which would be reflective of previous offending and therefore suggests that the findings from the current hypothesis support those from Hypothesis 1.

4.4 Hypothesis 3: There will be significant differences between the predictive risk and protective factors for violent, sexual and 'other' high security offender groups.

As highlighted in Section 4.2, childhood risk factors appeared to be more closely associated with the violent offender group, as was suggested by the literature (Hawkins et al., 2000; Lipsey & Derzon, 1998). A multinomial logistic regression was performed to identify whether

factors identified in previously researched risk factor models, such as those by Lipsey and Derzon (1998) and Hawkins et al. (2000) were predictive in the current sample. Only those risk factors that were found to be significantly associated with offender types as identified in Section 4.2 and that reflected the risk factors considered in the Lipsey & Derzon (1998) and Hawkins et al. (2000) models were used in the regression analysis.

The multinomial logistic regression was analysed with five childhood risk factors; juvenile sentences, antisocial peers, childhood substance misuse, history of aggression and childhood hyperactivity included in the model. As a consequence of missing data for some participants a total of 73 cases were analysed and the full model was significantly reliable (χ^2 (10) =50.27, p<.000) indicating that the predictors as a set reliably distinguished between violent, sexual and 'other' offenders. Juvenile sentences, antisocial peers and a history of aggression were found to be individually significant in the model. This model accounted for between 50% and 56% of the variance in offender type, with 62% of the violent offenders, 91% of the sexual offenders and 54% of the 'other' offenders accurately predicted. Overall 69% of the predictions were accurate

Table 14 shows the significant predictors for each offender group. 'Other' offenders were found to be fifteen times more likely to have had a juvenile sentence than were violent offenders (z=6.08, p<.05) and were also more likely to have had no history of aggression (z=4.21, p<.05). Violent offenders were seven times more likely than sexual offenders to have antisocial peers (z=3.78, p<.05) and sexual offenders were less likely to have antisocial peers than 'other' offenders (z=5.23, p<.05).

In summary, only juvenile sentences, antisocial peers and a history of aggression were significant predictors, with the most notable difference being that 'other' offenders were more likely to have had a juvenile offence and violent offenders were more likely to have had a

history of aggression. These findings support the results of the Chi-square analyses in Section 4.2, thereby suggesting a difference in the predictive factors of these offender groups.

Table 14: MNLR analysis of predictor variables of violent, sexual and 'other' offenders.

Offender Variables	***B***	***Wald***	***p value***	***Exp(B)***	***95% C.l. for Exp (B)***	
					Lower	**Upper**
OTHER (Reference category is 'Violent' offender)						
Juvenile sentence	2.72	6.08	.014	15.15	1.75	131.41
No history of aggression	-2.34	4.21	.040	.097	.010	.901
Intercept	-.121	.02	.895			
VIOLENT (Reference category is 'Sexual' offender)						
Antisocial peers	1.99	3.78	.050	7.34	.985	54.74
Intercept	-20.01	163.70	.000			
SEXUAL (Reference category is 'Other' offender)						
Antisocial peers	2.28	5.23	.022	-9.80	1.36	69.46
Intercept	-20.14	131.59	.000			

4.5. Discussion

Despite the plethora of research into risk and protective factors for delinquency and offending in a number of populations, there appeared to be a dearth of knowledge regarding risk and protective factors for high security offenders. Furthermore, few studies had considered risk factors for specific types of offending. The current study was therefore exploratory in nature, with the overall aim of identifying whether different types of high security offenders (violent, sexual and 'other') demonstrated different developmental risk and protective factors to those identified in the literature.

4.5.1 Summary and evaluation of findings

4.5.1.1 There will be significant differences in the experience of childhood risk factors between the groups of violent, sexual and 'other' high security offenders.

The majority of previous risk factor research has focussed on risk factors for delinquency and low level violent offending in juvenile samples. From this, risk factor models such as those developed by Lipsey and Derzon (1998) and Hawkins et al. (2000) have identified factors (such as antisocial peers and childhood aggression) to be strongly associated with delinquency and juvenile violent behaviour. It was therefore hypothesised that as the research has predominantly focussed on violent delinquency, there may be a difference in the predictive risk and protective factors of high security violent offending in comparison to high security sexual and 'other' offending.

Six risk factors were found to be associated with types of offending and five of these (history of aggression, aggression towards peers, antisocial peers, childhood substance misuse, childhood hyperactivity) were significantly more prevalent in the violent group, compared to both the sexual and 'other' group. Consequently the first hypothesis was accepted, as a significant difference was observed between the groups with violent offenders having experienced significantly more childhood risk factors than the sexual and 'other' groups.

Within this, post hoc analyses showed that the single risk factor of having had a juvenile sentence was significantly more prevalent in the 'other' offenders compared to both the violent and sexual offenders. However, the current findings support previous literature and consistently demonstrate that violent offenders experience significantly more childhood risk factors than the other two offender groups. It is worthy of note that the sexual offenders experienced significantly fewer risk factors than either violent or 'other' offenders. This may reflect a clear difference in the experience of childhood risk factors by sexual offenders; however this finding may also be the result of a lack of relevant data contained within the files of this offender group. Alternatively, individuals who become sexual offenders may experience different risk factors to those highlighted by the juvenile delinquency literature and therefore future research is required to explore this area further.

This finding of violent offenders having consistently more risk factors than the other two offender groups is consistent with previous risk factor research, with each of these factors having been found to individually contribute to delinquency or offending in previous studies (Farrington, 2003; Lipsey & Derzon, 1998; Tolan & Gorman-Smith, 1998; Walker, 2008). However, there was also a degree of overlap demonstrated between violent and 'other' offenders in relation to general antisocial behaviour (antisocial peers and substance misuse); although a similar overlap was not found between the violent and sexual offender group. It is possible that this difference is reflective of the older age of first conviction identified in the sexual offender group, whereby developmental risk factors were less pervasive for them as evidenced by minimal previous contact with the police.

It is perhaps not surprising to find that previous aggression and aggressive behaviour towards peers is associated with adult violent behaviour, considering the strong link between aggression and violence (Loeber & Hay, 1997; Loeber & Stouthamer-Loeber, 1998). In addition, the increased presence of childhood hyperactivity within the violent offender group

also supports previous research (Hawkins et al., 2000; McDermott, Edens, Quanbeck, Busse & Scott, 2007). It may therefore, be hypothesised that hyperactivity is linked to aggression as a risk factor within the current violent sample, for example as a means of gaining attention and stimulation in an otherwise boredom prone environment. This may be reflected in the custodial behaviour of these individuals, whereby a lack of stimulation within the prison environment is expressed as violence. However, custodial behaviour was not assessed within the current study and may warrant exploration in future studies. In contrast, previous aggression in the 'other' offender group may be indicative of a more general antisocial attitude, whereby violence is used as a means of achieving self-interests as indicated by Catalano and Hawkins (2005).

The presence of antisocial peers and childhood substance misuse was apparent in both the violent and 'other' offender groups, however was more prevalent in the violent group. This finding supports previous research which has identified a link between early substance misuse, association with antisocial peers and increased delinquency and offending (Guo, Hill & Hawkins, 2002; White, Loeber, Stouthamer & Farrington, 1999). This research has also identified an increased association between these specific risk factors at an earlier age and increased severity of later offending; which may be particularly relevant to the current population. These factors also appear to fit the Integrated Cognitive Antisocial Potential (ICAP) theory proposed by Farrington (2005) in that individuals have a degree of antisocial potential which is underpinned by impulsivity, as evidenced by childhood substance misuse and antisocial models.

The direction of the relationship between antisocial peers and offending is not clear from the analysis utilised within this study. It may be that antisocial individuals seek out other antisocial peers or that individual's model antisocial peers and become involved in offending behaviour when they perhaps would have otherwise avoided this. It is also possible that protective factors (such as attachment and positive role models) may serve to reduce the

antisocial propensity of individuals. However, when considering that the majority of violent offenders in the current study also had criminal parents it is unlikely that this protective factor was available to them and may have instead increased their chances of following an offending pathway. It is also likely that parents who offended served as antisocial models throughout the individuals' childhood and therefore, increased the risks for offending two-fold. Consequently, individuals involved in substance abuse who associate with other anti-social peers may be at increased risk of becoming violent offenders in adulthood. This provides evidence for the escalating need for interventions aimed at reducing the risk factors and promoting positive factors for at risk adolescents.

Of the significant associations only having a juvenile sentence was not more prevalent amongst the violent group, with more of the 'other' offender group having been convicted as juveniles. This finding initially appears somewhat spurious considering the prevalence of risk factors in the violent group, however it may suggest that 'other' offenders were generally more antisocial, committed a range of offences and came to the attention of the police at a younger age compared to those offenders who went on to be violent. Alternatively, if offenders in the violent group committed more violent offences as a juvenile it is possible that these were not reported to the police and did not therefore result in conviction; for example fights at school or with peers in the community may have been dealt with at a community level. Within this sample, the 'other' offenders who served juvenile sentences continued to become high risk adult offenders. This may provide support for Bouffard and Piquero's (2010) defiance theory, whereby the sanctioning of 'other' offenders served to increase their lifetime offending behaviour. However, this cannot be fully explored as the offenders' perceptions of their sentence were not recorded. Alternatively, being imprisoned as a juvenile may have negatively impacted on these individuals' lifetime opportunities, for example in relation to employment and supportive relationships, thereby continuing the offending cycle as a means of surviving.

This explanation would therefore, argue against the notion of juvenile custodial sentences and instead support community interventions.

In conclusion, all childhood risk factors that were found to be significantly associated with types of offending were more prevalent within the violent offender group; except having had a juvenile sentence. This suggests that adolescents identified as having multiple risk factors present in their lives may be at increased risk of becoming a high security violent offender in adulthood and interventions should, therefore be allocated accordingly.

4.5.1.2 There will be significant differences in the patterns of previous offending between the three groups in relation to offending outside of their index offence category

Previous research suggests that individuals tend to be versatile as opposed to specialised in their offending (Domburgh, Loeber, Bezemer, Stallings & Stouthamer-Loeber, 2009; Farrington, 2005) particularly if this offending commences in adolescence. The versatility of offending was investigated retrospectively in this sample of high security convicted offenders to identify whether they offended outside of their index offence category.

The findings demonstrated that a minority of offenders had committed offences outside of that for which they were categorised for the purpose of the study, thereby suggesting a degree of versatility. The primary overlap was between violent and 'other' offenders whereby the first offence and repeated offences were often split between violent and 'other'. This suggests a similarity in the offending pattern of violent and 'other' offenders, despite the developmental risk factors being different. However, the risk factors associated with both violent and 'other' offenders reflected antisocial behaviour, which may be closely linked to the types of previous offending and thereby explain this similarity. It is possible that this finding fits with the ICAP theory (Farrington, 2005) whereby the offending style is linked to the individuals underlying antisocial potential. According to this theory, violent and 'other' offenders may use either violent or other criminal behaviours to meet their self-interests.

It is worthy of note that the method of data collection may have impacted on the results, in that some offences could have been coded as either violent or 'other', for example armed robbery. As highlighted in section 3.2, offences such as armed robbery were coded as 'other' as the violent group included only physical harm and not psychological damage (for example the threat of physical violence). Consequently, there may be a degree of overlap in some of the characteristics of individuals who threaten and those who perpetrate harm to others and this should be borne in mind when considering these findings.

There was also a slight overlap between violent and sexual offenders in relation to the repeated and concurrent offences, suggesting that sexual offenders also offend violently and vice versa. Although a more specific breakdown cannot be offered from the current data, it may be hypothesised that few offenders overlapped but that those who did could be categorised as violent-sexual offenders. For example, an individual in the sexual group who committed a stranger rape may be more likely to use violence to gain compliance than in a child sex offence case. However, it is notable that many risk assessments, such as the HCR-20 (Webster, Eaves, Douglas & Wintrup, 1995) record any sexual offence as a violent offence also and it may therefore, be more appropriate to consider these offences together as a sexual-violence group, in future studies.

In contrast, a significant majority of all three groups of offenders offended only within the group for which they were categorised. These findings were most significant for repeated and concurrent offences and suggest a degree of specialisation of offending. This finding was most notable in relation to 'other' offenders whereby initial analyses showed that 'other' offenders remained completely distinct from sexual offenders when considering previous, concurrent and repeated offences. In other words, offenders in the 'other' group did not offend sexually. Previous research has not separated offenders in this manner and therefore, only tentative explanations can be provided for these findings. It is possible that the motivation for the

offending may bear some relevance in relation to the separation of sexual and 'other' offenders. For example, many of the 'other' offenders had index offences of robbery, burglary or terrorism. It could perhaps be argued that the motivation for these offences were either financial or political and would not have been achieved by offending sexually. Due to the retrospective nature of this study, further exploration of the reasons for the differences in offending are outside of its scope and it is therefore, recommended that future research consider this as an area for development.

4.5.1.3 There will be significant differences between the predictive risk and protective factors for violent, sexual and 'other' high security offender groups.

Significant differences in the predictive risk factors were found between each of the groups, whereby serving juvenile sentences was most predictive of the 'other' offender group and having antisocial peers and a history of aggression was most predictive of the violent offender group. The sexual offender group was associated with the absence of risk factors, for example sexual offenders were less likely to have had antisocial peers than the other two groups. This supports the findings from the first hypothesis, whereby sexual offenders had experienced significantly fewer childhood risk factors than either the 'other' or violent groups. The finding from the regression analysis suggests that the single childhood risk factors of juvenile sentences, antisocial peers and a history of aggression may be predictive of offending in high security populations.

The finding that childhood aggression and antisocial peers significantly predicted being a violent offender supports the early aggression and early onset hypothesis of offending (Moffitt, 1993; Tolan & Gorman-Smith, 1998), whereby such individuals were violent as juveniles and continued to become high security violent offenders. However, it may be hypothesised that other risk factors would also have been present for an individual to demonstrate aggression and violence at an early age. Therefore, significant risk factors should

be considered within an interactive context. Furthermore, chi-square associations showed that violent offenders experienced significantly more childhood risk factors than the other two groups of offenders, although none of these risk factors were individually significantly predictive of being a violent offender. Therefore, it is likely that the cumulative approach to risk factors (Sameroff et al., 1998) is supported from this research in relation to the violent offender group.

Having a juvenile sentence was the only risk factor that was predictive of 'other' offenders, which suggests that although the violent and 'other' group offended at a similar rate, the 'other' offenders were arrested and convicted more frequently. This may reflect the ease of conviction for the type of offence that was committed, for example offences of burglary may necessitate police interference, as opposed to school fights (violent group) which may be dealt with through other channels, such as school discipline.

In addition, being in prison at a young age may have reduced the positive opportunities available to these individuals (such as education and employment) which may have served to perpetuate the cycle of offending through into adulthood. The chi-square analyses highlighted that the 'other' offender group experienced a range of childhood risk factors at an increased rate to the sexual offender group. Although these risk factors were not individually predictive of being an 'other' offender, it is possible that a cumulative impact of the experience of risk factors impacted on the likelihood of becoming a high risk 'other' offender in adulthood. Alternatively, as discussed in Section 5.1, the significance of juvenile sentences may also support the defiance theory of offending (Bouffard & Piquero, 2010) whereby the negative perception of the sanction, served to continue the individual's offending career. Therefore, sanctions other than a custodial sentence may be more beneficial in reducing re-offending and protecting society in the long-term.

Although violent and 'other' offenders may have a more prolific offending history as evidenced by the number of previous convictions on their PNC, the population of sex offenders included in this current study were primarily deniers who had not engaged in any form of treatment. It is therefore possible that this group had numerous previous offences and a long offending history, but that they had not come to the attention of the police prior to the current offence. Possible explanations for this may be that their victims were children who only reported the offence when they were older, or that the offence was committed within the family and therefore went unreported until such a time that the victims felt confident to pursue the case. Furthermore, in order to commit a sexual offence against children, individuals may require good social skills to create a suitable environment for the offending to occur.

These factors may therefore explain the lack of predictive value of the risk factor variables in relation to the sexual offender group, as individuals attempt to maintain a trustworthy facade. However, it is acknowledged that this explanation may not fit for sexual offenders against adults whereby they may use physical violence to coerce their victims to comply and may therefore present as more similar to the violent offender group. Alternative explanations for the lack of predictive risk factors for the sexual offender group may relate to a lack of relevant file data. The sexual offenders in this research were new to the prison and therefore, file information may have been lacking in comparison to the other two offender groups. The sexual offender group as a whole had also been detained for a shorter period and perhaps the opportunity to gather relevant information had not arisen in this time. This is noted as a limitation to this research and therefore, future research is required to identify the specific childhood risk factors that are most specific to sexual offenders and compare these against other high security offender groups.

4.5.2 Limitations of current research

The current study demonstrated improvements on the limitations of previous risk factor research in relation to extending the sample population to high security convicted offenders. Additional developmental risk factors were also included and explored for three types of offending, as opposed to focussing on only one offending type as in previous studies. The current study also used collateral file information to overcome the limitations of self-report as identified in previous studies.

