Exploring differences in substance use and attachment patterns amongst offending populations

ANNA MARIA STOKES, B.Sc.

Thesis submitted to the University of Nottingham for the degree of Doctor in Forensic Psychology

December 2018

Abstract

There appears to be a link between substance abuse and offending behaviour; however, other risk factors are likely to interact with this, and it is unclear how these factors relate to sexual offending. This thesis explored substance use and attachment patterns in sexual offenders compared to other offending and non-offending populations. It also considered the impact of these risk factors on treatment readiness, motivation to change, engagement and therapeutic alliance, and risk of future offending.

A systematic review examined the research literature on alcohol and drug abuse in male sexual offenders, and compared this to non-sexual offending and non-offending populations. Results into specific alcohol and drug use patterns were mixed; however, a lack of control groups made comparison with other offending groups difficult. A psychometric critique was undertaken on one of the most widely used, and most researched, screening tools to assess alcohol dependency and identify alcohol-related problems: the Michigan Alcoholism Screening Test (MAST; Selzer, 1971). Psychometric properties for the MAST, as well as its subsequent variations, were found to be generally satisfactory.

An empirical research study then examined substance use and attachment patterns in sexual offenders compared to other types of offenders and non-offenders, and investigated whether sexual offending could be better predicted by considering an association between substance use and attachment style. No differences were found in drug use or

attachment, although alcohol abuse appeared to be an important risk factor for predicting non-sexual, non-violent offending. A case study evaluated the effectiveness of an intervention with a male psychiatric inpatient, whose risk of future violent behaviour appeared to be influenced by his mental health, continued poly-substance misuse, and underlying interpersonal difficulties linked to an insecure attachment style. This also considered the impact of these contributing risk factors on treatment readiness, motivation to change, and intervention engagement.

The findings from the thesis chapters were reviewed, and practical and clinical implications discussed. It was concluded that alcohol use and insecure attachment appear to be important risk factors in male offending behaviour in general, but are not specific to sexual offending. However, more research is needed to examine their specific role, as well as that of other contributing risk factors, in order to be of any practical utility in informing effective assessment and treatment of sexual and non-sexual offenders, as well as implementation of prevention strategies.

Acknowledgments

Firstly, I would like to thank my academic supervisor Dr Vincent Egan, who supervised all components of this thesis. Your guidance, patience, and support over the past few years has been greatly appreciated. Thank you also to the DForenPsy staff for their compassion during a very difficult time. Secondly, I would like to thank NOMS for approving the research study for this thesis, and for granting access to Probation records. A special thanks to staff at the NPS Midlands division for assisting with participant recruitment and data collection, and for your continued support. I am also very thankful to those who took the time to participate in my research.

I would like to extend my gratitude to my placement supervisors, Julie Burton, Wendy Martin, Paul Mooney, Jamie Thomas, and Eve Hepburn, who provided me with invaluable advice and encouragement throughout this process. I would also like to express my appreciation to the patients, service users, and staff I have worked with along the way. A big shout out to my fellow coursemates and peers - we'll all get there in the end, guys! Particular thanks goes to Hannah for acting as my second rater in the quality assessment of my systematic review. To those closest to me, thank you for your continued love and support over the years, and for keeping me sane!

Finally, to my parents, without whom this would not be possible. I am so grateful for all the love, support, and encouragement you have

given me (both emotionally and financially!). Thank you so much for providing me with this fantastic opportunity.

Dad – my biggest regret is that you won't be here to see me finish this journey, but I know that you would be so proud. I dedicate this to you.

Table of Contents

ABSTRACT I

ACKNOWLEDGMENTS III

TABLE OF CONTENTS V

LIST OF TABLES AND FIGURES VI

LIST OF APPENDICES VII

CHAPTER 1: OVERVIEW 1

CHAPTER 2: A SYSTEMATIC REVIEW OF SUBSTANCE ABUSE IN MALE SEXUAL OFFENDERS COMPARED TO NON-SEXUAL AND NON-OFFENDING POPULATIONS 13

CHAPTER 3: A PSYCHOMETRIC CRITIQUE OF THE MICHIGAN ALCOHOLISM SCREENING TEST 51

CHAPTER 4: EXAMINING THE RELATIONSHIP BETWEEN SUBSTANCE USE AND ATTACHMENT STYLE IN SEXUAL OFFENDERS COMPARED TO NON-SEXUAL OFFENDERS AND NON-OFFENDERS 75

CHAPTER 5: USING A COGNITIVE-BEHAVIOURAL ANGER INTERVENTION WITH A SUBSTANCE MISUSING MALE PSYCHIATRIC INPATIENT WITH PERSECUTORY DELUSION-DRIVEN AGGRESSIVE AND VIOLENT BEHAVIOUR 105

CHAPTER 6: GENERAL DISCUSSION 136

REFERENCES 153

APPENDICES 195

List of Tables and Figures

Number	Title	Page
Chapter 2		
Table 1	PICO Inclusion and Exclusion Criteria	19
Table 2	Study Characteristics	28
Table 3	Quality Assessment of Included Studies	30
Table 4	Studies Reviewing File Information to Assess Substance Abuse	34
Table 5	Studies Using Screening Tools and/or Structured Interviews to Assess Substance Abuse	38
Figure 1	Systematic Review Search Strategy	25
Chapter 3		
Table 6	Reported Internal Consistency Reliability Coefficients for the MAST, BMAST, and/or SMAST	59
Table 7	Reported Test-Retest Reliability Coefficients for the MAST and SMAST	62
Table 8	Reported Validity for the MAST	66
Table 9	Reported Validity for the BMAST or SMAST	69
Chapter 4		
Table 10	Mean Scores with Differences Found Between the Four Groups on the Various Measures	92
Table 11	Correlation Matrix for Age, Drug, Intimacy, Attachment, Alcohol and Desirable Responding Scores	95
Table 12	Parameter Estimates Contrasting the Sexual Offending Group vs. the Violent, 'Other' and Non-Offending Group	97
Chapter 5		
Table 13	Breakdown of Treatment Session Plan	125
Table 14	Summary of Change in Mr D's Pre- and Post- Intervention Scores on the NAS-PI	128
Table 15	Summary of Change in Mr D's Pre- and Post- Intervention Scores on the STAXI-2	129

List of Appendices

Letter	Title	Page
Appendix A	Search Syntax	195
Appendix B	Inclusion/Exclusion Pro-Forma	21
Appendix C	Relevant Studies Excluded	202
Appendix D	Quality Assessment Tool	204
Appendix E	Data Extraction Pro-Forma	207
Appendix F	Michigan Alcoholism Screening Test (MAST)	209
Appendix G	Brief Michigan Alcohol Screening Test (BMAST)	212
Appendix H	Short Michigan Alcoholism Screening Test (SMAST)	213
Appendix I	Initial Information and Instruction Sheet for OMs	214
Appendix J	Amended Information and Instruction Sheet for OMs	215
Appendix K	Poster Advertising Study	216
Appendix L	Participant Information Sheet (Offending Sample)	217
Appendix M	Participant Information Sheet (Non-Offending Sample)	220
Appendix N	Consent Form	223
Appendix O	Demographic Information Sheet	224
Appendix P	Instruction Sheet	225
Appendix Q	Drug Abuse Screening Test (DAST-10)	226
Appendix R	Miller Social Intimacy Scale (MSIS)	227
Appendix S	Relationship Scales Questionnaire (RSQ)	228
Appendix T	Short Michigan Alcoholism Screening Test (SMAST)	230
Appendix U	Balanced Inventory of Desirable Responding (BIDR)	231
Appendix V	Debrief Sheet (Offending Sample)	233
Appendix W	Debrief Sheet (Non-Offending Sample)	234
Appendix X	Offence Classification List	235
Appendix Y	Patient Consent Form	237

Appendix Z	5 P's Formulation for Mr D	238
Appendix AA	Worksheet 1: My experience and expression of anger	239
Appendix BB	Worksheet 2: My hierarchy of anger triggers	240
Appendix CC	Worksheet 3: My action plans for anger-provoking situations	241

Chapter 1: Overview

1.1. Introduction

1.1.1. Substance abuse and offending behaviour

A variety of definitions and concepts have been used across public health, medical, and criminal justice contexts in relation to problematic alcohol and drug use. International classification systems, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM), and the International Statistical Classification of Diseases (ICD), have adopted various terminology to cover the physical and/or psychological harm from use of, and dependence on, substances. Inconsistencies and lack of clarity regarding definitions used, often dependent on social and cultural context (as well as the intended purpose of use), make research into substance abuse difficult. For the purpose of this thesis, and in line with World Health Organisation (WHO) terminology, the term 'substance abuse' will refer to the harmful or hazardous use of psychoactive substances, including both alcohol and illicit drugs.

Andrews and Bonta (2003) have argued that substance abuse is an important dynamic criminogenic need associated with criminal behaviour. Research has consistently found that alcohol and drug problems, both separately and combined, are associated with crime (Peugh & Belenko, 2001a). In the UK, higher rates of alcohol misuse have been found at

various stages in the criminal justice system than in primary care settings (Funk et al., 2005), and high prevalence rates of both alcohol and drug related disorders have been found in male and female prisoners (Fazel, Bains, & Doll, 2006).

Substance abuse has also been demonstrated to be an important contributor to recidivism amongst offenders, including sexual offenders (Abracen & Looman, 2004; Hanson, Morton, & Harris, 2003; Långström, Sjöstedt, & Grann, 2004). Substance abuse in sexual offenders has been examined from various perspectives, and with various sexual offender populations (e.g. Peugh & Belenko, 2001b; Harsch, Bergk, Steinert, Keller, & Jockusch, 2006), with one review demonstrating that almost half of sexual offenders have a history of substance abuse (Kraanen & Emmelkamp, 2011).

A relationship between substance abuse and offending is evident; however, there are likely to be other contributing factors that lead to substance abuse, as well as the propensity to commit particular types of offences. For example, a high prevalence of substance abuse amongst individuals with insecure attachment has been found (Borhani, 2013; Caspers, Cadoret, Langbehn, Yucuis, & Troutman, 2005; Thorberg, & Lyvers, 2006), which suggests attachment to be a potentially important risk factor to explore further.

1.1.2. Attachment theory

Attachment theory seeks to describe the origins of patterns in close interpersonal relationships, and suggests that the interaction of environmental factors in early developmental relationships determines individual differences in patterns of attachment behaviour. Attachment theory was first conceptualised by Bowlby (1969, 1973), who examined the early emotional bond between an infant and their caregiver, and how the quality of that bond (termed 'attachment') could affect subsequent emotional, cognitive, and physical development. It was thought that these early experiences help individuals develop perceptions of themselves, and expectations about the support they will receive from others, thus creating internal working models of the *self* and of the *other.* These then influence patterns of behaviour, often termed 'attachment styles' (Hazan & Shaver, 1994; Wallin, 2007).

Ainsworth (e.g. see Ainsworth, 1989; Ainsworth & Bell, 1970; Ainsworth, Blehar, Waters, & Wall, 1978) initially suggested three types of attachment based on differing infant responses to attachment figure separation in the devised 'strange situation experiment'; secure, avoidant, and anxious-ambivalent. Although originally conceptualised to explain infant–caregiver bonds, attachment is now widely accepted as being relatively stable, and studies have demonstrated a robust relationship

between childhood and adult attachment patterns (Grady, Levenson, & Bolder, 2017).

Bartholomew and Horowitz (1991) extended Bowlby's (1973) idea of models of the *self* and *other* to create a four-category dimensional model of adult attachment. This model included an additional attachment category distinguishing two distinct forms of avoidant attachment: dismissive-avoidant, and fearful-avoidant. With this model, Bartholomew and Horowitz (1991) argued that attachment style is an interaction of the two underlying dimensions: the model of *self,* and of *other*. The former refers to the extent the individual views themselves, and the latter the extent to which they view others. Based on the combinations of these two dimensions they proposed four adult attachment styles: secure (positive *self* and *other* models; with an adequate sense of self-worth, and can find a balance between intimacy and independence); anxious-preoccupied (negative *self* and positive *other* models; will anxiously seek to gain validation from others, but are often rejected and experience extreme distress when intimacy needs are not fulfilled); fearful-avoidant (negative *self* and *other* models; are highly dependent on others, but tend to shy away from intimacy to avoid anticipated rejection); and dismissive-avoidant (positive *self* and negative *other* models; will avoid intimacy, but maintains sense of self-worth by over-valuing independence and defensively denying the value of close relationships). Adult attachment

patterns have been demonstrated as having an ongoing influence upon the ability to form close relationships and achieve intimacy, including inappropriate behaviours (Cassidy & Shaver, 1999; Fraley & Shaver, 2000). This thesis will examine whether attachment theory is specific to the prediction of sexual offending behaviour, and whether this operates in conjunction with substance use.

1.1.3. Using attachment to explain sexual offending

Marshall (1989, 1993) first linked the concept of attachment into the aetiology of sexual offending. It was argued that attachment theory provides a useful theoretical framework to examine interpersonal difficulties (such as intimacy deficits and emotional loneliness) in sexual offenders. Marshall and Barbaree's (1990) integrated model of sexual offending argues that early childhood experiences are critical for the development of interpersonal skills. Parenting styles that involve inconsistency, lack of supervision and discipline, and high levels of paradoxical control then rejection and neglect, have been found to be highly prevalent among sexual offenders (Craissati, McClurg, & Browne, 2002; Marsa et al., 2004; McCormack, Hudson, & Ward, 2002). It is argued that insecure childhood attachment can lead to distorted beliefs regarding the self, others, and relationships, which can affect the ability to develop sufficient self-confidence and skills to initiate or maintain mutual intimate relationships with appropriate others. This increases the likelihood

of seeking intimacy in dysfunctional and inappropriate ways (Beech & Mitchell, 2005), including sexual offending behaviour (Baker, Beech, & Tyson, 2006; Beech & Ward, 2004; Burk & Burkhart, 2003; Marshall, 1989, 1993).

Ward, Hudson, Marshall, and Siegert (1995) further theorised that different sexual offending patterns may be predicted by an individual's specific attachment style. Specifically, it has been suggested that rapists may demonstrate dismissive-avoidant attachment, which leads them to demonstrate hostility to victims, whereas child molesters may demonstrate anxious-preoccupied attachment, which leads them to engage in sexual behaviour towards victims perceived as less threatening (i.e. children; Ward, Hudson, & Marshall, 1996). However, research on this is mixed. For example, it has also been found that rapists are more likely to report a dismissive (McCormack et al., 2002; Stirpe, Abracen, Stermac, & Wilson, 2006; Ward et al., 1996), or an avoidant attachment style (Simons, Wurtele, & Durham, 2008). Child molesters have been found with fearful-avoidant attachment styles (Jamieson & Marshall, 2000; Marsa et al., 2004), or both fearful and preoccupied attachment (McCormack et al., 2002; Ward et al., 1996). Others studies have found child molesters to report more of an anxious–ambivalent childhood attachment (Simons et al., 2008), or both anxious and avoidant attachment (Smallbone & Dadds, 2001). Furthermore, some research has failed to find a difference in

attachment style at all between types of sexual offenders (Baker & Beech, 2004; Smallbone & Dadds, 1998). Thus, a variety of attachment problems have been found in sexual offenders.

It is likely that these mixed results reflect differences in the methodology and terminology of attachment used by researchers, which also makes comparison difficult. For example: use of various measures and methods to assess attachment style, e.g. self-report vs. interview vs. observational data; measurement of attachment being a categorial or dimensional phenomena; and decisions about which relationship/attachment pattern to examine (as these may differ towards different individuals), e.g. towards parents, current relationship, romantic relationships in general (Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010). Furthermore, terminology used has been inconsistent. One measure might assign a respondent to one of four attachment categories (e.g. secure vs. anxious vs. avoidant vs. disorganised), another to a different four categories (e.g. secure vs. preoccupied vs. avoidant/dismissing vs. avoidant/fearful), and another to three (e.g. secure vs. preoccupied vs. avoidant).

1.1.4. Substance abuse, attachment and sexual offending

It has been suggested that attachment, and related adult interpersonal problems, may interact with other known dynamic risk factors related to sexual offending. Such a risk factor might be substance abuse, which could

act as a disinhibiting factor to reduce an individual's capacity to process information, attend to social behaviour cues, and control their sexually risk-taking behaviour in a situation where they perceive sexually suggestive cues to be present (Steele & Josephs, 1990). Cognitive expectations related to anticipation of alcohol effects have also been suggested as being influential in the role of alcohol on sexual offending behaviour (Aromäki & Lindman (2001), and substance use may magnify existing cognitive distortions and deviant fantasies in sexual offenders (Abracen, Looman, & Ferguson, 2017).

Furthermore, having an insecure attachment style might create a vulnerability to the development of various problems, including an inability to regulate emotions. Self-regulation theories stress the importance of negative emotionality, and suggest that use of substances is often a means of alleviating, avoiding, and/or coping with uncomfortable and negative feelings and situations (such as loneliness; Hull & Slone, 2004). Indeed, sexual offenders in particular have been shown to be lonelier and have greater intimacy deficits and self-regulation problems than other offenders and community controls (e.g. Abracen & Looman, 2004; Seidman, Marshall, Hudson, & Robertson, 1994). As previously mentioned, Marshall (1989, 1993) proposed that intimacy deficits and associated negative emotionality may be of aetiological significance with regard to sexual offending, with sexual offenders often confusing intimacy with

sexuality, and being more likely to use ineffective approaches to managing stressful situations than other types of offenders (Looman, Abracen, Di Fazio, & Maillet, 2004; Marshall, Serran, & Cortoni, 2000); substance use may be one such approach.

1.1.5. Clinical and practical implications

The attachment model has important implications in terms of informing effective assessment, treatment, and risk management of sexual offenders, as well as influencing therapeutic alliance (Levy, Ellison, Scott, & Bernecker, 2011; Mikulincer & Shaver, 2007). Linking an understanding of attachment issues to offending behaviour enables practitioners to develop a better understanding of an individual's particular characteristics (or 'attachment style'), and their triggers to offending, than they would achieve using risk assessment measures alone. As strong social and intimate relationships are considered important factors in the desistance from further offending behaviour (McAlinden, Farmer, & Maruna, 2017; Wyse, Harding, & Morenoff, 2014), it is important to help offenders form and maintain secure attachment bonds, and learn appropriate skills to cope with interpersonal difficulties, such as intimacy deficits. Interventions such as relationship skills training (including providing education about attachment), might therefore be important to help offenders learn how to develop and maintain appropriate intimate relationships.

An individual's attachment style might also be predictive of the quality of a therapeutic relationship between an offender and a practitioner (Mallinckrodt, Porter, & Kivlighan, 2005). This would affect offender responsivity and effectiveness of management. Indeed Ansbro (2008) suggests that inconsistent supervision by practitioners replicates the behaviours of unreliable childhood attachment figures, highlighting the importance of continuity and consistency in a practitioner-client relationship.

1.2. Aims and structure of the thesis

There appears to be a link between substance abuse and offending behaviour; however, other risk factors are likely to interact with this. Attachment, and related interpersonal difficulties, also appear to be important influences on offending, although more research is needed to explore their specific contribution. It is also unclear whether these risk factors are specific to sexual offending, or for general offending behaviour.

This aims of this thesis, therefore, are to explore substance use and attachment patterns of sexual offenders compared to other offending and non-offending populations. More specifically, it examines whether alcohol and drug abuse in sexual offenders is higher than violent and other offender types, and whether using attachment theory improves prediction of offending behaviour. It also considers the impact of these risk factors on

treatment readiness, motivation to change, engagement and therapeutic alliance, and risk of future offending.

Following this overview in Chapter 1, Chapter 2 systematically reviews recent research literature on alcohol and drug abuse in male sexual offenders, to determine prevalence of substance abuse amongst this population, and how this might differ to non-sexual offending and non-offending populations.

Chapter 3 provides an overview and critique of one of the most widely used, and most researched, screening tools to assess alcohol dependency and identify alcohol-related problems: the Michigan Alcoholism Screening Test (MAST; Selzer, 1971), as well as its subsequent variations.

Chapter 4 is an empirical research study examining substance use and attachment patterns in sexual offenders compared to other types of offenders and non-offenders, investigating whether sexual offending can be better predicted by considering an association between substance use and attachment style.

Chapter 5 presents a case study which evaluates the effectiveness of a cognitive-behavioural anger intervention with a male psychiatric inpatient, whose persecutory delusion-driven aggressive and threatening behaviour (and future risk of violence) appeared to be reinforced by continued poly-substance misuse and underlying interpersonal difficulties

linked to an insecure attachment style. This also considers the impact of risk factors such as these on treatment readiness, motivation to change, engagement, and risk for future violence.

Finally, Chapter 6 concludes the thesis by presenting a general discussion on the findings in relation to the aims of the thesis: 1) to review alcohol and drug abuse in male sexual offenders, and compare against other offending and non-offending populations; 2) to critically evaluate one of the most widely used alcohol screening tools: the MAST, and its subsequent variations; 3) to examine substance use and attachment patterns in sexual offenders compared to other types of offenders and non-offenders, and investigate whether sexual offending can be better predicted by considering an association between substance use and attachment style; and 4) to evaluate the effectiveness of an intervention with a mentally disordered patient with violent and aggressive urges, and to consider the impact of contributing risk factors and underlying difficulties. Practical and clinical implications will then be discussed, and limitations of the various aspects of thesis will be highlighted. Future recommendations will also be suggested.

Chapter 2: A systematic review of substance abuse in male sexual offenders compared to non-sexual and non-offending populations

Abstract

Purpose: This study aimed to systematically review the prevalence of alcohol and drug abuse in male sexual offenders, and compare this to other offending and non-offending populations.

Background: The relationship between sexual offending and substance abuse has been extensively researched, although there has only been one systematic review evaluating these studies to date. The current review was conducted to provide more up-to-date knowledge, and reflect potential changes in offending and substance use patterns.

Methods: Six electronic databases were searched as part of the systematic review, along with hand search techniques and contact with experts. Inclusion criteria were applied to the identified studies, and these were then quality assessed using pre-defined criteria, prior to data extraction and synthesis.

Results: The combined search strategies yielded 4619 publications. Of these, duplicates, obviously irrelevant publications, and studies that did not meet inclusion criteria were excluded. Studies were also excluded if they were unavailable or had been comprehensively reviewed previously. This resulted in 18 studies being included in the final review.

Conclusions: A variety of methodologies and terminological models have been used to explore substance abuse amongst sexual offenders. Results into specific alcohol and drug use patterns continue to be mixed. Substance abuse appears to be prevalent amongst sexual offenders; however, a lack of control groups makes comparison with other offending groups difficult. More recent research appears to reflect changes in substance abuse and/or sexual offending patterns, although better quality research is needed to better understand this.

2.1. Introduction

2.1.1 Background

Research has consistently found that alcohol and drug use, both separately and combined, are associated with crime (Peugh & Belenko, 2001a), and in particular violent crime (Duke, Smith, Oberleitner, Westphal, & McKee, 2018). For example, in the UK, perpetrators were believed to have been under the influence of alcohol in 40%, and of drugs in 19%, of violent incidents in 2015/16 (Office for National Statistics [ONS], 2017a). An association between substance abuse and sexual offending has also been considered and examined from various perspectives. There have been a variety of models proposed which seek to explain the link between substance abuse and sexual offending, including Seto and Barbaree's (1995) disinhibition model, which argues that alcohol misuse may be related to committing sexual offences through disinhibitory mechanisms, and Marshall and Barbaree's (1990) integrated theory, which proposes that pre-existing intimacy deficits might contribute towards the development of substance abuse issues within a sexual offending population.

A scoping exercise was conducted to identify the extent of the existing literature on substance abuse of sexual offenders. These included comparing rates of substance abuse of sexual offenders against non-sexual offenders, rates within the heterogeneous sexual offender

population, and examining intoxication at the time of sexual offence. Common methods examining the link between substance abuse and sexual offending included use of self-report measures or screening questionnaires, interviews, and retrospective file searching. An overwhelming majority of studies appeared to focus on male sexual offenders, and there seemed to be limited research on female and juvenile sexual offenders alone.

In addition, it was found that varying definitions have been used to refer to problematic substance use of participants in previous studies, including alcohol and/or drug 'misuse', 'abuse', 'addiction', 'use disorder', and 'dependency'. Often this has reflected use of diagnostic criteria to determine appropriate definitions, although this has not always been clear, and these criteria have changed over the years. Therefore, during this review the term 'substance abuse' will be used to encompass all these terms, unless referring to definitions used by specific studies.

Despite many studies examining the relationship between sexual offending and substance abuse, there has been limited integrative evaluation of these studies. One existing review, carried out by Kraanen and Emmelkamp (2011), examined substance misuse prevalence within sex offender populations, prevalence compared to other populations, and intoxication at time of offence, discussing these separately in terms of the various methodology used in identified studies. The current review also

aims to examine substance abuse of sexual offenders, and how this compares with other offending populations, conducting a more comprehensive search strategy and clearer quality assessment procedure than in past work, and including more recent research. Furthermore, it is thought that research carried out since Kraanen and Emmelkamp's (2011) review might reflect changes in patterns of substance use and increasing awareness of, and research into, alternative forms of sexual offending (e.g. Internet-based offending). Therefore, it was considered appropriate to complete the current review to provide more up-to-date knowledge of the link between sexual offending and substance abuse, and to report this using a more thorough and clear approach.

2.1.2 Objectives

To systematically review studies examining alcohol and drug abuse in male sexual offenders, and compare this to non-sexual offenders, and non-offenders.

The review questions are then as follows:

1. What is the prevalence of alcohol abuse among male sexual offenders, and does this differ from other offending and non-offending populations?

2. What is the prevalence of drug abuse among male sexual offenders, and does this differ from other offending and non-offending populations?

2.2. Method

This review was conducted following a systematic approach using the PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009).

2.2.1. Inclusion and exclusion criteria

The inclusion and exclusion criteria that were used for the current review are outlined in Table 1, using the Population, Intervention or Exposure, Comparator, and Outcome (PICO) framework:

The rationale for the inclusion/exclusion was as follows:

Population: A male forensic offending population aged 18 years or older was focused on, and studies including females or juvenile offenders (i.e. younger than 18 years old at the time of the offence), or a male non-offending community population, were excluded. This was due to the overwhelming number of studies identified concentrating specifically on adult male offenders, and the expectation that potential differences in substance abuse patterns of male adults compared to juvenile or female offenders might make comparison difficult.

Intervention/Exposure: The review examined substance abuse by individuals who had been convicted of a sexual offence; i.e. non-contact and contact offences, including molestation, unlawful sexual contact, and rape, against males or females of any ages. The offender did not have to have been intoxicated at the time of the offence.

Table 1
PICO Inclusion and Exclusion Criteria

PICO	Inclusion Criteria	Exclusion Criteria
Population	• Males • Aged 18 or over • Forensic	• Females • Juvenile offenders (i.e. younger than 18) • Community only
Intervention / Exposure	• Sexual offenders	
Comparison	• Other types of sexual offenders • Non-sexually violent offenders • Non-sexual non-violent offenders • Non-offenders	
Outcome	• Alcohol abuse • Drug abuse	• Substance use at the time of the offence only
Characteristics	• Publication year from 2006 onwards • Language (English)	• Publication year pre-2006 • Opinion and commentary papers

Comparison: Studies comparing within sexual offending populations (e.g. rapists vs. paedophiles), and against non-sexual offenders and non-offenders were included. Studies were also included even if they did not have a comparison group, or if they only examined recidivism rates of sexual offenders. Offending groups had to be distinct, i.e. offending types not being grouped together.

Outcome: The outcome criterion looked at in the current review was substance abuse (alcohol and/or drug). Due to inconsistencies in definitions of drug and alcohol use, this review included all studies that referred to substance 'abuse', 'addiction', 'dependence', 'use disorder' or 'misuse'. Studies clearly measuring substance use or intoxication at the time of the offence alone were excluded because this alone does not necessarily indicate presence of substance use problems, as were studies which measured substance abuse based only on previous charges relating to intoxication. Studies were also excluded if they were unclear about which group they were measuring substance abuse for (e.g. they grouped multiple offences together).

Characteristics: Primary research (cross-sectional, case control, or cohort) studies were included in the review. No limits were set on country of origin so as to include all relevant research and avoid publication bias; however, due to time restraints, papers that were not available in English were excluded. Papers published prior to 2006 were also excluded as these had

already been comprehensively reviewed previously (see Kraanen & Emmelkamp, 2011). Opinion and commentary papers were excluded as by their nature they do not empirically evaluate the research in question.

2.2.2. Search strategy: Sources

Preliminary searches of the Cochrane Database of Systematic Reviews and The Campbell Collaboration Library of Systematic Reviews were undertaken to assess the utility of the current review. In addition, PsychINFO and MEDLINE databases were searched specifically to limit the search to systematic reviews. The preliminary search identified one related systematic review on substance misuse and substance use disorders in sexual offenders (Kraanen & Emmelkamp, 2011). However, as previously mentioned, it was thought that the current review would use a more comprehensive search strategy and clearer quality assessment procedure, and that more recent studies might be of better quality and provide more up-to-date knowledge.

The following sources were searched:

a) *Electronic bibliographic databases*: Search date: 30th October 2017

- OVID: PsycINFO
- OVID: MEDLINE
- OVID: EMBASE
- ProQuest: Applied Social Sciences Index and Abstracts (ASSIA)

- Web of Science
- Cochrane Library

b) *Theses and unpublished literature searches*: Search date: 30th October 2017
   - ProQuest Dissertations & Theses A&I
   - DART-Europe E-thesis Portal
   - Nottingham E-thesis

c) *Web searches*: Search date: 2nd November 2017
   - Google (first 50 pages)
   - GoogleScholar (first 25 pages)

The additional hand search techniques employed comprised:

a) *Citation searching*: Using the 'cited reference' function within Web of Science, forward searching was conducted on seven key references.

b) *Reference list searching*: The reference lists of all included studies were hand searched, in addition to three review papers.

c) *Author searching*: Searches were conducted using the names of seven researchers who have published extensively in the research area.

d) *Contact with experts*: Attempts were made to contact two experts within the field (i.e. with publications of great relevance to the review) to ask whether they: a) had any unpublished data that would be relevant for inclusion in the review; and b) whether they

knew of any (published or unpublished) work that would be unlikely to be sourced through electronic bibliographic databases. One replied, and one review paper was sourced (although this had already been identified via other search methods).

2.2.3. Search strategy: Terms

The following search terms were used in all searches:

sex* offen* OR (rap* or rapis*) OR sex* crim* OR (child molest* or molest*) OR child sex* abus* OR sex* abus* OR sex* assault* OR sex* violen* OR (paedophil* or pedophil*) OR groom* OR indecent expos*

AND

(substance use* or substance abus* or substance misuse* or substance dependen* or substance addict* or substance use disorder* or substance abuse disorder*) OR (alcohol use* or alcohol abus* or alcohol misuse* or alcohol dependen* or alcohol addict* or alcoholi*) OR (drug use* or drug abus* or drug misuse* or drug dependen* or drug addict* or drug use disorder*)

AND

perpetrator* OR crim* OR offen*

The exact search syntax/strategy employed was modified to meet the requirements of each specific database, and can be found in Appendix A.

2.2.4. Study selection

Inclusion and exclusion criteria (as outlined in Table 1) were applied to studies retrieved through the searches, and those that did not meet the criteria were excluded. Studies that met the inclusion criteria using the inclusion/exclusion pro-forma (see Appendix B) went through to the quality appraisal and review stage. See Appendix C for excluded studies, and Figure 1 for the search strategy.

2.2.5. Quality assessment

A pre-defined quality assessment tool was created by adapting the Critical Appraisal Skills Programme (CASP) tools (Public Health Resource Unit, 2006). The quality assessment tool (see Appendix D) included a range of items which contribute to potential bias (sampling and selection, attrition, measurement, and results), and the overall risk of bias for each study was rated as 'high', 'partial', 'low', or 'unclear'. A second rater also independently appraised the quality of 20% of included studies.

2.2.6. Data extraction

A pre-defined data extraction pro-forma (see Appendix E) was applied to all included studies prior to synthesis. This form assisted with the collection of information relating to the study design, population

characteristics, outcome measures, and analysis. In cases where information was unclear, attempts were made to contact authors; five were contacted, with two responding to confirm details.

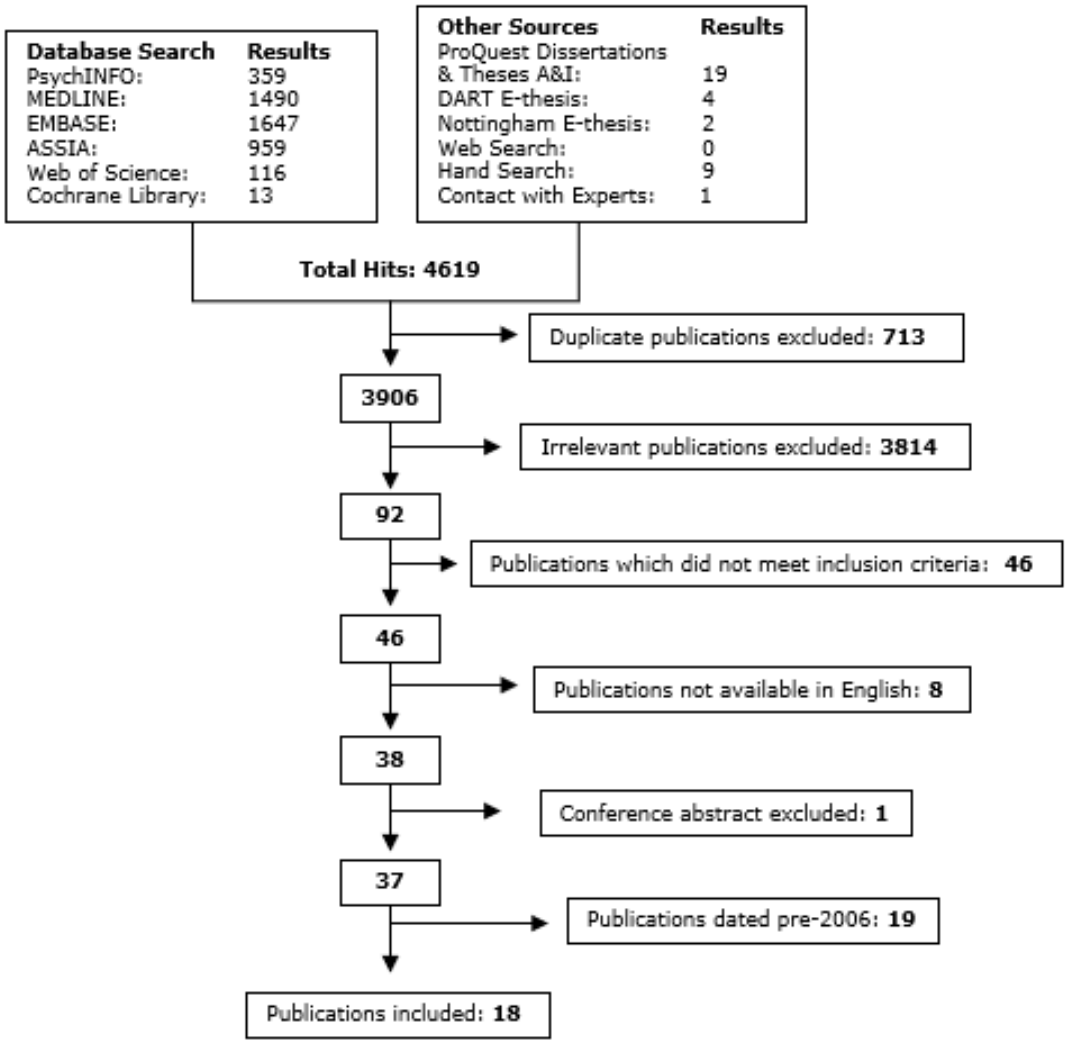


Figure 1. Systematic Review Search Strategy.

2.2.7. Data synthesis

A qualitative data synthesis approach was adopted in the form of a narrative summary, including tables. A quantitative data synthesis was

also considered; however, due to high level of heterogeneity across the studies i.e. differences in study samples (e.g. terminology, extent of substance use, offence type etc.), methodology (e.g. study designs), and data reporting (e.g. measurement tools used), it was decided that statistical pooling was not appropriate.

2.3. Results

2.3.1. Description of studies

The combined electronic bibliographic database searches yielded 4584 publications (see Figure 1). A further 35 references sourced via the additional search strategies (unpublished literature and hand searching) were added, resulting in a combined total of 4619 references. Seven-hundred-and-thirteen duplicates were removed, and a further 3814 obviously irrelevant publications were excluded on the basis of their titles and/or abstracts, resulting in 92 references. The list was further refined by evaluating suitability against the inclusion and exclusion criteria (see Appendix C for reasons for exclusion), with 46 studies excluded. Eight publications were not available in English and so were also excluded, along with one reference which was a conference abstract (with no published manuscript to access at time of search, despite author contact). A further 19 publications dated prior to 2006 were excluded due to having been comprehensively reviewed previously (Kraanen & Emmelkamp, 2011). This resulted in 18 studies to be included in the current final review.

2.3.2. Characteristics of included studies

A summary of study characteristics can be seen in Table 2. In total, data from 4485 participants contributed to this review; however, this is likely to include overlap of participants in four studies (Baltieri & de Andrade, 2006, 2008a, 2008b, 2008c). The study design of the 18 included studies was primarily cross-sectional (12 studies), with a minority being case–control designs (6 studies). Most of the studies were carried out within a prison setting and/or psychiatric centres/clinics.

Seven studies used retrospective file information to code data, and eleven used screening tools and/or structured interviews; the Michigan Alcohol Screening Test (MAST; Selzer, 1971; 4 studies); the Drug Abuse Screening Test (DAST; Skinner, 1982; 8 studies – although scores not reported in one); the CAGE (Mayfield, McLeod, & Hall, 1974; 4 studies – although scores not reported in one); the Short Alcohol Dependence Data (SADD; Davidson & Raistrick, 1986; 4 studies – although scores not reported in one); the German and Dutch versions of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; Wittchen, Zaudig, & Fydrich, 1997 and van Groenestijn, Akkerhuis, Kupka, Schneider, & Nolen, 1998, respectively; 2 studies); the Drug Use Survey (Langevin, 1985; 1 study); and a uniquely developed survey (1 study; study included in review as survey scale items reported by author).

Table 2.
Study Characteristics

Method	7 used retrospective file information 11 used screening tools and/or structured interviews
Population	10 compared sexual offenders 5 compared sexual offenders vs. other offenders 3 examined sexual offenders only
Definition[a]	9 used drug abuse 4 used alcohol abuse 4 used alcohol dependence 4 used drinking/alcohol-related problems 4 used substance abuse or misuse 2 used substance use disorder 2 used drug addiction 1 used alcohol addiction 1 used alcoholism
Setting	9 in prison 6 in psychiatric and/or treatment centres/clinics 1 in prison and psychiatric centre 1 in management unit 1 used psychiatric court reports
Geographical location	5 in USA 4 in Canada 4 in Brazil 2 in Germany 1 in Israel 1 in Netherlands 1 in UK

[a] Number of studies totals more than $n = 18$, due to some studies measuring both alcohol and drug use.

Three studies examined a sexual offending group only (Langevin, Langevin, Curnoe, & Bain, 2006; Levenson, 2016; Looman & Abracen, 2011). Ten compared different sexual offending groups. More specifically, these were separated by contact vs. non-contact offences (Aslan & Edelmann, 2014; Faust, Bickart, Renaud, & Camp, 2015; McCarthy, 2010), victim ages (Baltieri & de Andrade, 2006, 2008a; Poortinga,

Lemmen, & Majeste, 2007), victim sex (Baltieri & de Andrade, 2008b), number of victims (Baltieri & de Andrade, 2008c), and diagnoses (Briken, Habermann, Kafka, Berner, & Hill, 2006; Marshall & Marshall, 2006). Five compared various offending groups, including violent and other offenders (Abracen, Looman, Di Fazio, Kelly, & Stirpe, 2006; Alish et al., 2007; Harsch et al., 2006; Kraanen, Scholing, & Emmelkamp, 2012; Young, Justice, & Edberg, 2010). No studies included a non-offending comparison group.

Half of the studies included in the current review were also included in Kraanen and Emmelkamp's (2011) review (Abracen et al., 2006; Alish et al., 2007; Baltieri & de Andrade, 2008a, 2008b, 2008c; Briken et al., 2006; Harsch et al., 2006; Marshall & Marshall, 2006; Poortinga et al., 2007). Seven were published after the review (Aslan & Edelmann, 2014; Faust et al., 2015; Kraanen et al., 2012; Levenson, 2016; Looman & Abracen, 2011; McCarthy, 2010; Young et al., 2010), and two included studies here (Baltieri & de Andrade, 2006; Langevin et al., 2006) may not have been included in the previous review due to differences in search terms and/or databases, or inclusion criteria used.

2.3.3. Quality of included studies

A breakdown of ratings of overall risk of various types of bias for the 18 included studies can be found in Table 3. Six studies used a case-control design; however, the majority of studies (12 studies) were of a cross-

sectional design, which is the most appropriate design to investigate prevalence (Mann, 2003). Although difficult to eliminate, many studies failed to acknowledge and attempt to control for potential confounding variables (such as age, socio-economic background, or individual temperament), contributing towards half being rated as partially at risk of measurement bias (9 studies), and all 18 studies were rated as partially at risk of bias in their results.

Table 3
Quality Assessment of Included Studies

Type of Bias	High	Partial	Low	Unclear
Sampling & Selection Bias	0	6 (33.3%)	9 (50.0%)	3 (16.7%)
Attrition Bias	1 (5.6%)	0	15 (83.3%)	2 (11.1%)
Measurement Bias	1 (5.6%)	9 (50.0%)	7 (38.9%)	1 (5.6%)
Results & Reporting Bias	0	18 (100.0%)	0	0
Overall Risk of Bias	0	13 (72.2%)	5 (27.8%)	0

Furthermore, few reported thorough descriptions of tools and measures used (e.g., reliability and validity), and the majority failed to report statistical power; the latter is particularly important when considering that seven of the studies used retrospective file information to code or diagnose substance abuse problems. Several studies indicated dropout and non-participation rates, which is reflected in the majority having a low rating of attrition bias (15 studies). In terms of sampling and selection bias, the majority were deemed generally acceptable with partial (6 studies) or low (9 studies) risk of bias, and most involved samples of

100 or over (16 studies), with six of these having over 200 total participants.

Areas highlighted as being particularly unclear were the descriptions of recruitment processes and how authors dealt with missing information, so there is room for improvement in these areas for future research. Also clear from the quality assessment process was a lack of non-sexual offending comparison groups among the included studies, with only five comparing against other offending groups, and no studies including a non-offending control group. Thus, few studies consider the influence of base-rates prior to group effects. Despite few (5 studies) being rated as having an overall low risk of bias, none of the identified studies were deemed to have an overall high risk of bias to warrant being excluded.

The interrater reliability of the ratings provided by two raters during the quality assessment process was calculated using Cohen's Kappa. These ranged between .61 to .70, representing substantial agreement (Landis & Koch, 1977). All discrepancies lay within the overall bias groups, were discussed, and ratings adjusted accordingly.

2.3.4. Descriptive data synthesis

Due to the heterogeneity between the included studies, a qualitative data synthesis approach was taken rather than a quantitative one, as it was considered that it would not be useful to conduct a meta-analysis. All papers were included to facilitate the review of the available data.

Synthesis of data was complicated by the differences in samples, methodology, and reporting across the studies, and so these will be considered and discussed according to the research method used to obtain data.

2.3.4.1. File information search

The seven studies that used retrospective file information to assess substance abuse are reported in Table 4.

2.3.4.1.1. Prevalence of substance abuse in sexual offenders

Three studies (Alish et al., 2007; Faust et al., 2015; Poortinga et al., 2007) reported prevalence rates of substance abuse, and one of substance misuse (Aslan & Edelmann, 2014), without distinguishing between alcohol and drugs. Another (Young et al., 2010) used the term 'drug abuse' to refer to any substance-related disorder (including alcohol abuse). These found prevalence rates for a history of substance abuse amongst sexual offenders ranging between 13.7% and 88.0%. This broad range highlights significant differences in substance use depending on the sexual offending population studied, with larger disparities existing between child contact and non-contact offenders, offenders with and without schizophrenia, and offenders against older vs. younger victims. One study (Briken et al., 2006) focused on alcohol dependence and found that sexual murderers reported prevalence rates between 3.4% and 31.0%, depending on

whether they had a paraphilic/paraphilic-related disorder. Again, this broad range suggests that heterogeneity of sexual offenders is important to consider when examining substance abuse. Another study (McCarthy, 2010) reported alcohol and drug abuse in child pornography offenders, and found that 21.0% abused alcohol, and 27.0% abused illicit drugs.

2.3.4.1.2. Comparing prevalence rates

Most studies using retrospective file information compared within a sexual offending group. Three studies compared contact and non-contact sexual offenders; two reported significantly more substance abuse (drug and alcohol) in contact sexual offenders (Faust et al., 2015; McCarthy, 2010); and the other reported similar rates for Internet, contact, and Internet-contact offenders (Aslan & Edelmann, 2014). One study (Poortinga et al., 2007) found significantly more substance abuse amongst offenders against older victims (79.0%) than those who offended against younger victims (21.0%). One study (Alish et al., 2007) found more substance abuse in sexual offenders with schizophrenia (44.4%) than those without (26.3%), and significantly more in non-sexual offenders with schizophrenia (66.3%) than sexual offenders with schizophrenia (44.4%). One study (Briken et al., 2006) showed higher prevalence rates amongst sexual murderers without paraphilic or paraphilic-related disorders, murderers with both, and murderers with a paraphilic-related disorder only, compared to those who had only a paraphilic disorder.

Table 4

Studies Reviewing File Information to Assess Substance Abuse

Study	Design	Location; Setting	Sample characteristics	Definition used	% prevalence
Alish et al. (2007)	Case-control	Israel; forensic psychiatric unit at a mental health center	Sexual offenders with schizophrenia (*n* = 36)	Substance abuse	44.4%[a]
			Sexual offenders without schizophrenia (*n* = 80)	Substance abuse	26.3%
			Non-sexual offenders with schizophrenia (*n* = 57)	Substance abuse	66.3%
Aslan & Edelmann (2014)	Case-control	UK; offender management unit	Internet child sex offenders (*n* = 74)	Substance misuse	31.0%
			Contact child sex offenders (*n* = 118)	Substance misuse	28.0%
			Internet-contact child sex offenders (*n* = 38)	Substance misuse	21.0%
Briken et al. (2006)	Case-control	Germany; psychiatric court reports	Sexual murderers without PRD or PA (*n* = 47)	Alcohol dependence	25.5%
			Sexual murderers with PRD (*n* = 29)	Alcohol dependence	31.0%[b]
			Sexual murderers with PA (*n* = 29)	Alcohol dependence	3.4%
			Sexual murderers with PRD and PA (*n* = 56)	Alcohol dependence	17.9%
Faust et al. (2015)	Case-control	USA; federal prison system	Child pornography sex offenders (*n* = 428)	Substance abuse	13.7%[c]
			Child contact sex offenders (*n* = 210)	Substance abuse	43.1%
McCarthy (2010)	Case-control	USA; private forensic practice	Child pornography offenders (*n* = 107)	Alcohol abuse	21.0%
				Illicit drug abuse	27.0%
			- Non-contact (*n* = 56)	Alcohol abuse	18.0%
				Illicit drug abuse	16.0%[d]
			- Contact (*n* = 51)	Alcohol abuse	24.0%
				Illicit drug abuse	40.0%
Poortinga et al. (2007)	Case-control	USA; center for forensic psychiatry	Sex offenders with young victims; <6 years old (*n* = 38)	Substance abuse[e]	21.0%
			Sex offenders with older victims; 12 years or older (*n* = 125)[f]	Substance abuse	79.0%
Young et al. (2010)	Cross-sectional	USA; prison	Sexual offenders (*n* = 60)	Drug abuse[g]	88.0%
			Non-sexual offenders (*n* = 60)	Drug abuse	87.0%

Note. PRD = paraphilia related disorder; PA = paraphilic disorders.

[a] Significantly more substance abuse in non-sexual offenders with schizophrenia vs. sexual offenders with schizophrenia ($p < .05$).

[b] Significantly more alcohol dependence in PRD group vs. PA group ($p < .05$).

[c] Significantly more substance abuse in child contact vs. child pornography sex offenders ($p < .05$).
[d] Significantly more illicit drug abuse in contact vs. non-contact child pornography offenders ($p < .01$).
[e] Includes alcohol and/or non-alcohol abuse or dependency.
[f] Sex offenders with victims aged between 6 and 11 years old also formed a group, but percentage not reported by authors for these.
[g] Defined as meeting criteria for any substance-related disorder (including alcohol abuse).

Overall, identified studies using file information to assess substance abuse generally suggest a higher prevalence of substance use amongst child contact offenders (compared to non-contact offenders), offenders against older victims, and those with clinical diagnoses (here, schizophrenia or paraphilic-related disorders). This highlights the importance of regarding sexual offenders as a heterogenous group, with differing patterns of substance use, needs, and motivations. A lack of non-sexual offending comparison groups made it difficult to determine whether substance use of sexual offenders differs from other offending groups; however, findings from one study (Young et al., 2010) suggested similar prevalence rates.

2.3.4.2. Screening tools and structured interviews

The eleven studies that used screening tools and/or interviews to assess substance abuse are reported in Table 5. These will now be discussed in terms of alcohol abuse, drug abuse, and substance use disorders.

2.3.4.2.1. Prevalence of substance abuse in sexual offenders

2.3.4.2.1.1. Alcohol

Four studies used the MAST to assess alcohol abuse, alcoholism, or alcohol addiction (Abracen et al., 2006; Langevin et al., 2006; Looman & Abracen, 2011; Marshall & Marshall, 2006), where typically scores of 4 or more represent at least moderate difficulties with alcohol abuse. Scores ranged from 8.4 to 8.8 in these studies, indicating severe problems with

alcohol abuse, and prevalence rates of 21.4%-32.7% were reported by Langevin et al. (2006). One author (Levenson, 2016) developed her own survey, and found a slightly higher alcohol abuse prevalence rate: 44.0%. Four studies (Baltieri & de Andrade, 2006, 2008a, 2008b, 2008c) used the CAGE to identify alcohol-related problems (although results were not reported by Baltieri & de Andrade, 2008c). The same four studies also used the SADD to measure alcohol dependency (although results were not reported by Baltieri & de Andrade, 2008b), where a score of 20 or more suggests severe alcohol dependence. Prevalence rates of between 30.2%-89.6%, and SADD scores between 8.2 and 16.2, were reported for sexual offenders. Discrepancies in scores and rates appeared to depend on age of victim, sex of victim, and number of victims. Whether severe problems with alcohol dependency amongst sexual offenders were found also appeared to depend on the measure used. Studies using the MAST indicated more problematic alcohol use by sexual offenders than those using the SADD, which suggests that it is important to clearly define and understand how alcohol use is measured and interpreted.

2.3.4.2.1.2. Drugs

Eight studies (Abracen et al., 2006; Baltieri & de Andrade, 2006, 2008a, 2008b, 2008c; Langevin et al., 2006; Looman & Abracen, 2011; Marshall & Marshall, 2006) used the DAST to assess drug abuse or drug addiction (although results were not reported by Baltieri & de Andrade, 2008b),

Table 5

Studies Using Screening Tools and/or Structured Interviews to Assess Substance Abuse

Study	Design	Location; Setting	Sample characteristics	Tool(s) used	Definition according to measure used/study	Mean (*SD*)	% prevalence
Abracen et al. (2006)	Cross-sectional	Canada; federal prison	Sexual offenders (*n* = 94)[ab]	MAST	Alcohol abuse	8.41 (-)[c]	-
			- Rapists (*n* = 48)	DAST	Drug abuse	7.98 (-)[d]	-
			- Child molesters (*n* = 43)	DAST	Drug abuse	4.85 (-)	-
			Violent offenders (*n* = 21)	MAST	Alcohol abuse	5.50 (-)	-
				DAST	Drug abuse	6.75 (-)	-
Baltieri & de Andrade (2006)	Cross-sectional	Brazil; penitentiary	Sexual offenders against children; <11 years old (*n* = 101)	CAGE	Alcohol-related problem	-	48.5%
				SADD	Alcohol dependence	16.24 (14.64)[e]	-
				DAST	Drug abuse	2.91 (6.38)	-
			Sexual offenders against adolescents; 12-18 years old (*n* = 56)	CAGE	Alcohol-related problem	-	30.4%
				SADD	Alcohol dependence	9.96 (13.47)	-
				DAST	Drug abuse	2.23 (5.92)	-
			Sexual offenders against adults; >18 years old (*n* = 41)	CAGE	Alcohol-related problem	-	36.6%
				SADD	Alcohol dependence	9.90 (12.56)	-
				DAST	Drug abuse	8.83 (9.91)[f]	-
Baltieri & de Andrade (2008a)	Cross-sectional	Brazil; penitentiary	Sexual aggressors of girls; <11 years old (*n* = 46)	CAGE	Alcohol-related problem	-	43.5%
				SADD	Alcohol dependence	11.35 (12.83)	-
				DAST	Drug abuse	3.04 (6.72)	-
			Sexual aggressors of pubertal females; 12-18 years old (*n* = 43)	CAGE	Alcohol-related problem	-	30.2%
				SADD	Alcohol dependence	8.16 (12.26)	-
				DAST	Drug abuse	1.86 (5.52)	-
			Sexual aggressors of women; >18 years old (*n* = 42)	CAGE	Alcohol-related problem	-	38.1%
				SADD	Alcohol dependence	10.62 (13.25)	-
				DAST	Drug abuse	9.89 (9.93)[g]	-
Baltieri & de Andrade (2008b)	Cross-sectional	Brazil; penitentiary	Sexual offenders against boys (*n* = 48)	CAGE[h]	Alcohol-related problem	-	89.6%[i]
			Sexual offenders against girls (*n* = 52)	CAGE	Alcohol-related problem	-	48.0%
Baltieri & de Andrade (2008c)	Cross-sectional	Brazil; penitentiary	Sexual aggressors of one victim (*n* = 149)	SADD[j]	Alcohol dependence	12.99 (13.93)	-
				DAST	Drug abuse	4.34 (7.78)	-
			Sexual aggressors of two victims (*n* = 25)	SADD	Alcohol dependence	14.16 (13.95)	-
				DAST	Drug abuse	3.08 (6.63)	-
			Sexual aggressors of three or more victims (*n* = 24)	SADD	Alcohol dependence	13.08 (16.55)	-
				DAST	Drug abuse	2.42 (6.77)	-

Harsch et al. (2006)	Cross-sectional	Germany; forensic psychiatry centres & prison	Forensic sexual offenders (*n* = 40)	SCID-I	Substance use disorder	-	55.0%
			Imprisoned sexual offenders (*n* = 30)	SCID-I	Substance use disorder	-	66.7%
			Imprisoned violent offenders (*n* = 26)	SCID-I	Substance use disorder	-	69.2%
Kraanen et al. (2012)	Cross-sectional	Netherlands; forensic psychiatry outpatient clinic	Sexual offenders (*n* = 22)[k]	SCID-I	Alcohol use disorder	-	4.5%
					Cannabis use disorder	-	9.1%
					Cocaine use disorder	-	0.0%
					Other substance use disorder	-	0.0%
					Any drug related disorder	-	9.1%
					Any substance use disorder	-	9.1%
			Perpetrators of general violence (*n* = 52)	SCID-I	Alcohol use disorder	-	46.2%[l]
					Cannabis use disorder	-	38.5%
					Cocaine use disorder	-	9.6%
					Other substance use disorder	-	1.9%
					Any drug related disorder	-	40.4%
			Perpetrators of physical intimate partner violence (*n* = 68)	SCID-I	Any substance use disorder	-	61.5%
					Alcohol use disorder	-	27.9%
					Cannabis use disorder	-	10.3%
					Cocaine use disorder	-	4.4%
					Other substance use disorder	-	0.0%
					Any drug related disorder	-	13.2%
			Other offenders (*n* = 45)	SCID-I	Any substance use disorder	-	30.9%
					Alcohol use disorder	-	15.6%
					Cannabis use disorder	-	20.0%
					Cocaine use disorder	-	4.4%
					Other substance use disorder	-	2.2%
					Any drug related disorder	-	17.8%
					Any substance use disorder	-	26.7%

Langevin et al. (2006)	Cross-sectional	Canada; university & private forensic clinics	Sex offenders and paraphilics (n = 899)[m]	MAST DAST & Drug Use Survey	Alcoholism Serious drinking problem Drug addiction Drug abuse	- - - -	32.7% 21.4% 4.2% 22.0%
Levenson (2016)	Cross-sectional	USA; civil commitment & outpatient sex offender treatment programs	Sex offenders (n = 679)	Survey[n]	Alcohol abuse Illicit drug abuse Prescription drug abuse Marijuana abuse	- - - -	44.0% 33.0% 12.0% 40.0%
Looman & Abracen (2011)	Cross-sectional	Canada; federal prison	Sexual offenders (n = 250)[o]	MAST DAST	Alcohol abuse Drug abuse	8.6 (6.9) 5.5 (5.6)	- -
Marshall & Marshall (2006)	Cross-sectional	Canada; federal prison	Sexual offender sex addicts (n = 14) Sexual offender non-sex addicts (n = 26)[p]	MAST DAST MAST DAST	Alcohol addiction Drug addiction Alcohol addiction Drug addiction	12.6 (15.7) 3.1 (4.1) 8.8 (7.5) 2.5 (3.3)	- - - -

Note. MAST = Michigan Alcoholism Screening Test; DAST = Drug Abuse Screening Test; SADD = Short Alcohol Dependence Data; SCID-I = Structured Clinical Interview for DSM-IV Axis-I Disorders.