However, this study does have several limitations. Firstly the aims of the current study were exploratory in nature due to the minimal amount of previous research regarding the risk factors of different types of offending, particularly in a high security sample. Although a number of risk factors were included in the study as identified from previous research, there may have been other variables not included which were more predictive of high security offenders. Consequently, the conclusions are based on comparisons between the three groups and may not therefore, be fully representative of the high security prison population.

Secondly, the study utilised a relatively small sample from one high security prison and results may therefore have been different if a larger, more representative population were used. In a similar vein, the offenders included in the current study were not generally representative of sexual offenders as they were primarily deniers who had not completed any offending behaviour work and had also been recently sentenced. It is unclear to what extent this would impact on the findings, however it is possible that sexual offenders who were not in denial may have demonstrated different developmental risk and protective factors to those included in the sample.

Furthermore, the groups were clearly defined by type of index offence; however it was noted that some types of offences could overlap, for example armed robbery was classified as 'other', but has previously been classified as violent in other studies. A different classification

system may impact on the demographics of the groups and therefore, future research may benefit from reducing these groups further and identifying risk factors for specific offences. In addition, no distinction was made between vulnerable prisoners (VP) and prisoners on normal location. This may be an area for future research whereby prisoners on VP wings may demonstrate different or more severe forms of the identified risk factors.

A number of limitations are apparent in relation to the methods of data collection and the actual data collected. All data were collated from file information which introduced an initial bias relating to the interpretation of the report writers and case note entries. Some data were highly reliable such as that from the Police National Computer and court transcripts, however the remainder of information such as psychiatric and psychology reports allowed for a degree of individual bias. In addition, data were recorded as present if evidence could be found within the prisoners' collateral information. However, it must be noted that a risk factor not being stated as present in the file information, does not guarantee that the risk factor was not present for the individual at any time. This could have been rectified by clarifying information with prisoners or professionals; however this was outside of the scope of this study.

Additionally, none of the protective variables were found to be significantly predictive of types of offending and therefore the understanding of protective factors in high security offenders has not progressed from this research. It is possible that this is reflective of the nature of the high security offender sample, thereby adding evidence to the argument of increased risk factors and few protective factors being more likely to result in serious offending. However, this may also be a result of limited collateral information in relation to protective factors. As already mentioned, the data were collected from prison file information with no additional information from prisoners or professionals. It is perhaps less likely that protective factors would be included in file information. However, as demonstrated in previous research (Hart, O'Toole, Price-Sharps & Shaffer, 2007) enhancing protective factors can serve

to reduce offending and inclusion of this information in prison files is therefore, strongly recommended to enhance progress within high security offender populations.

Finally, the findings of this research were limited by the categorical nature of the variables used. Future research could benefit from utilising a qualitative approach to explore the variables included in this study in more depth. This would provide a better understanding of the interactive and multiplicative effects of the risk and protective factors and could also draw on the importance of the offender's perception of their life experiences, as opposed to merely considering the presence or absence of the variables.

4.5.3 Applications of the research

The findings of this research demonstrate the heterogeneous nature of high security prisoners in relation to their offending and developmental history. This suggests that a 'one size fits all' approach to intervention would be less effective than a group intervention aimed at addressing the specific risk factors associated with an offending type. Perhaps more effective would be to target the specific risk factors displayed by the individual, in combination with increasing their protective factors. The sample used in this study is among the most dangerous to society. It is thereby hoped that identifying the risk factors for this type of offending will go some way to developing effective management plans for such offenders and consequently, reduce the risk of harm that they pose to others.

Identification of the risk factors for different types of offending also highlights the ability to work more closely with at-risk individuals prior to the onset of offending. For example, research has shown that youngsters who demonstrate aggression and have antisocial peers may be at increased risk of continuing on an offending pathway. The current research supports this, but extends these findings to highlight that these same risk factors hold true for individuals who continue to develop into high security, and particularly violent offenders. However, a number of other variables were found to be associated, although not predictive of offending in

this sample and these may also require further consideration. Further research is therefore required to provide a full predictive model of the risk factors for different types of high security offending.

4.5.4 Future Research

Although the aims of the research have been addressed within the constraints of this paper, risk factors for high security offending types could be explored in more depth.

An initial recommendation would be to replicate the present study utilising a larger sample size by expanding to another data source, for instance using data from another high security prison establishment. Although this procedure would be subject to consent and confidentiality agreements, the results would likely be more valid and generalisable to the high security population. Additionally, the current study would benefit from being repeated with the inclusion of a low security control group to compare the presence of identified risk and protective factors for types of offending between high and low security groups. This could be facilitated by comparing a high security sample of violent, sexual and 'other' offenders to a Category B, C and D sample of violent, sexual and 'other' offenders.

Alternatively, it would be intriguing to carry out a qualitative clinical case study with a number of high security offender types to gain a more in-depth understanding and an accurate reflection of the individuals' perceptions of their experiences of risk and protective factors. For example, it may be found that what would be classified as a protective factor from collateral information may be perceived by the offender to be a risk factor, such as over-controlling parents. It is also likely that the offenders' perception of their previous experiences is as, if not more, influential than the mere presence of the factor itself. This approach would address some of the methodological issues previously highlighted when using quantitative data alone and would go some way to identifying the applicability of previously researched models such as

the differential association theory (Sutherland, 1939) and the Integrated Cognitive Antisocial Potential theory (Farrington, 2005a) with a high risk offender population.

4.5.5 Conclusions

Using a sample of high security adult male offenders, this study has identified significant associations between violent, sexual and 'other' types of offending and a number of developmental and offence related risk factors. A statistically reliable multinomial logistic regression model was developed, which identified that violent offenders were more likely to have a history of aggression and 'other' offenders were more likely to have had a juvenile sentence. This model successfully predicted 69% of the total sample.

The findings demonstrated overlap between violent and 'other' offenders, however sexual offenders consistently presented as a distinct group. Previous research was supported in relation to violent offenders presenting with a significantly high prevalence of risk factors. Further research is recommended to develop a clear model and fuller understanding of the predictive risk and protective factors for high security offending.

DISCUSSION

1. Aims of Thesis

The aim of this thesis was to identify the developmental risk and protective factors for high security offending, with a view to understanding what makes some individuals more likely to follow serious offending pathways than others. The thesis considered this question from both a qualitative and quantitative perspective with the primary conclusion being that an increased prevalence of risk factors in combination with reduced protective factors, results in an individual being more likely to engage in future offending behaviour. Within this, some risk factors may be more influential in relation to specific offences, for example juvenile sentences were found to be more closely associated with 'other' offending types, whereas evidence of aggression throughout the lifespan was more predictive of violent offending. Although these findings are supported by the literature relating to juvenile delinquency and violence (Hawkins et al., 2000; Lipsey & Derzon, 1998), the individual's circumstances and choices also need to be considered within the complex interaction of risk and protective factors; in that experience of risk factors does not result in offending being inevitable. Consequently, the thesis achieved the overall aim of identifying common risk and protective factors in high security offenders, however the factors still need to be considered in relation to the individual and the context concerned, as opposed to being applied globally to this population.

A long term aim of this thesis would be to use the findings to instruct future research, with a view to identifying adolescents who are more likely to become serious high security offenders. Consequently, focus should be given to reducing risk factors and enhancing protective factors in order to reduce offending. Such developments may therefore go some way to reducing the prevalence of serious crime and subsequently, reducing the fear that such offenders pose to society.

A number of objectives were identified in order to achieve the overall aim of this thesis and these are discussed below.

2. Main findings relevant to the literature

2.1 Chapter 1

To investigate the role of psychopathology as a risk factor for offending in a sample of juvenile offenders.

The first chapter used a systematic approach to assess the literature regarding the association between psychopathology and offending behaviour within a sample of juvenile offenders. An initial scope demonstrated that most of the risk factor research had concentrated on males. The review therefore, identified studies which had included samples of juvenile females with a male comparator to highlight any gender differences in relation to psychopathology as a risk factor for offending.

The findings of the review demonstrated that although offending by young males was more common, juvenile females experienced a much higher prevalence of psychopathology in comparison to both clinical and male forensic populations. This finding was consistent with previous literature (Adkins, Wang, Dupre, Van den Oord & Elder, 2009; Blader & Carlson, 2007) which identified that juvenile female offenders were perhaps the most disordered population. However, when the disorders were distinguished by externalising or internalising behaviours, male juvenile offenders were found to be equally impacted by their experiences of their psychological conditions. The significant majority of studies found that males more frequently displayed externalising disorders (such as substance use and conduct disorder) in comparison to females who exhibited internalising disorders (such as depression and anxiety) (Andrade, Silva & Assumpcao, 2004; Robertson, Dill, Hussain & Undesser, 2004).

Although the studies included in the review did not explicitly state the effect of psychological disorder in relation to risk, the conclusions of the review were that the externalising disorders which were more common to the male samples, were closely associated with offending. Therefore, psychopathology in this sense was considered to be a risk factor within the context of offending as identified in previous studies of adult offenders (McReynolds, Schwalbe & Wasserman, 2010; Moffitt, Caspi, Harrington, & Milne, 2002). As risk factors may continue to present and develop throughout the lifespan, it was assumed that psychopathology could present as a risk factor in adult offender populations and should consequently be explored further.

The outcome of this review directed the remainder of the thesis to focus on adult high security males to identify whether psychopathology continued to present as a risk factor in the population that is considered to pose the greatest risk to society. The findings of externalising disorders, such as substance misuse and aggression were considered more explicitly in the remainder of the thesis to investigate whether these were apparent in high security adult male populations, as they were in juvenile and low risk samples.

2.2 Chapter 2

To investigate the ability of a psychometric assessment of psychopathology and personality to be utilised in understanding risk in forensic clients.

The first chapter of the thesis highlighted the possibility for some personality traits and psychological disorders to be related to risk in juvenile offenders and potentially, adult offenders. An understanding of the assessment of this in forensic settings was felt to be beneficial in achieving the overall aim of this thesis. The second chapter of this thesis therefore aimed to assess the ability of the Millon Clinical Multiaxial Inventory, Third Edition (MCMI-III; Millon, 1994) to consider psychopathology and personality traits in the understanding of risk factors in forensic populations.

The MCMI-III was shown to be a highly popular psychometric tool with good reliability and validity; thereby supporting its common use within low and high security forensic settings. Despite the strong evidence base for the MCMI-III, the direction of the association between psychopathology, personality disorder and offending behaviour was unclear, although some personality styles (such as borderline personality disorder and antisocial personality disorder) were considered to be more closely associated with harmful behaviours. These disorders may feasibly link back to the findings in the first chapter in relation to the externalising of behaviours in male offenders.

This review highlighted the need to evaluate the context of the assessment process when incorporating the MCMI-III and how this may subsequently impact on the responding of the individual. This aspect is important in many assessments, however when considering the complex nature of forensic clients and the meaning of the outcome of the MCMI-III, for example in a parenting assessment case or Dangerous and Severe Personality Disorder (DSPD) referral, these conditions become increasingly salient. Consequently, even if the assessment does not demonstrate that the individual presents with significant personality traits, the information may guide ways of working effectively with them; which may inadvertently serve to reduce future risk of offending.

2.3 Chapter 3

To identify whether previously researched risk and protective factors are present in a qualitative single case study of a high security offender.

The previous chapters concentrated on the presence of psychopathology and personality disorders as risk factors to offending and these findings were then extended to an individual case in Chapter 3. Therefore, the third chapter aimed to utilise a single case study approach to retrospectively investigate previously researched risk and protective factors in a high security violent offender. This allowed for further exploration of psychopathology as a risk factor, in

combination with other risk factors identified from the literature. This approach reflected a risk and protective factor model, as developed by previous researchers (Hawkins et al., 2000; Lipsey & Derzon, 1998).

The offender, Mr X, demonstrated a small number of protective factors as identified in the literature, including a higher than average IQ, valuing education and employment and having other interests (Blum, Ireland & Blum, 2003; Hart et al., 2007; Orpinas, Murray & Kelder, 1999). However, he had also experienced several risk factors from a very early age, which covered all domains highlighted in the literature including individual, familial, peer, school and community. Throughout the case study it became apparent that these risk factors had interacted and resulted in a multiplicative effect of risk, for example he had been abused by a family member and was removed from the family to a special school, whereby he met antisocial peers and became engaged in substance misuse and aggression as a means of developing and maintaining friendships. Consequently in the case of Mr X, the interaction between the risk factors and the inferences regarding them were as important as the presence of the risk factors themselves. Perhaps more importantly, was that these risk factors continued to be present throughout the lifespan of Mr X as they had become part of his lifestyle. These qualitative findings support the literature (Domburgh et al., 2009; Farrington, 2003; Stouthamer-Loeber et al., 2002) and may also suggest that risk and protective factors which are present in youth, in conjunction with a lack of protective factors, may continue to impact on adult functioning and offending behaviour.

In conclusion, the case of Mr X displayed a complex interaction of risk and protective factors and reflected a qualitative approach to the findings of the literature. Finally, the presence of increased risk factors in combination with limited protective factors appeared to perpetuate and continue Mr X's high security violent offending.

2.4 Chapter 4

To identify whether different types of high security offenders (violent, sexual and 'other') demonstrate different developmental risk and protective factors to those identified in the literature.

The findings from Chapter 3 suggested that similar risk factors were apparent retrospectively in an individual offender and a quantitative approach was used to investigate this for a large sample of different offence types. Therefore, the fourth chapter utilised risk factors as identified in previous models (Hawkins et al., 2000; Lipsey & Derzon, 1998) and considered the relevance of these in relation to violent, sexual and 'other' offenders imprisoned in conditions of high security.

A large number of previously researched risk factors were found to be associated with the offender types; however only juvenile sentences were found to be individually significantly predictive of the 'other' offender group and antisocial peers and childhood aggression were predictive of the violent offender group. The sexual offender group appeared to be distinctly different in that it was characterised by an absence of risk factors. This provides some support for the risk factor models in that early delinquency and peer influences appear to be predictive of adult high security offending, as highlighted in the literature. It is suggested that risk factors that occur early on in an individual's life are the most predictive of offending, as highlighted in previous risk factor models. However, worthy of consideration is the fact that risk factors rarely occur spuriously and may instead be indicative of other negative aspects of the child's life that have not been acknowledged. Also risk factors may be presented as a chain of events in that if an individual is offending and using substances from an early age, it is possible that they would be more likely to associate with negative peers when participating in these behaviours. This may subsequently alter their values in relation to offending and may therefore reduce the value they place on future goals such as achieving in education and employment.

Further findings showed that there were differences in relation to the predictive risk and protective factors for different types of offending, which may have been anticipated from the literature considering that much risk factor research is based only on violent or delinquent behaviour. A degree of overlap was observed, primarily between the violent and 'other' offenders, whereas the sexual offender group presented as more distinct. However, there may be a number of explanations for these findings as explained in Chapter 4 and therefore, further research is recommended to incorporate both qualitative and quantitative approaches, to ensure the most reliable information is gathered.

It was concluded that both proactive and reactive interventions could utilise the findings from the research to effectively target at risk adolescents who present with the factors; or to address the factor balance in already incarcerated adult offenders. This would thereby reduce re-offending and the risk posed to society by dangerous offenders detained in conditions of high security.

3. Thesis strengths and limitations

This thesis utilised two established risk factor models (Hawkins et al., 2000; Lipsey & Derzon, 1998) as a basis for identifying risk and protective factors in the high security prison population. Consequently, this thesis extended themes from previous research to a minimally researched, but highly dangerous population and therefore represents current trends in the high security prison population. Furthermore, this thesis used both qualitative and quantitative approaches to identify not only the predictive risk and protective factors, but also how the offenders perceived these factors and the subsequent impact this had on their experiences and offending behaviour.

However, it may be argued that this thesis is perhaps too quantitative and it would therefore, be recommended that key risk and protective factors identified in this sample be qualitatively investigated with a smaller sample. This approach could utilise interview techniques to gain a

more detailed understanding of the risk factors in individual cases, for example experiences of aggression, at who this was directed, whether they were caught for the behaviour, what were their associated thoughts and what was the function of the aggression.

This thesis can therefore, serve as a platform for further research with regards to high security adult offending.

4. Applicability of Findings

This thesis has identified that some of the most significant risk factors in adolescent delinquent populations are also strongly apparent in the high security adult offender population (childhood aggression, antisocial peers and juvenile sentences). Although these findings require further clarification from future research, it is possible that the key findings could be tentatively considered in working with at-risk adolescents. For example, antisocial peers and aggression have been consistently demonstrated to be associated with adolescent offending; however this thesis, utilising a retrospective approach, also found that these factors were highly prevalent in the development of high security violent offenders. It may be hypothesised that high security offenders experience more detrimental consequences of such risk factors than low security offenders and this is the link between experience of risk factors and high security offending.