[a] Indicates n in initial sample. Three sexual offenders could not be classified easily as either rapist or child molester, therefore were excluded from some analyses. Reported n's for each group on the DAST differ from initial sample; rapists (n = 45), child molesters (n = 41), and violent offenders (n = 20).
[b] No significant differences between rapist and child molester groups on MAST, therefore collapsed into sexual offender group.
[c] Sexual offenders scored significantly higher than violent offenders on the MAST ($p < .05$).
[d] Rapists scored significantly higher than child molesters on the DAST ($p < .05$).
[e] Sexual offenders against children scored significantly higher than sexual offenders against both adolescents and women on the SADD ($p < .05$).
[f] Sexual offenders against adults scored significantly higher than sexual offenders against both children and adolescents on the DAST ($p < .01$).
[g] Sexual offenders against women scored significantly higher than sexual offenders against both girls and pubertal females on the DAST ($p < .01$).
[h] SADD and DAST also administered, but not included here because no exact scores or percentages provided by author.
[i] Sexual offenders against boys reported more alcohol problems than sexual offenders against girls on the CAGE ($p < .01$).
[j] CAGE also administered, but not included here because no scores or percentages provided by author.

[k] Only patients who scored at cutoff or above cutoff on the Alcohol Use Disorder Identification Test (AUDIT) and Drug Use Disorder Identification Test (DUDIT) (used to measure substance use at time of offence) completed the SCID-I. Therefore, reported n's for each group differ from initial sample reported by Kraanen et al. (2012).
[l] Significantly more violent offenders were diagnosed with any alcohol use disorder, any cannabis use disorder, any drug use disorder, and any substance use disorder using the SCID-I ($p < .01$). Significantly fewer sex offenders were diagnosed with any alcohol use disorder using the SCID-I ($p < .01$).
[m] A control group of 113 non-sex offenders was included in the sample, but no scores provided by author for this group.
[n] Substance abuse scale items in survey reported by author.
[o] Initial sample was $n = 397$; however, complete data available for only 250 offenders.
[p] A group of 40 community controls was included in the sample, but no scores provided by author for this group apart from when combined with sexual offenders in an overall sexual addicts group.

where typically scores of 11 or more indicate substantial problems with drug abuse. Scores ranged from 1.9 to 9.9 in these studies, with larger discrepancies seen between older vs. younger victims, although generally scores did not suggest substantial drug problems. Drug abuse prevalence rates of 22.0% were reported by Langevin et al. (2006), who also used the Drug Use Survey, and Levenson (2016), using her own developed survey, found a 33.0% prevalence rate for illicit drug abuse, 12.0% for prescription drug abuse, and 40.0% for marijuana abuse, indicating differences depending on type of drug.

2.3.4.2.1.3. Substance use disorders

Two studies (Harsch et al., 2006; Kraanen et al., 2012) used the German and Dutch version of the SCID-I to diagnose substance use disorders amongst sexual offenders. Harsch et al. (2006) reported substance use disorder prevalence rates of 55.0% and 66.7% amongst forensic and imprisoned sexual offending samples, whereas Kraanen et al. (2012) reported on more specific disorders within this, finding 4.5% for any alcohol use disorder and 9.1% for any cannabis use disorder (with a rate of 9.1% for any drug or substance use disorder). Although these rates appear to be relatively low for substance use disorders amongst sexual offenders, it should be noted that participants from this study only completed the SCID-I after scoring at or above the cutoff for the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) and Drug Use Disorder Identification Test (DUDIT; Berman, Bergman, Palmstierna, & Schlyter, 2005) for substance use at

the time of their offence, indicating that there might still be problems with substance abuse.

2.3.4.2.2. Comparing prevalence rates

2.3.4.2.2.1. Alcohol

Most studies using screening tools and/or interviews compared either within a sexual offending group, or against a non-sexual offending group. Baltieri and de Andrade (2006, 2008a, 2008b, 2008c) found a higher prevalence of alcohol-related problems and dependency in those who offended against younger victims (48.5%), younger female victims (43.5%), and boys (89.6%). They also demonstrated similar SADD scores in sexual offenders who had offended against one, two, or three or more victims, although it is not clear whether they used the same sample across their studies. Only two studies using the MAST compared scores; Abracen et al. (2006) found that sexual offenders reported significantly more alcohol abuse than violent offenders; whereas Marshall and Marshall (2006) found more alcohol addiction in sexual offenders who were also defined as "sex addicts" (compared to those who were not sex addicts).

These results suggest that sexual offenders might be more likely to abuse alcohol than violent offenders, and those who sexually offend against younger victims, particularly boys, might experience more problems with alcohol dependency. This could reflect reliance on alcohol as a disinhibitor, or as a coping strategy, in an attempt to overcome problems with developing appropriate intimate relationships, or engaging in appropriate sexual activity with a consenting adult.

2.3.4.2.2.2. Drugs

Four studies compared drug abuse within a sexual offending group. Baltieri and de Andrade (2006, 2008a, 2008c) found significantly higher scores of drug abuse in those who offended against older victims, and older female victims, but that number of victims made no difference to scores. Marshall and Marshall (2006) also found similar drug abuse in sexual offenders with and without sex addiction. Only one study compared drug abuse in sexual offenders to other types of offenders. Abracen et al., (2006) compared DAST scores in rapists and child molesters to violent offenders, and found that rapists reported more drug abuse than violent offenders, and significantly more than child molesters. These results suggest that individuals who sexually offend against older victims might be more likely to abuse drugs than those who offend against children, as well as violent non-sexual offenders; however, it should be noted, as previously mentioned, that reported scores did not always indicate substantial drug problems. Furthermore, lack of comparison groups makes it difficult to determine whether drug use of sexual offenders differs from other offending groups.

2.3.4.2.2.3. Substance use disorders

Harsch et al. (2006) found a higher prevalence rate of substance use disorder amongst imprisoned violent offenders and sexual offenders (69.2% and 66.7%, respectively), compared to forensic sexual offenders (55.0%). Kraanen et al. (2012) also reported a significantly higher prevalence of any substance use disorder amongst violent offenders

(61.5%), followed by perpetrators of physical intimate partner violence (30.9%), other offenders (26.7%), and sexual offenders (9.1%). This shows a high prevalence of substance use disorder amongst violent offenders, but mixed results with sexual offenders. However, as previously mentioned, this does not necessarily indicate an absence of problems with substance abuse.

2.4. Discussion

The objectives of this review were to examine the prevalence of alcohol and drug abuse in male sexual offenders, and compare this to other offending and non-offending populations. The aim was to adopt a clear and thorough systematic approach to contribute to the existing knowledge regarding the link between sexual offending and substance abuse, and to pick up where Kraanen and Emmelkamp's (2011)'s review left off by examining more recently published research.

The review found a mixture of methods utilised by studies to investigate problematic substance use in offenders, namely retrospective file information, screening tools, and interviews. It was also found, as anticipated, that a variety of definitions were used as an outcome measure across studies, with substance 'abuse', 'dependence', 'problems', 'misuse', and 'addiction' amongst the most frequent. The file search method studies tended to group together drugs and alcohol into the term 'substances', whereas methods using tools were more likely to measure drug and alcohol use separately.

2.4.1. Summary of results

Results generally found clinically significant high scores of alcohol abuse amongst sexual offenders, although these tended to be higher when screening tools were used; particularly the MAST. This highlights the importance of clearly defining and selecting the most appropriate measure of alcohol use for this population. In contrast, higher drug use prevalence rates were reported by studies using the file search method, whereas those relying upon screening measures (typically the DAST) did not appear to suggest specific problems with drug use amongst sexual offenders. Prevalence rates for substance use disorders amongst sexual offenders, using structured interview techniques, were found to be relatively low; however, it is important to note that this does not necessarily mean they do not experience problems with substance use.

In terms of comparisons, only two studies using retrospective file searching included a non-sexual offending comparison group. These found that sexual offenders scored lower (Alish et al., 2007) or similarly (Young et al., 2010) on substance abuse, which suggests that even if high, substance abuse may not be specific to sexual offenders. Two studies using screening tools found mixed results in terms of substance use disorder rates amongst sexual and violent offenders (Harsch et al., 2006; Kraanen et al., 2012), and one study found that sexual offenders scored higher on alcohol abuse than violent offenders (Abracen et al., 2006). No studies included a non-offending comparison group. The lack of inclusion of comparison groups by studies makes it difficult to determine whether substance use by sexual offenders differs from other offending or non-

offending groups. This is particularly important when considering that alcohol consumption in the UK is generally high, with reports that 1.4% of the adult population drink at what is defined as dependent levels (Public Health England [PHE], 2017a). Furthermore, statistics indicate that 34.2% of adults have used an illicit drug at some point in their lives, with 2% classed as frequent drug users (i.e. more than once a month in the past year; Broadfield, 2017). Comparison against other substance-using groups would help determine whether patterns of alcohol and drug use differ significantly for particular types of offenders and offending behaviour.

In terms of comparisons within a sexual offending group, contact sexual offenders were found to report more substance and drug use than non-contact sexual offenders (Faust et al., 2015; McCarthy, 2010). Offenders against children were found to report more alcohol dependence than those with older victims (Baltieri & de Andrade, 2006), whereas offenders against adults reported more drug use (Abracen et al., 2006; Baltieri & de Andrade (2006, 2008a). These results show the importance of regarding sexual offenders as a heterogenous group, and provides support for models that argue that substances might act as a disinhibitor (Seto & Barbaree, 1995).

Compared to Kraanen and Emmelkamp's (2011) review, it was found that more recent studies have included different types of sex offender typologies, namely non-contact, pornographic sexual offenders. This could reflect greater ability of individuals to sexually offend due to the development of technology and increase in resource gathering and

sharing. It might also reflect changes in the way we record and research sexual offending. This has led to the acknowledgment that this as an important typology of sexual offending to further investigate and enabled more studies into illegal online sexual activity to be conducted. The current review reports similar overall findings to Kraanen and Emmelkamp (2011), with sexual offenders generally reporting high levels of alcohol (but not drug) abuse. Differences between contact and non-contact sexual offenders have been highlighted, and these may be important to explore further. The current study also found continued lack of non-sexually offending and non-offending comparison groups in studies examining substance use and offending, despite the high base-rate of this behaviour in society generally.

2.4.2. Limitations of the included studies

Whilst conducting this review, several common limitations in terms of quality of studies were noted. Firstly, as previously mentioned, there was a lack of appropriate comparison (control) groups, if any at all; this was particularly with regards to non-offending population groups. Secondly, there was often a lack of clear description regarding terminology and methodology used, making comparisons between studies difficult; particularly those studies utilising a file search method. For example, it was sometimes unclear whether 'substance abuse' referred to drugs and/or alcohol, and therefore results might not accurately reflect specific use patterns. Furthermore, studies often failed to detail selection and

recruitment processes, and descriptions of methodology utilised also lacked reporting of reliability and validity.

2.4.3. Limitations of the current review

This review excluded studies with samples that included female offenders or juvenile offenders under the age of 18; therefore, potentially important observations and patterns of substance abuse amongst these subgroups of sexual offenders have not been considered. Nor did the current review take into account substance abuse at the time of the index offence, as Kraanen and Emmelkamp's (2011) review did. Acknowledging the limitation highlighted above, i.e. that definitions of outcome measure were not always clear, it might be the case that studies were implicitly measuring substance use at time of offence, and not lifetime or current problematic substance use, or substance use disorders. In addition, this review treated all studies as separate studies, despite it being possible there was some overlap. Consequently, the number of participants within the review may be an overestimate.

2.4.4. Conclusions and recommendations

In conclusion, the current review found a variety of methodology and terminology utilised to explore problematic substance use amongst sexual offenders. Results into specific alcohol and drug use patterns in relation to offending were mixed. It has been demonstrated that substance abuse is prevalent amongst sexual offenders; however, prevalence rates may be overestimated when screening tools are used. More recent research appears to reflect changes in substance abuse and/or sexual offending

patterns, e.g. an increase in studies reporting higher levels of substance abuse in non-contact sexual offending. This might provide support for Marshall's (1989, 2010) ideas relating to underlying patterns of insecure attachment amongst sexual offenders, as this might contribute towards the decision to offend remotely/online, as well as the development of substance abuse problems.

Following on from the limitations mentioned above, it is recommended that future studies adopt and report a more thorough and structured methodology, to overcome issues of bias and enable comparisons between groups. It is also important for studies to include appropriate control conditions, i.e. non-sexual offending and non-offending populations, in order to better understand the relationship between substance abuse and sexual offending compared to other types of offending and substance-using populations. As mentioned by Kraanen and Emmelkamp (2011), it would also be useful for research to explore specific drug use patterns, to find out whether there are particular types of drugs that might be more useful to investigate in relation to sexual offending; this is particularly important given drug classification changes, and rising popularity of new psychoactive substances. Finally, it would be important for future research to continue to acknowledge changes in offending and substance use patterns in order to accurately reflect alcohol and drug use amongst this population, and to be of any practical utility in informing effective assessment and treatment of sexual offenders, as well as prevention strategies.

Chapter 3: A psychometric critique of the Michigan Alcoholism Screening Test

Abstract

The Michigan Alcoholism Screening Test (MAST; Selzer, 1971) was developed to provide quick and effective measurement of alcoholism. It is one of the most widely used, and most researched, screening tool both clinically and in research to assess alcohol dependency and identify alcohol-related problems. In order to adjust to clinical need, and in response to concerns about length, several variations of the MAST have since been developed, including the Brief Michigan Alcohol Screening Test (BMAST; Pokorny, Miller, & Kaplan, 1972), and the Short Michigan Alcoholism Screening Test (SMAST; Selzer, Vinokur, & van Rooijen, 1975).

All variations of the MAST have been validated across various populations and settings, demonstrating high internal consistency and test-retest reliability, and show significant correlations with other alcoholism screening tools, such as the CAGE Questionnaire (Ewing, 1984) and AUDIT (Saunders et al., 1993). They have also demonstrated moderate effectiveness in identifying those with alcoholism from other clinical and non-clinical groups. Despite limited research into the effectiveness of the MAST, or any of its variations, in forensic settings, the SMAST was found suitable for use in this thesis due to its general satisfactory psychometric properties, with attempts made to overcome limitations identified within this review.

3.1. Introduction

3.1.1. Background

Hazardous drinking is defined as a pattern of alcohol consumption increasing the risk of psychological and/or physical health problems or accidents directly related to alcohol, whereas harmful drinking is defined by the presence of these problems or accidents (National Institute for Health and Care Excellence [NICE], 2011). Alcohol dependence is characterised by a preoccupation with alcohol and continued drinking despite harmful consequences, and is associated with offending behaviour, and comorbid mental and physical health disorders. Estimates show that 1.4% of the adult population in England have alcohol dependency (PHE, 2017a), with nearly half of all adults receiving specialist treatment interventions for drug and alcohol misuse presenting with problematic alcohol use (PHE, 2017b).

Problem drinking exists on a continuum of severity and early intervention is important to help reduce prevalence of alcohol-related problems. Therefore, early diagnosis and assessment of alcohol misuse is essential as it identifies those at risk and can inform appropriate interventions. Consequently, the routine use of validated screening tools within primary healthcare settings and the criminal justice system has been recommended to help with identification of those at risk of problem drinking (Fiellin, Reid, & O'Connor, 2000; Fleming, 2004; Lapham, 2004/2005; WHO, 2013).

There are a number of well-known screening questionnaires available to help clinicians identify alcohol-related problems, including the

CAGE Questionnaire (Ewing, 1984) and the AUDIT (Saunders et al., 1993). One of the most widely used, and most researched, is the MAST (Selzer, 1971), which will be the focus of this review. The MAST was developed by Selzer (1971) to provide a quick and effective structured tool to measure alcoholism, and continues to be used both clinically and in research to assess alcohol dependency and identify alcohol-related consequences.

3.1.2. Objectives

To provide an overview of the MAST (as well as some of the subsequent variations), to review psychometric properties of these, and to consider limitations of the tool.

3.2. Overview of the MAST

3.2.1. Development and description of the tool

The MAST (Selzer, 1971) was originally developed using a white North American population of 116 men admitted to hospital because of alcoholism, and a control group of 103 men with no alcohol problems. In addition, Selzer also administered the MAST to two other groups expected to have high rates of alcoholism (99 drivers convicted of driving under the influence, and 110 individuals convicted of being drunk and disorderly), as well as 98 drivers undergoing licence reviews following excessive accidents and violations over a two-year period.

The original 25 items included were derived from empirical investigations of alcoholism and a scoring system developed using visual analysis of participant responses (Selzer, 1971), along with clinical

knowledge of alcoholism. The MAST was later reduced to 24 items, with wording of questions slightly modified and an omission of question 7, before becoming revised to the 22-item version (see Appendix F).

The MAST asks respondents to answer questions relating to alcohol use, focusing on either lifetime drinking patterns or within the past 12 months. This relies on an individual's accurate and honest perception of their alcohol use, and items cover a range of problems often associated with problematic alcohol use, including drinking habits, behavioural, social and occupational consequences of drinking behaviour, and physical effects relating to drinking. It is worth noting that these are not directly linked to diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM).

3.2.2. Administration and scoring of the tool

The MAST is quick and simple to administer, either as a pencil and paper measure, via computer, or delivered as an interview, taking between 5-15 minutes to complete. It is in the public domain and can be administered by non-professionals as well as professionals.

In the original 25- and 24-item versions, individuals are asked to respond to questions regarding alcohol consumption and related behaviours with a YES or NO answer, with positive responses weighted (items 1, 4, 6, and 8 in the 25-item version, and 1, 4, 6, and 7 in the 24-item version are reverse-scored). Questions that are highly discriminating are given a value of 1 or 2 points, whereas a positive response to particular items (9, 20, or 21 in the 25-item version, and 8, 19, or 20 in

the 24-item version) is enough to be considered diagnostic of alcoholism and assigned 5 points. The total score is the sum of each individual item score. Selzer (1971) suggested a score of 3 points or less to indicate non-alcoholism, a score of 4 suggesting alcoholism, and a score of 5 indicating alcoholism. In his original 1971 study, 114 of the 116 alcoholics, and 5 of the 103 controls scored at or above 5.

In the 22-item version, individuals are also asked to respond to questions with a YES or NO answer; however, only 1 point is assigned for each positive response (items 1 and 4 are reverse-scored). Here, a total score of 6 or more indicates hazardous drinking or alcohol dependence. It should be noted that higher cut-off scores have been used elsewhere (e.g., Connors, O'Farrell, Cutter, & Thompson, 1987; Hedlund & Vieweg, 1984; Ross, Gavin, & Skinner, 1990).

3.2.3. Variations of the tool

In order to adjust to clinical need, and in response to concerns about the length of the measure, several variations of the MAST have since been developed. These include:

3.2.3.1. Brief Michigan Alcohol Screening Test (BMAST)

The 10-item BMAST (Pokorny et al., 1972; see Appendix G) was derived from the original 25-item MAST (Selzer, 1971), with items chosen based on their performance in discriminating 60 patients being treated for alcohol problems and 62 patients presenting with a variety of psychiatric disorders (but no known alcohol problems). Pokorny et al. (1972) administered the original MAST, selected items that appeared to be most

discriminating (items 1, 6, 9, 13, 14, 16, 19, 20, 21, and 25), and found correlation coefficients of .95 and .96 between the two forms for the alcoholics and non-alcoholics, respectively.

As with the MAST, items are answered YES or NO, and responses are weighted in the same way as the original measure, with positive response to questions 3, 8, and 9 scoring 5 points, and a total score ranging from 0-29. Typically, a score of 6 or more would indicate the presence of alcohol problems (Pokorny et al., 1972).

3.2.3.2. Short Michigan Alcoholism Screening Test (SMAST)

The 13-item SMAST (Selzer et al., 1975; see Appendix H) was developed to be a shorter, and easier to score, version of the original MAST (Selzer, 1971). Items were chosen by administering the MAST to 501 male drivers (102 renewing licenses, 171 with traffic violations, 129 undergoing inpatient alcohol treatment, and 99 undergoing outpatient alcohol treatment), and using a stepwise regression procedure to select 12 significant items (items 1, 3, 5, 6, 7, 8, 10, 13, 15, 19, 20, and 24), as well as including an additional question (item 23). The two forms were found to correlate very highly for non-alcoholics, alcoholics, and over the entire sample (.93, .90, and .97, respectively).

In terms of scoring, unlike the MAST and BMAST, any alcoholism-endorsing response scores 1 point (questions 6, 10, and 11 are considered diagnostic), with a maximum total score of 13. Selzer et al. (1975) suggested a score of 3 or more to be indicative of the presence of alcoholism. Studies have also used the original weighted scoring system,

with scores of 5 or above indicating significant alcohol problems (e.g. Barry & Fleming, 1993).

Other versions of the MAST that will not be discussed here include the 24-item Michigan Alcohol Screening Test–Geriatric Version (MAST-G; Blow et al., 1992) and 10-item Short Michigan Alcohol Screening Test-Geriatric Version (SMAST-G; Blow, Gillespie, Barry, Mudd, & Hill, 1998), which specifically measure alcohol dependence in older adults. The 9-item Malmo Modification of the Michigan Alcohol Screening Test (MmMAST; Kristenson, & Trell, 1982) focuses on attitudes and habits rather than symptoms of drinking, and the 25-item Michigan Assessment-Screening Test for Alcohol and Drugs (MAST/AD; Westermeyer, Yargic, & Thuras, 2004) replaces the term 'alcohol' with 'alcohol and/or drugs'.

3.3. Psychometric properties

3.3.1. Reliability

The reliability of a psychometric tool indicates the overall stability and consistency of a measure across different conditions, samples, and time frames.

3.3.1.1. Internal consistency

The internal consistency indicates how well each item measures the construct of interest, in this case alcohol dependency, i.e. how well does each item on the test correlate with all other items. An alpha coefficient of .70 or more is generally considered to demonstrate good internal reliability (Kline, 1999).

Reliability coefficients from a selection of studies using the MAST, BMAST, and SMAST are reported in Table 6. In their original validation study, Selzer et al. (1975) reported the MAST to have high internal consistency. Other studies examining internal consistency of the MAST have also found high coefficient alphas ranging between .74 and .95 with a range of populations, including drink drivers (Conley, 2001; Mischke & Venneri, 1987; Zung, 1979); offenders (Langevin & Lang, 1990; Saltstone, Halliwell, & Hayslip, 1994); students (Clements, 1998); general medical patients (Rumpf, Hapke, Hill, & John, 1997); psychiatric patients (Teitelbaum & Carey, 2000; Zung, 1982; Zung & Ross, 1980); and alcoholics (Skinner, 1979; Skinner & Sheu, 1982).

In terms of internal consistency for the two shortened forms of the MAST, Selzer et al. (1975) found reliability coefficient alphas to be almost as high for the SMAST as for the MAST, and declared the SMAST to be as good a screening tool. Other studies examining SMAST reliability coefficient alphas have found a similar range to the MAST, ranging between .76 to .93 (Barry & Fleming, 1993; Hays et al., 1993; Rumpf et al., 1997; Thombs, 1991; Zung, 1979), apart from one study (Fleming & Barry, 1989), which reported lower alphas (.57 and .62) for their samples. Lower reliability coefficient alphas have also been reported for the BMAST (Zung, 1979), which might be expected for tests with fewer items.

In their meta-analysis of the MAST and its variations, Shields, Howell, Potter, and Weiss (2007) found that most studies observed moderate to good internal consistency reliability estimates, and reported an average reliability estimate of .81, n = 48, 95% CI [.78, .84].

Table 6

Reported Internal Consistency Reliability Coefficients for the MAST, BMAST, and/or SMAST (with an Overall Mean Coefficient Alpha Calculated with 95% Confidence Intervals)

Study	Participants used	MAST	BMAST	SMAST
Barry & Fleming (1993)	Primary care patients (*n* = 287)	-	-	.85
Clements (1998)	Undergraduates (*n* = 306)	.74	-	-
Conley (2001)	DUIL offenders (*n* = 126)	.86	-	-
Fleming & Barry (1989)	Sample A (*n* = 108)[a]	-	-	.57
	Sample B (*n* = 160)[a]	-	-	.62
Hays et al. (1993)	Drink drivers (*n* = 296)	-	-	.84
	Drink drivers (*n* = 270)	-	-	.84
Langevin & Lang (1990)	Sex offenders (*n* = 461)	.89	-	-
Mischke & Venneri (1987)	DWI offenders (*n* = 90)	.84	-	-
Rumpf et al. (1997)	General hospital patients (*n* = 1167)	.91[b]	-	.86
	General practice patients (*n* = 774)	-	-	.85
Saltstone et al. (1994)	Female offenders (*n* = 326)	.89	-	-
Selzer et al. (1975)	Alcoholic inpatients and outpatients (*n* = 228)	.87	-	.78
	Non-alcoholic controls (*n* = 273)[c]	.83	-	.76
	Entire sample (*n* = 501)	.95	-	.93
Skinner (1979)	Alcoholics and drug addicts (*n* = 208)[d]	.90[e]	-	-

Skinner & Sheu (1982)	Alcoholic inpatients (*n* = 83)	.85	-	-
Teitelbaum & Carey (2000)	Psychiatric outpatients (*n* = 71)	.95	-	-
Thombs (1991)	Undergraduates (*n* = 1148)	-	-	.80
Zung (1979)	DWI arrestees (*n* = 100)[f]	.88	.80	.81
	DWI arrestees (*n* = 100)[f]	.83	.60	.77
Zung (1982)	Acute psychiatric inpatients (*n* = 120)	.91[g]	-	-
		.87	-	-
		.86	-	-
		.84	-	-
Zung & Ross (1980)	General psychiatric patients (*n* = 91)	.89	-	-
	Overall mean α (95% CI)	.87 (.85, .89)	.70 (.50, .90)	.79 (.74, .84)

Note. DUIL offenders = driving under the influence of liquor offenders; DWI offenders = driving while intoxicated offenders.

[a] Included alcoholic inpatients, alcoholic outpatients, and non-alcoholic family members.
[b] German translation of MAST used.
[c] Included driver's licence renewers, and individuals sent to driver's safety school.
[d] *N* = 157 were inpatients.
[e] Using original (weighted) scoring.
[f] Randomly selected groups were divided into two groups.
[g] Obtained for lifetime problems, 12-month recency, 6-month recency, and 3-month recency, respectively.

However, the authors noted that 70% of the included unique MAST, BMAST, and SMAST measurement opportunities (*n* = 470) made no reference to the reliability of the tools used, and only 13% provided a reliability estimate for their data (Shields et al. 2007). This is consistent with the findings of the current review, which found that many studies failed to report reliability estimates, particularly for the BMAST. From studies that were reviewed, average reliability estimates were calculated for the MAST and SMAST (α = .87, 95% CI [.85, .89] and α = .79, 95% CI [.74, .84], respectively).

3.3.1.2. Test-retest reliability

The MAST has been found to have high test-retest reliability, i.e. scores for a population are in the same rank order between two or more test times. A minimum threshold of .70 is generally considered to be an appropriate value for this statistic (Kline, 1999).

Test-retest reliability coefficients for the MAST and SMAST can be found in Table 7, although few studies were found which reported this. All those found employing the MAST used a psychiatric population (Hseuh et al., 2014; Skinner & Sheu, 1982; Teitelbaum & Carey, 2000; Zung, 1982), and retest intervals ranged from 1-day to an average of 4.8 months. These demonstrated high test-retest reliability coefficients ranging between .84 and .98.

The SMAST has also been demonstrated to have high test-retest reliability, with Fleming and Barry (1989) finding a test-retest correlation

Table 7

Reported Test-Retest Reliability Coefficients for the MAST and SMAST

Study	Participants used	Retest interval	Reliability coefficient *r*
MAST			
Hsueh et al. (2014)[a]	Psychiatric outpatients (*n* = 162)	2-week	.89
Skinner & Sheu (1982)	Psychiatric patients (*n* = 83)	4.8 months (average)	.84
Teitelbaum & Carey (2000)	Psychiatric outpatients (*n* = 71) Nonclinical sample (*n* = 64)	1-week	.95 .98
Zung (1982)	Acute psychiatric admissions (*n* = 120)	1-day[b] 2-day[b] 3-day[b]	.97 .86 .94
SMAST			
Fleming & Barry (1989)	Alcoholic inpatients (*n* = 16) Alcoholic inpatients (*n* = 21)	10-day	.87 .87
Peters et al. (2000)	Male inmates (*n* = 400)[c]	72-hours	.88

[a] Chinese translation of MAST used.
[b] For lifetime alcohol problems.
[c] Although SMAST only readministered to a random subsample (*n* = 60) to obtain test-retest reliability.

coefficient of .87 for two samples of alcoholics over 10 days, and Peters et al. (2000) finding a coefficient of .88 for male inmates over 72 hours.

3.3.2. Validity

The validity of a measure refers to the accuracy of measurement of an underlying construct of interest (here, alcohol dependency). There are several types of validity, and those relevant to the MAST will now be discussed in turn.

3.3.2.1. Criterion validity

Criterion validity is a measure of how well one or more variables predict an outcome, based on information from other variables, and has two variants: concurrent and predictive. As the MAST is not a measure which predicts future outcomes, only concurrent validity will be discussed.

3.3.2.1.1. Concurrent validity

Concurrent validity reflects the degree to which scores on a tool are related to another valid criterion or scores on another tool administered at the same time, i.e. whether or not scores on the MAST correlate with those on other established tools claiming to measure alcohol dependency.

Watson et al. (1995) compared the validity of the MAST against other measures of alcohol use, and found that the MAST was the most accurate in identifying lifetime alcoholism. The MAST (r = .95) and the CAGE (r = .80) have also shown comparable estimates of classification consistency within a psychiatric setting (Teitelbaum & Carey, 2000). The MAST and AUDIT have been found to correlate well with each other (r =

.60), and the MAST was found to correlate more highly with DSM-IV criteria (r = .60) than the AUDIT (r = .40) (Conley, 2001).

Hays and colleagues found significant correlations of .70-.73 and .65-.66 between the SMAST and the CAGE and AUDIT, respectively (Hays et al., 1993; Hays, Merz, & Nicholas, 1995). However, Fiellin et al. (2000), in their systematic review, showed the CAGE to perform better than the SMAST in accurately detecting alcohol abuse or dependence, and the AUDIT to have increased accuracy in identifying at-risk, harmful, or hazardous drinking. In addition, Connor, Grier, Feeney, and Young (2007) found the BMAST to have moderate correlation with the AUDIT (r = .58), and demonstrated that it was equally as effective as the AUDIT in assessing severity of alcohol dependence. As previously mentioned, the MAST has also been found to correlate very highly with the BMAST and SMAST.

3.3.2.2. Construct validity

Construct validity demonstrates whether a tool measures the construct it is intending to measure. There are various ways of obtaining this, including comparing differences between groups of respondents (one already with established alcohol dependency problems), conducting factor analysis, and establishing convergent validity (i.e. that the same concept measured in different ways yields similar results).

Reported sensitivities, i.e. accuracy in identifying diagnosed alcoholics, and specificities, i.e. correctly identifying non-alcoholics, of the MAST can be found in Table 8. Selzer (1971) originally reported that MAST

scores with cut-offs of 5 or more correctly identified 98% of his alcoholic group, whereas scores of 4 or less correctly classified 95% of his control group. Elsewhere, reported MAST sensitivity has ranged between 57% and 100%, whilst specificity ranges from 36% to 98%.

Fiellin et al. (2000) in their systematic review evaluated seven studies using the MAST or its variants. They found sensitivities for the SMAST ranging between 38% and 100%, and specificities between 79% and 97%, for detecting lifetime and/or current diagnosis of alcohol abuse and dependence. Other reported sensitivities and specificities for the SMAST (ranging between 48% to 100% and 58% to 96%, respectively) and BMAST (ranging between 37% to 100% and 83% to 100%, respectively) can be found in Table 9.

It is worth noting that the variation in reported sensitivities and specificities is likely due to the use of various cut-offs, weighted or unweighted scoring, or type of diagnosis measured (i.e. current or lifetime alcohol dependence).

The MAST's underlying factor structure has previously been examined via exploratory factor analysis (Friederich, Boriskin, & Nelson, 1978; Skinner, 1979; Zung, 1978, 1980a, 1980b, 1982; Zung & Ross, 1980) and confirmatory factor analysis (Thurber, Snow, Lewis, & Hodgson, 2001). The presence of a strong primary factor ('alcohol dependence') has been consistently supported; however, others have argued that important information about drinking patterns is lost if considering only the total score (Crook, Oei, & Young, 1994; Parsons, Wallbrown, & Myers, 1994).

Table 8

Reported Validity for the MAST

Study (cut-off score used)	Participants used	Criterion measured	Overall % accuracy	Sensitivity (%)[a]	Specificity (%)[b]
Benussi, Gallimberti, Zorzut, de Vanna, & Gasparin (1982)[cd]	Hospitalised 'problem drinkers' (*n* = 56)	Group membership[d]	-	100	-
	General medical 'adequate drinkers' (*n* = 48)		-	-	94
Breitenbucher (1976)[c]	Outpatients (*n* = 252)	Medical records	-	86	76
Favazza & Pires (1974)[cd]	Alcoholic patients (*n* = 33)	Group membership[c]	-	97	-
	Controls (*n* = 75)[e]		-	-	78
Friedrich & Loftsgard (1978)[cd]	Alcoholics attending alcoholism education program (*n* = 100)	Biographic and interview data	-	90	-
Garzotto, Baratta, Pistoso, & Faccincani (1988)[c] (Italian version)	Alcoholic patients (*n* = 75)	DSM-III criteria for alcohol abuse or dependency	-	96	-
	Non-alcoholic controls (*n* = 75)		-	-	89
Hsueh et al. (2014) (>6/7) (Chinese translation)	Psychiatric outpatients (*n* = 162)	SADS-L current diagnosis	-	92	83
Magruder-Habib, Fraker, & Peterson (1983)[c] (>6)	Outpatients (*n* = 369)	Clinician's diagnosis	-	68	80
Magruder-Habib, Stevens, & Alling (1993) (≥5)	General medical patients (*n* = 112)	DSM-III-R criteria for present alcohol dependence	-	100	62
		DSM-III-R criteria for lifetime alcohol dependence	-	90	82

McAuley, Longabough, & Gross (1978)[cd]	General psychiatric admissions (*n* = 75)	Psychiatric diagnosis with:			
		MAST-self	67	94	59
		MAST-family informant	80	100	75
Mischke & Venneri (1987)[c]	DWI offenders (*n* = 90)	Alcoholism counselor's diagnosis	-	85	68
Moore (1971)[d]	General medical inpatients (*n* = 200)	Patient histories	-	90	-
Moore (1972)[cd]	General psychiatric inpatient admissions (*n* = 400)	Psychiatric diagnosis	78	98	86
Okay et al. (2010) (>5) (Turkish translation)	General medical inpatients (*n* = 800)	DSM-IV criteria for alcohol abuse or dependency (SCID)	-	74	98
Pottenger et al. (1978)[cd]	Alcoholic outpatients (*n* = 61)	Group membership[d]	-	97	-
Ross et al. (1990)[c]	Drug addict outpatients (*n* = 501)	Current DSM-III alcohol abuse or dependence disorder	-	98	57
Rounsaville, Weissman, Wilber, & Kleber (1983)[cd]	Drug abuse inpatients (*n* = 385)	SADS-L and RDC diagnoses:			
		Lifetime	77	57	88
		Current	80	83	82
Rumpf et al. (1997) (≥5) (German translation)	General hospital patients (*n* = 1167)	ICD-10 or DSM-III-R criteria for alcohol abuse or dependency	91	78	94

Searles, Alterman, & Purtill (1990)[c]	Schizophrenic inpatients (*n* = 70)	DSM-III criteria for alcohol abuse or dependency	-	88	69
Selzer (1971) (≥5)	Hospitalised alcoholics (*n* = 116)	Group membership[d]	-	98	-
	Controls (*n* = 103)[f]		-	-	95
Selzer, Gomberg, & Nordhoff (1979)[c]	Alcoholic inpatients (*n* = 203)	Group membership[d]	-	98	-
Skinner & Sheu (1982)[c]	Alcoholic inpatients (*n* = 83)	Group membership[d]	-	94	-
Zung & Ross (1980)[cd]	Acute psychiatric inpatients (*n* = 182)	Psychiatric diagnosis	42	90	36
Zung (1982)[cd]	Acute psychiatric admissions (*n* = 120)	Psychiatric diagnoses:			
		Lifetime	58	88	50
		12-months recency	69	83	65
		6-months recency	72	83	68
		3-months recency	77	79	73

Note. SADS-L = Schedule for Affective Disorders and Schizophrenia-Lifetime version; DWI offenders = driving while intoxicated offenders; SCID = Structured Clinical Interview for DSM; RDC = Research Diagnostic Criteria.

[a] Sensitivity % refers to percentage of alcoholics correctly identified.
[b] Specificity % refers to the percentage of non-alcoholics/controls correctly identified.
[c] As reported in Storgaard, Nielsen, & Gluud (1994).
[d] As reported in Hedlund & Vieweg (1984).
[d] Alcoholic vs. non-alcoholic.
[e] Included hospital corpsmen.
[f] Included blue-collar employees of the University of Michigan, and visitors to the university's allergy clinic.

Table 9

Reported Validity for the BMAST and SMAST

Study (cut-off score used)	Participants used	Criterion measured	Overall % accuracy	Sensitivity (%)[a]	Specificity (%)[b]
BMAST					
Ashman, Schwartz, Cantor, Hibbard, & Gordon (2004) (≥5)	TBI patients (*n* = 223)	DSM-IV criteria for alcohol abuse or dependency (SCID)	82	74	83
Chan, Pristach, & Welte (1994)[c] (≥6)	Primary care patients (*n* = 390)	DSM-III criteria for current alcohol dependency	-	78	90
Hearne, Connolly, & Sheehan (2002) (≥5)	General medical patients (*n* = 424)	DSM-IV criteria for alcohol abuse or dependency (SCID)	-	37	100
Lockhart et al. (1986)[c] (≥6)	Medical patients (*n* = 104)	Detailed clinical assessment	-	46	99
Pokorny et al. (1972) (≥6)	Alcoholic inpatients (*n* = 60) General psychiatric inpatients (*n* = 62)	Group membership[d]	- -	100 -	- 89
Taylor, Passmore, Kilbane, & Davies (1986)[c] (≥6)	General hospital patients (*n* = 1628)	Alcohol-related physical disease	-	78	94

SMAST

Breakey, Calabrese, Rosenblatt, & Crum (1998) (≥3)	Psychiatric inpatients (*n* = 78)	Lifetime DSM-III-R diagnosis of alcohol use disorder	-	82	96
Fleming & Barry (1989) (>4)	Sample A (*n* = 108)[e]	DSM-III criteria for alcohol abuse or dependency	-	98	58
	Sample B (*n* = 160)		-	94	70
Peters et al. (2000) (≥6)	Male inmates (*n* = 379)	DSM-IV criteria for alcohol dependence disorder (SCID)	-	100	34
Rumpf et al. (1997) (≥2)	General hospital patients (*n* = 1167)	ICD-10 or DSM-III-R criteria for alcohol abuse or dependency	90	78	93
	General practice patients (*n* = 774)		90	48	95
Selzer et al. (1975) (≥2)	Alcoholic inpatients (*n* = 129)	Group membership[d]	-	100	-
	Alcoholic outpatients (*n* = 99)		-	92	-
	Non-alcoholic controls (*n* = 273)[f]		-	-	75

Note. TBI = traumatic brain injury; SCID = Structured Clinical Interview for DSM.

[a] Sensitivity % refers to percentage of alcoholics correctly identified.
[b] Specificity % refers to the percentage of non-alcoholics/controls correctly identified.
[c] As reported in Mackenzie, Langa, & Brown (1996).
[d] Alcoholic vs. non-alcoholic.
[e] Included alcoholic inpatients, alcoholic outpatients, and non-alcoholic family members.
[f] Included driver's licence renewers, and individuals sent to driver's safety school.

The number of factors identified by studies reporting factor analysis has ranged between four and six. However, in their review, Hedlund and Vieweg (1984) reported that four underlying factors appeared to be relatively consistent across these studies; 'self-identification/recognition of problem'; 'help seeking'; 'marital/family problems'; and 'work/legal problems'. In order to examine potential over- or under-factor extraction by the above-mentioned studies, parallel analyses, using an online Parallel Analysis Engine (Patil, Singh, Mishra, & Donavan, 2007), were attempted. However, due to lack of inclusion of raw data by authors, this was not possible.

3.4. Appropriate normative samples

It is important that the sample of the population used in the development and validation of a tool is appropriate and representative, as it allows for more meaningful comparison and interpretation of results against a group with similar characteristics, who have also been administered the tool in a standardised way. The original MAST study (Selzer, 1971) used a primarily American white male population of hospitalised alcoholics and individuals convicted of being drunk and disorderly or drink driving offences; therefore, would not be considered a representative sample. The MAST, along with its variations, has however since been tested for accuracy in detecting problematic alcoholic use and dependence in a variety of populations.

Shields et al. (2007) demonstrated that the MAST has an average test-retest reliability of .81 across groups differing by age, gender, and

ethnicity. They also found the MAST and SMAST to have equivalent internal consistency across different populations and translations. The MAST (and/or its variations) has been translated into, and validated in, various languages, including German (Mueller, Schumacher, Wetzlmair, & Pallauf, 2016); Turkish (Okay, Şengül, Açıkgöz, Ozan, & Dilbaz, 2010); Chinese (Hseuh et al., 2013); Brazilian (Kano, Santos, & Pillon, 2014); and Thai (Nanakorn, Fukuda, Ogimoto, Tangseree, & Treethiptikhun, 2000). In terms of age, there is evidence that the MAST is less reliable and sensitive to detecting alcohol problems in older individuals; however, the revised MAST-G has been found to have good sensitivity and specificity (Fingerhood, 2000).

The MAST has shown good sensitivity and moderate specificity across validity studies with psychiatric populations, including those with mood and anxiety disorders (Teitelbaum & Mullen, 2000), and schizophrenia (Searles et al., 1990). The MAST has also been used within forensic settings, although this has not been as thoroughly researched as with other populations. Nevertheless, it has been found to have good sensitivity and can effectively identify severe alcohol use amongst incarcerated individuals (Conley, 2001; Peters et al., 2000).

3.5. Limitations

One problem with using the MAST as a measure of problematic drinking is that not all those who drink heavily experience alcohol-related problems. It also relies on the individual's willingness and ability to recognise problematic drinking patterns and consequences (Kaplan, Pokorny, Kanas,

& Lively, 1974), and does not examine quantity or frequency of alcohol use. This might be improved by also exploring alternative sources of information, or by incorporating specific questions about drinking habits. Another major criticism is that the MAST does not discriminate between past and present drinking. Therefore, it may be more useful in identifying the presence of past alcohol issues, or in detecting early stages of addiction (Dawe, Loxton, Hides, Kavanagh, & Mattick, 2002). To overcome this, instructions should make the reporting timeframe clear, i.e. in relation to lifetime drinking patterns, or within the past year. There have also been concerns over the weighted scoring system (Crook et al., 1994), as well as potential ambiguity of items (e.g., Robin et al., 2004).

What must also be taken into account when considering the applicability of the MAST are the underlying differences in cross-cultural drinking patterns, and in recognition and reporting of the severity of related problems or dependence symptoms. Different drinking cultures and attitudes towards alcohol consumption exist, e.g. the wet/dry culture distinction (Bloomfield, Stockwell, Gmel, & Rehn, 2003). In some cultures (e.g. European), alcohol is widely accessible and typically integrated into daily life and activities, whereas in other cultures (e.g. North America), alcohol consumption is not as common, and access is more restricted. These differences in strong cultural norms impact on perceptions of alcoholism, as well as reporting of related behaviour and consequences, and potentially creates problems in the development of cross-culturally

applicable diagnostic criteria and measurement tools (Rehm & Room, 2017), such as the MAST.

3.6. Conclusions

There have been a wide range of validated screening tools developed to examine problematic alcohol use. The MAST is a relatively simple, inexpensive, and widely used screening tool initially designed to provide a quantifiable, structured interview to help detect alcoholism. The MAST has since been validated across various populations in a variety of settings (Storgaard, Nielsen, & Gluud, 1994). Internal consistency and test-retest reliability appear to be satisfactory, it is significantly related to a number of other alcoholism measures, and has been demonstrated to be moderately effective in identifying those with alcoholism from other clinical and non-clinical groups. Sensitivity, depending on group examined, is generally quite high, with specificity tending to be lower. The MAST has been shown to be significantly valid when used in psychiatric settings (Teitelbaum & Mullen, 2000), supporting its use in psychiatric settings as a screening tool. There is, however, limited research into its effectiveness in forensic settings, particularly in the UK where the AUDIT tends to be favoured. Therefore, although it has been used to identify alcohol problems in various forensic populations, it should be acknowledged that in the UK the MAST may have limited value.

Chapter 4: Examining the relationship between substance use and attachment style in sexual offenders compared to non-sexual offenders and non-offenders

Abstract

The current study explored substance use and attachment in male sexual offenders compared to non-sexual offenders and non-offenders. In line with previous research, it was hypothesised that sexual offenders would report more alcohol use, but not drug use, more insecure attachment, and more intimacy deficits. Participants taken from a Probation sample were separated into a sexual, violent, or 'other' offending group and, along with a non-offending control group, completed questionnaires measuring attachment style, alcohol and drug abuse, and intimacy. No differences were found in drug use, attachment, or intimacy scores between the offending groups; however, 'other' types of offenders (i.e. non-sexual and non-violent) reported significantly higher alcohol use compared to sexual offenders. Results also found that an association between substance use and attachment did not improve prediction of offending type. Rather than being specific to sexual offending, alcohol abuse appears instead to be an important risk factor for predicting non-sexual, non-violent offending behaviour. These results contribute to the already existing literature identifying a link between alcohol and general offending behaviour, including antisocial, acquisitive, and property crime.

4.1. Introduction

4.1.1. Substance abuse and offending

Substance-related crime appears to be an important societal and economical concern, with links between substance use and violent offending behaviour previously being focused on. Alcohol has typically been most closely associated with increased aggression and violence (Boles & Miotto, 2003; Haggård–Grann, Hallqvist, Långström, Möller, 2006), although violence has also been associated with a range of illicit drugs, particularly stimulants such as cocaine and amphetamines/methamphetamines (Boles & Miotto, 2003). Recent figures from the Crime Survey for England and Wales (CSEW) suggest that 40% of violent incidents between 2014 and 2016 were perceived to be alcohol-related, and 19% of violent incidents drug-related, i.e. the victim perceived the offender(s) to be under the influence of alcohol or drugs (ONS, 2017a).

Adopting a clear and consistent definition of alcohol- and drug-related crime is important to be able to understand the link between substance use and offending behaviour, although this is made difficult by the various ways substances (and in particular drugs) might be related to criminal activity. These include; (a) use of illegal drugs being a criminal act in itself; (b) offending in order to support or fund a habit or an addiction, e.g. by committing theft; (c) crimes (often violent) relating to the system of drug manufacturing and distribution, e.g. debt collection assaults; and (d) offending under the influence or when intoxicated, e.g.

due to disinhibition, cognitive impairments (Goldstein, 1985). When considering the latter, there are several theories that are of relevance. For example, the Alcohol Myopia Model (AMM; Steele & Josephs, 1990) postulates that intoxication reduces an individual's capacity to process information and attend to situational and social behaviour cues, making it more likely that an individual may misinterpret, and react accordingly to their perception of, the cue.

Although the above links between substance use and offending behaviour can be used to explain behaviour that is violent, acquisitive, or otherwise substance-related in nature, the role of substance use on sexual offending behaviour has been considered separately. In terms of using the AMM to explain sexual offending, individuals who are intoxicated may find themselves less able to control their sexually risk-taking behaviour in a situation where they perceive sexually suggestive cues to be present. Substance use, and in particular alcohol use, may also work to magnify existing cognitive distortions and expectations in sexual offenders (Abracen et al., 2017). Furthermore, use of substances is thought to be related to intimacy deficits, and general regulation and interpersonal problems (Abracen & Looman, 2004), which are often found in sexually offending populations. For example, Baltieri and de Andrade (2008) found that between 30% and 43% of sexual offenders in their sample reported alcohol problems, and almost half of sexual offenders have been found to have a history of substance abuse (Kraanen & Emmelkamp, 2011).

Despite these findings, research using standardised measures to investigate the association between substance abuse and sexual offending has been lacking. Langevin and Lang (1990) administered the Michigan Alcohol Screening Test (MAST; Selzer, 1971) and the Drug Abuse Screening Test (DAST; Skinner, 1982) to sexual offenders, finding alcohol abuse to be more common than drug abuse (with over half of the sample reporting the former, and less than 20% the latter). However, they failed to test a non-sexual offender comparison group. A replication of the study, including a comparison group of violent non-sexual offenders, was carried out by Abracen, Looman, and Anderson (2000). They also found that sexual offenders reported significantly higher alcohol abuse scores compared to the violent offenders, but fewer drug abuse problems. Other findings (Abracen et al., 2006; Looman et al., 2004) also support a higher prevalence of alcohol abuse among sexual offenders compared to violent non-sexual offenders.

Research such as this suggests a link between alcohol (but not drug) abuse and sexual offending. It could be that alcohol abuse is associated with intimacy deficits, which (possibly magnified by alcohol abuse) may increase the likelihood of sexual offending. Research supportive of this idea was reported by Di Fazio, Looman, and Abracen (2000) who administered several other measures, along with the MAST and DAST, to their sample of sexual and violent offenders, including the Miller Social Intimacy Scale (MSIS; Miller & Lefcourt, 1982). Consistent with previous studies, sexual offenders demonstrated significantly more

alcohol problems, but there was no difference in drug abuse. They also found that sexual offenders showed more intimacy deficits compared to violent offenders. Looman et al. (2004) therefore suggested that the combination of alcohol abuse, emotionally-focused coping, and intimacy deficits may all contribute to sexual offending. They also questioned whether there might be differing patterns of attachment between sexual and other offender groups.

4.1.2. Attachment and sexual offending

Attachment theory seeks to describe the origins of patterns in close interpersonal relationships, and suggests that the interaction of environmental factors in early developmental relationships determines individual differences in patterns of attachment behaviour (Bowlby, 1969). Bartholomew and Horowitz (1991) extended Bowlby's (1973) idea of models of the *self* and *other* to create a four-category dimensional model of adult attachment with four styles: secure, anxious-preoccupied, fearful-avoidant, and dismissive-avoidant.

Adult attachment patterns have been demonstrated as having an ongoing influence upon the ability to form close relationships, and to enable counterproductive behaviours when trying to achieve intimacy (Cassidy & Shaver, 1999; Fraley & Shaver, 2000). Marshall (1989; 1993) argued that attachment theory provides a useful theoretical framework to examine interpersonal problems (such as intimacy deficits and emotional loneliness) in sexual offenders. Ward and Siegert's (2002) pathways model also considers attachment insecurity a vulnerability factor for

perpetration of sexual offending by proposing four clusters of problems typically found in sexual offenders: emotional regulation problems; deviant sexual attractions; intimacy and social deficiencies; and offence-tolerant belief systems.

It is argued that an insecure attachment style may lead to distorted beliefs regarding the self, others, and relationships, which might interact with adverse experiences to produce cognitive distortions about sexual behaviour and intimacy. It may also affect the ability to develop sufficient self-confidence and social skills to initiate or maintain mutual intimate relationships with appropriate others, and increase the likelihood of individuals developing maladaptive attachment styles which prompt them to seek intimacy and emotional closeness in inappropriate ways (Baker et al., 2006; Beech & Mitchell, 2005). Furthermore, it is proposed that insecure attachment patterns could be related to the development of other interpersonal problems experienced in adulthood that are commonly found among sexual offenders, including loneliness, emotional regulation, social skills deficits, and impaired social relationships (Bumby & Hansen, 1997; Hudson & Ward, 1997).

Indeed, empirical research has found that sexual offenders report lower levels of intimacy, more social skills deficits, and more loneliness than non-sexual offenders or non-offenders (e.g. Bumby & Hansen, 1997; Garlick, Marshall, & Thornton, 1996; Seidman et al., 1994). Other studies have also found evidence to support the idea that sexual offenders are more likely to report an insecure attachment style in adult relationships

compared to non-sexual offenders, non-offenders, and victims of abuse (e.g. Abracen et al., 2006; Baker & Beech, 2004; Hudson & Ward, 1997; Stirpe et al., 2006; Ward, et al., 1996).

Research such as this indicates that there are greater intimacy deficits and more insecure attachment in sexual offenders compared to non-sexual offenders and non-offenders, and these appear to be important risk factors for the aetiology and maintenance of sexual offending. However, high levels of insecure attachment have also been observed in violent offenders (e.g. Ross & Pfäfflin, 2007), which might suggest that insecure attachment is not a specific risk factor for sexual offending so much as for offending in general. Furthermore, insecure attachment is also surprisingly common in the general population (approximately 40% being found to having insecure attachment; van Ijzendoorn, 1995). Therefore, insecure attachment alone does not appear to provide an adequate model of sexual offending. Consequently, it has been suggested that attachment and related adult interpersonal problems, such as intimacy deficits, may interact with other known dynamic risk factors related to sexual offending; one such risk might be substance abuse.

4.1.3. Substance abuse, attachment & sexual offending

In order to examine the specific role of substance use in sexual offending, it may be important to consider interactions with difficulties linked to insecure attachment, such as negative emotionality and intimacy deficits. Previous research has indicated that attachment styles may be associated

with substance abuse, emotional distress, empathy deficits, and interpersonal problems in adulthood (e.g., Britton & Fuendeling, 2005; Doumas, Blasey, & Mitchell, 2006). Higher levels of insecure attachment and difficulties with intimacy, as well as problems with intrapersonal and interpersonal functioning, have also been demonstrated in substance use disorder patients (Thorberg & Lyvers, 2006, 2010). It may be that having an insecure attachment style increases vulnerability and risk for a range of self-regulation problems, which may lead to substance abuse.