The findings from this thesis therefore serve as a platform for future prospective research to identify the nature and severity of risk factors in both low and high security offenders, with a view to identifying and addressing the distinguishing features between these groups. For example, working intensely with all adolescents who display aggression, use substances and have antisocial peers would not be practical due to the high prevalence of these behaviours in adolescent populations. However, consideration of the significant findings from this thesis may assist in the targeting of appropriate interventions for at-risk individuals. The identifying

factors in sexual offenders are not so clear from this thesis and therefore, further research is required to recognise the developmental factors that may be present in at risk adolescents.

Secondly, some of the findings are consistent with the research which suggests that a one size approach does not fit all offenders. For example, it may be possible that juvenile custodial sentences are detrimental in some instances and actually serve to increase the risk and propensity for further offending in some at-risk groups. Therefore, consideration should be given to alternative forms of punishment and if custody is considered warranted, a clear plan should be devised of how to reduce subsequent risk factors (such as lack of employment and developing relationships with anti-social peers).

Finally, it is possible that these findings may go some way to altering society's attitude towards offenders detained in conditions of high security. The often shocking and harrowing nature of such offences is widely publicised by the media, however there is less consideration for the often distressing nature of the offender's developmental years and early life experiences. Many prisoners experience a significant number of risk factors in conjunction with minimal protective factors, thus resulting in an increased chance of following an offending pathway. Although offending in such circumstances is not guaranteed and an element of choice of behaviours is available for all adults, a degree of understanding of their experiences is fundamental to working effectively with such individuals.

5. Future research

As already highlighted, this thesis was exploratory in nature and therefore the subsequent findings are tentative, although promising. As such, future research is recommended to develop both the validity and applicability of the findings. This could be achieved by repeating the research with a larger sample size, perhaps utilising multiple prisons from the high security estate and incorporating a control group of low-security offenders. Secondly, aspects of the individual case study could be explored with individuals from all three offender groups and

comparisons made across these, to identify the individual perspectives regarding risk and protective factors for the different types of offences. Expanding on both of these sections would develop both the qualitative and quantitative knowledge regarding the risk and protective factors of high security offenders. A long-term goal may be to utilise future findings from large scale research to develop interventions, thereby addressing the risk factors and developing the protective factors that are found to be most significant in the high security offender group. Subsequent re-offending could then be measured to identify whether such developments served to reduce the risk posed to society.

6. Conclusions

This thesis met the proposed aims and objectives and has thereby, developed the understanding of the risk and protective factors in high security offenders. The findings suggest that the risk factor models proposed by Lipsey & Derzon (1998) and Hawkins et al. (2000) can in part be retrospectively mapped on to the experiences of the adult high security population in prison. The most common risk factor identified throughout this thesis was aggression throughout the lifespan which was consistently related to violent offending; there was also some support for substance misuse and externalising disorders and the link to high security offending. It is recommended that further research be conducted in this area to continue developing the understanding of what contributes to individuals' high security offending behaviour, in order to reduce this both in at risk juveniles and already imprisoned adult offenders.

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APPENDICES

Appendix 1: Recorded search of electronic databases

Cochrane Library, Sat Apr 19 8:32:00 EDT 2008
(Juvenile or adolescent or youth or young or child or teenager or minor) in All Fields and (offender or criminal or prisoner or delinquent) in All Fields and (mental illness or personality disorder or schizophrenia or psychosis or psychotic) in All Fields and (substance use or behavioural disorders) in All Fields.

ASSIA
((juvenile) or (youth) or (young) or (adolescent) or (child) or (teenager) or (minor)) AND ((Offender) or (criminal) or (prisoner) or (delinquent)) AND ((girl) or (female)) AND ((mental illness) or (personality disorder) or (schizophrenia) or (psychosis) or (psychotic) or (substance use) or (behavioural disorder))

EMBASE, 19-04-08
1. juvenil$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
2. you$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
3. adolescen$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
4. child$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
5. teenager.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
6. minor.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
7. 1 or 2 or 3 or 4 or 5 or 6
8. offender.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
9. prisoner.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
10. criminal.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
11. delinquen$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
12. 8 or 9 or 10 or 11
13. girl.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
14. female.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
15. 13 or 14
16. mental illness$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
17. personality disorder.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
18. schizophren$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
19. (psychosis or psychotic).mp. [mp=title, original title, abstract, name of substance word, subject heading word]
20. 16 or 17 or 18 or 19
21. 7 and 12 and 15 and 20

22. remove duplicates from 21

Ingenta Connect- 16-04-08

Articles published between "1989" and "2008" with title/keyword/abstract containing "((juvenil* or young* or youth* or adolescent* or child) AND (female* or girl*) AND (offender* or delinquent* or criminal*) AND ("mental illness" or psychiatric disorder* or "personality disorder")" OR (“substance* *use* or behaviour* disorder*))

Science Direct
1989 and (juvenile or youth or young or adolescent or child or teenager or minor) AND (0ffender or criminal or prisoner or delinquent) AND (girl or female) AND (mental illness or personality disorder or schizophrenia or psychosis or psychotic) AND (substance use or behavioural disorder) AND EXCLUDE(contenttype, "2,3,4,5",",Book,Reference Work")

Medline

1. juvenil$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
2. you$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
3. adolescen$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
4. child$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
5. teenager.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
6. minor.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
7. 1 or 2 or 3 or 4 or 5 or 6
8. offender.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
9. prisoner.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
10. criminal.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
11. delinquen$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
12. 8 or 9 or 10 or 11
13. girl.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
14. female.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
15. 13 or 14
16. mental illness$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
17. personality disorder.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
18. schizophren$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
19. (psychosis or psychotic).mp. [mp=title, original title, abstract, name of substance word, subject heading word]
20. 16 or 17 or 18 or 19
21. 7 and 12 and 15 and 20

22. remove duplicates from 21

PsychINFO (including Journals@OVID full text)

1. juvenil$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
2. you$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
3. adolescen$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
4. child$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
5. teenager.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
6. minor.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
7. 1 or 2 or 3 or 4 or 5 or 6
8. offender.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
9. prisoner.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
10. criminal.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
11. delinquen$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
12. 8 or 9 or 10 or 11
13. girl.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
14. female.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
15. 13 or 14
16. mental illness$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
17. personality disorder.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
18. schizophren$.mp. [mp=title, original title, abstract, name of substance word, subject heading word]
19. (psychosis or psychotic).mp. [mp=title, original title, abstract, name of substance word, subject heading word]
20. 16 or 17 or 18 or 19
21. 7 and 12 and 15 and 20

22. remove duplicates from 21

Web of Science, 16-04-08

	#4 AND #3 AND #2 AND #1 Timespan=1990-2008. Databases=SCI-EXPANDED, SSCI, A&HCI.

Set	Web of Science Search History - "W of S Syst Rev"
#5	#4 AND #3 AND #2 AND #1
#4	TS=((mental illness) OR (personality disorder) OR (schizophrenia) OR (psychosis) OR (psychotic)) OR (substance use) OR (behavioural disorder) AND Language=(English)
#3	TS=((girl) OR (female)) AND Language=(English)
#2	TS= ((offender) OR (criminal) OR (prisoner) OR (delinquent)) AND Language=(English)
#1	TS= ((juvenile) OR (youth) OR (young) OR (adolescen*) OR (teenager) OR (child) OR (minor)) AND Language=(English)

National Criminal Justice Reference Abstracts

((juvenile) or (youth) or (young) or (adolescent) or (child) or (teenager) or (minor)) AND ((Offender) or (criminal) or (prisoner) or (delinquent)) AND ((girl) or (female)) AND ((mental illness) or (personality disorder) or (schizophrenia) or (psychosis) or (psychotic) or (substance use) or (behavioural disorder))

Appendix 2: Table of Excluded Studies

Details of Excluded Studies	Reason for Exclusion
Abram K. Teplin L. McClelland G. Dulcan M. (2003). Comorbid psychiatric disorders in youth in juvenile detention. *Archives of General Psychiatry*, 60, 1097-108.	Outcome: General health
Miller, A. Muehlenkamp, J. Jacobson, C. (2008). Fact or fiction: Diagnosing borderline personality disorder in adolescents. *Clinical Psychology Review.*	Review
Chapman, A. Cellucci, T. (2007). The role of antisocial and borderline personality features in substance dependence among incarcerated females. *Addictive Behaviours*, 32, 1131-1145.	Population: Adults only
Amato, J., Cornell, D., Xitao, F. (2008). Adolescent Psychopathy: Factor Structure and Correspondence With the Millon Adolescent Clinical Inventory. *Criminal Justice and Behaviour,* 35, 294-310.	Outcome: Factors of psychopathy
Anckarsater, H., Nilsson, T., Stahlberg, O., Gustafson, M., Saury, J.-M., Rastam, M., & Gillberg, C. (2007). Prevalences and configurations of mental disorders among institutionalized adolescents. *Developmental Neurorehabilitation*, 10, 57-65.	Outcome: Mental health disorders
Anderson, L., Vostanis, P. & Spencer, N. (2004). Health needs of young offenders. *Journal of Child Health Care,* 8, 149-64.	Outcome: general health
Anderson, T., Rosay, A., & Saum, C. (2002). The Impact of Drug Use and Crime Involvement on Health Problems Among Female Drug Offenders. *The Prison Journal,* 82, 50-68.	Exposure: Substance abuse
Armistead, L., Wierson, M., Forehand, R. & Frame, C. (1992). Psychopathology in incarcerated juvenile delinquents: Does it extend beyond externalizing problems? *Adolescence,* 27, 309-314.	Exposure: Not according to DSM criteria
Bailey, S., Thornton, L. & Weaver, A. (1994). The first 100 admissions to an adolescent secure unit. *Journal of Adolescence,* 17, 207-220.	Outcome: Characteristics
Owen, B. & Bloom, B. (2000). *Profiling the Needs of Young Female Offenders:* Instrument Development and Pilot Study. Final Report.	Opinion paper
Bauer, D. (2001). Psychopathy in incarcerated adolescent females: Prevalence rates and individual differences in cognition, personality and behaviour. [Dissertation Abstract] *Dissertation Abstracts International: Section B: The Sciences and Engineering, 61, 4970.*	Outcome: Cognition and psychopathy

Becker, J. (1998). What We Know About the Characteristics and Treatment of Adolescents Who have Committed Sexual Offences. *Child Maltreatment*, 3, 317-329.	Population: Male only
Richie, B., Tsenin, K. & Spatz Widom, C. (1999). *Research on Women and Girls in the Justice System*: Plenary Papers of the 1999 Conference on Criminal Justice Research and Evaluation: Enhancing Policy and Practice Through Research, Volume 3	Opinion paper
Boone, D. & Green, S. (1991). Predicting with the MMPI the adjustment of juvenile delinquents to institutionalization: does gender make a difference? *Journal of Personality Assessment*, 57, 61-76.	Outcome: Gender bias
Burnette, M., & Newman, D. (2005). The natural history of conduct disorder symptoms in female inmates: On the predictive utility of the syndrome in severely antisocial women, *American Journal of Psychiatry*, 75, 421-430.	Outcome: Cluster types
Campbell, M., Porter, S. & Santor, D. (2004). Psychopathic traits in adolescent offenders: an evaluation of criminal history, clinical, and psychosocial correlates *Behavioural Sciences & the Law*, 22, 23-47.	Exposure: PCL-YV
Catchpole, R., & Gretton, H. (2003). The Predictive Validity of Risk Assessment with Violent Young Offenders: A 1-Year Examination of Criminal Outcome. *Criminal Justice And Behaviour,* 30, 688-708.	Exposure: Assessment
Chapman, A., Specht, M. & Cellucci T. (2005). Factors associated with suicide attempts in female inmates: The hegemony of hopelessness. *Suicide and Life-Threatening Behaviour,* 35, 558-569.	Exposure: Suicide attempts
Chapman, A. & Cellucci, T. (2007). The role of antisocial and borderline personality features in substance dependence among incarcerated females. *Addictive Behaviours,* 32, 1131-45.	Exposure: drug/ Alcohol use
Charles, D., Abram, K., Mcclelland, G., & Teplin, L. (2003). Suicidal Ideation and Behaviour Among Women in Jail. *A Journal Of Contemporary Criminal Justice*, 19, 65-81.	Outcome: Suicidal ideation
Chowdhury, N., Whittle, N., McCarthy, K., Bailey, S., & Harrington, R. (2005). Ethnicity and its relevance in a seven-year admission cohort to an English national adolescent medium secure health service unit. *Criminal Behaviour and Mental Health*. 15, 261-272.	Outcome: Ethnic representation
Christopher, K., Lutz-Zois, C. & Reinhardt, A. (2007). Female sexual-offenders: personality pathology as a mediator of the relationship between childhood sexual abuse history and sexual abuse perpetration against others. *Child Abuse & Neglect,* 31, 871-83.	Exposure: Sexual abuse

Bailey, P. & Clark, S. (2000). Relationship between psychotic disorders in adolescence and criminally violent behaviour. A retrospective examination. *British Journal of Psychiatry,* 177, 275-9.	Outcome: Violence in psychosis
Coid, J., Kahtan, N., Gault, S., & Jarman, B. (2000). Women admitted to secure forensic psychiatry services: I. Comparison of women and men. *Journal of Forensic Psychiatry*, 11, 275-295.	Population: Adult only
Corneau, M. & Lanctot, N. (2004). Mental health outcomes of adjudicated males and females: the aftermath of juvenile delinquency and problem behaviour. *Criminal Behaviour & Mental Health*, 14, 251-62.	Outcome: Suicide and help seeking behaviours
Costello, E., Copeland, W., Cowell, A., & Keeler, G. (2007). Service costs of caring for adolescents with mental illness in a rural community, 1993-2000. *American Journal of Psychiatry,* 164, 36-42.	Outcome: service costs
Cruise, K., Colwell, L., Lyons, P., & Baker, M. (2003). Prototypical analysis of adolescent psychopathy: investigating the juvenile justice perspective. *Behavioural Sciences & the Law,* 21, 829-46.	Population: Detention and probation officers
Cuellar, A., Markowitz, S., Libby, A. (2004). Mental health and substance abuse treatment and juvenile crime. *Journal of Mental Health Policy and Economics,* 7, 59-68.	Exposure: Mental health treatment
Cuellar, J. & Curry, T. (2007). The Prevalence and Co-morbidity Between Delinquency, Drug Abuse, Suicide Attempts, Physical and Sexual Abuse, and Self-Mutilation Among Delinquent Hispanic Female. *Hispanic Journal of Behavioural Sciences,* 29, 68-82.	Exposure: Suicide and self harm
Cunliffe, T., & Gacono, C. (2005). A Rorschach Investigation of Incarcerated Female Offenders With Antisocial Personality Disorder. *International Journal Of Offender Therapy And Comparative Criminology,* 49, 530-546.	Exposure: Psychopathy only
Dembo, R., Jainchill, N., Turner, C., Fong, C., & Farkas, S. (2007). Childs K. Levels of psychopathy and its correlates: a study of incarcerated youths in three states. *Behavioural Sciences & the Law,* 25, 717-38.	Outcome: Psychopathy
Dessureault, D., Gote, G., & Lesage, A. (2000). Impact of first contacts with the criminal justice or mental health systems on the subsequent orientation of mentally disordered persons toward either system. *International Journal of Law & Psychiatry,* 23, 79-90.	Pop: Adults only

Myers, D. & Farrell, A. (2008). *Reclaiming lost opportunities: Applying public health models in juvenile justice.* Children and Youth Services Review.	Review
Dicataldo, F. & Grisso, T. (1995). A Typology of Juvenile Offenders Based on the Judgments of Juvenile Court Professionals. *Criminal Justice and Behaviour*, 22, 246-262.	Outcome: Offender typologies
Dixon, A., Howie, P., & Starling, J. (2004). Psychopathology in female juvenile offenders. *Journal of Child Psychology and Psychiatry,* 45, 1150-1158.	Duplicate
Dolan, B. & Mitchell, E. (1994). Personality disorder and psychological disturbance of female prisoners: A comparison with women referred for NHS treatment of personality disorder. *Criminal Behaviour and Mental Health*, 4, 130-143.	Population: Women only
Dolan, M. & Smith, C. (2001). Juvenile homicide offenders: 10 years' experience of an adolescent forensic psychiatry service. *Journal of Forensic Psychiatry,* 12, 313-329.	Exposure: Homicide
Douma, J., Dekker, M., Ruiter, K., Tick, N. & Koot, H. (2007). Antisocial and delinquent behaviors in youths with mild or borderline disabilities. *American Journal of Mental Retardation,* 112, 207-20.	Exposure: Learning disability
Driessen, M., Schroeder, T., Widmann, B,. von Schonfeld, C. & Schneider F. (2006). Childhood trauma, psychiatric disorders, and criminal behaviour in prisoners in Germany: a comparative study in incarcerated women and men. *Journal of Clinical Psychiatry,* 6, 1486-92.	Population: Adults only
Fazel, S., Doll, H. & Långström, N. (2008). Mental disorders among adolescents in juvenile detention and correctional facilities: a systematic review and metaregression analysis of 25 surveys. *Journal of the American Academy of Child and Adolescent Psychiatry,* 47, 1010-1019.	Exposure: Structured assessment tool not always used
Foster, E., Stephens, R., Krivelyova, A. & Gamfi, P. (2007). Can system integration improve mental health outcomes for children and youth? *Children and Youth Services Review*, 29, 1301-1319.	Exposure: Different care communities
Verona, E., Hicks, B. M. & Patrick, C. J. (2005). Psychopathy and Suicidality in Female Offenders: Mediating Influences of Personality and Abuse. *Journal of Consulting and Clinical Psychology,* 73, 1065-1073.	Exposure: Suicidality
Edens, J., Campbell, J., & Weir, J. (2007). Youth psychopathy and criminal recidivism: A meta-analysis of the psychopathy checklist measures, *Law and Human Behaviour,* 31, 53-75.	Meta-analysis
Edens, J. & Cahill, M. (2007). Psychopathy in Adolescence and Criminal Recidivism in Young	Population: Male only