It has also been suggested that substance abuse of sexual offenders can partly be explained by research indicating that alcohol abuse (but not necessarily drug abuse) is associated with intimacy deficits and negative emotionality (Abracen & Looman, 2004). As previously mentioned, Marshall et al. (1989, 1993) proposed that the formation of intimacy deficits related to insecure attachment patterns may be causally significant to sexual offending, with sexual offenders often confusing intimacy with sexuality. Use of substances may be a means of alleviating, avoiding, and/or coping with uncomfortable feelings, such as loneliness, with some research suggesting that individuals with insecure attachments may lack the necessary skills to form intimate relationships, so might be more likely to use substances as a coping strategy (Kassel, Wardle, & Roberts, 2006).

To investigate the pattern of attachment and substance abuse of sexual and other offending groups, Abracen et al. (2006) extended Looman et al.'s (2004) study by administering an additional measure of

attachment patterns, the Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994). They found that sexual offenders demonstrated significantly more difficulties with alcohol abuse than violent offenders (although both groups significantly abused alcohol). They found no difference between offending groups on their drug abuse.

4.1.4. Objectives

Results from studies such as those discussed above have shown that there appears to be a relationship between insecure attachment and sexual offending, but also suggest other risk factors are likely to interact with this effect. Limited research has also indicated a link between alcohol (but not drug) abuse and sexual offending behaviour.

The current research therefore seeks to replicate previous studies examining substance use and attachment in sexual offenders compared to other types of offenders and non-offenders. It then extends this research by also considering whether using attachment theory improves prediction of sexual offending behaviour by comparing a sexual offending population to non-sexual offending and non-offending populations, who may also have attachment difficulties. As was highlighted from the earlier systematic review, few studies of this type have used appropriate comparison groups. A significant relationship between substance use and violence has been consistently demonstrated (Duke et al., 2018), so a violent (non-sexual) offending group was thought to be important to include. It was also decided to include a non-sexual, non-violent offending group. It was thought that this 'other' offending group was likely to

include individuals who use substances; particularly as substance-related offences would be included for this group. This would enable comparison of sexual offenders to other types of offenders who might also use substances, or where substance use might be a risk factor for violence or other offending behaviour.

The research questions are then as follows:

1. Are there differing patterns of substance use, attachment style, and intimacy deficits between sexual offenders and non-sexual offenders?
2. Can sexual offending be better predicted by considering an association between substance use and attachment style?

In line with previous findings the hypotheses are:

1. That sexual offenders will report more insecure attachment than other offending and non-offending groups (although no specific patterns of insecure attachments are hypothesised).
2. That sexual offenders will report a higher level of alcohol, but not drug, use.
3. That sexual offenders will demonstrate greater intimacy deficits.

No specific hypotheses are made regarding the association between substance use and attachment style, given the limited research available on this topic.

4.2. Method

4.2.1. Participants

Participants consisted of offenders either on a community order, or who had been released from prison on licence or parole, and were attending a Nottinghamshire National Probation Service (NPS) office for supervision appointments. A complete list of offenders attending Probation was obtained, their details taken from NPS records, and they were sorted into one of three offending groups (as recorded in the Offence Classification Index (Home Office, 2013); see Appendix X), according to their index offence: sexual offenders (SO); violent (non-sexual) offenders (VO); or 'other' (non-sexual, non-violent) offenders (OthO). A sample was randomly selected using a random number generator, and their offender managers (OMs) asked to make the initial approach to invite them to participate. Given difficulties encountered in recruiting participants in this way (see below), OMs were later asked to invite any offender they supervised in the community to participate, and they were later allocated to the appropriate offending group. A non-offender (NonO) control group was gathered from a convenience sample of males from the general community (age range = 22-71; *M* = 32, *SD* = 13.98), who were approached from various sources of access (universities, leisure centres, gyms, cafes etc.).

In total, 80 participants were recruited (n_{SO} = 22, n_{VO} = 21, n_{OthO} = 15, n_{NonO} = 22). All participants were male and between the ages of 18 and 72 years (*M* = 33, *SD* = 13.51), with 46% reporting that they were in

a relationship at the time of the study. An exclusion criterion was set (for violent, 'other', and non-offending group participants not to have a history of sexual offending) to ensure that there was no overlap of offending types in the same offending condition group. Participants were asked prior to completing the study whether they had ever been convicted of a sexual offence, which was verified by conducting an offending history search. No reward for participation was given.

4.2.2. Procedure

Once a sample list was generated for the offending sample, the OMs of the randomly selected participants were given an information sheet (see Appendix I) and asked to approach and invite them to participate. Participants were given an information sheet (see Appendix L) and, if they agreed to participate, a time was then arranged for the researcher to meet with them either after a supervision session or as a separate appointment. Various difficulties arose from this sampling method, including the constant need to re-sample following declines to participate from the selected individuals, and practical difficulties with arranging to meet with those who did agree to participate. Therefore, OMs were instead provided with copies of the questionnaire battery and, if it was not possible for the participant to meet with the researcher, it was requested they ask offenders to complete these after their sessions, returning them at the end of their appointment. OMs were provided with an updated information sheet (see Appendix J), which instructed them to respond neutrally or with limited information if asked any questions by the

participant (to reduce potential bias), and envelopes were provided for participants to seal their responses in before returning to their OM (to reinforce anonymity and confidentiality). In total, 39 questionnaires were administered by the researcher, and 19 by the OMs (29 individuals declined to participate, and 33 copies of the questionnaire battery were not returned by OMs).

The non-offending sample was recruited primarily through posters (see Appendix K) advertising the study in locations including cafes, coffee shops, gyms, and the local universities. When contacted by a potential participant, arrangements were made to meet with the researcher where they were given an information sheet (see Appendix M).

All participants were given the opportunity to ask questions about the study, and were assured of their anonymity and that information provided would be kept confidential. They were also informed that they were free to withdraw at any time and (in the case of the offending sample) that their ongoing supervision would not be affected by their decision to participate. If they still consented to participate they were asked to sign a consent form (see Appendix N) and answer several demographic questions (see Appendix O). The participant was then given instructions about the task (see Appendix P) and presented with the battery of questionnaires to self-complete (see Appendices Q-U). After completing the questionnaires participants were provided with a debrief sheet (see Appendices V and W) and thanked for their participation. Participants from the offending sample were then allocated to the relevant

offending group by the researcher, based on their index offence as indicated by their NPS records.

4.2.3. Measures

Self-report methodology was selected as this was thought to be a quick and more feasible way to gather data from a population who were likely to be reluctant to engage. All participants were required to complete a battery of questionnaires, the order of which was counter-balanced to minimise response order effects. Due of potential problems with social desirability, the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1991) was also administered to all participants to measure response bias (yielding an overall score, as well as 'self-deception enhancement' (SDE) and 'impression management' (IM) scores).

4.2.3.1. Drug Abuse Screening Test (DAST-10)

The DAST-10 (Skinner, 1982) is brief self-report questionnaire covering the drug use, physical and medical complications, and emotional and personal problems arising from drug use. The original 28-item version (Skinner, 1982) was modelled on the MAST (Selzer, 1971) and matches the items in that questionnaire. The current 10-item version of the DAST consists of 10 YES/NO items, each scored 0 or 1. Scores therefore range from 0-10 and a higher score corresponds to a higher level of reported drug problems. The 10-item version has been found to correlate very highly with other versions of the DAST (e.g. r = .97 with the DAST-20;

Cocco & Carey, 1998), and has good reliability with internal consistencies ranging from .86 to .94 (Yudko, Lozhkina, & Fouts, 2007).

4.2.3.2. Miller Social Intimacy Scale (MSIS)

The 17-item MSIS (Miller & Lefcourt, 1982) assesses intimacy in close adult interpersonal relationships; 6 items measure the frequency of intimate contacts, and 11 items assess the intensity of intimate relations. Each of the items are rated on 10-point scale. Individual items are summed to produce an overall score, with higher scores indicating greater amounts of intimacy. The MSIS has good internal consistency (ranging from .86 to .91) and test-retest reliability (r = .96 over a 2-month interval; Miller & Lefcourt, 1982). The MSIS is designed to assess intimacy in a variety of relationships (e.g., friendships, family, partner). It was thought that participants might find it easier to refer to current experiences of relationships in general; particularly if they did not currently have a partner. Therefore, they were asked to describe their relationship with the person closest to them, rather than with a partner specifically.

4.2.3.3. Relationship Scales Questionnaire (RSQ)

This 30-item self-report measures dimensions related to positive or negative models of *self* and *others* and yields four attachment patterns and two attachment dimensions. Items in the RSQ (Griffin & Bartholomew, 1994) were developed using Hazan and Shaver's (1987) Adult Attachment Questionnaire (AAQ), Bartholomew and Horowitz's

(1991) Relationship Questionnaire (RQ), and Collins and Read's (1990) Adult Attachment Scale (AAS). The RSQ asks respondents to rate themselves on a 5-point scale in response to statements describing characteristic styles in close relationships. Five statements contribute to the secure and dismissing attachment patterns, and four statements contribute to the fearful and preoccupied attachment patterns. Scores for each attachment pattern are derived by taking the mean of the items representing each attachment type. Scales of the underlying two dimensions of anxiety (model of *self*) and avoidance (model of *others*) can also be derived.

Griffin and Bartholomew (1994) demonstrated the convergent and discriminant validity of the two dimensions, and internal consistency when using the RSQ to measure attachment style ranges from .56 to .78 (Fraley, Waller, & Brennan, 2000). Moderate-high test-retest reliability has also been supported over an 8-month period ranging from .72 to .85 (Scharfe & Bartholomew, 1994).

The RSQ was chosen over other self-report measures, e.g. the Experiences in Close Relationships scale (ECR; Brennan, Clark, & Shaver, 1998), as the items refer more generally to close relationships with others rather than romantic partners in particular. Again, it was thought that participants might find it easier to refer to current experiences of relationships in general.

4.2.3.4. Short Michigan Alcoholism Screening Test (SMAST)

The SMAST (Selzer et al., 1975) is a brief self-report questionnaire used to identify alcoholism, alcohol dependence and/or abuse. It consists of 13 dichotomous YES/NO items relating to use of alcohol for the previous 12 months. A YES answer scores 1 point, with a total of 4 or above indicating the presence of an alcohol problem. The SMAST is one of a number of revised versions developed from the original 25-item MAST (Selzer, 1971). Reliabilities of both the SMAST and MAST have been demonstrated, with internal consistencies of .76 to .93 for the SMAST and .83 to .95 for the MAST (Selzer et al., 1975).

4.3. Results

4.3.1. Descriptive statistics and correlational analysis

See Table 10 for the mean scores and standard deviations on the various measures for the four groups. Internal consistency was found to be high for the DAST-10 (α = .85), MSIS (α = .83), and SMAST (α = .85), but lower for the BIDR (α = .70; SDE = .58; and IM = .64) and RSQ (Secure = .60; Fearful = .50; Preoccupied = .49; and Dismissing = .56). Similar low coefficients have been reported elsewhere (Bäckström & Holmes, 2007; Griffin & Bartholomew, 1994), and it has been argued that this low internal consistency when measuring the four categories of attachment can be explained due to each category being a combination of both the anxiety and avoidance dimensions (Halpern, Maunder, Schwartz, & Gurevich, 2012).

Table 10

Mean Scores (and Standard Deviations) with Differences Between the Four Groups on the Various Measures (with Observed Internal Reliability Coefficients)

	SO (*n* = 22)	VO (*n* = 21)	OthO (*n* = 15)	NonO (*n* = 22)	Test Statistic	*p*	α
Age	39.68 (16.64)	31.10 (10.97)	27.40 (6.17)	31.82 (13.98)	*F*[a]	.03*	
DAST-10	0.77 (1.23)	1.00 (1.45)	2.13 (3.14)	1.09 (2.19)	*H*[b]	.52	.85
MSIS	120.36 (18.24)	129.43 (18.65)	125.60 (19.42)	124.32 (15.38)	*F*	.43	.83
RSQ: Sec	3.20 (0.60)	3.16 (0.70)	3.00 (0.36)	3.40 (0.49)	*F*[a]	.06	.60
RSQ: Fear	3.08 (0.73)	2.68 (0.57)	2.93 (0.78)	2.78 (0.47)	*F*	.19	.50
RSQ: Preocc	2.81 (0.76)	2.29 (0.76)	2.63 (0.57)	2.65 (0.67)	*F*	.11	.49
RSQ: Dis	3.18 (0.66)	3.34 (0.65)	3.69 (0.89)	3.33 (0.52)	*F*	.16	.56
SMAST	1.45 (2.39)	1.48 (1.89)	4.13 (4.29)	1.82 (1.68)	*H*[b]	.03*	.85
BIDR	12.00 (5.12)	12.57 (5.33)	8.60 (3.66)	10.77 (4.76)	*F*	.09	.70
SDE	5.45 (3.04)	6.19 (3.11)	4.93 (2.52)	4.86 (2.90)	*F*	.45	.58
IM	6.55 (2.99)	6.38 (3.25)	3.67 (1.91)	5.91 (3.01)	*F*	.02*	.64

Note. DAST-10 = drug abuse score; MSIS = intimacy score; RSQ: Sec = secure attachment score; RSQ: Fear – fearful attachment score; RSQ: Preocc = preoccupied attachment score; RSQ: Dis = dismissing attachment score; SMAST = alcohol abuse score; BIDR = desirable responding score; SDE = self-deceptive enhancement score; IM = impression management score; SO = sexual offender group; VO = violent offender group; OthO = other (non-sexual, non-violent) offender group; NonO = control non-offender group.

[a] *Welch's F* used due to violation of equal variances assumption.

[b] Kruskal–Wallis test used due to violation of normality assumption.

*$p < .05$

Data were tested for normality, examining skewness and the Shapiro-Wilks test, and indicated the data were normally distributed, except for scores provided by all four groups on the SMAST and DAST-10. Correlational analyses were conducted to examine the relationships between the scores on the various measures (with non-parametric analyses for the SMAST and DAST-10; see Table 11). Significant correlations were found between age and drug scores (r_s = -.29, p < .01), suggesting that age was negatively associated with more drug use. High alcohol use was related to high drug use (r_s = .25, p < .05). It was also found that preoccupied attachment was positively associated with fearful attachment (r = .47, p < .01), and negatively associated with secure attachment (r = -.26, p < .05). It is also worth noting that significant correlations were found between several scores on several of the measures and scores on the BIDR; particularly the IM subscale. This suggested that participants may have been promoting themselves favourably when reporting alcohol (r_s = -.37, p < .01) and drug (r_s = -.37, p < .01) use, as well as secure (r = .37, p < .01) and preoccupied (r = .23, p < .05) attachment.

4.3.2. Psychometric measures

A series of one-way ANOVAs was used to examine differences in scores provided by the four groups on the RSQ and MSIS (see Table 10). Equal variances were not assumed for age (F(3, 76) = 4.41, p < .01) or the RSQ: Sec scores (F(3, 76) = 4.71, p ≤ .005), so the Welch test was used instead for these variables. No significant differences were found between

the offending groups on attachment or intimacy; however, a significant difference was found for age (*Welch's F*(3, 42.01) = 3.44, $p < .05$, ω^2 = .08). Games-Howell post-hoc tests, used due to violation of the equal variances assumption, indicated that sexual offenders (*M* = 39.68, *SD* = 16.64) were significantly older than 'other' offenders (*M* = 27.40, *SD* = 6.17).

A non-parametric Levene test indicated equal variances for the SMAST and DAST-10 scores, and a Kruskal-Wallis test found significant differences in alcohol use between groups, $H(3) = 8.68$, $p < .05$, but not drug use. Mann Whitney tests, Bonferroni corrected to a .017 level of significance, indicated that 'other' offenders reported significantly more alcohol use (*Mdn* = 2) than sexual offenders (*Mdn* = 0), $U = 80.00$, $z = -2.7$, $p < .017$, $r = -.44$.

As both age and impression management scores correlated significantly with some of the scores, one-way ANCOVAs were also conducted, using an interaction term of age x IM score as a covariate. However; even after controlling for the effects of age and IM, reported alcohol use was still the only statistically significant difference found between the offending groups.

A post-hoc power analysis, using the G*Power computer program (Faul, Erdfelder, Lang, & Buchner, 2007), with a sample size of 80 and alpha level set at .05, revealed that the statistical power for detecting a large effect ($f = .40$) was .85. This suggested the study had adequate power (above the recommended .80; Cohen, 1988) at a large effect size

Table 11

Correlation Matrix for Age, Drug, Intimacy, Attachment, Alcohol and Desirable Responding Scores

	Age	DAST-10[a]	MSIS	RSQ: Sec	RSQ: Fear	RSQ: Preocc	RSQ: Dis	SMAST[a]	BIDR	SDE	IM
Age	-										
DAST-10[a]	-.29**	-									
MSIS	-.09	-.04	-								
RSQ: Sec	.11	-.19	.18	-							
RSQ: Fear	-.10	.02	-.12	-.16	-						
RSQ: Preocc	-.05	.07	-.01	-.26*	.47**	-					
RSQ: Dis	-.02	-.02	.00	-.08	.16	-.19	-				
SMAST[a]	-.10	.25*	-.15	-.07	-.08	.11	-.01	-			
BIDR	.27*	-.41**	.14	.35**	.01	-.26*	-.01	-.33**	-		
SDE	.13	-.30**	.10	.21	.01	-.21	.01	-.17	.83**	-	
IM	.31**	-.37**	.15	.37**	.01	-.23*	-.02	-.37**	.84**	.38**	-

Note. DAST-10 = drug abuse score; MSIS = intimacy score; RSQ: Sec = secure attachment score; RSQ: Fear – fearful attachment score; RSQ: Preocc = preoccupied attachment score; RSQ: Dis = dismissing attachment score; SMAST = alcohol abuse score; BIDR = desirable responding score; SDE = self-deceptive enhancement score; IM = impression management score.

[a] Spearman's correlation coefficient used due to violation of normality assumption.

*$p < .05$, **$p < .01$

level for the sample size in the current study.

4.3.3. Substance use and attachment as predictors of offender type

A multinomial logistic regression analysis was performed with offending group status as the outcome, six predictors (alcohol score; drug score; secure attachment score; fearful attachment score; preoccupied attachment score; and dismissing attachment score), and interaction terms between the substance use and attachment scores (alcohol x secure; alcohol x fearful; alcohol x preoccupied; alcohol x dismissing; drug x secure; drug x fearful; drug x preoccupied; and drug x dismissing). Age was also entered into the model as a covariate.

To test for multicollinearity, tolerance and VIF statistics were examined, and no problems of collinearity were observed. Results indicated that the predictor model provided a statistically significant improvement over the intercept-only model, $\chi^2(6, n = 80) = 17.73$, $p < .01$, Nagelkerke $R^2 = .21$, and results of Goodness-of-Fit showed that the model adequately fit the data. Overall, 37.5% of cases were classified correctly by the model. Significant unique contributions to offending group prediction were made by age ($\chi^2(3) = 8.36$, $p < .05$), and alcohol score ($\chi^2(3) = 8.89$, $p < .05$).

The reference group was the sexual offending group, as it was originally hypothesised that sexual offenders would report more alcohol use and insecure attachment, and the individual contribution of the

predictors to the model are shown in Table 12. It was found that prediction of belonging to the 'other' offending group, compared to the sexual offending group, was dependent on both age (b = -.09, Wald $\chi^2(1)$ = 4.66, p < .05), and reported alcohol use (b = .31, Wald $\chi^2(1)$ = 4.45, p < .05).

Table 12

Parameter Estimates Contrasting the Sexual Offending Group vs. the Violent, 'Other' and Non-Offending Group

Predictor	SO vs.	*B (SE)*	*OR (95% CI)*	*p*
Age	VO	-.04 (.02)	.96 (.92, 1.00)	.07
	OthO	-.09 (.04)	.92 (.85, .99)	.03*
	NonO	-.04 (.02)	.96 (.92, 1.01)	.09
Alcohol	VO	-.02 (.16)	.99 (.72, 1.36)	.93
	OthO	.31 (.15)	1.37 (1.02, 1.82)	.04*
	NonO	.07 (.15)	1.07 (.80, 1.43)	.66

Note. SO = sexual offender group; VO = violent offender group; OthO = other (non-sexual, non-violent) offender group; NonO = control non-offender group.

*p < .05

The odds ratios suggested that as age increased, the change in odds of belonging to the 'other' offending group, compared to the sexual offending group, was .92 [95% CI = .85, .99], i.e. that individuals belonging to the 'other' offending group were more likely to be younger.

The odds ratios also suggested that as there was an increase in reported alcohol use, the change in odds of belonging to the 'other' offending group, compared to the sexual offending group, was 1.37 [95% CI = 1.02, 1.82], i.e. that individuals were more likely to belong to the 'other' offending group if they reported higher alcohol use. Attachment

was not found to have a significant effect on offending group prediction, nor did it significantly interact with other predictors to improve group prediction.

4.4. Discussion

4.4.1. Summary of results

The current study aimed to examine differing patterns of substance use and attachment style between sexual offender and non-sexual offender types. Results showed no significant differences between offending groups on drug use, attachment, or intimacy scores; however, it was found that 'other' types of offenders reported significantly more alcohol use than sexual offenders. The 'other' offending group was in fact the only group to produce a score on the SMAST indicative of an alcohol problem. Overall, the current findings did not support the hypothesis that sexual offenders would report more insecure attachment, higher alcohol use, and more intimacy deficits, but did support the hypothesis that there would be little difference in drug use scores.

It was examined whether prediction of sexual offending behaviour, compared to other offending and non-offending populations, could be improved by considering interaction effects between substance use and attachment style. Attachment did not have a significant effect on offending group prediction, or significantly interact with drug or alcohol use to improve group prediction. Therefore, the current findings suggest

that sexual offending is not better predicted by incorporating an association between an individual's substance use and attachment style.

4.4.2. Implications for theory and link to previous research

Previous research has suggested a strong relationship between substance abuse and offending, but that there are likely to be other contributing factors that might interact with this to impact on an individual's propensity to commit particular types of offences. The current study did not provide support for the role of attachment alone as one of these factors. Overall, scores for the three insecure attachment styles (fearful, preoccupied, and dismissing) were found to be similar across offending groups, suggesting that all types of offenders displayed similar levels of insecure attachment. The non-offending control group appeared to report more secure attachment than the offending groups, although this was not statistically significant. This supports findings which suggest that insecure attachment is not specific to sexual offenders, but may be a general vulnerability or risk factor for many offender types (Jamieson & Marshall, 2000; Ross & Pfäfflin, 2007; Ward et al., 1996).

This study did not add to previously consistent findings that sexual offenders report significantly higher alcohol abuse and more intimacy deficits (Abracen et al., 2000; Abracen et al., 2006; Di Fazio et al., 2000; Langevin & Lang, 1990; Looman et al., 2004), but did support the findings from these studies that reported drug abuse does not differ between offending groups. The lack of findings supporting high alcohol

use in violent offenders was unexpected due to the number of alcohol-related violent crimes consistently reported (ONS, 2017a); however, the findings do contribute to the already existing literature identifying a link between alcohol and general offending behaviour (e.g. Boden, Fergusson, & Horwood, 2013; Felson & Staff, 2010; McMurran & Cusens, 2005); that 'other' offenders reported significantly higher alcohol abuse is consistent with the types of offences related to this group. For example, driving under the influence, general antisocial behaviour (which might be magnified by intoxication), or acquisitive criminal behaviour (where the motivation might be to feed an addiction).

The current study also found 'other' offenders were significantly younger than sexual offenders. This is consistent with research that suggests that individuals tend to engage in different criminal activities at different ages; in particular, that younger offenders tend to commit more impulsive crimes, such as property offences (including burglary), vehicle theft, petty theft, and criminal damage (Francis, Soothill, & Fligelstone, 2004; Soothill, Francis, Ackerley, & Humphreys, 2007).

4.4.3. Implications for practice

The current findings suggest that early and positive intervention is important in promoting desistance from offending; particularly given that younger offenders tend to commit more impulsive and acquisitive crime, which might develop into more serious or versatile offending behaviour patterns (Francis et al., 2004). Working with individuals to identify and

encourage personal strengths, develop and maintain social relationships, and learn and use new skills is an important part of this (McNeill, Farrall, Lightowler, & Maruna, 2012), and should be encouraged amongst professionals working within the criminal justice system.

In terms of substance abuse, as highlighted by the significant positive association found between reported drug and alcohol use in the current study, both are important to consider when working with those who have offended, or are at risk of offending. Practitioners should aim to efficiently screen, identify, and address any potential alcohol and/or drug misuse by an individual (whether it is related to their offending or not). This might include referral to specialist services, providing information about the risk of substance abuse and what help is available, or the delivery of evidence-based interventions (McSweeney, Webster, Turnbull, & Duffy, 2009). It is therefore important that staff feel competent to deliver this support and that they have training in, or at least some knowledge of, the area of substance abuse and the impact it can have on offending behaviours, criminogenic needs, and motivations.

4.4.4. Limitations of the current study

Previous research exploring substance abuse in sexual offenders has often lacked non-offending, as well as non-sexual offender, control groups. The current study attempted to include both of these condition groups, as well as a non-sexual, non-violent group (i.e. 'other' offending group). However, it is acknowledged that the offending sample was taken from a

Probation population, where a number of respondents were likely to have recently been released from prison. This might have limited the generalisability of this group to a wider forensic population. Furthermore, the SMAST and DAST-10, which were used as substance abuse measures, asked respondents to report on alcohol and drug use from the past year, and so results might be affected by limited opportunity if the respondent spent time in prison prior to completing the questionnaires. Matching the participants in the non-offending control group would also have been useful to ensure a more robust design, and help control for potential confounding variables.

Research examining sexual offending has previously distinguished between those who offend against children and adults (e.g. Abracen et al., 2006; Looman et al., 2004), which might have been expected in the current study. However, these studies have tended to collapse these sub-groups into a general 'sexual offender' group after finding a lack of significant difference between them during analysis. Given the relatively small sexual offender sample size here (n = 22), this was not attempted in the current study, but might be important to explore further in future research.

In terms of measures used in the current study, self-report screening instruments are often judged to overestimate prevalence of substance abuse (Kraanen & Emmelkamp, 2011); this was not the case here. In fact, it is likely, considering consistent previous findings regarding substance abuse in offending populations, that this was under-

reported. It is noted that significant correlations were found between scores on the SMAST and DAST-10 and scores on the BIDR, suggesting that participants may have been reporting less alcohol and drug use in an attempt to 'look good'. Similarly, it has been debated how best to measure attachment in individuals (see Ravitz et al., 2010), and interviews or self-report measures other than the RSQ might have yielded a more valid measure of adult attachment style; particularly given the low internal reliabilities observed in the current study.

Various practical issues arose during data collection which resulted in alternative strategies becoming necessary to be employed, including OMs being asked to administer some questionnaires. Despite attempts to reduce bias and desirable responding, and although no significant difference was found in responding by the offender groups to researcher- or OM- administered questionnaires, alternative methods of administration might have been considered instead, such as use of online questionnaires.

4.4.5. Conclusions

The current study aimed to explore attachment and substance use in sexual offenders compared to other offending and non-offending groups. Results were not consistent with the previous finding that sexual offenders report more alcohol abuse and insecure attachment, and did not find that an association between substance use and attachment improved prediction of offending type; however, the finding that 'other' offenders

reported significantly higher alcohol abuse contributes to the already existing literature identifying a link between alcohol and general offending behaviour, including antisocial, acquisitive, and property crime.

Given lack of appropriate control groups (as identified in the systematic review), the current research attempted to extend previous studies by including a non-sexual (violent) offending group, a non-sexual, non-violent ('other') offending group, and a non-offending group. Therefore, given that the 'other' group was likely to encompass substance-related crime, the current findings relating to this group were unsurprising. It would therefore be important to have a clearer understanding of what type of offending behaviour is being compared before conclusions are made regarding substance use and specific offending groups.