Adulthood: Longitudinal Results From a Multiethnic Sample of Youthful Offenders. *Assessment,* 14, 57-64.	
Eppright, T., Kashani, J., Robison, B., & Reid, J. (1993). Co-morbidity of conduct disorder and personality disorders in an incarcerated juvenile population. *American Journal of Psychiatry,* 150, 1233-1236.	Outcome: Not offending
Epps, K. (1997). The Use of Secure Accommodation for Adolescent Girls who Engage in Severe and Repetitive Self-Injurious Behaviour. *Clinical Child Psychology And Psychiatry*, 2, 539-552.	Exposure: Self injurious behaviour
Espelage, D., Cauffman, E., Broidy, L., Piquero, A., Mazerolle, P. & Steiner, H. (2003). A cluster-analytic investigation of MMPI profiles of serious male and female juvenile offenders. *Journal of the American Academy of Child and Adolescent Psychiatry,* 4, 770-777.	Outcome: MMPI profiling
Faller, K. (1995). A clinical sample of women who have sexually abused children. Journal of Child Sexual Abuse, 4, 13-30.	Exposure: Sexual abuse
Farand, L., Chagnon, F., Renaud, J., & Rivard, M. (2004). Completed Suicides among Quebec Adolescents Involved with Juvenile Justice and Child Welfare Service. *Suicide and Life-Threatening Behaviour,* 34, 24-35.	Exposure: Suicide
Farr, K. (2000). Classification for Female Inmates: Moving Forward. *Crime & Delinquency*, 46, 3-13	Narrative
Fazel, M., Langstrom, N., Grann, M., & Fazel, S. (2008). Psychopathology in adolescent and young adult criminal offenders (15-21 years) in Sweden. *Social Psychiatry and Psychiatric Epidemiology,* 4, 319-324	Outcome: Offending
Folsom, J. & Atkinson, J. (2007). The Generalizability of the LSI-R and the Cat To the Prediction of Recidivism in Female Offenders. *Criminal Justice and Behaviour*, 34, 1044-1056.	Exposure: Self report assessments
Friedrich, W., Gerber, P., Koplin, B., Davis, M., Giese, J., Mykelbust, C., & Franckowiak, D. (2001). Multimodal Assessment of Dissociation in Adolescents: Inpatients and Juvenile Sex Offenders. Sexual Abuse. *A Journal Of Research And Treatment*, 13,167-177.	Outcome: Dissociation measures
Gerardin, P. & Thibaut, F. (1999). Epidemiology and Treatment of Juvenile Sexual Offending. *Paediatric Drugs,* 6, 79-91.	Exposure: Sexual offending
Glass, N., Koziol-mclain, J., Campbell, J., & Block, C. (2004). Female-Perpetrated Femicide	Exposure: Intimate partner violence

and Attempted Femicide: A Case Study. *Violence Against Women*, 10, 606-625.	
Goodkind, S., Nig, I., & Sarri, R. (2006). The Impact of Sexual Abuse in the Lives of Young Women Involved or At Risk of Involvement With the Juvenile Justice System. *Violence Against Women,* 12, 456-477.	Exposure: Sexual abuse
Gosden, N., Kramp, P., Gabrielsen, G., Andersen, T. & Sestoft, D. (2005). Violence of young criminals predicts schizophrenia: A 9-year register-based follow-up of 15- to 19-year-old criminals. *Schizophrenia Bulletin,* 31, 759-768.	Exposure: Violence in youth
Gover, A. (2004). Childhood Sexual Abuse, Gender, and Depression Among Incarcerated Youth. *International Journal of Offender Therapy and Comparative Criminology*, 48, 683-696.	Exposure: Sexual Abuse
Graves, R., Openshaw, D., Ascione, F., & Ericksen, S. (1996). Demographic and Parental Characteristics of Youthful Sexual Offenders. *International Journal of Offender Therapy and Comparative Criminology*, 40, 300-317.	Review
Gretton, H., Mcbride, M., Hare, R., O'Shaughnessy, R., & Kumka, G. (2001). Psychopathy and Recidivism in Adolescent Sex Offenders. *Criminal Justice and Behaviour*, 28, 427-449.	Population: Male only
Grilo, C., Becker, D., Walker, M., Levy, K., Edell, W. & McGlashan, T. (1995). Psychiatric co-morbidity in adolescent inpatients with substance use disorders. *Journal of the American Academy of Child and Adolescent Psychiatry,* 34, 1085-1091.	Comparator: Substance use disorder
Guoping, H., Yalin, Z., Shakeh, M., Yuping, C., & Lan, Z. (2006). Prevalence and characteristics of trauma and posttraumatic stress disorder in female prisoners in China. *Comprehensive Psychiatry,* 47, 20-29.	Exposure: Trauma
Hamerlynck, S., Doreleijers, T., Vermeiren, R., Jansen, L., Cohen-Kettenis, P. (2008). Aggression and psychopathology in detained adolescent females. *Psychiatry Research*, 159, 77-85.	Outcome: Aggression
Haugaard, J. (2004). Recognizing and Treating Uncommon Behavioural and Emotional Disorders in Children and Adolescents Who Have Been Severely Maltreated: Borderline Personality Disorder. *Child Maltreatment*, 9, 139-145.	Review
Haywood, T., Kravitz, H., Goldman, L., & Freeman, A. (2000). Characteristics of Women in Jail and Treatment Orientations: A Review. *Behaviour Modification,* 24, 307-324.	Case Example, Review

Hipwell, A., Loeber, R., Stouthamer-Loeber, M., Keenan, K., White, H. & Kroneman L. (2002). Characteristics of girls with early onset disruptive and antisocial behaviour. *Criminal Behaviour & Mental Health,* 12, 99-1182.	Exposure: No mental health issues
Hubbard, D., Jones, D., & Matthews, B. (2008). Reconciling the Differences Between the "Gender-Responsive" and the "What Works" Literatures to Improve Services for Girls. *Crime & Delinquency,* 54, 225-258.	Outcome: Effective treatment
Hubbard, D., Jones, D. & Pratt, T. (2002). A meta-analysis of the predictors of delinquency among girls. *Journal of Offender Rehabilitation,* 34, 1-13.	Meta-analysis
Hunter, J., & Figueredo, A. (1999). Factors Associated with Treatment Compliance in a Population of Juvenile Sexual Offenders. Sexual Abuse: *A Journal Of Research And Treatment*, 11, 49-67.	Population: Male only
Hussey, D., Drinkard, A., & Flannery, D. (2007). Comorbid substance use and mental disorders among offending youth. *Journal of Social Work Practice in the Addictions,* 7, 117-138.	Exposure: Substance misuse
Islam-Zwart, K.; & Vik, P. (2004). Female Adjustment to Incarceration as Influenced by Sexual Assault History. *Criminal Justice And Behaviour*, 31, 521-541.	Exposure: Previous sexual abuse
Jackson, R., Rogers, R., Neumann, C., & Lambert, P. (2002). Psychopathy in Female Offenders: An Investigation of Its Underlying Dimensions. *Criminal Justice and Behaviour*, 29, 692-704.	Outcome:3 factor model of psychopathy
Washburn, J., Romero, E., Welty, L., Abram, K., Teplin, L., McClelland, G., & Paskar, L. (2007). Development of Antisocial Personality Disorder in Detained Youths: The Predictive Value of Mental Disorders. *Journal of Consulting and Clinical Psychology*, 75, 221-231.	Outcome: Future mental health issues
Smith, J. & Bailey, S. (1998). One hundred girls in care referred to an adolescent forensic mental health service. *Journal of Adolescence,* 21, 555-568.	Outcome: Offences
Vitale, J., Brinkley, C. & Hiatt, K. (2007). Newman Abnormal Selective Attention in Psychopathic Female Offenders. *Neuropsychology,* 21, 301-312.	Outcome: Abnormal selective attention
Johnson, J., Cohen, P., Smailes, E., Kasen, S., Oldham, J., Skodol, A. & Brook, J. (2000). Adolescent personality disorders associated with violence and criminal behaviour during adolescence and early adulthood. *American Journal of Psychiatry,* 157, 1406-1412.	Outcome: Offending
Jordan, B., Schlenger, W., Fairbank, J., & Caddell, J. (1996). Prevalence of psychiatric	Population: Adult only

disorders among incarcerated women. II. Convicted felons entering prison. *Archives of General Psychiatry*, 53, 513-9.	
Cropsey, K., & Weaver, M. (2008). Predictors of involvement in the juvenile justice system among psychiatric hospitalized adolescents. *Addictive Behaviours,* 33, 942-948.	Outcome: Future offending
Kasen, S., Cohen, P., & Brook, J. (1998). Adolescent School Experiences and Dropout, Adolescent Pregnancy, and Young Adult Deviant Behaviour. *Journal of Adolescent Research,* 13, 49-72.	Exposure: School experiences
Graves, K. (2007). Not always sugar and spice: Expanding theoretical and functional explanations for why females aggress. *Aggression and Violent Behaviour*, 12, 131-140.	Review
Kjelsberg, E. & Dahl, A. (1999). A long-term follow-up study of adolescent psychiatric in-patients. Part II. Predictors of delinquency. *Acta Psychiatrica Scandinavica.* 99, 237-42.	Outcome: Predictors of delinquency
Komarovskaya, I., Loper, A., Booker, W. (2007). The Role of Impulsivity in Antisocial and Violent Behaviour and Personality Disorders Among Incarcerated Women. *Criminal Justice and Behaviour*, 34, 1499-1515.	Outcome: Impulsivity
Krischer, M., Sevecke, K., Lehmkuhl, G., & Pukrop, R. (2007). Dimensional assessment of personality pathology in female and male juvenile delinquents. *Journal of Personality Disorders,* 21, 675-89.	Exposure: No DSM-IV criteria
Kruh, I., Frick, P., & Clements, C. (2005). Historical and Personality Correlates to the Violence Patterns of Juveniles Tried as Adults. *Criminal Justice and Behaviour*, 32, 69-99.	Outcome: Personality measures
Kruttschnitt, C. & Vuolo, M. (2007). The cultural context of women prisoners mental health. *Punishment and Society*, 9, 115-150.	Population: Adult only
Laporte, L., Poulin, B., Marleau, J., Roy, R. & Webanck, T. (2003). Filicidal women: jail or psychiatric ward? *Canadian Journal of Psychiatry,* 48, 94-8.	Exposure: Filicide
Leve, L., & Chamberlain, P. (2005). Girls in the Juvenile Justice System: Risk Factors and Clinical Implications. Pepler, Debra J (Ed); Madsen, Kirsten C (Ed); Webster, Christopher (Ed); Levene, Kathryn S (Ed). (2005). *The development and treatment of girlhood aggression* (pp. 191-215*).* Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.	Narrative
Loney, B., Frick, P., Clements, C., Ellis, M., & Kerlin, K. (2003). Callous-unemotional traits, impulsivity, and emotional processing in adolescents with antisocial behaviour problems.	Outcome: Emotional reactivity

Journal of Clinical Child & Adolescent Psychology, 32, 66-80.	
Loper, A. (2003). The Relationship of Maladaptive Beliefs to Personality and Behavioural Adjustment Among Incarcerated Women. *Journal of Cognitive Psychotherapy: An International Quarterly*. 17, 253-266.	Exposure: Maladaptive belief assessments
Loper, A., Hoffschmidt, S., & Ash, E. (2001). Personality features and characteristics of violent events committed by juvenile offenders. *Behavioural Sciences & the Law,* 19, 81-96.	Outcome: Personality features
Lynch, C., Matthews, R., & Rosina, R. (2007). Health as a mediator of change in the trajectory of young people in contact with the criminal justice system. *International Journal of Adolescent Medicine & Health,* 19, 269-76.	Narrative
Lyons, J., Griffin, G., Quintenz, S., Jenuwine, M. & Shasha, M. (2003). Clinical and Forensic outcomes from the Illinois mental health juvenile justice initiative. *Psychiatric Services*, 54, 12.	Exposure: Mental health treatment
Madsen, A., Jacoby, M. & Kramp, P. (2001). Serious criminality among adolescents. II. Criminality, psychiatric morbidity and mortality 15-20 years after the first mental observation. [Danish] *Ugeskrift for Laeger,* 163, 29-31.	Outcome: Prognosis of young delinquents
Maeve, M. (2001). Waiting to be caught: The devolution of health for women newly released from jail. *Criminal Justice Review,* 26, 143-169.	Narrative
Mao, Z., Tan, Z., Zeng, Y. & Zhang, J. (2005). Parental rearing patterns associated with formation of personality disorder of young criminals. *Chinese Journal of Clinical Rehabilitation,* 9, 98-100.	Exposure: Parental rearing
Mapson, A. (2005). Hanging on by a Thread: Mentally Ill Female Offenders Involved in the Juvenile Justice System. *Journal of Evidence-Based Social Work*, 2, 85-95.	Narrative
Marsee, M., Silverthorn, P., & Frick, P. (2005). The association of psychopathic traits with aggression and delinquency in non-referred boys and girls. *Behavioural Sciences & the Law*, 23, 803-17.	Outcome: Not offending
McManus, M., Brickman, A., Alessi, N., & Grapentine, W. (1994). Borderline personality in serious delinquents. *Comprehensive Psychiatry,* 25, 446-454.	Outcome: Effectiveness of assessments

Miller, P., Byrne, M., Hodges, A., Lawrie, S. & Johnstone, E. (2002). Childhood behaviour, psychotic symptoms and psychosis onset in young people at high risk of schizophrenia: Early findings the Edinburgh High Risk Study. *Psychological Medicine,* 32, 173-179.	Outcome: Schizophrenia
Modestin, J., Mauron, S., & Erni, T. (2002). Criminal behaviour in female schizophrenic inpatients. *Archives of Women's Mental Health,* 4, 93-98.	Outcome: Criminal behaviours
Mohan, D., Scully, P., Collins, C. & Smith, C. (1997) Psychiatric disorder in an Irish female prison. *Criminal Behaviour and Mental Health*, 7, 229-235.	Population: Adult only
Montero Vasquez, E., Noemi Sanchez, A., Montero Vasquez, J., Sargiotti, M., Akimenco, J. & Lenzetti, H. (1989). Women, crime and mental disorders in the province of Buenos Aires. *Acta Psiquiatrica y Psicologica de America Latina*, 35, 104-10.	Pop: Adult only
Mosoigo, P., Capilnean, A., Rosu, B., & Bala, R. (1995). The role of extrinsic factors in juvenile delinquency. *Romanian Journal of Legal Medicine,* 3, 154-158.	Exposure: Social milieu and educational programmes
Myers, W., Burket, R., & Harris H.E. (1995). Adolescent psychopathy in relation to delinquent behaviours, conduct disorder, and personality disorders. *Journal of Forensic Sciences,* 40, 435-439.	Exposure: Psychopathy only
Myers, W. & Scott, K. (1998). Psychotic and Conduct Disorder Symptoms in Juvenile Murderers. *Homicide Studies,* 2, 160-175.	Exposure: No DSM-IV criteria
Nicol, R., Stretch, D., Whitney, I., Jones, K., Garfield, P., Turner, K., & Stanion, B. (2000). Mental health needs and services for severely troubled and troubling young people including young offenders in an N.H.S. region. *Journal of Adolescence*, 23, 243-61.	Comparator: Different settings
Odgers, C. (2005). Violence, victimization and psychopathy among female juvenile offenders. *Dissertation Abstracts International: Section B: The Sciences and Engineering,* 66, 1, 568.	Outcome: Predictive validity
Olvera, R., Semrud-Clikeman, M., Pliszka, S. & O'Donnell, L. (2005). Neuropsychological deficits in adolescents with conduct disorder and comorbid bipolar disorder: a pilot study. *Bipolar Disorders,* 7, 57-67.	Exposure: Neuropsychological deficits
Oliver, L., Nagayama, D., Hall, G. & Neuhaus, S. (1993). A Comparison of the Personality and Background Characteristics of Adolescent Sex Offenders and Other Adolescent Offenders. *Criminal Justice And Behaviour*, 20, 359-370.	Population: Male only