Chapter 5: Using a cognitive-behavioural anger intervention with a substance misusing male psychiatric inpatient with persecutory delusion-driven aggressive and violent behaviour

Abstract

A referral was made for a male patient (Mr D) with a diagnosis of Schizoaffective Disorder, who had an extensive history of intermittent psychotic episodes, poly-substance misuse, interpersonal difficulties, and violent and threatening behaviour. Mr D's assessment results and formulation indicated that his violent and aggressive urges appeared to be activated by feelings of anger, and directed towards those he believed to be persecuting or threatening him, often those he had difficult interpersonal relationships with. A cognitive behavioural therapy (CBT)-based anger intervention was completed with Mr D to help him further explore and address how he experiences and manages his anger, including recognising triggers and contributing risk factors. Some reliable and clinically significant change was demonstrated in Mr D's self-reported experience and expression of anger following the intervention; however, he continued to minimise the impact of his substance use on his mental health and urges to behave violently, despite previously completing interventions to address these. This case study highlights the importance of determining a hierarchy of treatment targets when there are multiple treatment needs, and of adequately addressing problems in order of priority.

5.1. Patient introduction

5.1.1. Ethical considerations

The patient in this case study will be referred to throughout as Mr D, to provide him with anonymity, and to adhere to the British Psychological Society (BPS) and Health and Care Professions Council (HCPC) guidelines on ethical practice. Written consent was provided by Mr D, and can be found in Appendix Y.

5.1.2. Referral

Mr D was a 33-year-old British male with a diagnosis of Schizoaffective Disorder, who was detained under Section 3 of the Mental Health Act. He was admitted to a low secure psychiatric unit following an incident where Mr D made threats to kill his Community Psychiatric Nurse (CPN). He was referred to the author by his Multidisciplinary Team (MDT), who thought that Mr D would benefit from intervention work to explore and address how he experiences and manages his anger, given his previous threatening and aggressive behaviour.

5.2. Introduction

5.2.1. Background

Aggression is defined as behaviour directed towards another with intent to cause harm, which the perpetrator knows will cause harm, and which the target is motivated to avoid. An act of aggression with the goal of causing extreme harm is considered as violent (Anderson & Bushman, 2002). Violent crime, as measured by the Crime Survey for England and Wales

and police recorded crime, covers a range of offence types, including offences where there is threat of violence, even if there is no injury (ONS, 2017b).

Aggression and violence are often used interchangeably, and the emotional state most often identified as an important antecedent for these is anger (Novaco, Ramm, & Black, 2001; Parrott & Giancola, 2007). Anger is a subjective emotional state elicited by perceived threat and motivating antagonism towards the source of the threat (DiGiuseppe & Tafrate, 2007). Theories of aggression, such as Anderson and Bushman's (2002) General Aggression Model, specify several explanatory mechanisms for the role of anger towards aggression. These include: reducing inhibitions; acting as an information cue; priming aggressive thoughts; and increasing arousal. Novaco's model of anger suggests that the expression of anger is an interaction between external events, cognitive arousal, and behavioural factors, and that violent and aggressive behaviour is often activated by angry affective and emotional states, and cognitive appraisals supportive of aggression or violence (Novaco, 2011).

Whilst anger alone is neither necessary nor sufficient for violence or aggression to occur, there is evidence that it is an important contributing factor when considered in combination with other factors (Howells, 2009, 2011). These include: situational and environmental factors; mental disorders; personality traits; interpersonal problems; and disinhibitors, such as substance abuse. For example, research has suggested that

individuals with high levels of anger are more likely to engage in substance abuse (Litt, Cooney, & Morse, 2000), and demonstrate more aggression when intoxicated (Parrott & Gianocola, 2004). In addition, links have been demonstrated between insecure attachment patterns and more reported (and higher intensity) anger experiences (Diamond & Hicks, 2005), as well as antisocial or violent behaviour (Levinson & Fonagy, 2004; Mikulincer & Shaver, 2007), and interventions encouraging the strengthening of secure attachment bonds have been found to reduce rates of anger and aggressive behaviour (Born, Chevalier, & Humblet, 1997).

Violence and aggression is associated in some individuals with psychotic disorders, such as schizophrenia and schizoaffective disorder (e.g. Steinert, Wölfle, & Gebhardt, 2000; Walsh, Buchanan, & Fahy, 2002; Witt, van Dorn, & Fazel, 2013). A common symptom of psychotic disorder is paranoia, which relates to the belief of threat of harm or persecution from others (Freeman & Garety, 2000, 2014). Frequent experience of such beliefs might contribute to the use of aggression towards the source of the perceived harm or threat. This hostile attribution bias has been linked to persecutory symptoms amongst psychotic patients (An et al., 2010). In addition, comorbid substance abuse has been demonstrated to be a dynamic risk factor strongly associated with increased violence risk in individuals with psychosis (e.g. Fazel & Grann, 2006; Walsh et al., 2002; Witt et al., 2013).

As the distinction between aggression and violence is largely based on the extent of physical harm inflicted, verbal aggression is generally not regarded as violent (Howells, Daffern, & Day, 2008), and research has generally dismissed threats to kill as an important risk factor in assessing future violence (Steadman et al. 1998). However, there is the suggestion that explicit threats are predictive of subsequent violence. Warren, Mullen, Thomas, Ogloff, and Burgess (2008) found high rates of further violent offending in those convicted of threats to kill, with substance misusers, the mentally disordered (particularly schizophrenia), the young, and those without prior criminal convictions being most at risk of carrying the threat out. They were also found to be at high risk of subsequent violence to themselves.

In terms of relevance to Mr D, he described experiencing angry thoughts and feelings which, in combination with other factors (including his poly-substance misuse), appeared to contribute to persecutory delusion-driven beliefs, and led him to make threats to kill a practitioner that he had a poor relationship with, and who he believed had wronged him. Despite not acting on these threats, Mr D's continued experience of intense anger appeared to be an important risk factor for future aggressive or potentially violent behaviour. This was particularly so given his minimisation of his risk and contributing factors, such as his diagnosis and substance use.

5.2.2. Objectives

To evaluate the effectiveness of using an anger-focused intervention with a mentally disordered patient with violent and aggressive urges, and to consider the impact of contributing risk factors and underlying interpersonal difficulties on treatment readiness, motivation to change, engagement, and risk of future violence.

5.2.3. Patient background

5.2.3.1. Sources of information

Following his admission, baseline psychometric and risk assessments were completed for Mr D, to aid initial formulation and treatment planning. Due to having only a six-week assessment and intervention period, a clinical interview was not attempted; however, patient records and case discussions with the MDT and ward-based staff provided valuable information and insight into Mr D's background, as well as more recent presentation and behaviour. Previous reports and session notes were also reviewed.

5.2.3.2. Patient history

Mr D was born into a family consisting of his mother, father, and a sister who was four years older than him, with no history of offending or psychiatric illness. He described his parents as "*strict*" and "*disciplinarians",* and reported that he began to notice "*cracks on the wall*" in their relationship from a young age, which affected him and his sister. He explained that when he was aged 17 his mother began drinking

heavily and would often get upset and angry with his father, but did not like confrontation. Mr D progressed through school and sixth form, attaining GCSEs and A-Levels. He stated that he excelled at everything, and after leaving school worked in retail and then in IT on short-term contracts.

Mr D had had one long-term heterosexual relationship, which lasted from the age of 16 to 21. Four years into the relationship, he and his partner moved in together and he assumed financial responsibility because she was out of work. Mr D described his partner as a *"control freak"* and stated that they experienced financial difficulties, which meant they often argued. After one year of living together, Mr D stated that their relationship broke down, and he returned to live with his parents. He reported that he had not been in an intimate relationship since.

Mr D reported experiencing his first spiritual/religious experience aged 25, which initially caused him some concern because he believed that he might be suffering symptoms of schizophrenia. He explained that *"miracles"* started happening, which he saw as a sign from God. Mr D's parents became concerned after he discussed this with them and contacted their GP. Mr D was diagnosed as delusional and asked to attend voluntary appointments at hospital.

Mr D went on to have a 5-year period of intermittent psychotic episodes with manic presentation, and was subsequently given a diagnosis of Schizoaffective Disorder. He experienced auditory hallucinations, some of which were of a commanding nature; grandiose

delusions; and also described having a spiritual connection with a well-known female serial killer, who he believed was a supreme female spiritual being. Mr D contacted the Crisis Team due to concerns that he couldn't control his urges to behave violently. He was sectioned (s2) following threats to harm himself and his family, but was subsequently released. Mr D was sectioned again (s3) after his work colleagues raised concerns about e-mails he sent to his boss, which outlined his spiritual/religious experience, and his belief that he should be promoted.

Whilst detained, Mr D posted messages on Facebook stating that he would commit a murder upon his release, which he described as his "*destiny*" and "*god's will*", and sent texts threatening to kill his CPN. He was consequently transferred to a low secure unit admissions ward. Mr D did not have a history of self-harm, although admitted to experiencing suicidal thoughts in the past.

Mr D had an extensive history of illicit substance abuse. He began occasionally smoking cannabis aged 16, describing loving the effects it gave him. He began going to raves from the age of 16, and described being peer pressured into trying MDMA. Shortly after this, Mr D began using amphetamine, describing it as "*rocket fuel*", which gave him more of a "*spiritual buzz*" than alcohol. Mr D explained that all of his inhibitions had gone by this time, and stated that by the time he was 20 he was only using cannabis, amphetamine, and MDMA occasionally. He recalled that he had been using M-CAT (mephedrone) and cannabis the weekend prior to having his spiritual/religious experience. He continued using M-CAT

until he was sectioned. Mr D also reported taking cannabis and cocaine following his discharge from hospital.

5.3. Assessment, analysis and formulation

5.3.1. Case review and discussion

A review of Mr D's patient records, previous assessment results and reports, and progress notes provided information about his history.

During case discussions, staff reported that since admission Mr D had generally maintained a low-profile; however, would become defensive and argumentative during discussions with staff regarding his diagnosis (which he did not agree with), and his medication (which he did not believe he needed). Mr D refused to engage with Occupational Therapy (OT) activities offered, and sometimes became verbally abusive towards staff and patients when he felt frustrated, ignored, or lied to.

It was reported that his readmissions to hospital tended to follow the pattern whereby Mr D stopped taking his prescribed medication and used illicit substances. He held a negative view of mental health services and did not believe that they were helping him progress, accusing staff instead of attempting to persecute him (consistent with paranoid symptomology; Freeman & Garety, 2000, 2014). He described feeling "*infuriated*" about being detained, and previously disclosed having thoughts about harming two male staff nurses because he felt they had mistreated himself.

Results from a previous Millon Clinical Multiaxial Inventory (MCMI-IV; Millon, Millon, & Grossman, 2015), completed on admission with Mr D, indicated an elevation on the Antisocial, Narcissism, and Borderline scales. These were consistent with his apparent lack of respect for authority figures and professionals, substance abuse, exaggerated sense of self-importance and competence, threatening behaviour when challenged or criticised, interpersonal difficulties, and mood swings. These underlying personality traits have been found to be associated with problems with anger and aggression (Howell, 2009), and a high prevalence of personality problems and substance abuse has been demonstrated in mentally disordered individuals who make threats to kill (Barnes, Gordon, & Hudson, 2001).

5.3.2. Psychometric and risk assessments

In order to effectively assess anger, an understanding of an individual's anger triggers, appraisals, experiences, behavioural responses, and outcomes must be developed. There are several psychometric tools assessing anger-related constructs that have been used extensively in research and clinical settings, and two of these were used in the current case study; Novaco's (2003) Anger Scale and Provocation Inventory (NAS-PI), and Spielberger's (1999) State-Trait Anger Expression Inventory-2 (STAXI-2).

5.3.2.1. Novaco Anger Scale and Provocation Inventory (NAS-PI)

The NAS-PI (Novaco, 2003) is a two-part, self-report questionnaire used to measure how an individual experiences anger (60-items in the Novaco Anger Scale; NAS), and the kind of situations that induce anger (25-items in the Provocation Inventory; PI). The NAS yields scores for cognitive, arousal, behavioural, anger regulation subscales, as well as a Total NAS score. The PI produces a single Total PI score. This validated assessment of anger control and aggression is widely used in clinical and forensic settings (Novaco & Taylor, 2004). It can distinguish between assaultive and non-assaultive forensic inpatients, and predict assaultive behaviour in institutions, as well as violent behaviour in the community following hospital discharge (Novaco, 2003).

Mr D's responses did not indicate clinically significant difficulties in anger regulation towards various provocations; however, indicated how Mr D typically experienced and reacted to anger.

His NAS cognitive subscale responses indicated that anger endangering thoughts that appeared to be relevant for Mr D fell into the categories of justification and suspiciousness. His arousal subscale responses indicated that Mr D may have experienced high intensity and prolonged anger. His behaviour subscale responses indicated that behaviours most problematic for Mr D might be impulsive reactions and verbal aggression. His anger regulation subscale responses indicated some inability to regulate the frequency, intensity, duration, and

expression of anger. These were all consistent with Mr D's historical expression of anger in the form of threatening behaviour towards those he felt were treating him unfairly.

5.3.2.2. State-Trait Anger Expression Inventory-2 (STAXI-2)

The STAXI-2 (Spielberger, 1999) is a 57-item self-report questionnaire designed to provide concise measures of the experience, expression, and control of anger. The experience of anger is conceptualised as having two major components: State and Trait Anger. Anger expression and anger control are conceptualised as having four major components: Anger Expression-Out, Anger Expression-In, Anger Control-Out, and Anger Control-In. An Anger Expression Index provides an overall measure of the expression and control of anger. It is a valid and reliable measure, and has been developed and standardised for use in forensic settings (Eckhardt, Norlander, & Deffenbacher, 2004).

Mr D's State Anger score was in the 'normal' range, suggesting that he did not report significant problems with annoyance, irritation, anger, or fury whilst completing the test. His overall Trait Anger score indicated he was sometimes quick-tempered. Mr D's high Anger Expression-Out score, along with his moderate Anger Control-Out and Control-In scores suggested that when angry he might try to remain calm, although might not always be able to reduce anger quickly. It indicated that Mr D might generally deal with anger through inappropriate external expressions of anger, including using threats, directed towards others. This was

evidenced in the events leading to Mr D's admission to hospital, and was consistent with his self-report that he often found it difficult to control feelings of anger and frustration.

5.3.2.3. Historical Clinical and Risk Management-20, Version 3 (HCR-20V3)

The HCR-20V3 (Douglas, Hart, Webster, & Belfrage, 2013) was used to assess risk for violence, given Mr D's history of aggression, as well as threatening behaviour. The HCR-20V3 has been found to significantly predict aggressive behaviour in forensic and general psychiatric male patients up to two years post-discharge (Michel et al. 2013).

Historical risk factors identified as being present and highly relevant for increasing Mr D's risk of violence to others included: antisocial behaviour; relationships; employment; substance use; major mental disorder; traumatic experiences; violent attitudes; and treatment or supervision response. Clinical risk factors identified as being highly relevant for increasing his risk of violence included: lack of insight; violent ideation or intent; symptoms of major mental disorder; and treatment or supervision response. Future risk factors which were thought to be highly relevant in increasing his risk of violence included: professional services and plans; living situation; personal support; treatment or supervision response; and stress or coping.

Overall Mr D was rated as being at high risk for future violence; however, these were dependent on the scenario, his mental state and

adherence to medication, and whether he was continuing to use substances.

5.3.3. Case formulation

A diagrammatic formulation, using a 5 Ps approach (Persons, 2008), can be seen in Appendix Z; the following is a summary.

Mr D's main presenting problem appeared to be difficulties coping with thoughts, feelings, and urges of anger and violence. From an early age, Mr D appeared to hold the view that his father was a dominant figure who intimidated his mother, which is likely to have developed into the view of older males as authoritarian and controlling. Mr D was left frustrated at his mother's inability to stand up for herself and for him and his sister, and his admiration for the well-known female serial killer appeared to have developed in response to frustration over his mother's perceived vulnerability and weakness. His threatening behaviour is likely to have provided him with an outlet that allowed him to challenge authority and increase his sense of control.

Mr D had problems with past employment, with persecutory thoughts about other employees being jealous and sabotaging his progress, and feeling that there was a lack of recognition of his achievements and talents from employers. This increased his view of the world as an unjust place, and his paranoia/persecutory thoughts in relation to other people. His threats against his CPN appeared to have been triggered by this same feeling of being misrepresented or treated

unfairly and, when combined with his negative views of male authoritarian figures, underlying narcissistic traits, and poor interpersonal skills, exacerbated underlying frustrations and anger that he found unable to manage. It is likely that holding such persecutory beliefs about those in authority allowed Mr D to dismiss negative thoughts about his abilities and underachievement, that would further undermine his self-esteem.

In terms of his interpretation of his spiritual experiences, Mr D was able to maintain his sense of being special, whilst avoiding the stigma associated with mental illness, as he refused to accept it as a symptom of his mental illness. It is likely that as those around him failed to accept this as being real, Mr D would have felt increasingly threatened by their concerns about his mental health. His aggressive and threatening response therefore might have been a way to prevent them from challenging him and his beliefs. His parents in particular, who he reported having a mixed relationship with, became a focus for his anger and frustration as the instigators of his detention, further reinforcing his persecutory thoughts. Mr D's positive self-appraisal, underlying narcissism, and belief that he had special talents, might also have acted as a protective factor against suicidality (Johnson et al., 2010), which has previously been associated with schizophrenia, psychosis, and schizoaffective disorder (Harkavy-Friedman, Nelson, Venarde, & Mann, 2004; Hor & Taylor, 2010). It might also have contributed to his repeat discontinuation of medication (Moritz et al., 2013).

Mr D had a history of extensive substance abuse which was likely to have contributed towards the development and sustaining of many of his paranoid/persecutory thoughts (Freeman & Garety, 2000; 2014), as well as acting as a coping strategy. Psychoactive substances known to trigger psychotic episodes, and in particular persecutory ideation and paranoia, in users include M-CAT, cannabis, amphetamine, and cocaine. Main psychiatric effects particularly associated with M-CAT use include agitation, hallucinations, paranoia, delusions, and aggressive behaviour (Karila, Billieux, Benyamina, Lançon, & Cottencin, 2016).

There was continued minimisation of the impact that substances had on his mental health and urges to behave violently, and he instead would focus on other sources as being the underlying cause, e.g. relationship and financial difficulties. Mr D also appeared to experience interpersonal difficulties that impacted on his relationships with family, partners, and staff; such difficulties have been associated with adult attachment styles (Bartholomew & Horowitz, 1991; Collins & Read, 1990). Attachment avoidance, associated with a negative image of others, defensiveness, and interpersonal hostility (Mikulincer, Shaver, & Pereg, 2003), seemed to be particularly relevant for Mr D. Associations between insecure adult attachments and a wide range of psychiatric disorders have previously been demonstrated; in particular, interpersonal difficulties and psychosis (Penn et al., 2004; Read, van Os, Morrison, & Ross, 2005).

5.3.4. Initial conclusions and recommendations

Mr D had an extensive history of intermittent psychotic episodes, poly-substance misuse, and violent and threatening behaviour. Despite his NAS-PI and STAXI-2 scores not indicating significant problems with anger control and aggression, Mr D had a history of threatening behaviour, and admitted that he often found it difficult to control his violent urges. A lack of insight into, and minimisation of, the impact of his substance use on his mental health and risk, suggested this to be an important intervention target; however, he had recently completed an intervention to address these.

Mr D's previous aggressive and threatening behaviour appeared to be activated by feelings of anger or injustice, and directed towards those he believed to be persecuting or threatening him. Therefore, it was thought that Mr D would benefit from further exploration into recognising triggers and risk factors for his violent and aggressive urges, and how he experienced and managed his anger in greater depth. It was thought that this should also include helping Mr D to recognise risk factors that might impact on his ability to manage these feelings and urges, such as his substance abuse and insight into his mental health, and how he could monitor and manage these factors; particularly given his underlying personality traits and continued interpersonal difficulties.

5.4. Intervention

5.4.1. Approach and aims

Mr D's formulation indicated several therapeutic treatment targets relating to his anger and aggression.

As previously mentioned, even though experiencing anger alone is not sufficient or necessary for aggression or violence, it is a recognised risk factor for the development of offending behaviour (Novaco et al., 2001), and has been considered a primary treatment target with forensic populations (Howells et al., 2005). Meta-analyses of the effectiveness of anger and aggression treatments demonstrate cognitive behavioural therapy (CBT) approaches to have the greatest efficacy (Deffenbacher, 2011; Del Vecchio & O'Leary, 2004; DiGiuseppe & Tafrate, 2003; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012; Novaco, 2013; Tang, 2001). A CBT approach for anger emphasises the cognitive, emotional, and physiological processes involved during anger-provoking situations, and the resulting behavioural responses (Novaco, 1975). It combines anger management and treatment by adopting a psychoeducational approach, guided by CBT principles, to teach skills to cope with provocation, and help modify cognitions promoting and maintaining anger (Novaco et al., 2001; Taylor & Novaco, 2005).

Clinical guidelines recommend psychological therapies, such as CBT, for individuals with psychosis (NICE, 2014), and CBT has been shown to be effective at reducing the severity and frequency of psychotic symptoms (Tarrier & Wykes, 2004). Violence and aggression appear to be

associated with the presence of delusional symptoms and anger (Appelbaum, Robbins, & Monahan, 2000; Meehan et al., 2006), and anger-related problems in patients with severe mental health problems have been successfully treated using CBT (Renwick, Black, Ramm, & Novaco, 1997). There is evidence to suggest that CBT is effective in treating psychotic disorders, such as schizophrenia (e.g. Jauhar et al., 2014), and for inpatients who have co-existing psychosis and aggression (Haddock, Lowens, Brosnan, Barrowclough, & Novaco, 2004; Haddock et al., 2009). The current intervention, however, did not incorporate techniques with psychosis specifically in mind, due to Mr D's refusal to acknowledge his diagnosis and related experiences.

The aims of the intervention, based on the above theoretical underpinnings, were to help Mr D to:

- gain a greater understanding into his own negative thinking patterns, and emotional, physical, and behavioural reactions to anger;
- recognise risk factors that can lead to feelings of frustration and anger, and how he can monitor and manage these factors;
- identify potential future high-risk situations that might trigger feelings of frustration and anger;
- and identify core coping strategies he could use to help manage feelings of frustration and anger in these situations.

5.4.2. Intervention plan

Mr D's treatment plan was based on the cognitive–behavioural approach developed by Novaco (1975). The exact breakdown of the treatment session plan can be seen in Table 13.

Central features of approaches such as these include cognitive restructuring, arousal reduction, and behavioural skills training. For this intervention, this included:

a) self-monitoring and recording of anger frequency, intensity, and triggers (see Appendix AA);
b) constructing a personal anger provocation hierarchy (see Appendix BB);
c) cognitive restructuring by shifting attentional focus, and challenging and modifying evaluations of anger-provoking situations;
d) developing arousal reduction techniques to reduce general tension, arousal to provocation, and impulsive reactions;
e) and exploring behavioural coping to handle anger-provoking situations constructively, including effective communication, assertiveness, and problem-solving.

Due to time limitations, there was little opportunity to expose Mr D to simulations of identified anger-provoking situations from his hierarchy to allow him to practice acquired skills, e.g. through role-play; however, these were discussed and action plans made (see Appendix CC).

Table 13
Breakdown of Treatment Session Plan

	Session Focus
Session 1	Completion of pre-intervention assessments; Recognising anger as a normal emotion; Identifying differences between anger and aggression; Identifying advantages and disadvantages of anger and consequences of aggression
Session 2	Recognising physiological arousal and warning signs; Identifying triggers; Building an anger hierarchy
Session 3	Beginning cognitive restructuring; Exploring and challenging unhelpful thinking styles
Session 4	Developing cognitive restructuring; Using self-talk effectively; Exploring relaxation and arousal reduction techniques
Session 5	Problem-solving through effective communication; Exploring different types of behaviour; Assertiveness as appropriate behavioural coping
Session 6	Integrating skills and dealing with repeated provocation; Risk and future planning including identifying high-risk situations; Development of action plans
Session 7	Review of sessions; Completion of post-intervention assessments

5.5. Results

5.5.1. Engagement, motivation and readiness to change

Mr D attended all sessions offered to him and generally engaged well with the intervention, albeit quite passively. His compliance appeared to be motivated by a desire to return to the community, rather than to address an outstanding treatment need. Despite this, Mr D stated that he understood the need to complete this intervention work, and how serious his previous aggressive and threatening behaviour had been.

5.5.2. Psychometric and risk assessments

Mr D's pre- and post- intervention assessment results for the NAS-PI and STAXI-2 were compared to assess change. The reliable change index and

a calculation for clinically significant change were used to evaluate the impact of the intervention. Reliable change criterion was calculated according to methods originating in Jacobson, Follette, and Revenstorf (1984), amended by Christensen and Mendoza (1986), and later described by Evans, Margison, and Barkham (1998), and Jacobson and Truax (1991). Clinically significant change criterion for each scale was calculated according to methods offered by Jacobson et al. (1984).

5.5.2.1. Novaco Anger Scale and Provocation Inventory (NAS-PI)

Mr D's pre- and post- intervention scores on the NAS-PI are reported in Table 14, along with reliable change results. Normative data from a clinical sample was not reported in the psychometric manual (Novaco, 2003); however, a number of studies have since reported findings from a range of forensic and psychiatric populations (e.g. Hornsveld, Muris, & Kraaimaat, 2011; Lindqvist, Dåderman, & Hellström, 2005; Novaco & Taylor, 2004). The data used for this case study were taken from a recent validation study by Moeller, Novaco, Heinola-Nielsen, and Hougaard (2015). Clinically significant change was not calculated for the NAS-PI results, as Mr D's pre-intervention scores had not indicated significant difficulties.

Mr D's total and subscale NAS scores did not show any reliable change following the anger intervention, although Mr D's pre-intervention scores were already within the average range. A reliable change was,

however, demonstrated with Mr D's PI score. This indicated that, rather than a reduction, he in fact reported experiencing a higher-level intensity level of anger across a range of provocations, which was not hoped for following therapeutic intervention.

5.5.2.2. State-Trait Anger Expression Inventory-2 (STAXI-2)

Mr D's pre- and post- intervention scores on the STAXI-2 are reported in Table 15, along with available reliable and clinically significant change results. Mr D's State Anger scores did not show any reliable or clinically significant change following the anger intervention; however, as with his NAS-PI scores, these were initially considered to be within the 'normal' range. Mr D's Trait Anger and Angry Reaction scores were found to have changed reliably, and put him in the 'low' range, suggesting that he reported experiencing angry feelings less frequently following the intervention.

Furthermore, reliable change was demonstrated with all of Mr D's Anger Expression and Control scores, as well as his overall Anger Expression Index. Although the majority of these scores were within the 'normal' range at the pre-intervention stage, this indicates that Mr D reported a reduction in intense angry feelings experienced, and showed an improvement in his ability to control outward manifestations of his anger and being able to calm down quickly.

Although clinically significant change was not calculated for the subscales Mr D scored within the 'normal' range at the pre-intervention

Table 14
Summary of Change in Mr D's Pre- and Post- Intervention Scores on the NAS-PI

	Pre-treatment		Post-treatment		Mean (*SD*) of norm group[a]	Mean (*SD*) of clinical sample[b]	Reliable change index[c]
NAS-PI subscale	T-score	Score range[d]	T-score	Score range			
Cognitive	50	Average	56	High Average	29.1 (5.0)	34.1 (5.8)	5.88
Arousal	50	Average	55	Average	28.2 (5.5)	32.2 (5.8)	6.10
Behaviour	57	High Average	58	High Average	26.7 (6.6)	30.9 (5.8)	6.07
Anger Regulation	56	High Average	59	High Average	25.3 (3.7)	26.8 (4.4)	5.02
Total NAS	53	Average	57	High Average	83.9 (15.6)	97.1 (16.8)	10.59
Total PI	42	Low Average	57	High Average	63.7 (14.8)	65.4 (14.0)	9.17**

[a] Standardised norm group data from a non-clinical sample, as reported in psychometric manual (Novaco, 2003).
[b] Using data from a clinical sample of Danish male forensic inpatients and inmates, as reported by Moeller et al. (2015).
[c] Using alpha coefficients for NAS-PI measure, as reported in psychometric manual (Novaco, 2003).
[d] Ranges as specified in psychometric manual (Novaco, 2003).