Pakiz, B., Reinherz, H., & Frost, A. (1992). Antisocial Behaviour in Adolescence: A Community Study. *The Journal Of Early Adolescence,* 12, 300-313.	Exposure: No mental illness
Park, N., Beom, S., Bolland, J., Vazsonyi, A., & Fei, S. (2008). Early Adolescent Pathways of Antisocial Behaviours in Poor, Inner-City Neighbourhoods. *The Journal Of Early Adolescence*, 28, 185-205.	Outcome: Developmental trajectories
Boxer, P. (2007). Aggression in Very High-Risk Youth: Examining Developmental Risk in an Inpatient Psychiatric Population. *American Journal of Orthopsychiatry*, 77, 636-646.	Exposure: Seclusion and restraint
Poels, V. (2007). Risk assessment of recidivism of violent and sexual female offenders. *Psychiatry, Psychology and Law,* 14, 227-250.	Review
Pogge, D., Stokes, J., Mcgrath, R., Bilginer, L., & De Luca, V. (2002). MMPI-A Structural Summary Variables: Prevalence and Correlates in an Adolescent Inpatient Psychiatric Sample. *Assessment,* 9, 334-342.	Exposure: MMPI assessment
Pollock, J., Davis, S., & Sareta, M. (2005). The Continuing Myth of the Violent Female Offender. *Criminal Justice Review*, 30, 5-29.	Exposure: No mental health issues
Ponder, J. (1999). An investigation of psychopathy in a sample of violent juvenile offenders. *Dissertation Abstracts International: Section B: The Sciences and Engineering. 5, 9, 5105.*	Exposure: Psychopathy only
Pullmann, M., Kerbs, J., Koroloff, N., Veach-White, E., Gaylor, R., & Sieler, D. (2006). Juvenile Offenders With Mental Health Needs: Reducing Recidivism Using Wraparound. *Crime & Delinquency*, 52, 375-397.	Exposure: MH Treatment
Putkonen, H., Komulainen, E., Virkkunen, M., Eronen, M., & Lonnqvist, J. (2003). Risk of repeat offending among violent female offenders with psychotic and personality disorders. *American Journal of Psychiatry,* 160, 947-951.	Outcome: Offending
Randall, J., Henggeler, S., Pickrel, S., & Brondino, M. (1999). Psychiatric co-morbidity and the 16-month trajectory of substance-abusing and substance-dependent juvenile offenders. *Journal of the American Academy of Child & Adolescent Psychiatry,* 38, 1118-24.	Exposure: Substance abuse
Rasanen, P., Tiihonen, J., Isohanni, M., Moring, J. & Koiranen, M. (1998). Juvenile mortality, mental disturbances and criminality: A prospective study of the Northern Finland 1966 birth cohort. *Acta Psychiatrica Scandinavica,* 97, 5-9.	Outcome: Mortality
Richards, H., Casey, J., & Lucente, S. (2003). Psychopathy And Treatment Response In	Exposure: Psychopathy only

Incarcerated Female Substance Abusers. *Criminal Justice and Behaviour*, 30, 251-276.	
Roe-Sepowitz, D. (2007). Adolescent female murderers: characteristics and treatment implications. *American Journal of Orthopsychiatry,* 77, 489-96.	Exposure: Homicide
Ross, S., Benning, S., & Adams, Z. (2007). Symptoms of executive dysfunction are endemic to secondary psychopathy: An examination in criminal offenders and non-institutionalized young adults. *Journal of Personality Disorders,* 21, 384-399.	Outcome: Prefrontal circuitry
Ruchkin, V., Schwab-Stone, M., Koposov, R., Vermeiren, R., & Steiner, H. (2002). Violence Exposure, Posttraumatic Stress, and Personality in Juvenile Delinquents. *Journal of the American Academy of Child and Adolescent Psychiatry,* 41, 322-329.	Population: Male only
Rutherford, H. & Taylor, P. (2004). The transfer of women offenders with mental disorder from prison to hospital. *The Journal of Forensic Psychiatry and Psychology*, 15,108-123.	Population: Adults only
Ryan, E., & Redding, R. (2004). A review of mood disorders among juvenile offenders. *Psychiatric Services,* 55, 1397-407.	Review
Sannie, M., Hamerlynck, T., Doreleijers, R., Vermeiren, L., Jansen, P., & Cohen-Kettenis, J. (2008). Aggression and psychopathology in detained adolescent females. *Psychiatry Research,* 159, 77-85.	Exposure: Aggression
Daoust, S., Loper, A., Magaletta, P., & Diamond, P. (2006). Neuropsychological Dysfunction and Aggression Among Female Federal Inmates. *Psychological Services,* 3, 88-96.	Outcome: Aggression
Schrum, C. & Salekin, R. (2006). Psychopathy in adolescent female offenders: an item response theory analysis of the psychopathy checklist: youth version. *Behavioural Sciences & the Law,* 24, 39-63.	Exposure: PCL-YV
Scott, E. (1979). The female delinquent narcissistic personality disorder: A case illustration. *International Journal of Group Psychotherapy,* 29, 503-508.	Case Study
Sikorski, J. (2006). Psychopathy and choice of victims: Implications for the sub-categorization and treatment of juvenile sexual offenders**.** *Dissertation Abstracts International: Section B: The Sciences and Engineering, 66, 12, 6936.*	Exposure: Sex offending
Silovsky, J. & Niec, L. (2002) Characteristics of Young Children with Sexual Behaviour Problems: A Pilot Study. *Child Maltreatment*, 7, 187-197.	Exposure: Sexual behaviour problems

Smith, D., Leve, I., Leslie, D., & Chamberlain, P. (2006). Adolescent Girls' Offending and Health-Risking Sexual Behaviour: The Predictive Role of Trauma. *Child Maltreatment,* 11, 346-353.	Exposure: Trauma
Staton, M., Leukefeld, C., & Webster, J. (2003). Substance Use, Health, and Mental Health: Problems and Service Utilization Among Incarcerated Women. *International Journal of Offender Therapy and Comparative Criminology*, 47, 224-239.	Exposure: Substance abuse
Yuetong, S., Yirong, F., Jianguo, Q., Renqin, W., & Hongya, Z. (1998). Behaviour and personality traits of juvenile delinquents. *Chinese Journal of Clinical Psychology,* 6, 121-122.	Exposure: No mental illness
Tallichet, S., & Hensley, C. (2004). Exploring the Link between Recurrent Acts of Childhood and Adolescent Animal Cruelty and Subsequent Violent Crime. *Criminal Justice Review*, 29, 304-316.	Exposure: Animal cruelty
Teplin, L., Abram, K., & McClelland, G. (1996). Prevalence of psychiatric disorders among incarcerated women. I. Pretrial jail detainees. *Archives of General Psychiatry,* 53, 505-12.	Duplicate
Thomas, C. & Penn, J. (2002). Juvenile justice mental health services. *Child & Adolescent Psychiatric Clinics of North America,* 11, 731-48.	Narrative
Thompson, C. & Loper, A. (2005). Adjustment Patterns in Incarcerated Women: An Analysis of Differences Based on Sentence Length. *Criminal Justice and Behaviour*, 32, 714-732.	Comparator: Length of prison sentence
Thompson, L., Whitmore, E., Raymond, K., & Crowley, T. (2006). Measuring Impulsivity in Adolescents With Serious Substance and Conduct Problems. *Assessment*, 31, 3-15.	Outcome: Impulsivity and aggression
Thomson, L., Bogue, J., Humphreys, M., & Jhonstone, E. (2001). A survey of female patients in high security psychiatric care in Scotland. *Criminal Behaviour and Mental Health*, 11, 86-93.	Outcome: Characteristics
Townsend, E., Walker, D., Sargeant, S., Vostanis, P., Hawton, K., Stocker, O. & Sithole, J. (2009). Systematic review and meta-analysis of interventions relevant for young offenders with mood disorders, anxiety disorders, or self-harm. *Journal of Adolescence (in press).*	Exposure: CBT Intervention
Tres, S. & Georgia, B. (2007). Calhoun Subtypes of female juvenile offenders: A cluster analysis of the Millon Adolescent Clinical Inventory. *International Journal of Law and Psychiatry,* 30, 95-111.	Outcome: Cluster analysis

Turell, S. & Armsworth, M. (2003). A Log-Linear Analysis of Variables Associated With Self-Mutilation Behaviours of Women With Histories of Child Sexual Abuse. *Violence Against Women*, 9, 487-512.	Population: Women only
Ugueto, A. (2006). Psychopathy in delinquent girls: An examination of factor structure. *Dissertation Abstracts International: Section B: The Sciences and Engineering. 66, 9, 5108.*	Outcome: Validity
Underwood, L., Barretti, L., Storms, T., & Safonte-Strumolo, N. (2004). A Review of Clinical Characteristics and Residential Treatments for Adolescent Delinquents with Mental Health Disorders: A Promise Residential Program. *Trauma, Violence, & Abuse*, 5, 199-242.	Review
Vander-Stoep, A., Evens, C. & Taub, J. (1997). Risk of juvenile justice system referral among children in a public mental health system. *Journal of Mental Health Administration,* 24, 428-442.	Outcome: Risk of police contact
Vandiver, D., & Kercher, G. (2004). Offender and Victim Characteristics of Registered Female Sexual Offenders in Texas: A Proposed Typology of Female Sexual Offenders. *Sexual Abuse: A Journal of Research and Treatment*, 16, 121-137.	Outcome: Offender typologies
Vandiver, D., & Walker, J. (2002). Female Sex Offenders: An Overview and Analysis of 40 Cases. *Criminal Justice Review*, 27, 284-300.	Exposure: Sex offending
Vaughn, M., Freedenthal, S., Jenson, J., & Howard, M. (2007). Psychiatric Symptoms and Substance Use Among Juvenile Offenders: A Latent Profile Investigation. *Criminal Justice And Behaviour*, 34, 1296-1312.	Exposure: Substance abuse
Veneziano, C., & Veneziano, L. (2002). Adolescent Sex Offenders: A Review of the Literature. *Trauma, Violence, & Abuse*, 3, 247-260.	Review
Veysey, B., & Hamilton, Z. (2007). Girls Will Be Girls: Gender Differences in Predictors of Success for Diverted Youth With Mental Health and Substance Abuse Disorders. *Journal Of Contemporary Criminal Justice*, 23, 341-362.	Outcome: Gender Differences
Viale-Val, G., & Sylvester, C. (1993). Female delinquency. M. Sugar, (Ed). (1993). *Female adolescent development (2nd ed.).* Philadelphia, PA, US: Brunner/Mazel.	Narrative
Vizard, E., Hickey, N., & McCrory, E. (2007). Developmental trajectories associated with juvenile sexually abusive behaviour and emerging severe personality disorder in childhood: 3 - year study. *British Journal of Psychiatry*, 49, 27-32.	Exposure: No DSM-IV criteria

Wareham, J., & Dembo, R. (2007). A Longitudinal Study of Psychological Functioning Among Juvenile Offenders: A Latent Growth Model Analysis. *Criminal Justice and Behaviour,* 34, 259-273.	Exposure: Drug Abuse
Warren, J., Hurt, S., Loper, A., & Booker, C. (2004). Exploring Prison Adjustment among Female Inmates: Issues of Measurement and Prediction. *Criminal Justice and Behaviour*, 31, 624-645.	Exposure: Assessment
Warren, J., & South, S. (2006). Comparing the Constructs of Antisocial Personality Disorder and Psychopathy in a Sample of Incarcerated Women. *Behavioural Sciences & the Law,* 24, 1-20.	Exposure: Not DSM criteria
Washburn, J., Romero, E., Welty, L., Abram, K., Teplin, L., McClelland, G. & Paskar, L. (2007). Development of antisocial personality disorder in detained youths: the predictive value of mental disorders. *Journal of Consulting & Clinical Psychology,* 75, 221-31.	Exposure: No DSM-IV criteria
Washington, P. & Diamond, R. (1985). Prevalence of mental illness among women incarcerated in five California county jails. *Research in Community & Mental Health,* 5, 33-41.	Population: Adults only
Weizmann-Henelius, G., Viemero, V., & Eronen, M. (2002). Violent women, blame attribution, crime and personality. *Psychopathology,* 35, 355-361.	Population: Adults only
Weizmann-Henelius, G., Viemero, V., & Eronen, M. (2003). The violent female perpetrator and her victim. *Forensic Science International*, 133, 197-203.	Outcome: Reasons for offending
Weizmann-Henelius, G., Viemero, V., Eronen, M. (2004). Psychopathy in violent female offenders in Finland. *Psychopathology*, 37, 213-221.	Outcome: Prevalence of psychopathology
Wheatley, M., Waine, J., Spence, K., & Hollin, C. (2004). Characteristics of 80 adolescents referred for secure inpatient care. *Clinical Psychology and Psychotherapy,* 11, 83-89.	Outcome: Behaviour characteristics
Whitmore, E., Mikulich, S., Ehlers, K. & Crowley, T. (200). One-year outcome of adolescent females referred for conduct disorder and substance abuse/dependence. *Drug and Alcohol Dependence,* 59, 131-141.	Exposure: Outpatient treatment
Worling, J., & Långström, N. (2003). Assessment of Criminal Recidivism Risk with Adolescents who have Offended Sexually: A Review. *Trauma, Violence, & Abuse*, 4, 341-362.	Review

Wright, E., Salisbury, E., & Van Voorhis, P. (2007). Predicting the Prison Misconducts of Women Offenders: The Importance of Gender-Responsive Needs. *Journal of Contemporary Criminal Justice,* 23, 310-340.	Outcome: Gender responsive risk factors
Zalot, A., Jones, D., Forehand, R., & Brody, G. (2007). Self-Regulation and Conduct Problems Among Low-Income African American Youth From Single-Mother Homes: The Roles of Perceived Neighbourhood Context and Child Gender. *Journal of Black Psychology*, 33, 239-259.	Exposure: Differing neighbourhoods
Zlotnick, C. (1999). Antisocial personality disorder, affect dysregulation and childhood abuse among incarcerated women. *Journal of Personality Disorders,* 13, 90-95.	Exposure: Childhood abuse
Zoccolillo, M. & Rogers, K. (1991). Characteristics and outcome of hospitalized adolescent girls with conduct disorder. *Journal of the American Academy of Child & Adolescent Psychiatry,* 30, 973-81.	Exposure: Not DSM criteria

Appendix 3: Quality Assessment Tools
Cross-sectional

QUESTION	Y	P	N	U	COMMENTS
INITIAL SCREENING					
Are hypotheses/ aims clearly stated?					
Is the study addressing the prevalence and nature of psychopathology in juvenile female offenders?					
STUDY DESIGN					
Has the study addressed the question being asked?					
Is a cross-sectional study an appropriate way of answering the question under the circumstances?					
SELECTION BIAS					
Were the participants representative of the defined population?					
Was a sufficient sample size used?					
Were the groups similar at base line?					
Were the groups comparable in all important confounding variables?					
Were potential confounding variables controlled for (by matching or through statistics)?					
MEASUREMENT AND DETECTION BIAS					
Has psychopathology been clearly defined and measured? And identified as a risk factor?					
Have the assessments used been clearly defined, measured and standardised?					
Were self report measures used?					
Was blinding incorporated where feasible?					
Were the measurements for outcome objective?					
Was the outcome measure validated?					
Was the outcome assessed in the same way across groups?					
ATTRITION BIAS					
Were reasons explained for those refusing to participate in the study?					
Were attrition rates similar across groups?					
OUTCOME BIAS					
Was outcome measured in a correct way?					
Were the measures valid and reliable for the defined population?					

STATISTICS					
Was the statistical analysis used correctly?					
Were there statistical attempts to deal with missing data?					
ARE THE RESULTS BELIEVABLE?					
Are results unbiased?					
Are the results significant?					
Is the size of effect reasonable?					
Are methods and design reliable?					
Have results been clearly reported?					
Have limitations been discussed?					
APPLICIABILITY OF FINDINGS					
Are the participants representative of UK sample population?					
Can results be applied to population sample regardless of culture and size?					
Can the results be applied to the UK population?					
Do the results of this study fit with other available evidence?					