** Indicates significant change in the *undesired* direction

Table 15
Summary of Change in Mr D's Pre- and Post- Intervention Scores on the STAXI-2

	Pre-treatment		Post-treatment		Mean (*SD*) of norm group[a]	Mean (*SD*) of clinical sample[b]	Clinically significant change[c]	Reliable change index[d]
STAXI-2 scale/subscale	T-score	Score range[e]	T-score	Score range				
S-Ang	42	Normal	<20	Low	19.25 (5.26)	22.71 (8.49)	-	3.57
S-Ang/F	44	Normal	38	Low	7.06 (2.81)	9.16 (3.97)	-	2.34
S-Ang/V	40	Normal	40	Normal	6.39 (2.66)	7.73 (3.55)	-	2.33
S-Ang/P	42	Normal	42	Normal	5.82 (2.13)	5.96 (2.09)	-	2.21
T-Ang	50	Normal	40	Low	18.40 (5.42)	20.14 (5.86)	-	5.42*
T-Ang/T	42	Normal	46	Normal	6.38 (2.53)	6.88 (2.92)	-	2.22
T-Ang/R	60	High	38	Low	8.67 (2.61)	9.61 (3.17)	9.09*	2.89*
AX-O	60	High	46	Normal	15.42 (3.74)	15.68 (4.16)	15.54*	4.64*
AX-I	54	Normal	36	Low	16.35 (3.99)	18.26 (4.68)	-	4.95*
AC-O	52	Normal	64	Very High	23.53 (5.01)	21.06 (.23)	-	5.01*
AC-I	48	Normal	64	Very High	22.60 (5.82)	21.39 (6.13)	-	4.84*
AX Index	34	Normal	<20	Very Low	33.68 (13.07)	39.58 (13.96)	-	15.37*

[a] Standardised normative data from a male normal adult sample, as reported in psychometric manual (Spielberger, 1999).
[b] Standardised normative data from a male psychiatric inpatient sample, as reported in psychometric manual (Spielberger, 1999).
[c] Clinically significant change not calculated for subscales scoring within the 'normal' range at pre-intervention.
[d] Using alpha coefficients for a male psychiatric inpatient sample, as reported in psychometric manual (Spielberger, 1999).
[e] Ranges as specified in psychometric manual (Spielberger, 1999).

* Indicates significant change in the *desired* direction

stage, his scores for Anger Reaction and Anger Expression-Out did indicate clinically significant change.

5.6. Discussion

5.6.1. Summary of results

As previously mentioned, there is an established evidence base for the effectiveness of using CBT interventions for anger with various populations (Del Vecchio & O'Leary, 2004; DiGiuseppe & Tafrate, 2003; Hofmann, et al., 2012; Novaco, 2013). The CBT intervention used as part of this case study was chosen due to Mr D's previous aggressive and threatening behaviour being activated by feelings of anger (Novaco, 2011), and directed towards those he believed to be persecuting or threatening him. It was thought that these beliefs and feelings were exacerbated by Mr D's extensive substance abuse, which has been found to be related to risk of violence in individuals with psychosis (e.g. Witt et al., 2013).

Although some reliable and clinically significant change was demonstrated in Mr D's self-reported experience and expression of anger following the intervention, his pre-intervention scores mostly fell within the 'normal' range, suggesting that he did not report having significant difficulties with this prior to the intervention. Due to his history of aggressive and threatening behaviour, and minimisation of contributing factors, it is likely that this reflected a lack of awareness regarding his risk, or under-reporting by Mr D. It has been demonstrated that severe mental illness, in the presence of co-morbid substance abuse, is a

significant predictor of violent acts (Elbogen & Johnson, 2009). Given Mr D's continued persecutory beliefs, lack of insight into his mental health, and denial of the impact substance use might have on his mental health and risk of future violent and threatening behaviour, these remained outstanding treatment targets. Psychosis-related issues further increased treatment complexity, including Mr D's suspiciousness, which might have been further exacerbated by an underlying insecure attachment style.

Ansbro (2008) highlights the importance of continuity and consistency in a practitioner-client relationship, and has previously suggested that inconsistent supervision by practitioners replicates the behaviours of unreliable childhood attachment figures. Such unreliability was reported by Mr D in relation to his parents and upbringing. It might be that an (avoidant) insecure attachment style has consequently been developed by Mr D, affecting the quality of his social, intimate, and therapeutic relationships, and contributing to the disregard for, and suspiciousness of, others. This would likely be a block for Mr D to develop a trusting relationship with practitioners, as well as predisposing him to use substances to cope, e.g. as an avoidance technique, or to feel a "*spiritual buzz*".

5.6.2. Limitations of the case study

One limitation of this case study is the length of the intervention, which was limited to seven sessions across a six-week period, including the administration of pre- and post- assessments. This meant that sessions had to be concise, leaving little opportunity to complete tasks that would

usually be carried out as part of a typical CBT anger intervention, e.g. completion of an anger diary, role-play (Novaco, 1975).

Furthermore, there was no opportunity to complete motivational work prior to the anger intervention, which might have helped Mr D to engage more meaningfully with the intervention. Motivation, according to the Transtheoretical Model of Change, is considered important in order to move through the series of stages as part of the process of change (Prochaska & DiClemente, 1983). Therefore, having time to attempt to increase Mr D's readiness to change prior to completing the intervention would have been preferred. Alternative methods of assessments and monitoring, such as staff observations and recording of aggressive or violent incidents, could also have been used to monitor change.

As previously mentioned, Mr D's history and self-report implied that he experienced interpersonal problems which might have contributed towards his persecutory thoughts in relation to other people, and how he reacted to them. Therefore, additional measures to provide more information regarding Mr D's suspected interpersonal problems and insecure attachment style might also have been useful to administer.

5.6.3. Implications for practice

This case study has shown the importance of adopting a person-centered approach when working with a psychiatric population, and ensuring an individual is motivated and ready to engage meaningfully with an intervention, in order to increase maximum responsivity. This includes considering the impact the individual's mental health and level of insight,

as well as underlying personality traits and interpersonal skills, might have on their ability to complete intervention work, and whether this needs to be addressed first, or merely requires further consideration when planning effective techniques to be used (Turkington, Kingdon, & Weiden, 2006).

Insight is a complex construct and includes: recognition of the presence of a mental illness/problem; understanding of the consequences of the illness/problem; attribution of psychotic symptoms as pathological; and/or awareness of the need for treatment. When working with patients with psychosis, improving insight is an important therapeutic goal, although research into the impact of CBT on insight in individuals with psychosis has been conflicting (McCormack, Tierney, Brennan, Lawlor, & Clarke, 2014). The current intervention, being anger-focused, did not incorporate techniques with psychosis specifically in mind, due to Mr D's refusal to acknowledge his diagnosis and related experiences; however, it might have been beneficial to engage Mr D in CBT for psychosis (CBTp), to encourage improvement in insight, prior to targeting any anger-related problems.

This case study highlights the benefits of using various techniques, especially if an individual is not forthcoming with information during sessions. For example, Mr D appeared to find it difficult to contribute during discussions and tasks; however, when given as an out-of-session task, he was able provide examples to discuss. He might have required

extra time to process information, and help to recall and apply previously learned information.

Mr D continued to minimise his experience of anger and need to complete this intervention, and it became increasingly apparent that there were other underlying issues that needed to be addressed, such as his interpersonal difficulties. Mr D had previously completed interventions to increase his mental health awareness, and address his substance use. It became clear that these also remained outstanding treatment needs, as well as relevant risk factors for his risk behaviour.

This highlights the importance of determining a hierarchy of treatment targets and adequately addressing these in order of priority, to ensure provision of effective and appropriate treatments and interventions with a psychiatric population.

5.6.4. Conclusions

The case study aimed to evaluate the effectiveness of a CBT-based intervention with a poly-substance misusing mentally disordered male, whose persecutory delusion-driven violent and aggressive urges, and threatening behaviour, appeared to be activated by feelings of anger, and directed towards those he believed to be persecuting or threatening him. Although some reliable and clinically significant change was demonstrated in self-reported experience and expression of anger following the intervention, due to various limitations and lack of meaningful engagement, it was unclear how useful this intervention was.

The case study also considered the impact of contributing risk factors on treatment readiness, motivation to change, engagement, and risk of future violence. Underlying interpersonal difficulties linked to an insecure attachment style were thought to predispose him to substance abuse and contribute towards his persecutory beliefs about others, as well as increasing the risk of behaving violently; particularly against those who might resemble unreliable early attachment figures. It was also likely that these difficulties, as well as lack of insight into his mental health and risk, impacted on his engagement and motivation. This highlights the importance of determining a hierarchy of treatment targets when there are multiple treatment needs, and of adequately addressing problems in order of priority. This case study further supports the idea that substance abuse and insecure attachment patterns are important risk factors in male offending behaviour in general, and are not necessarily specific to sexual offending.

Chapter 6: General Discussion

6.1. Aims of the thesis

The general aims of this thesis were to explore substance use and attachment patterns of male sexual offenders compared to other offending and non-offending populations, and to consider how these risk factors contribute towards specific offending behaviour patterns, as well as their impact on treatment readiness, motivation to change, engagement and therapeutic alliance, and risk of future offending. More specifically, the objectives in this thesis were:

1) to review alcohol and drug abuse in male sexual offenders and compare against other offending and non-offending populations
2) to critically evaluate one of the most widely used alcohol screening tools: the MAST, and its subsequent variations
3) to examine substance use and attachment patterns in sexual offenders compared to other types of offenders and non-offenders, and investigate whether sexual offending can be better predicted by considering an association between substance use and attachment style
4) to evaluate the effectiveness of an intervention with a mentally disordered patient with violent and aggressive urges, and to consider the impact of contributing risk factors and underlying difficulties.

A systematic review (Chapter 2), a psychometric critique (Chapter 3), an empirical research study (Chapter 4), and a case study (Chapter 5) were conducted, and will now be discussed in terms of their summary findings.

6.2. Summary of findings

6.2.1. Systematic review

The review aimed to examine recent research literature on alcohol and drug abuse in male sexual offenders, and found that a variety of methodology and definitions have been used to explore substance abuse in this population. Retrospective file information tended to group together drug and alcohol into the term 'substances', whereas methods using tools and/or interviews were more likely to measure drug and alcohol use separately. More recent research also appeared to reflect changes in substance abuse and/or sexual offending patterns (e.g. non-contact sexual offending).

In terms of reviewing specific alcohol and drug use patterns amongst sexual offenders, results continued to be mixed, and were dependent upon how these were measured. Clinically significant high scores of alcohol abuse amongst sexual offenders were found, although these tended to be higher when screening tools were used. In contrast, higher drug use prevalence rates were reported by studies using the file search method, whereas those relying upon screening measures did not appear to suggest specific problems with drug use amongst sexual offenders.

In terms of group comparisons, results generally found similar levels of substance use for sexual and non-sexual offenders, but higher alcohol use in sexual offenders. However, a lack of control groups continues to make it difficult to determine whether substance use in sexual offenders differs from other offending or non-offending groups. Within the sexual offending population, contact sexual offenders tended to report more substance and drug abuse than non-contact offenders, and those who offended against children were more likely to report more alcohol dependence and less drug use than offenders against adults; highlighting sexual offenders as a heterogenous group.

6.2.2. Psychometric critique

The systematic review identified the MAST (Selzer, 1971) as one of the most common screening tool methods used by studies investigating alcohol dependency/abuse, and this was critically evaluated along with two of its subsequent variations: the BMAST (Pokorny et al., 1972); and the SMAST (Selzer et al., 1975). All variations of the MAST have been validated across various populations and settings, although there is limited research into its effectiveness in forensic settings; particularly in the UK. High internal consistency and test-retest reliability has been demonstrated, and significant correlations with other alcoholism screening tools, such as the CAGE Questionnaire (Ewing, 1984) and the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) have been reported. The MAST has also been shown to be valid, and moderately

effective in identifying alcoholics from other clinical and non-clinical groups.

The SMAST was subsequently chosen as the alcohol measure to be used as part of the empirical research for this thesis due to its general satisfactory psychometric properties, with attempts made to overcome limitations identified within this critique.

6.2.3. Empirical research study

This research aimed to examine patterns of substance use and attachment style between sexual offender and other offending and non-offending groups. Results showed no significant differences between offending and non-offending groups on drug use or attachment style, but found that 'other' types of offenders reported significantly more alcohol use than sexual offenders, and were the only group whose scores were indicative of alcohol problems. Overall, the current findings were not consistent with previous findings and the hypotheses that sexual offenders would report more alcohol abuse and insecure attachment; however, did support the hypothesis that there would be little difference in drug use scores across offending groups.

Furthermore, it was examined whether prediction of sexual offending behaviour, compared to other offending and non-offending populations, could be improved by considering interaction effects between substance use and attachment style. It was found that attachment did not have a significant effect on offending group prediction, or significantly interact with drug or alcohol use to improve group prediction. The findings

suggest that sexual offending is not better predicted by considering an association between an individual's substance use and attachment style. Therefore, rather than being specific to sexual offending, insecure attachment might instead be a risk factor for offending behaviour in general.

6.2.4. Case study

The case study aimed to evaluate the effectiveness of a CBT-based intervention with a poly-substance misusing mentally disordered male, whose persecutory delusion-driven violent and aggressive urges and threatening behaviour appeared to be activated by feelings of anger, and directed towards those he believed to be persecuting or threatening him. It was thought that underlying interpersonal difficulties experienced by the patient, linked to an insecure attachment style, might predispose him to use substances as a coping or avoidance technique, and contribute towards his persecutory beliefs about others, as well as increasing the risk of future violence; particularly against those who might resemble unreliable early attachment figures.

Although some reliable and clinically significant change was demonstrated in self-reported experience and expression of anger following the intervention, it was unclear how useful this was, as pre-intervention scores did not indicate significant difficulties with this initially; however, this might have reflected a lack of risk awareness or under-reporting.

The case study also considered the impact of contributing risk factors (including mental health deterioration, lack of insight, continued substance use, and interpersonal difficulties) on treatment readiness, motivation to change, engagement, and risk for future violence, and suggested the importance of determining a hierarchy of treatment targets when there are multiple treatment needs, and of adequately addressing problems in order of priority.

6.3. Theoretical and practical implications

Previous research has suggested a strong relationship between substance abuse and offending, and has indicated that attachment might be an important contributing factor to consider. The current research study did not find that insecure attachment was specific to sexual offenders, but results might provide support for it being a general risk factor for offending (Jamieson & Marshall, 2000; Ross & Pfäfflin, 2007). Other studies have also failed to find links between sexual offending and attachment (e.g. Smallbone & McCabe, 2003). Alternatively, it might be that to better understand the aetiology of sexual offending, other contributing factors are important to consider alongside attachment style and substance use.

Significant alcohol abuse in sexual offenders was demonstrated in the systematic review, supporting previous findings (Abracen et al., 2000; Abracen et al., 2006; Di Fazio et al. 2000; Kraanen & Emmelkamp, 2011; Langevin & Lang, 1990; Looman et al., 2004); however, this was not replicated in the current research study. Instead, results found that

'other' offenders reported significantly higher alcohol abuse, providing support to the already existing literature which identifies a link between alcohol and general antisocial or acquisitive offending behaviour (e.g. Boden, Fergusson, & Horwood, 2013; Felson & Staff, 2010; McMurran & Cusens, 2005).

The lack of support from the current research study might be accounted for by differences in measures used (the SMAST and DAST-10 compared to the MAST and DAST), and the context, i.e. much of the previous research has been conducted with an incarcerated or inpatient forensic population from North America. As identified in the critique, despite having satisfactory psychometric properties, the MAST (or SMAST) may have limited value in the UK, and so may not have accurately identified alcohol problems in the probation population studied.

Previous research, if including a comparison group, has tended to use violent offenders so the current research study included an additional 'other' (i.e. non-sexual, non-violent) offending group, which might include criminal or antisocial behaviours fuelled by intoxication, or motivated in order to access alcohol. Both the current review and research study found that drug abuse did not appear to differ between offending groups, which previous research has also indicated. This suggests that drug abuse might not be as important a risk factor as alcohol abuse in offending behaviour.

The current review also found that more recent research appeared to reflect changes in substance abuse and sexual offending patterns; for example, an increase in studies reporting alcohol abuse in non-contact

sexual offenders. This might provide support for Marshall's (1989, 2010) ideas relating to underlying patterns of insecure attachment amongst sexual offenders. More insecure attachment, along with related interpersonal difficulties affecting the ability to seek and form appropriate relationships, might contribute towards the decision to offend remotely/online. It might also lead to the development of substance abuse problems (Kassel et al., 2006), with self-regulation theories suggesting that the role of alcohol is often a means of coping with insecurity, and avoiding negative situations or emotions (Hull & Slone, 2004).

It is clear that more comprehensive models of sexual offending, incorporating issues related to attachment difficulties and substance abuse, are needed. An empirically supported heuristic treatment model, the Integrated Risk Assessment and Treatment System (IRATS), has recently been suggested by Abracen, Looman, and Gallo (2017). The IRATS model lists three core constructs that should be assessed. The first component relates to criminal history and lifestyle variables, combining the eight core criminogenic needs (including personality, substance abuse, criminal thinking etc.) described by Andrews and Bonta (2003), with more recent research demonstrating the relevance of attachment difficulties. The second component of the model focuses on serious mental illness, and complex trauma, which have been found to be associated with increased rates of recidivism (Abracen & Looman, 2006), and numerous mental health diagnoses (including those related to substance abuse and

negative emotionality). The third component of the model is deviant sexual interests. Abracen, Looman, and Ferguson (2017) argue that a comprehensive approach to assessment and treatment, guided by an empirically supported model such as this, may improve effective management of sexual offenders, who often present with multiple treatment needs to be addressed.

Attachment theory could offer significant insights when considering working with offenders. Although insecure attachment was not found to be specific to sexual offenders in the current research study, it appears to be important in general offending behaviour or in those at risk of offending (as indicated in the current case study). Therefore, a greater emphasis on understanding of attachment issues and the link to general offending behaviour would enable practitioners and services to identify and develop a better understanding of an individual's particular attachment style, related characteristics and difficulties, and their triggers to offending. This would also help with understanding how an individual's attachment style might influence responsiveness to assessment and treatment. It has been argued that an individual's attachment style is predictive of the quality of a therapeutic relationship between an offender and a practitioner (Ansbro, 2008; Daniel, 2006; Mallinckrodt et al., 2005). Developing a more secure attachment to the practitioner might help an individual to see them as secure base from which they can build up trust to enhance effectiveness of treatment or intervention (Mikulincer, Shaver, & Berant, 2013). It is thought that this base is important to establish

before moving onto more exploratory work into how past experiences influence current behaviour, symptoms, and relationships (Berry & Danquah, 2016).

In terms of substance abuse, practitioners should aim to efficiently screen, identify, and address any potential alcohol and/or drug misuse by an individual (whether it is related to their offending or not). It is important that staff feel competent, and have at least some knowledge of, the area of substance abuse and the impact it can have on offending behaviours, criminogenic needs, and motivations. Incorporating an assessment of substance use history (alcohol abuse in particular) as part of a comprehensive risk assessment with offender populations might be beneficial, and there is evidence that this can add to the prediction of recidivism over using only actuarial tools (e.g. Looman & Abracen, 2011).

The current research findings also suggest that early and positive intervention is key in promoting desistance from offending; particularly given that younger offenders tend to commit more impulsive and acquisitive crime, which might develop into more serious or versatile offending behaviour patterns (Francis et al., 2004). Working with individuals to identify and encourage personal strengths, develop and maintain social relationships, and learn and use new skills would be an important part of this (McNeill et al., 2012).

Finally, this thesis highlights the importance of ensuring that an individual is ready to engage meaningfully with an intervention, and explore any underlying issues, such as those linked to an insecure

attachment style. These might be particularly predisposing to certain risky behaviours (e.g. substance abuse and/or specific types of offending), as well as impacting on an individual's motivations, insight, and ability to engage meaningfully with an intervention, so may need to be addressed first. Practitioners should be aware that an insecure attachment may influence an individual's readiness for treatment (Kealy, Tsai, & Ogrodniczuk, 2017), and should attempt to adopt a more accommodating, motivational, and adaptive approach (Daly & Mallinckrodt, 2009); particularly if there are other comorbidities (such as psychosis in the current case study). Interventions need to take account of an individual's motivation to address their treatment need, and might benefit from applying motivational interventions, for example, using motivational interviewing techniques (Miller & Rollnick, 2013).

6.4. Limitations of the current thesis

6.4.1. Systematic review

The review in this thesis included only studies examining substance use in male sexual offenders, and therefore potentially important observations and patterns of substance abuse amongst female or juvenile sexual offending groups might have been missed. The current review also did not include substance abuse at the time of the index offence, as Kraanen and Emmelkamp's (2011) review did. In terms of the included studies, definitions of outcome measure were not always clear, which might impact on accuracy of reporting in the current review. Furthermore, there is the possibility that the number of participants within the review may be

an overestimate, due to potential overlap of reported studies by the same authors. The limited time and resources available did not allow for non-English papers to be translated, which may have introduced bias into the reported findings. Due to the heterogeneity between the included studies, the review did not include a meta-analysis, which would have provided a more statistically reliable approach.

6.4.2. Psychometric critique

Despite finding the MAST and its subsequent variations to be valid and reliable measures of alcohol dependency, there is limited research into use of these with an explicitly forensic population; particularly in the UK. This might impact on the utility of using the SMAST as part of this thesis, and on interpretations of the findings reported. For example, results from the current empirical research study were not consistent with previous research that has demonstrated significant alcohol problems in offending populations, and more reported alcohol abuse in sexual offenders. Alternatively, this might reflect cross-cultural differences in drinking patterns, as very few identified studies to use and report reliability and validity of this tool were UK-based.

Attempts were made to overcome some of the limitations identified by the critique, such as making the timeframe clear (respondents were asked to answer in relation to alcohol use during the last 12 months). This was chosen as Zung (1984) suggested that accuracy for the SMAST tends to improve when individuals are asked about problems within the past year rather than lifetime. The scoring system was also chosen

(alcoholism-endorsing responses scoring 1 point) due to previous concerns regarding weighted scoring (Crook et al., 1994).

6.4.3. Empirical research study

Following the finding from the current systematic review that research exploring substance abuse in sexual offenders often lacked appropriate comparison groups, the current research study attempted to include two non-sexual offending groups (violent and 'other'), as well as a non-offending control group. However, it is acknowledged that the offending sample was taken from only a Probation population, which might have limited the generalisability of this group to a wider forensic population. The non-offending sample was not matched, which would have been useful to ensure a more robust design and help control for potential confounding variables. Furthermore, due to a small sample size, the current study did not distinguish between different types of sexual offenders (e.g. against children vs. adults or contact vs. non-contact), as previous research has done, as further subgroups would have reduced the power further. Therefore, differences within this heterogenous group could not be explored, which the current systematic review had identified as being important.

It has been debated how best to measure attachment, and alternative interviews or self-report measures to the RSQ might have yielded a more valid measure of adult attachment style in the current study; particularly given the low internal reliabilities observed. As mentioned, for the substance abuse measures respondents were asked to

report on alcohol and drug use from the past year. As this was a Probation sample, results might be affected by limited opportunity if the respondent had spent time in prison prior to participating in this research study. Given the various practical issues that arose during data collection, it might also have been useful to administer questionnaires in a different way, e.g. online.

6.4.4. Case study

Time and setting constraints contributed to several limitations identified for the current case study. A limited assessment and intervention period with the patient meant that there was little opportunity to complete additional potentially important assessments and observations. For example, it was suspected from the patient's history and self-report that he experienced interpersonal difficulties which might have contributed towards his persecutory thoughts in relation to other people, and how he reacted to them. Therefore, additional measures to provide more information regarding interpersonal problems and insecure attachment style would have been useful to administer; particularly in terms of relevance to this thesis and contributing to the overall understanding about the role of attachment in offending behaviour. Furthermore, aspects of the intervention had to be simplified or omitted, such as exposure to simulations of identified anger-provoking situations and rehearsal of skills (although these were discussed and action plans made).

Significant difficulties in self-reported experience and expression of anger weren't identified from the pre-intervention assessments, which might suggest that this was not an important treatment need for the patient. However, considering the patient's history and continued minimisation, it is likely that this instead reflected a lack of awareness or under-reporting. It would therefore have been useful to first complete some work to encourage the patient's motivation and readiness to change prior to completing the intervention; however, as mentioned, time restraints prevented this. In addition, it became apparent that there were other underlying issues (such as insight into his mental health, interpersonal difficulties, and substance abuse) relevant to his risk of offending behaviour that, despite previously completing interventions targeting these, remained outstanding treatment needs and would be important to address first.

6.5. Conclusions and future recommendations

This thesis aimed to explore substance use and attachment patterns of male sexual offenders compared to other offending and non-offending populations, and to consider how these risk factors contribute towards specific offending behaviour patterns, as well as their impact on treatment readiness, motivation to change, engagement, and risk of future offending. It has been demonstrated that alcohol use appears to be an important risk factor in male offending behaviour; however, this might not be specific to sexual offending. Insecure attachment also appears to be a risk factor for offending behaviour in general, and it might be that

this is activated only in the presence of other factors, to increase the likelihood of specific offending behaviour. Attachment-informed practice, and knowledge of links with other important risk factors (such as substance abuse and any co-morbid diagnoses), may help encourage treatment readiness, motivation to change, engagement and therapeutic alliance, and reduce risk of future offending. However, more research is needed to examine the role of other contributing risk factors, as well as empirical evaluation of the impact of using attachment-informed interventions and strategies.

Exploration of substance use of offenders is made difficult by differences in terms and definitions used in the literature, and the various methodology and measures utilised. There is limited evidence of the effectiveness and validity of using alcohol screening tools, such as the MAST, in forensic settings (particularly in the UK). There is also a continued lack of non-sexually offending and non-offending comparison groups in research studies. Future research should therefore include appropriate control groups in order to better understand the relationship between substance abuse and sexual offending compared to other types of offending and substance-using populations. It is also recommended that future studies adopt and report a more thorough and structured methodology, to overcome issues of bias and enable comparisons between groups which accurately reflect alcohol and drug use amongst these offending populations. This method will maximise practical utility in

informing effective assessment and treatment of sexual and non-sexual offenders, as well as implementation of prevention strategies.