General Information

Date of data extraction

Author

Identification of the reviewer

Notes

Re-verification of study eligibility

Population:	Juvenile female offenders	**Y**	**N**	**?**
Exposure:	Use of structured assessment to determine the presence of psychopathology	**Y**	**N**	**?**
Comparator:	Different types of mental health issues	**Y**	**N**	**?**
	No mental health issues	**Y**	**N**	**?**
Outcome:	Diagnosis of specific mental health issue or personality disorder	**Y**	**N**	**?**

Study Design	Cohort	Case Control	Cross-Sectional
Continue?	**Yes**	**No**	

Specific Information

Population

1. Target population (describe)
2. Inclusion Criteria
3. Exclusion Criteria
4. Recruitment procedures used
5. Characteristics of participants

No of participants:

Male: Female:

No of participants refused:

Age:

Ethnicity:

Other information:

Exposure

Additional Notes

a) Use of structured assessment?

b) Which assessment tool was used?

c) Was the assessment conducted in a suitable/ confidential environment?

d) Who facilitated the assessment?

Outcome

1) What was measured at baseline?

a)

b)

c)

2) What was measured after the exposure?

a)

b)

c)

3) Most prevalent psychopathologies found?

a.

b.

c.

4) Was blinding utilised where feasible?

5) How was the outcome measured?

6) Was self-report utilised? If so, to what extent?

7) Was there a follow up? If so, how long was the follow up period?

8) Drop out rates (plus proportion of those who did not agree to participate if stated)?

9) Reason for drop outs?

10) Was study clearly reported?

11) Limitations?

a.

b.

c.

12) Notes

Analysis

1) Statistics techniques used?

2) Were confounding variables assessed?

3) Was attrition adequately dealt with in the results?

4) Were the statistics and results reported clearly?

6) Overall study quality? **good** **reasonable** **poor**

7) Number of 'unclear' or unanswered assessment items?

8) Notes

Appendix 4: Criteria for narcissistic personality disorder as described by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (American Psychiatric Association, 1994).

1. An exaggerated sense of self-importance (e.g., exaggerates achievements and talents, expects to be recognized as superior without commensurate achievements)
2. Preoccupation with fantasies of unlimited success, power, brilliance, beauty, or ideal love
3. Believe they are "special" and can only be understood by, or should associate with, other special or high-status people (or institutions)
4. Require excessive admiration
5. Has a sense of entitlement
6. Selfishly takes advantage of others to achieve their own ends
7. Lacks empathy
8. Often envious of others or believes that others are envious of them
9. Shows arrogant, haughty, patronizing, or contemptuous behaviours or attitudes

Consequently, individuals with narcissistic personality disorder are often difficult to engage in therapy as they are reluctant to admit a problem. When they do progress to admitting any difficulties, it is unlikely that they consider others to have the ability to help them, due to their negative view of others, therefore rapport and progress can be difficult to establish. Despite these barriers to intervention, aspects of cognitive-behavioural therapy would be successful in addressing the core beliefs which facilitate the narcissistic views and could also address co-occurring symptoms, such as depression or anger.

Millon (1996) identified five subtypes of narcissist (unprincipled narcissist, amorous narcissist, compensatory narcissist, elitist narcissist, fanatic type) and postulated that each

individual may exhibit none or any of the associated characteristics. He suggested that the fanatic type was slightly different to the other sub-categories of the disorder in that such individuals were fighting the reality of their insignificance and lost value, as opposed to truly believing they were of higher importance than others. Millon concluded that these individuals were attempting to re-establish their self-esteem through grandiose fantasies and self-reinforcement and would consequently use others to achieve this. This explanation was further advocated by Golomb (1992) who suggested that a narcissistic individual had a core belief of being flawed in a way that made them wholly unacceptable to others. It is therefore, suggested that in order to protect themselves against the intolerable rejection and isolation that they perceive would follow if others recognised their defective nature, narcissistic individuals make strong attempts to control others' view of them by exerting a false view of self.

The aetiology of narcissistic personality disorder is not clearly understood, however the following factors have been identified as potential risk factors to developing the disorder and link with the core belief of being wholly unacceptable (or more valued than others):

- An oversensitive temperament at birth
- Overindulgence and overvaluation by parents
- Valued by parents as a means to regulate parents own self-esteem
- Excessive admiration that is never balanced with realistic feedback
- Unpredictable or unreliable care-giving from parents
- Severe emotional abuse in childhood

Appendix 5: Session Plan Table

Date	Aim of Session
05-10-09	Discuss facilitating Focus TNA with GG
07-10-09	Begin reviewing FOCUS files
07-10-09	Supervision with JG re FOCUS
12-10-09 to 15-10-09	Attended scheduled FOCUS facilitator training
17-10-08	Engagement and clinical history, H/W depression information to read for following session
20-10-09 to 22-10-09	Facilitate first Focus 1-1 sessions (AF, DD, SC, MO)
22-10-09	Facilitate first 1-1 for GT
30-11-09 and 01-11-09	Review FOCUS files to develop TNA
02-12-09	Supervision with JG to discuss Focus preparation
02-12-09	Develop TNA drafts
08-12-09	Meet with Focus facilitators
09-12-09	Meet with Focus facilitators to discuss GT
10-12-09	Update TNA drafts
14-12-09 to 16-11-09	Facilitate second Focus 1-1 sessions (AF, DD, SC, MO)
16-12-09	Facilitate second 1-1 for GT (observed)
Jan 2010	Writing up TNA reports

Appendix 6: Pre-Focus assessment results

Interview

Mr X rated his commitment to abstaining and changing his substance use as 10 out of 20 and specified that the likelihood of him using again in the future would be 0 out of 10 for heroin, 2 out of 10 for cocaine/ecstasy/ acid and 8 out of 10 for cannabis. It appeared that Mr X was somewhat determined and committed to change his use of some substances, however his confidence in his ability to maintain this change required enhancing.

Drug Taking Confidence Questionnaire (DTCQ)

The DTCQ (Annis & Martin, 1985) is a 50-item questionnaire designed to assess anticipatory coping self-efficacy over eight categories of high-risk situations for substance use. This assessment showed that Mr X was confident in his ability to remain drug free in all given situations, except when celebrating or experiencing pleasant times with friends. These situations appear common to Mr X's previous use of substances and will therefore, require significant work to prevent relapse.

Alcohol Taking Confidence Questionnaire (ATCQ)

The ATCQ is an 8-item questionnaire, adapted from the DTCQ, designed to assess anticipatory coping self-efficacy over eight categories of high-risk situations for alcohol use. The outcome of this assessment showed similar responses to the DTCQ, in that Mr X was 100% confident in remaining alcohol free in all situations except when there is a social pressure to use. It is likely that this response partly reflects a pressure to use in order to fit in with others, but also as this is the situation whereby Mr X enjoys using alcohol. Mr X has frequently consumed alcohol previously for this reason and this area will require significant work in order to prevent future relapse of alcohol use, which may be related to violent offending.

Drug Avoidance Self-Efficacy Scales (DASES)

The DASES (Martin, 1992) was developed as a measure of self-efficacy to successfully cope with risk situations without using drugs or alcohol and is measured on a seven-point scale. Mr X reported that in most of the scenarios (11/16) he would be unable to say whether he could resist the urge to use drugs or alcohol. However, he recognised that in two of the scenarios he would be unable to resist the urge to use alcohol and/or drugs, these included feeling depressed at home or celebrating with friends. This assessment suggests that Mr X may be tempted to use substances in a number of situations, which differs to his reporting of high confidence to not use in the previous assessments (DTCQ and ATCQ). This may be a reflection of Mr X's ambivalence regarding remaining substance free in future.

Coping Behaviours Inventory (CBI)

The CBI (Litman, Stapleton, Oppenheim & Peleg, 1983) was designed to assess the behaviours and thoughts used by alcoholics to prevent, avoid or control the resumption of heavy drinking, whereby the respondent indicates how often they use each coping behaviour to avoid relapse. The outcome of the CBI showed that Mr X's main coping strategy was to avoid his triggers. However, Mr X identified some coping strategies that he used previously, including thinking of promises made to others, going to work and eating a good meal. Identifying and practising successful coping strategies appeared to be an area for development for Mr X, particularly as he is unlikely to avoid triggers if he is low in motivation to not use substances in the future.

Craving Belief Questionnaire (CBQ)

The CBQ measures beliefs about the craving phenomenon, using a seven-point Likert scale. Mr X scored 25 out of a possible 140 on this questionnaire, suggesting that his beliefs in his cravings were relatively weak. However, he heavily endorsed one item 'craving can drive you crazy' suggesting that his belief in his control over his cravings could be developed somewhat.

However, this belief was not evidenced further in one to one interview, whereby Mr X reported experiencing minimal cravings that had reduced significantly since being in prison. It is likely that Mr X uses substances because he wants to achieve particular outcomes, as opposed to a physical or psychological craving.

Appendix 7: Focus Treatment Needs Analysis (TNA)

FOCUS Treatment Need Analysis
Evidence Grid

Name: Mr X -

Prison Number: XXX

Prison: HMP X

Group Number: XXX

Supervisor (if applicable): JG and MB

Name of risk factor	**Evidence**	**Treatment Goals**
1. <u>Motivation to Change Substance Misuse and Offending</u> Substance mis-users can be at varying stages of motivation to change their substance use and offending behaviour. As with changing any behaviour motivation can be an integral part of this, this does not only include saying you want to change but also involves identifying and establishing the following: - Alternative responses to the use of substances - Having identified factors that will protect against the return to substance misuse (both internal and external factors) - Awareness of possible barriers to successful change.	Substance misuse: Mr X identified that his main aim of attending Focus was to progress through the system and he did not appear to have any internal motivation to change his use or offending. He initially presented as disinterested and lacking motivation, however he rated the importance of change as 10/10. He attributed this to him not wanting to return to prison after his release and considered changing his behaviour as key to achieving this. Mr X commented that he has learnt some things from attending Focus, such as the use of excuses in facilitating use. As such, it is likely that his motivation to attend and engage in Focus is developing throughout the duration of the programme. However, developing his internal motivation to remain drug free is a key developmental area for Mr X at present. Mr X's confidence to maintain a non drug using lifestyle is currently 40%, as he stated that if drugs were offered to him he would "probably take them". His primary reason for this is that he enjoys substance use and continues to identify the positive aspects of using. Mr X identified other positive aspects of his drug use as experiencing the high, creativity, having a laugh with friends, increased confidence, experiencing the buzz and the accompanying reputation. He was also able to identify some negative aspects of using, such as paranoia, getting physically hurt and experiencing poor health, however the positives of drug use appear to continue to outweigh the negative consequences. Throughout Focus, Mr X's decision balance has started	<u>Main treatment area:</u> Mr X would benefit from listing ten positive consequences of not using in each of his future high risk situations. From this his belief in these consequences could be strengthened in order that he may automatically consider the positive consequences of not using in high risk situations. Exploration of the wider benefits of change may also serve to increase Mr X's internal motivation to address his substance use and offending behaviour. Mr X would also benefit from listing the barriers to exploring his alcohol use and discussing these with his key-worker. This may serve to increase his trust

	to tip in favour of changing his use, however his belief in this remains low as does any internal motivation to change. Mr X has discussed his drug use relatively openly within the group, however appears to have avoided discussing his alcohol use. He stated that this is due to his alcohol use not being problematic as "everyone used to do it", although he does recognise the impact that alcohol use had on his index offence and previous violent convictions. It appears that Mr X maintains positive beliefs regarding his alcohol use and that this has a detrimental effect on his internal motivation to change his use. Offending Mr X stated that he is highly motivated to stop offending as he does not want to return to prison once he is released from this sentence. He recognises that his drug and alcohol use is linked to his offending, however his motivation to stop drug use is lower.	in others and thereby feel more comfortable in recognising his alcohol use as problematic.
2. <u>Thinking that Supports Substance Misuse and Offending</u> This area can be key in the development and maintenance of problematic substance misuse. The assumption is that the perception of early negative life experiences leads to beliefs about the self, others and the world/life that make them more	Substance misuse Through his key life events, Mr X acknowledged possible feelings of abandonment and rejection from his mother and a materialistic as opposed to affectionate relationship with his grandparents. However, he described being close to his grandmother and this may have resulted in him feeling confused about others his relationships with others. Furthermore, Mr X was physically punished by his grandfather and was a victim of bullying at school. This may have lead him to view others as untrustworthy interpret this to be a consequence of him	<u>Main treatment area:</u> Mr X would benefit from identifying the old me thinking that supported his substance use and utilise role play to develop counter-arguments to the underlying thoughts and

vulnerable to the development of substance use problems. Individuals quickly learn to use substances as a 'coping' or 'compensatory' behaviour and develop substance related beliefs that become associated with negative core beliefs e.g. 'I am unloved' – 'If I use then ill be popular' or 'The world is a horrible place' – 'If I use I can escape'	being different. Mr X identified that these experiences led to him forming unhelpful core beliefs of: "I am unlovable (different/ confused/ untrusting/ narcissistic)", "Others are untrustworthy/ stupid/ inferior/ judgemental" and "The world is confusing/ judgemental". It is possible that Mr X's negative beliefs about others serve to counteract his own feelings of low self worth, resulting from his difficult early life experiences. Mr X's substance related beliefs were identified as: "If I use then I will feel good, confident, I will get a buzz, be more sociable, can unwind and will have an adventure"; "If I don't use then I will be shy and I will be fuming and take it out on others". Mr X clearly endorses both reward and relief belief sin relation to his substance use and these continue to be a strong motivating factor for him to continue using. Offending Mr X identified that he used violence to get attention, to fit in with others, to gain acceptance and to rebel against others and the world. However, he would benefit from dismantling these beliefs further to identify the thoughts that underpinned such motivation.	dismantle old me beliefs. From this, Mr X could then work to strengthen his new beliefs by rating his beliefs before and after rehearsing the new thoughts and role play scenarios.

3. <u>Social Skills (and lack of coping abilities)</u> Many substance users have limited competencies for coping with the problems and conflicts of everyday life and problems in managing interpersonal expectations and conflict. In particular substance users have been identified as experiencing difficulty in the following areas: - Communication skills (expressing thoughts and feelings) - Use of assertiveness skills (in many cases can be passive and/or aggressive) - Saying no to social pressure to use/offend - Effective problem solving	Substance misuse Mr X identified that he commonly used drugs and alcohol to enhance positive emotions and to feel confident, particularly in situations with peers. He stated that since being in prison without access to substances, he has learned that he has always had confidence in himself but relied on drugs when they were available to him. Consequently, he no longer feels he requires drugs or alcohol to give him confidence, however he still identifies many other positive consequences of using. Mr X stated that he does not express his emotions or talk to others when attempting to solve problems as he prefers to work through them himself. Mr X also recognised that he finds it difficult to request help from others and this is perhaps an area of development for him. Mr X does not view this approach to problem solving as problematic but agreed to further develop his skills in this area. Mr X has been noted to present as slightly aggressive in group sessions when others disagree or challenge him. He has recognised this and states that he manages his emotions in such situations by using self-talk and thinking of the consequences of being violent in prison. Mr X has also experienced difficulties in expressing himself in relationships, whereby he 'snapped' at partners when he has been angry. This information suggests that Mr X has good social skills, but that he does not apply these when faced with high risk situations. As such, he may benefit from practising these in a safe environment as practice for use live situations.	<u>Main treatment area:</u> Mr X has begun to consider opportunities to express his emotions, however he may benefit from listing the positive and negative consequences of expressing his emotions to consider how this skill may be helpful for him and to increase his motivation to use this skill in live situations. Mr X would benefit from using check in to focus on fluctuation sin his motivation and how he has managed these. He would also receive feedback from facilitators and group members which may serve to strengthen his skills in expressing his emotions to others.

	Offending Mr X's use of violence is primarily related to substance misuse, however he has also resorted to violence when he has been angry and not expressed his emotions appropriately. Consequently, Mr X may benefit from learning to recognise his emotions and identifying effective ways of exploring and managing his emotions to ensure he does not resort to violence when he experiences intense emotions.	

4. <u>Susceptibility to the Negative Influence of Others (social and peer influence)</u> The influence of others can be a significant factor in the reasons why individuals have developed substance misuse problems and offending. This can be in the form of peers, role models as well as social and environmental factors.	Substance misuse Substance use has assisted Mr X in developing a negative reputation and in gaining attention from other negative peers. It is likely that this attention served as evidence against his core beliefs of being "unlovable and different" and was therefore interpreted as being functional for him. Mr X recognised that peer influence, including from family members, contributed to his development of using substances and identified that peers and situations with peers continue to act as triggers to his drug and alcohol use. It appears that peers can act as triggers when Mr X already has the want and intention to use and as such he is not considered to be susceptible to peer pressure to use substances. Mr X has acknowledged a number of triggers to his substance misuse but believes that he can override these if he chooses to, as he has started to "grow out of" substance misuse. This is a concern as this belief may limit his motivation to develop effective coping strategies. A developmental area for Mr X may therefore be to consider ways of managing high risk situations involving peers. Mr X's offending behaviour was partially influenced by peers as he developed a negative reputation to receive attention and to fit in with other negative peers. It is likely that negative peers have also impacted somewhat on the maintenance of Mr X's substance misuse and offending as these factors frequently co-occur. When considering Mr X's intention to use his negative reputation to fit in with others, this may also extend to offending behaviour.	<u>Main treatment area:</u> Mr X would benefit from identifying a positive support network both inside and outside of prison to ensure an alternative to negative peer influences. Exploration of the need to fit in may be beneficial in identifying the thoughts that underpin this belief. Challenging such thoughts and strengthening future me beliefs regarding influence of negative peers may also assist Mr X in maintaining a substance free lifestyle.

5. Consequential Thinking A number of substance mis-users give little consideration to the long term consequences of their substance misuse and/or offending behaviour. In some cases this may link to a lack of awareness of the consequences or emphasis being placed on immediate gratification rather than long term consequences.	Substance misuse It appears that Mr X is fully aware of the consequences of his actions and has the necessary skills to understand these. However, he does not value the negative consequences of his substance use, as the positive consequences far outweigh these at the current time. From this, it is clear that Mr X has the ability to think in a consequential manner, however he would benefit from identifying negative consequences of substance use to outweigh those that support his continued use. Offending Mr X has recently identified negative consequences of his offending including being in prison and the impact on his mother. However, his motivations are external and he has not identified any internal consequences of continued offending.	Main treatment area: Mr X would benefit from continuing to use balance sheets to identify negative consequences of substance misuse and offending, both in prison and the community. This may serve to increase his motivation to stop substance misuse and offending. From this Mr X could then rate his belief in the negative consequences and strengthen this throughout Focus.
6.Emotional Control Both positive and negative emotional states can be related to substance misuse. This can be in the form of heightening positive emotions e.g. happiness, excitement or blocking out negative emotions e.g. frustration, anger, anxiety and fear. People who have not had the skills to manage	Substance misuse There appears to be strong links between Mr X's substance misuse and his emotional control, as although he identified more strongly with reward beliefs of substance misuse, he recognised that he had used drugs and alcohol to reduce negative emotions, particularly anger. Mr X has used in prison as well as in the community and stated that he used heroin in prison to cope with his emotions and the situation. This may suggest that he has minimal alternative strategies to cope with difficult emotions and that this may be a developmental	Main treatment area: Exploration of other strategies that Mr X could implement to enhance positive emotions without use of drugs and alcohol may benefit him in reducing his reliance on substances when experiencing difficult

emotions effectively in the past have been at increased risk of substance use.	area for him. Mr X is able to recognise when he is experiencing different emotions, however he prefers to manage them alone without talking to others or expressing his emotions in any way. He does not currently view this strategy as problematic as he stated that he has always been successful in solving his problems and did not view others as worthy enough to help him in the past. More recently he has begun to consider the benefits of sharing problems and discussing his emotions with others, as a direct result of positive experiences of this on Focus. Therefore, Mr X may benefit from continuing a decision balance regarding sharing his emotions and problems and developing a range of effective strategies to assist in managing his emotions. Mr X identified a high risk situation involving emotions as experiencing a bad day at work where others have not done their job properly. This suggests that Mr X may tend to externalise the cause of his anger and may benefit from identifying the thoughts that underpin these experiences. From this he could then begin to challenge his thoughts and work towards more helpful thoughts in his future me.	emotions. Mr X may benefit from developing his ability to express emotions during participation on Focus. This could then be strengthened by requesting feedback, which would assist in developing his skills whilst accepting help from others. Completion of thought diary relating to specific situations where difficult emotions have been experienced to identify and challenge the underlying thoughts associated with such situations.
7. <u>Experiencing Cravings and Urges</u> Cravings and urges have been identified as a key factor in the maintenance of problematic substance use patterns characteristic of substance users. Cravings include:	Substance misuse Mr X recognised that his cravings whilst in the community were strong, with him often craving cannabis and alcohol after work to relax and cocaine at the weekends to increase his confidence. He identified physical, mental and emotional aspects to these cravings and	<u>Main treatment area:</u> Mr X to continue to identify experiences of cravings and urges and identify effective strategies he has used to

- Response to withdrawal symptoms - Response to lack of pleasure - Response to triggers The urge is the behavioural response to these cravings.	noted that this often resulted in him using. Mr X stated that he does not currently experience cravings for drugs and has not since the early part of his sentence. He stated that he initially used heroin in prison in order to cope with the sentence he had received and the environment he was in. He reported stopping his heroin use as he did not want his family to learn of his use and did not wish to be perceived by others as a heroin user. Mr X recognised that he has not experienced cravings for his drug of choice (cocaine) whilst in prison as he did not seek the stimulating effects that this drug would provide, as such cravings have not been a concern for him. Mr X identified that he has experienced cravings for alcohol since being in prison and that these are frequently triggered by watching football on the television or after playing football in the gym. He acknowledged that football and alcohol have always been strongly associated and subsequently trigger thoughts of enjoying himself with friends. At such times he has craved alcohol and reported that if alcohol had been available to him, he would have taken it. However, Mr X reports that he no longer experiences these cravings and believes that this is due to a reduction in the association between football and alcohol. He identified strategies that he has developed in order to manage his cravings initially, which included reading, studying, attending the gym and spending time cooking with peers. He reflected that these strategies have become easier for him to use and have increased in effectiveness and therefore, his cravings are no longer a concern for him. However, Mr X would benefit from continuing got utilise and develop a wider range of coping strategies to ensure they continue to be effective for him.	manage these. From this he can continue to practise these strategies whilst developing a wider range to use in all high risk situations.

8. <u>Ability to Cope with High Risk Situations</u> Many substance users have difficulty coping in high risk situations and can lead to continued substance use. In order to strengthen the ability to cope an individual must develop both general and specific coping skills as alternative to substance use. Key to this is an individuals self belief that they can effectively use these skills when faced with high risk situations. In addition understanding and recognition of potentially high risk situations can aid preparation for managing these.	Substance misuse Throughout Focus, Mr X has struggled to identify high risk situations and this may be due to Mr X's strong belief that his own willpower can over ride any urge to use in a high risk situation. However, this confidence may be detrimental to his motivation and progress on Focus, as he may view himself as not needing to develop skills to assist in stopping his use. On further exploration, Mr X was able to identify that weekends, seeing old friends and watching or playing sports had previously been high risk situations for him. He was unable to identify any high risk situations in prison and stated that he will have "grown out of using" by the time he is released. As such, he does not feel high risk situations are a concern for him, which may impact on his ability to develop relapse prevention plans. However, he has recently begun to identify effective coping strategies and would benefit from continuing to develop and utilise these.	<u>Main treatment area:</u> Mr X to identify a range of potential high risk situations and continue to consider which strategies would be most effective for him in managing these.

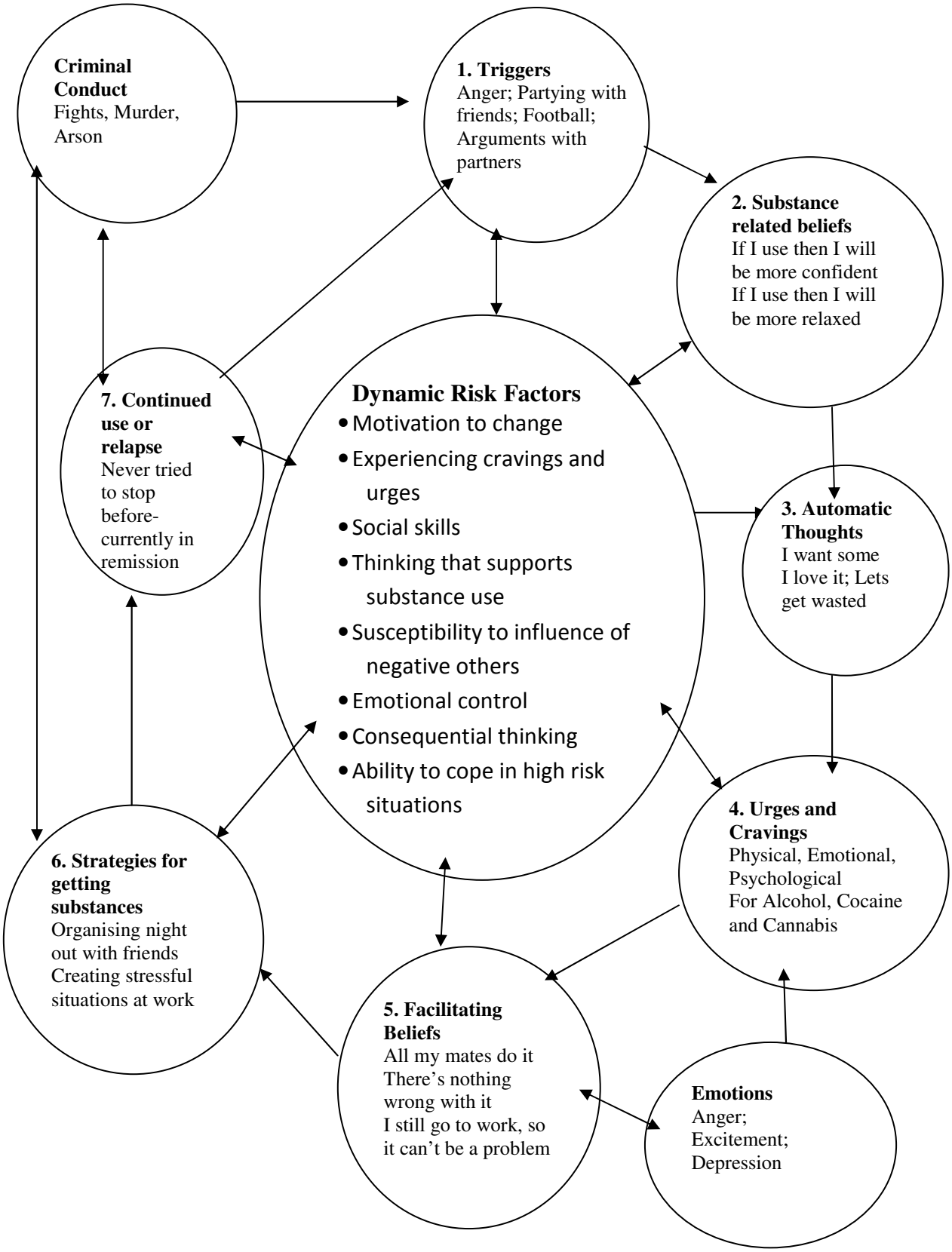
Group member…….

Report Writer……

Supervisor……Signature: …….

Date:…….Signed by:……

Appendix 8: Maintenance of Use Model



Appendix 9: Case Study Supervision Log & Forensic Practice Diary Entries

Date & Timeframe	Supervisor/ Supervision format	Issues discussed/ Outcomes/ Action Points
05-10-09 60mins	Meet with GG re FOCUS	• Met GG to discuss facilitation of Focus 1-1's and gain general info re programme • Provided with copies of paperwork and planned to begin reviewing Focus files • Provided general awareness of Focus and considered impact for prisoners ie lengthy intense programme- discussing past experiences • Consideration of 'what works' debate in terms of the frequently documented failure rate of prison group work. Reviewed CBT theory-practice links of the programme, individualised approach to 1-1 sessions- much evidence in support of the success of this group • Need to consider areas of outstanding treatment targets not addressed by Focus.
06-10-09 60mins	Reviewing FOCUS files and supervision with JG	• Reviewed files for 5 prisoners I will be working with- noted key info • Received positive feedback regarding noted information and initial understanding of Focus • Began to consider formulations of prisoners- discussed with JG, ie how to do this in line with Focus requirements ie not all encompassing psychological formulation • Discussed any areas of concern/ ways of best practice with JG. • Begin to think about best ways to facilitate 1-1's- previous 1-1 skills may assist in staying on topic/ identifying specific thoughts and emotions associated with the development and maintenance of their drug use. • Recognise high risk nature of the prisoners and limited previous experience of this- may impact on confidence and possibly the establishment of rapport- discussed with JG. Importance is in identifying this as a potential barrier and recognising/ managing this when it occurs- preparation and supervision are key. • Process more my concern than content- able to review process and build confidence in overall ability to complete task.

07-10-09 60mins	Meet with JG re FOCUS supervision	Met to discuss collated info and discuss any potential concerns • JG explained flexibility of process which eased concerns, and modelled ways to deliver session- learnt much from this in terms of what I liked about her way and how \I could incorporate this into my own sessions. • Feel able to manage content • Allowed me to consider and reflect on how I may subsequently facilitate the session slightly differently to plan- perhaps discuss the eight risk factors in relation to the individuals own knowledge and experience of these to then be supported by the psychometric report. This may flow better, allow more flexibility and may encourage the individuals to discuss their experiences.
12-10-09 to 15-10-09 All day	FOCUS Training	• Attended Focus training to gain overview of content of programme to enable discussion in 1-1 • Useful as an overview of programme- to assist in responses to prisoners questions • I found only observing was difficult in maintaining motivation and identifying learning points from each of these • Made me reflect on the experience of prisoners in groups- importance of inclusion to participate in order to maintain their motivation to engage and ability to benefit from the programme.
19-10-09 60mins	Supervision with MB re case study	• Met to discuss possibilities of using Focus client as case study • Discussed potential drawbacks ie not facilitating intervention, however reflected areas of outstanding need, not addressed by Focus to be recommended intervention • Benefits of consulting role and individual work, which is not always available • Plan to review cases to identify which would be most appropriate- think perhaps GT as violent offender with number of risk factors
22-10-09 pm	Focus 1-1 with GT	• Prepped for session and highlighted key areas to discuss • GT presented as guarded and defensive initially, but became more comfortable and talkative by the end of session (perhaps rapport/ anxiety-expectations of session) • Unsure how open and honest GT was being- would have preferred to have checked this out with

		him a little more, but thought it may detract from rapport building. • Reflected this to the facilitators of the group for them to consider this. • Plan to seek continued supervision regarding the best way of managing such a situation in future.
24-10-09 45mins	Supervision with MB re GT	• Met with MB to discuss GT as case study • Previously emailed copy of case study plan and agreed this would be suitable- discussed best way of facilitating and reporting this • I highlighted strong link with research ie number of risk factors and MB suggested I consider this when recommended future treatments- ie what would be most effective and what is available within current setting • Plan to begin draft copy and review with MB throughout
02-12-09 60mins	Focus report s/v with JG	• Met with JG to review the draft TNA- she had read GT's and noted feedback which was then discussed. • JG highlighted that the format was as required and I had drawn together themes well, particularly links between different risk factors. • However, she identified developmental points of separating aspects of the risk factors into developmental and maintenance- this made sense to me and I felt this would be a useful way of facilitating the discussion in the 1-1**,** eg it seems that peers were important in your development of substance misuse but they do not seem to play such a key part in the maintenance of your use, is this true for you? This encourages more of a collaborative approach to the session and also facilitates further learning of the development/maintenance model that they are working from throughout the programme. • Assisted in developing further lines of questioning • Considering what information I needed to ask key-workers • Complications of this case in comparison to others- BPD/ self-harm/ CD/ possible dissocial PD. Although not main focus of the TNA- consider how this may impact on the development of TNA and achieving agreed targets.

09-12-09 60mins	GT Facilitator meeting & discussion with s/v	• Met Focus facilitators to discuss concerns re GT • Fed back tentative formulation of GT- expressed concern re documented core beliefs eg I am narcissistic • They feedback that GT presented as very narcissistic within group and individual sessions- I felt this may be a protective strategy for him in relation to his diagnosis of BPD, negative early life experiences, rejection etc that his presentation reflected very low self-worth. • I acknowledged many transference issues occurring with this prisoner as staff reflected that they found him difficult to work with and appeared to not to 'like' him. • Suggested completion of MCMI to explore his personality traits and consider how possible traits impact on his presentation in group and how best to manage this and progress him- To discuss with supervisor. • Learnt a lot from this meeting in relation to my formulation of GT but also my practice as a trainee psychologist- aware of my ability to think of external issues eg transference between staff and prisoners/ what underpinned this and possible impact on sessions and progress. • JG agreed MCMI may be useful for management and formulation- discussed procedure of completing within prison as opposed to hospital. To discuss with Focus and GT
10-12-09 60mins	Case study/ Focus discussion/ Supervision	• Meet to reflect on discussions with keyworkers- explained areas of development eg having more structure and perhaps less people in attendance. • Also felt that the TNA's may have been better completed by facilitators as they knew the individuals better and I was getting the information from them to complete the TNA- JG reiterated the need for psychological input ie formulation towards treatment goals. • Recognised the speciality that psychologists bought to this aspect of the programme- assisted me in development of the TNA ie considering the specific psychological contribution that I could provide and what value this would add. • Suggested completion of MCMI and also linked this to the benefits of completing this for case study purposes also- requested clarification re procedures of completing psychometrics in high security prisons- JG stated that I would need to get signed consent from the prisoner • I plan to complete the 1-1 and TNA and review the need for assessment with key-worker and discuss again with JG.

16-12-09 pm	Focus 1-1 for GT (observed by JG) & subsequent s/v and feedback	• Utilised feedback from previous observed session and incorporated this into my preparation. • Reread information in draft TNA and highlighted pertinent aspects to facilitate more collaborative feedback. • Remained focussed on the set agenda and worked collaboratively with both GT and MC to develop both the TNA and treatment goals. • GT focussed on his "narcissism" as an explanation for much of his behaviour, although possible this may be more a reflection of underlying low self worth. • JG provided positive feedback after the session- also felt I had stuck to the agenda whilst utilising downward arrow technique to add to the formulation. • I initially felt the session was not going well as recognised that my questioning had reduced as I was so tired from previous 1-1's. I felt this was a –ve thing, however JG commented that this served as a +ve as it enabled me to focus on the aims of the session. • I found this approach very different to how I have worked previously in more clinical settings • On reflection, I recognise that this was functional and allowed me to meet the aims of the session. Learnt to judge my progress and success relative to the specific aims as opposed to my feelings about the session or interaction with the prisoner.
18-01-10 60mins	Discussion with Focus re GT	Met to discuss GT's continued progress on Focus, current need for personality assessment and feedback on other completed 1-1 sessions. Noted fluctuations in motivation to engage- therefore suggest continued development of further treatment goals outside of Focus Plan to speak to JG re suggesting and completing MCMI with GT, although aware of resource pressures etc. Aware that MCMI would be beneficial for my own interests, however also feel this could add much to GT's formulation and how best to work with him- particularly in understanding of him and presentation from Focus staff.
25-01-10 45mins	Supervision/ discussion with MB and JG re MCMI for GT	Proposed completion of MCMI-III for purpose of case study, however highlighted need for this outside of case study ie formulate the case and to manage appropriately Agreed there was significant need to offer this assessment Discussed consent procedure within prison service- recognised differences between this and NHS particularly legalities and high ratio of refusal by prisoners

		Referred to Focus re completion of this, however they requested it be postponed due to current reduction in motivation- on discussion with MB and JG feel this may serve to de-motivate him and activate negative core beliefs ie untrusting MCMI-III wont be completed for case study, however to be reviewed in 6 weeks time to identify if required for current treatment and management.

I certify that this is an accurate representation of the supervision received relating to Mr X, whilst on placement at HMP A for the duration of this case study.

Signed (Placement Supervisor): _____

Date: _____

Signed (Trainee): _____

Date: _____

Appendix 10: Coding Frame **Research No:**	
Demographic Information	
Age:	
Ethnicity	White British [] White Other [] Indian [] Pakistani [] Bangladeshi [] Chinese [] Other Asian [] Black Caribbean [] Black African [] Black Other [] Mixed white and black Caribbean [] Mixed white and black African[] Mixed white and black other [] Other []
Sexuality	Heterosexual [] Homosexual [] Bisexual [] Other []
Relationship Status	Married [] Single [] Divorced [] Other []
IQ	Extremely low (<69) [] Borderline (70-79) [] Low Average (80-89) [] Average (90-109) [] High Average (110-119) [] Superior(120-129) [] Very Superior(130+) []
Offence Related Information	
Date sentenced	
Length of sentence	
Index offence	
Total no. of previous convictions/ cautions	
Acting in isolation at times of offence	
Motivation for index offence	
No. of previous violent arrests/ convictions	
No. of previous sexual arrests/ convictions	
No. of previous other arrests/ convictions	
Total length of juvenile sentences	
Total length of adult sentences	
Psychometric Assessment Information	
Total PCL-r score	
Significant MCMI-III profile (above 85)	Schizoid [] Avoidant [] Depressive [] Dependent [] Histrionic [] Narcissistic [] Antisocial []

	Aggressive [] Compulsive [] Passive-Aggressive [] Self-Defeating [] Schizotypal [] Borderline [] Paranoid []
Risk Assessment Profile	High []; Medium []; Low []

Risk Factor	**Present/ Absent?**	**Additional Information**
Childhood Risk Factors		
Pregnancy/ birth complications	Y/N	
Low birth weight	Y/N	
Abnormal delivery	Y/N	
Poor attitude towards schooling	Y/N	
Age at leaving school		
Aggression towards teachers	Y/N	
Aggression towards peers	Y/N	
Poor school attendance	Y/N	
Antisocial peers	Y/N	
History of being bullied	Y/N	
Duration of bullying		
History of physical abuse	Y/N	
Age at first abuse		
Repeated physical abuse	Y/N	
Perpetrator;		Mother []; Father []; Step-parent []; Grandparent []; Other []
Duration:		
History of sexual abuse	Y/N	
Age at first abuse		
Repeated sexual abuse	Y/N	
Perpetrator;		Mother []; Father []; Step-parent []; Grandparent []; Other []
Duration:		
History of emotional abuse	Y/N	
Age at first abuse		
Repeated emotional abuse	Y/N	
Perpetrator;		Mother []; Father []; Step-parent []; Grandparent []; Other []
Duration:		
History of neglect	Y/N	
Age at first neglect		
Repeated neglect	Y/N	
Perpetrator;		Mother []; Father []; Step-parent []; Grandparent [];Other[]
Duration:		

Removal from family	Y/N	
Age at removal		
Removed to		Family []; fostered []; children home []; other []
Childhood substance misuse	Y/N	
Age at first misuse		
Substances used		Cannabis []; Glue []; Alcohol [], Heroin []; Crack []; Other []
History of aggression	Y/N	
Age of first aggression		
History of hyperactivity	Y/N	
Parents with criminal history	Y/N	Mother []; Father []; Imprisoned []
Parental substance misuse	Y/N	Mother []; Father []
Witnessed domestic violence	Y/N	
Inconsistent discipline	Y/N	
Single parent family	Y/N	
Under 18 at first arrest/ conviction	Y/N	
Offence type of first arrest		Sexual []; Violent []; Other []
Adult Risk Factors		
Presence of repeated offending	Y/N	Violence []; Sexual []; Other []
Other concurrent criminal charges	Y/N	Violence []; Sexual []; Other []
Adult aggressive behaviour	Y/N	
Poor employment history	Y/N	
Poor relationships with parents	Y/N	Mother []; Father []
Adult substance misuse	Y/N	Cannabis []; Alcohol []; Heroin []; Crack []; Other []
Deliberate self-harm	Y/N	Cutting []; Ligatures []; OD []; Other []
Age of first self-harm		
Diagnosis of personality disorder	Y/N	Antisocial []; Borderline []; Narcissistic []; Paranoid []; Other []
Diagnosis of mental illness (MI)	Y/N	Schizophrenia []; Depression []; Other []
Perpetrator of domestic violence (DV)	Y/N	
Conviction for DV	Y/N	
Gang membership	Y/N	

Protective Factors		
High IQ (Above Average)	Y/N	
Positive school attitude	Y/N	
Good school reports	Y/N	
Positive relationship with pro social models	Y/N	Parents []; Friends []; Other []
Supportive relationship with other adults	Y/N	Parents []; Friends []; Others []
Married	Y/N	
Stable/ long-term	Y/N	
Positive view of parents	Y/N	Mother []; Father []
Involvement/ interest in activities	Y/N	Sport []; Music []; Art []; Other []

Appendix 11: Group Codings

Motivation
1= Anger/ revenge
2= Sexual gratification
3=Financial
4= Control/ power
5= Contract killing
6= Religious/ Terror
7= Mental Illness
8= Gang related
9= Escape
10=U/K
11= Denies

1= Anger/ revenge
2= Denies
3= Financial
4=Sexual gratification
5= Other (Control; contracted; religious; mental illness; gang related; escape)

Index Offence
1= Murder
2=Manslaughter
3= Att wounding
4=GBH
5=Rape
6=Rape Child
7=Ind/ Ass/ Child
8=Buggery
9=Robbery
10=Cons/ Rob
11= Pos/ fa/ wi 12=Import/ drugs
13=Cons/ Sup/ Drugs
14= False Imp
15=Cons to cause exp
16=Terror

1=Murder
2=Manslaughter/ Att wounding/ GBH
3=Rape/ Buggery
4=Rape Child/ Ind/ Ass/ Child
5=Robbery/ Cons/ Rob
6=Drug related (Import/ cons to supply)
7=Other (Pos/ fa/ wi; False Imp; Cons to cause exp; Terror)

Ethnicity
1=White British
2=White Other
3=Indian
4=Pakistani
5=Bangladeshi
6=Chinese
7=Other Asian
8=Black Caribbean
9=Black African
10=Black Other
11=Mixed white and black Caribbean
12=Mixed white and black African
13=mixed white and black other
14=Other

White British?
yes= 1
No= 0

Sexuality
1= Heterosexual
2=Homosexual
3=Bisexual
4=Other

Heterosexual?
Yes= 1
No= 0

Relationship Status
1= Married
2= Single
3=Divorced
4=Other

In a relationship?
Yes (married/ other) =1
No relationship =0

IQ
1= Below Borderline
2= Borderline
3= Low Average
4= Average
5= High Average
6= Superior
7= Very Superior

IQ
Below Ave= 1
Ave=2
Above Ave=3

Childhood Substances
1= Cannabis
2= Glue
3= Alcohol
4= Heroin
5= Crack
6= Other

Child substance- Cannabis
0=No
1=Yes

Adult Substances
1= Cannabis
2= Alcohol
3= Heroin
4= Crack
5= Other

Adult Substances
1= Cannabis
2= Alcohol
3= Other

Adult substance- Legal
0=Alcohol
1=Other (illegal)

Sentence Dates
1= 2009
2= 2008
3= 2007
4= 2006
5= 2005
6= 2004
7= 2003
8= 2002
9= 2000
10= 1999-1995
11= 1994>

Date of sentencing
1= 2005-2009
2=2000- 2004
3= 1999>

Date of sentence
1= 2005-2009
2=2005>

Age at first offence
9-13=1
14-17=2
18-21=3
22-10=4
31+=5

Adult sentence
0=1
1-5=2
6+=3

Current Age
21-30= 1
31-40=2
41-50=3
51+= 4

Sentence length
0-10= 1
11-15= 2
16+ =3

Previous convictions
0=1
1-5=2
6-16=3
17+=4

Violent previous convictions
0=1
1-5=2
6+= 3

Sexual previous convictions?
Yes=1
No=0

Other previous convictions
0=1
1-10=2
11+= 3

Juvenile sentence?
Yes=1
No=0

Left school before 16?
Yes=1
No=0

Age at first offence
9-13=1
14-17=2
18-21=3
22+=4

Adult Sent
0=No
1=Yes

Age of childhood substance misuse
9-12= 1
13-17=2

High Risk
0=No
1=Yes

PCLR over 25
0=no
1=yes

MCMI-III Profile
1= Schizoid
2= Avoidant
3= Depressive
4= Dependent
5= Histrionic
6= Narcissistic
7= Antisocial
8= Aggressive
9=Compulsive
10=Passive- Aggressive
11= Self-defeating
12= Schizotypal
13= Borderline
14= Paranoid

Appendix 12: Consent Form

Predictive risk and protective factors of violent, sexual and other offending in a high security prison population.

To whom it may concern,

I am a third year trainee on the Forensic Psychology Doctorate at the University of Birmingham. I am currently on placement at HMP X, until next summer and within this time will be conducting a research study on 'Predictive risk and protective factors of violent, sexual and other offending in a high security prison population'.

Data on a number of prisoners from HMP X are required for this study. The data will consist of the recording of the presence or absence of a number of risk factors identified from the individuals' prison files. No additional information will be sought and therefore, contact with the prisoners is not required. The data will be stored on an excel spreadsheet on a password protected file and the prison files will not be moved from the location within the prison. Furthermore, the individuals included in the study will be referred to by a number, therefore, confidentiality will be maintained and the individuals' data will remain untraceable. The time scale of this study will run from October 2009, until completion of the report in May 2010.

The current research study aims to provide more depth in the understanding of the predictive risk factors, specifically for high security offenders. Much of the previous research in this area has focussed on adolescent and low-risk offenders and it is therefore, hypothesised that this study will identify risk factors specific to high security offenders. This study may provide subsequent benefits in relation to the development of intervention programmes for this group of offenders. This may therefore reduce the length of time prisoners spend in high security prisons, resulting in a reduction in financial costs as well as a reduction in the risk to potential victims and society as a whole.

As the current study does not require the participation of prisoners and the data is accessed from already available sources, the prisoners have not been approached for their individual consent. However, with respect to the confidentiality of the prisoners and similarly the access to prison service records, a form of consent from a member of the prison service research committee would be appreciated.

If any further information is required, please do not hesitate to contact me on XXX

Please consider the following points and sign to confirm your consent in relation to the above information regarding the research study of 'Predictive risk and protective factors of violent, sexual and 'other' offending in a high security prison population'.

- I confirm that I have read and understood the information provided in this consent form, in relation to the aforementioned research study

- I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

- I understand and consent to prison service data from prisoners' files being used for the purpose of the aforementioned research study.

- I understand that the researcher will hold all data collected securely and that confidentiality will be upheld to the highest standards.

- I consent to this research being conducted within HMP X.

Name: .....
Signature: .....
Department: .....
Date: .....

Appendix 13: Frequencies of non significant variables

Table A highlights the risk and protective factors (individual, family, school, peer and other) that were not significantly associated with different types of high risk offender groups (violent, sexual and other). These findings highlight that a number of widely researched risk factors from the literature, such as inconsistent parenting and a prior history of abuse were not associated with high risk offender types within this study.

Table A: Non-significant variables separated by risk factor category

Individual	PCL-R score (under 25, 25 and over); MCMI-III score; Birth complications; Childhood substance used (Cannabis; Glue; Alcohol; Heroin; Crack; Other); Deliberate self-harm; Diagnosis of personality disorder; Diagnosis of mental illness; Perpetrator of DV; High IQ
Family	Witnessed DV; Inconsistent parenting; Single parent family; Poor relationships with parents; Positive view of parents
School	Poor school attitude; Age at leaving school; Poor school attendance; Positive school attitude
Peer	Gang membership; Relationship stability
Other	Level of risk; History of being bullied; History of physical/ sexual/ emotional abuse; History of neglect; Under 18 at first arrest; Other interests

Table B presents the frequencies for each of the non-significant variables in relation to both total and individual group frequencies. The findings show that many of the factors that were not significantly associated with offender types occurred relatively infrequently. Differences between the groups were also minimal, thereby suggesting that these factors were less prevalent and there was less variance in the presence of these factors between groups.

Table B: Non-significant risk factors by offender groups

Risk Factors	Total sample, n (%)	Violent Group, n=30 (%)	Sexual Group, n=30 (%)	Other Group, n=30 (%)
Childhood risk factors				
Birth complications (n=6)	1 (17%)	0 (0%)	1 (100%)	0 (0%)
Poor school attitude (n=84)	37 (44%)	16 (57%)	8 (30%)	13 (45%)
Left school before 16 (n=82)	43 (52%)	18 (64%)	11 (44%)	14 (48%)
Poor school attendance (n=84)	41 (49%)	17 (61%)	11 (41%)	13 (45%)
History of being bullied (n=85)	10 (12%)	4 (14%)	2 (7%)	4 (13%)
History of physical abuse (n=83)	23 (28%)	11 (38%)	5 (20%)	7 (24%)
History of sexual abuse (n=83)	12 (14%)	3 (10%)	2 (8%)	7 (24%)
History of emotional abuse (n=83)	7 (8%)	3 (10%)	1 (4%)	3 (10%)
History of neglect (n=84)	5 (6%)	1 (3%)	2 (8%)	2 (7%)
Witnessed parental DV (n=85)	18 (21%)	9 (31%)	3 (12%)	6 (20%)
Inconsistent discipline (n=82)	28 (34%)	12 (43%)	7 (29%)	9 (30%)
Single parent (n=87)	30 (34%)	10 (34%)	8 (29%)	12 (40%)
Under 18 at first offence (n=90)	45 (50%)	17 (57%)	10 (33%)	18 (60%)
Adult risk factors				
Poor relationship with parent (n=87)	52 (60%)	16 (55%)	16 (57%)	20 (67%)
Deliberate Self Harm (n=90)	13 (14%)	6 (20%)	3 (10%)	4 (13%)
Personality Disorder (n=90)	7 (8%)	5 (17%)	1 (3%)	1 (3%)
Mental Illness (n=90)	15 (17%)	7 (23%)	4 (13%)	4 (13%)
Perpetrator of DV (n=90)	16 (18%)	6 (20%)	7 (23%)	3 (10%)
Gang membership (n=90)	9 (10%)	4 (13%)	1 (3%)	4 (13%)
Offence related variables				
Low IQ (n=89)	61 (69%)	23 (77%)	20 (69%)	18 (60%)
PCL-R score over 24 (n=12)	7 (58%)	2 (67%)	0 (0%)	5 (56%)
MCMI-III (antisocial) (n=15)	10 (67%)	5 (63%)	1 (50%)	4 (80%)

MCMI-III (aggressive) (n=15)	6 (40%)	1 (13%)	1 (50%)	4 (80%)