References

*Abbey, A., Clinton-Sherrod, A. M., McAuslan, P., Zawacki, T., & Buck, P. O. (2003). The relationship between the quantity of alcohol consumed and the severity of sexual assaults committed by college men. *Journal of Interpersonal Violence, 18*(7), 813-833. doi:10.1177/0886260503253301

*Abbey, A., McAuslan, P., & Ross, L. T. (1998). Sexual assault perpetration by college men: The role of alcohol, misperception of sexual intent, and sexual beliefs and experiences. *Journal of Social and Clinical Psychology, 17*(2), 167-195. doi:10.1521/jscp.1998.17.2.167

Abracen, J., & Looman, J. (2004). Issues in the treatment of sexual offenders: Recent developments and directions for future research. *Aggression and Violent Behavior, 9*(3), 229-246. doi:10.1016/S1359-1789(01)00074-X

Abracen, J., & Looman, J. (2006). Evaluation of civil commitment criteria in a high risk sample of sexual offenders. *Journal of Sexual Offender Civil Commitment: Science and the Law*, *1*, 124-140. Retrieved from http://www.defenseforsvp.com/Resources/Professional_Rpts_Misc/Abracen_Looman_2006.pdf

*Abracen, J., Looman, J., & Anderson, D. (2000). Alcohol and drug abuse in sexual and nonsexual violent offenders. *Sexual Abuse: Journal of Research and Treatment, 12*(4), 263-274. doi:10.1177/107906320001200403

Abracen, J., Looman, J., & Ferguson, M. (2017). Substance abuse among sexual offenders: Review of research and clinical implications. *Journal of Sexual Aggression*, *23*(3), 235-250. doi: 10.1080/13552600.2017.1334967

**Abracen, J., Looman, J., Di Fazio, R., Kelly, T., & Stirpe, T. (2006). Patterns of attachment and alcohol abuse in sexual and violent non-sexual offenders. *Journal of Sexual Aggression, 12*(1), 19-30. doi:10.1080/13552600600722963

Abracen, J., Looman, J., & Ferguson, M. (2017). Substance abuse among sexual offenders: Review of research and clinical implications. *Journal of Sexual Aggression*, *23*(3), 235-250. doi:10.1080/13552600.2017.1334967

Abracen, J., Looman, J., & Gallo, A. (2017). The Integrated Risk Assessment and Treatment System (IRATS) model of sexual offending: A case study. *Medical Research Archives*, *5*(9). Retrieved from http://www.journals.ke-i.org/index.php/mra/article/view/1490

*Abracen, J., Mailloux, D. L., Serin, R. C., Cousineau, C., Malcolm, P. B., & Looman, J. (2004). A model for the assessment of static and dynamic factors in sexual offenders. *Journal of Sex Research, 41*(4), 321-328. doi:10.1080/00224490409552239

Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist*, *44*(4), 709-716. doi:10.1037/0003-066X.44.4.709

Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development, 41*(1), 49-67. doi:10.2307/1127388

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.

**Alish, Y., Birger, M., Manor, N., Kertzman, S., Zerzion, M., Kotler, M., & Strous, R. D. (2007). Schizophrenia sex offenders: A clinical and epidemiological comparison study. *International Journal of Law and Psychiatry, 30*(6), 459-466. doi:10.1016/j.ijlp.2007.09.006

*Allnutt, S. H., Bradford, J. M., Greenberg, D. M., & Curry, S. (1996). Co-morbidity of alcoholism and the paraphilias. *Journal of Forensic Sciences, 41*(2), 234-239. doi:10.1520/JFS15420J

An, S. K., Kang, J. I., Park, J. Y., Kim, K. R., Lee, S. Y., & Lee, E. (2010). Attribution bias in ultra-high risk for psychosis and first episode schizophrenia. *Schizophrenia Research, 118(1)*, 54–61. doi:10.1016/j.schres.2010.01.025

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*(1), 27-51. doi:10.1146/annurev.psych.53.100901.135231

Andrews, D. A., & Bonta, J. (2003). *The psychology of criminal conduct* (3rd ed.). Cincinnati, OH: Anderson.

Ansbro, M. (2008). Using attachment theory with offenders. *Probation Journal, 55*(3), 231-244. doi:10.1177/0264550508092812

Appelbaum, P. S., Robbins, P. C., & Monahan, J. (2000). Violence and delusions: Data from the MacArthur violence risk assessment study. *American Journal of Psychiatry*, *157*(4), 566-572. doi:10.1176/appi.ajp.157.4.566

*Aromäki, A. S., & Lindman, R. E. (2001). Alcohol expectancies in convicted rapists and child molesters. *Criminal Behaviour and Mental Health, 11*(2), 94-101. doi:10.1002/cbm.374

Ashman, T. A., Schwartz, M. E., Cantor, J. B., Hibbard, M. R., & Gordon, W. A. (2004). Screening for substance abuse in individuals with traumatic brain injury. *Brain Injury*, *18*(2), 191-202. doi:10.1080/0269905031000149506

**Aslan, D., & Edelmann, R. (2014). Demographic and offence characteristics: A comparison of sex offenders convicted of possessing indecent images of children, committing contact sex offences or both offences. *The Journal of Forensic Psychiatry and Psychology, 25*(2), 121-134. doi:10.1080/14789949.2014.884618

Bäckström, M., & Holmes, B. M. (2007). Measuring attachment security directly: A suggested extension to the two-factor adult attachment construct. *Individual Differences Research*, *5*(2), 124-149. doi:10.1111/1467-9450.00216

*Bader, S. M., Schoeneman-Morris, K. A., Scalora, M. J., & Casady, T. K. (2008). Exhibitionism: Findings from a midwestern police contact sample. *International Journal of Offender Therapy and Comparative Criminology, 52*(3), 270-279. doi:10.1177/0306624x07307122

Baker, E., & Beech, A. R. (2004). Dissociation and variability of adult attachment dimensions and early maladaptive schemas in sexual and violent offenders. *Journal of Interpersonal Violence, 19*(1), 1119–1136. doi:10.1177/0886260504269091

Baker, E., Beech, A. R., & Tyson, M. (2006). Attachment disorganization and its relevance to sexual offending. *Journal of Family Violence, 21*(3), 221–231. doi:10.1007/s10896-006-9017-3

*Balasundaram, B., Frazer, J. B., & Wood, P. J. (2009). Who are sexual offenders? A survey of pre-trial psychiatric reports. *Medicine, Science and the Law, 49*(1), 33-40. doi:10.1258/rsmmsl.49.1.33

**Baltieri, D. A., & de Andrade, A. G. (2006). Alcohol and drug consumption and sexual impulsivity among sexual offenders. In E. Y. Brozner (Ed.), *New research on alcohol abuse and alcoholism* (pp. 133-154). New York, NY: New Science.

**Baltieri, D. A., & de Andrade, A. G. (2008a). Drug consumption among sexual offenders against females. *International Journal of Offender Therapy and Comparative Criminology, 52*(1), 62-80. doi:10.1177/0306624X07299345

**Baltieri, D. A., & de Andrade, A. G. (2008b). Alcohol and drug consumption among sexual offenders. *Forensic Science International, 175*(1), 31-35. doi:10.1016/j.forsciint.2007.05.004

**Baltieri, D. A., & de Andrade, A. G. (2008c). Comparing serial and nonserial sexual offenders: Alcohol and street drug consumption, impulsiveness and history of sexual abuse. *Revista Brasileira De Psiquiatria, 30*(1), 25-31. doi:10.1590/S1516-44462006005000067

*Barnard, G. W., Holzer, C., & Vera, H. (1979). A comparison of alcoholics and non-alcoholics charged with rape. *Bulletin of the American Academy of Psychiatry and the Law, 7*(4), 432-440. Retrieved from http://jaapl.org/content/jaapl/7/4/432.full.pdf

Barnes, M. T., Gordon, W. C., & Hudson, S. M. (2001). The crime of threatening to kill. *Journal of Interpersonal Violence*, *16*(4), 312-319. doi:10.1177/088626001016004003

Barry, K. L., & Fleming, M. F. (1993). The Alcohol Use Disorders Identification Test (AUDIT) and the SMAST-13: Predictive validity in a rural primary care

sample. *Alcohol and Alcoholism*, *28*(1), 33-42. doi:10.1093/oxfordjournals.alcalc.a045346

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226-244. doi:10.1037/0022-3514.61.2.226

Beech, A. R., & Mitchell, I. J. (2005). A neurobiological perspective on attachment problems in sexual offenders and the role of selective serotonin re-uptake inhibitors in the treatment of such problems. *Clinical Psychology Review*, *25*(2), 153-182. doi:10.1016/j.cpr.2004.10.002

Beech, A. R., & Ward, T. (2004). The integration of etiology and risk in sex offenders: A theoretical model. *Aggression and Violent Behavior, 10*(1), 31–63. doi:10.1016/j.avb.2003.08.002

Benussi, G., Gallimberti, L., Zorzut, G., de Vanna, M., & Gasparin, V. (1982). Validation of the Michigan Alcoholism Screening Test (MAST) in an Italian urban population. *Drug and Alcohol Dependence*, *9*(3), 257-263. doi:10.1016/0376-8716(82)90051-5

Berman, A., Bergman, H., Palmstierna, T., & Schlyter, F. (2005). *Drug Use Disorders Identification Test manual*. Stockholm, Sweden: Karolinska Institutet.

Berry, K., & Danquah, A. (2016). Attachment-informed therapy for adults: Towards a unifying perspective on practice. *Psychology and Psychotherapy: Theory, Research and Practice*, *89*(1), 15-32. doi:1 0.1111/papt.12063

Bloomfield, K., Stockwell, T., Gmel, G., & Rehn, N. (2003). International comparisons of alcohol consumption. *Alcohol Research and Health, 27*(1), 95-109. Retreived from https://pubs.niaaa.nih.gov/publications/arh27-1/95-109.pdf

Blow, F. C., Brower, K. J., Schulenberg, J. E., Demo-Dananberg, L. M., Young, J. P., & Beresford, T. P. (1992). The Michigan Alcoholism Screening Test-Geriatric Version (MAST-G): A new elderly-specific screening instrument. *Alcoholism: Clinical and Experimental Research*, *16*(2), 372.

Blow, F. C., Gillespie, B. W., Barry, K. L., Mudd, S. A., & Hill, E. M. (1998). Brief screening for alcohol problems in elderly populations using the Short Michigan Alcoholism Screening Test-Geriatric Version (SMAST-G). *Alcoholism: Clinical and Experimental Research*, *22*(Suppl. 3), 131A.

Boden, J. M., Fergusson, D. M., & Horwood, L. J. (2013). Alcohol misuse and criminal offending: Findings from a 30-year longitudinal study. *Drug and Alcohol Dependence*, *128*(1-2), 30-36. doi: 10.1016/j.drugalcdep.2012.07.014

Boles, S. M., & Miotto, K. (2003). Substance abuse and violence: A review of the literature. *Aggression and Violent Behavior*, *8*(2), 155-174. doi: 10.1016/S1359-1789(01)00057-X

Borhani, Y. (2013). Substance abuse and insecure attachment styles: A relational study. *LUX: A Journal of Transdisciplinary Writing and Research from Claremont Graduate University*, *2*(1). doi:10.5642/lux.201301.04

Born, M., Chevalier, V., & Humblet, I. (1997). Resilience, desistance and delinquent career of adolescent offenders. *Journal of Adolescence*, *20*(6), 679-694. doi:10.1006/jado.1997.0119

Bowlby, J. (1969). *Attachment and Loss, Vol. 1: Attachment*. New York, NY: Basic Books.

Bowlby, J. (1973). *Attachment and Loss, Vol. 2: Separation*. New York, NY: Basic Books.

Breakey, W. R., Calabrese, L., Rosenblatt, A., & Crum, R. M. (1998). Detecting alcohol use disorders in the severely mentally ill. *Community Mental Health Journal*, *34*(2), 165-174. doi:10.1023/A:1018793002740

Breitenbucher, R. B. (1976). The routine administration of the Michigan Alcoholic Screening Test to ambulatory patients. *Minnesota Medicine*, *59*(6), 485-488.

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

**Briken, P., Habermann, N., Kafka, M. P., Berner, W., & Hill, A. (2006). The paraphilia-related disorders: An investigation of the relevance of the concept in sexual murderers. *Journal of Forensic Sciences, 51*(3), 683-688. doi:10.1111/j.1556-4029.2006.00105.x

*Briken, P., Nika, E., & Berner, W. (2000). Alkoholisierung und alkoholprobleme im zusammenhang mit sexuell motivierten tötungsdelikten–eine thematische übersicht und ergebnisse aus 30 psychiatrischen gutachten [Alcohol problems and alcoholism in combination with sexual homicide-A review and results from 30 court reports]. *Recht und Psychiatrie*, *18*(4), 183-188.

Britton, P. C., & Fuendeling, J. M. (2005). The relations among varieties of adult attachment and the components of empathy. *The Journal of Social Psychology*, *145*(5), 519-530. doi: 10.3200/SOCP.145.5.519-530

Broadfield, D. (Ed.). (2017). *Drug misuse: Findings from the 2016/17 crime survey for England and Wales*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/642738/drug-misuse-2017-hosb1117.pdf

Bumby, K. M., & Hansen, J. D. (1997). Intimacy deficits, fear of intimacy and loneliness among sexual offenders. *Criminal Justice and Behaviour*, *24*(3), 315-332. doi:10.1177/0093854897024003001

Burk, L. R., & Burkhart, B. R. (2003). Disorganized attachment as a diathesis for sexual deviance: Developmental experience and the motivation for sexual offending. *Aggression and Violent Behavior*, *8*(5), 487-511. doi:10.1016/S1359-1789(02)00076-9

*Carlstedt, A., Innala, S., Brimse, A., & Söderström Anckarsäter, H. (2005). Mental disorders and DSM-IV paedophilia in 185 subjects convicted of sexual child abuse. *Nordic Journal of Psychiatry, 59*(6), 534-537. doi:10.1080/08039480500360724

Caspers, K. M., Cadoret, R. J., Langbehn, D., Yucuis, R., & Troutman, B. (2005). Contributions of attachment style and perceived social support to lifetime use of

illicit substances. *Addictive Behaviors*, *30*(5), 1007-1011. doi:10.1016/j.addbeh.2004.09.001

Cassidy, J., & Shaver, P. R. (Eds.). (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York, NY: Guilford Press.

Chan, A. W., Pristach, E. A., & Welte, J. W. (1994). Detection of alcoholism in three populations by the Brief-MAST. *Alcoholism: Clinical and Experimental Research*, *18*(3), 695-701. doi:10.1111/j.1530-0277.1994.tb00933.x

Christensen, L. & Mendoza, J. L. (1986). A method of assessing change in a single subject: An alteration of the RC index. *Behavior Therapy, 17*(3), 305-308. doi:10.1016/S0005-7894(86)80060-0

*Chuang, C. H., Liebschutz, J. M., Cheng, D. M., Raj, A., & Samet, J. H. (2007). Substance use during sexual and physical assault in HIV-infected persons. *Violence and Victims, 22*(2), 216-225. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1949020/pdf/nihms11103.pdf

Clements, R. (1998). A Critical Evaluation of Several Alcohol Screening Instruments Using the CIDI-SAM as a Criterion Measure. *Alcoholism: Clinical and Experimental Research*, *22*(5), 985-993. doi:10.1111/j.1530-0277.1998.tb03693.x

Cocco, K., & Carey, K. (1998). Psychometric properties of the Drug Abuse Screening Test in psychiatric outpatients. *Psychological Assessment, 10*(4), 408–414. doi:10.1037/1040-3590.10.4.408

Cohen, J. (1988), *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*(4), 644-663. doi:10.1037/0022-3514.58.4.644

Conley, T. B. (2001). Construct validity of the MAST and AUDIT with multiple offender drunk drivers. *Journal of Substance Abuse Treatment, 20*(4), 287–295. doi:10.1016/S0740-5472(01)00159-3

Connor, J. P., Grier, M., Feeney, G. F., & Young, R. M. (2007). The validity of the Brief Michigan Alcohol Screening Test (bMAST) as a problem drinking severity measure. *Journal of Studies on Alcohol and Drugs*, *68*(5), 771-771. doi:10.15288/jsad.2007.68.771

Connors, G. J., O'Farrell, T. J., Cutter, H. S., & Thompson, D. L. (1987). Dose-related effects of alcohol among male alcoholics, problem drinkers and nonproblem drinkers. *Journal of Studies on Alcohol*, *48*(5), 461-466. doi:10.15288/jsa.1987.48.461

Craissati, J., McClurg, G., & Browne, K. (2002). The parental bonding experiences of sex offenders: A comparison between child molesters and rapists. *Child Abuse and Neglect*, *26*(9), 909-921. doi:10.1016/S0145-2134(02)00361-7

Crook, G. M., Oei, T. P., & Young, R. M. (1994). Structure of the MAST with an Australian sample of alcoholics. *Drug and Alcohol Review*, *13*(1), 41-46. doi:10.1080/09595239400185711

Daly, K. D., & Mallinckrodt, B. (2009). Experienced therapists' approach to psychotherapy for adults with attachment avoidance or attachment anxiety. *Journal of Counseling Psychology*, *56*(4), 549-563. doi:10.1037/a0016695

Daniel, S. I. (2006). Adult attachment patterns and individual psychotherapy: A review. *Clinical Psychology Review*, *26*(8), 968-984. doi:10.1016/j.cpr.2006.02.001

Davidson, R., & Raistrick, D. (1986). The validity of the Short Alcohol Dependence Data (SADD) questionnaire: A short self-report questionnaire for the assessment of alcohol dependence. *British Journal of Addiction, 81*(2), 217−222. doi:10.1111/j.1360-0443.1986.tb00319.x

Dawe, S., Loxton, N., Hides, L. J., Kavanagh, D. J., & Mattick, R. P. (2002). *Review of diagnostic screening instruments for alcohol and other drug use and other psychiatric disorders* (2nd ed). Retrieved from http://www.nada.org.au/media/14712/screening_assessment_review.pdf

*de Chabalier, F., & Forzan, S. (2009). Evaluation de la comorbidite psychiatrique chez 72 hommes detenus en maison d'arret pour agression sexuelle [Evaluating psychiatric comorbidity in 72 men detained for a sexual offence]. *Annales Medico-Psychologiques, 167*(8), 576-582.

Deffenbacher, J. L. (2011). Cognitive-behavioral conceptualization and treatment of anger. *Cognitive and Behavioral Practice*, *18*(2), 212-221. doi:10.1016/j.cbpra.2009.12.004

Del Vecchio, T., & O'Leary, K. D. (2004). Effectiveness of anger treatments for specific anger problems: A meta-analytic review. *Clinical Psychology Review*, *24*(1), 15-34. doi:10.1016/j.cpr.2003.09.006

Di Fazio, R., Looman, J., & Abracen, J. (2000, November). *Alcohol and drug abuse among sex offenders: Relationship to intimacy deficits, loneliness and coping strategies*. Paper presented at the meeting of the Association for the Treatment of Sexual Abusers (ATSA), San Diego, CA.

DiGiuseppe, R., & Tafrate, R. C. (2003). Anger treatment for adults: A meta-analytic review. *Clinical Psychology: Science and Practice*, *10*(1), 70-84. doi:10.1093/clipsy/10.1.70

DiGiuseppe, R., & Tafrate, R. C. (2007). *Understanding anger disorders*. New York, NY: Oxford University Press.

Douglas, K. S., Hart, S. D., Webster, C. D., & Belfrage, H. (2013). *HCR-20V3: Assessing risk of violence – User guide*. Burnaby, Canada: Mental Health, Law, and Policy Institute, Simon Fraser University.

Doumas, D. M., Blasey, C. M., & Mitchell, S. (2007). Adult attachment, emotional distress, and interpersonal problems in alcohol and drug dependency treatment. *Alcoholism Treatment Quarterly*, *24*(4), 41-54. doi: 10.1300/J020v24n04_04

*Doyle, D. J., Ogloff, J., & Thomas, S. (2011). Designated as dangerous: Characteristics of sex offenders subject to post-sentence orders in Australia. *Australian Psychologist, 46*(1), 41-48. doi:10.1111/j.1742-9544.2010.00006.x

Duke, A. A., Smith, K. M., Oberleitner, L., Westphal, A., & McKee, S. A. (2018). Alcohol, drugs, and violence: A meta-meta-analysis. *Psychology of Violence, 8*(2), 238-249. doi: 10.1037/vio0000106

*Dunsieth, N. W., Nelson, E. B., Brusman-Lovins, L. A., Holcomb, J. L., Beckman, D., Welge, J. A., . . . McElroy, S. L. (2004). Psychiatric and legal features of 113 men convicted of sexual offenses. *Journal of Clinical Psychiatry, 65*(3), 293-300. doi:10.4088/JCP.v65n0302

Eckhardt, C., Norlander, B., & Deffenbacher, J. (2004). The assessment of anger and hostility: A critical review. *Aggression and Violent Behavior*, *9*(1), 17–43. doi:10.1016/S1359-1789(02)00116-7

*Eher, R., Grunhut, C., Fruhwald, S., & Hobl, B. (2001). Psychiatrische komorbiditat, typologie und ausmas der gewaltanwendung bei tatern mit sexuellen delikten an kindern [Psychiatric comorbidity, typology and amount of violence in extrafamilial sexual child molesters]. *Recht und Psychiatrie, 19*(2), 97-101.

*Eher, R., Neuwirth, W., Fruehwald, S., & Frottier, P. (2003). Sexualization and lifestyle impulsivity: Clinically valid discriminators in sexual offenders. *International Journal of Offender Therapy and Comparative Criminology, 47*(4), 452-467. doi:10.1177/0306624x03253844

Elbogen, E. B., & Johnson, S. C. (2009). The intricate link between violence and mental disorder: Results from the National Epidemiologic Survey on alcohol and related conditions. *Archives of General Psychiatry, 66(*2), 152-161. doi:10.1001/archgenpsychiatry.2008.537

*Erdogan, A., Tufan, E., Karaman, M. G., Atabek, M. S., Koparan, C., Ozdemir, E., ... Ankarali, H. (2011). Türkiye'nin dört farklı bölgesinde çocuk ve ergenlere cinsel tacizde bulunan kişilerin karakteristik özellikleri [Characteristic features of perpetrators of sexual abuse on children and adolescents in four different regions of Turkey]. *Anadolu Psikiyatri Dergisi, 12*(1), 55-61.

Evans, C., Margison, F., & Barkham, M. (1998). The contribution of reliable and clinically significant change methods to evidence-based mental health. *Evidence Based Mental Health, 1*(3), 70-72. doi:10.1136/ebmh.1.3.70

Ewing, J. A. (1984). Detecting alcoholism: The CAGE questionnaire. *Jama, 252*(14), 1905-1907. doi:10.1001/jama.1984.03350140051025

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175-191. doi:10.3758/BF03193146

**Faust, E., Bickart, W., Renaud, C., & Camp, S. (2015). Child pornography possessors and child contact sex offenders: A multilevel comparison of demographic characteristics and rates of recidivism. *Sexual Abuse: A Journal of Research and Treatment, 27*(5), 460-478. doi:10.1177/1079063214521469

Favazza, A. R., & Pires, J. (1974). The Michigan Alcoholism Screening Test: Application in a general military hospital. *Quarterly Journal of Studies on Alcohol, 35*(3), 925-929.

Fazel, S., Bains, P., & Doll, H. (2006). Substance abuse and dependence in prisoners: a systematic review. *Addiction*, *101*(2), 181-191. doi:10.1111/j.1360-0443.2006.01316.x

Fazel, S., & Grann, M. (2006). The population impact of severe mental illness on violent crime. *American Journal of Psychiatry, 163*(8), 1397-1403. doi:10.1176/ajp.2006.163.8.1397

*Fazel, S., Hope, T., O'Donnell, I., & Jacoby, R. (2002). Psychiatric, demographic and personality characteristics of elderly sex offenders. *Psychological Medicine, 32*(2), 219-226. doi:10.1017}S0033291701005153

*Fazel, S., Långström, N., Hjern, A., Grann, M., & Lichtenstein, P. (2009). Schizophrenia, substance abuse, and violent crime. *Journal of the American Medical Association, 301*(19), 2016-2023. doi:10.1001/jama.2009.675

*Felson, R. B., Burchfield, K. B., & Teasdale, B. (2007). The impact of alcohol on different types of violent incidents. *Criminal Justice and Behavior, 34*(8), 1057-1068. doi:10.1177/0093854807299651

Felson, R. B., & Staff, J. (2010). The effects of alcohol intoxication on violent versus other offending. *Criminal Justice and Behavior, 37*(12), 1343-1360. doi: 10.1177/0093854810382003

Fiellin, D. A., Reid, M. C., & O'Connor, P. G. (2000). Screening for alcohol problems in primary care: A systematic review. *Archives of Internal Medicine*, *160*(13), 1977-1989. doi:10.1001/archinte.160.13.1977

Fingerhood, M. (2000). Substance abuse in older people. *Journal of the American Geriatrics Society*, *48*(8), 985-995. doi:10.1111/j.1532-5415.2000.tb06900.x

*Firestone, P., Bradford, J. M., Greenberg, D. M., & Larose, M. R. (1998). Homicidal sex offenders: Psychological, phallometric, and diagnostic features. *Journal of the American Academy of Psychiatry and the Law, 26*(4), 537-552. doi:10.1016/S1353-1131(99)90030-5

*Firestone, P., Bradford, J. M., McCoy, M., Greenberg, D. M., Larose, M. R., & Curry, S. (1999). Prediction of recidivism in incest offenders. *Journal of Interpersonal Violence, 14*(5), 511-531. doi:10.1177/088626099014005004

*Firestone, P., Dixon, K. L., Nunes, K. L., & Bradford, J. M. (2005). A comparison of incest offenders based on victim age. *Journal of the American Academy of Psychiatry and the Law, 33*(2), 223-232. Retrieved from http://jaapl.org/content/jaapl/33/2/223.full.pdf

Flatley, J., Kershaw, C., Smith, K., Chaplin, R., & Moon, D. (2010). *Crime in England and Wales 2009/10.* Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/116347/hosb1210.pdf

Fleming, M. F. (2004). Screening and brief intervention in primary care settings. *Alcohol Research and Health, 28*(2), 57-62. doi:10.1037/t01528-000

Fleming, M. F., & Barry, K. L. (1989). A study examining the psychometric properties of the SMAST-13. *Journal of Substance Abuse*, *1*(2), 173-182. doi:10.1016/S0899-3289(88)80020-8

Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachments: Theoretical development, emerging controversies, and unanswered questions. *Review of General Psychology, 4*(2), 132–154. doi:10.1037//1089-2680.4.2.132

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item-response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*(2), 350-365. doi:10.1037/0022-3514.78.2.350

Francis, B., Soothill, K., & Fligelstone, R. (2004). Identifying patterns and pathways of offending behaviour: A new approach to typologies of crime. *European Journal of Criminology*, *1*(1), 48-87. doi:10.1177/1477370804038707

Freeman, D., & Garety, P. A. (2000). Comments on the content of persecutory delusions: Does the definition need clarification? *British Journal of Clinical Psychology, 39*(4), 407-414 doi:10.1348/014466500163400

Freeman, D., & Garety, P. A. (2014). Advances in understanding and treating persecutory delusions: A review. *Social Psychiatry and Psychiatric Epidemiology*, *49*(8), 1179-1189. doi:10.1007/s00127-014-0928-7

Friedrich, W. N., Boriskin, J. A., & Nelson, O. (1978). A factor analytic study of the Michigan Alcoholism Screening Test. *Psychological Reports*, *42*(3), 865-866. doi:10.2466/pr0.1978.42.3.865

Friedrich, W. N., & Loftsgard, S. O. (1978). Comparison of two alcoholism scales with alcoholics and their wives. *Journal of Clinical Psychology, 34*(3), 784-786. doi:10.1002/1097-4679(197807)34:3<784::AID-JCLP2270340344>3.0.CO;2-K

Funk, M., Wutzke, S., Kaner, E., Anderson, P., Pas, L., McCormick, R., ... World Health Organization Brief Intervention Study Group. (2005). A multicountry controlled trial of strategies to promote dissemination and implementation of brief alcohol intervention in primary health care: Findings of a World Health Organization

collaborative study. *Journal of Studies on Alcohol*, *66*(3), 379-388. doi:10.15288/jsa.2005.66.379

Garlick, Y., Marshall, W. L., & Thornton, D. (1996). Intimacy deficits and attribution of blame among sexual offenders. *Legal and Criminological Psychology, 1*(2), 251–258. doi:10.1111/j.2044-8333.1996.tb00323.x

Garzotto, N., Baratta, S., Pistoso, S., & Faccincani, C. (1988). Validation of a screening questionnaire for alcoholism (MAST) in an Italian sample. *Comprehensive Psychiatry*, *29*(3), 323-329. doi:10.1016/0010-440X(88)90055-7

Goldstein, P. J. (1985). The drugs/violence nexus: A tripartite conceptual framework. *Journal of Drug Issues*, *15*(4), 493-506. doi: 10.1177/002204268501500406

*Gorenc, K. D., Nakahodo, A. C., Peredo Rivera, S., & Oblitas, L. A. (1994). Consumo de alcohol y violación [Alcohol consumption and violation]. *Revista Latinoamericana de Psicología*, *26*(2), 205-234.

Grady, M. D., Levenson, J. S., & Bolder, T. (2017). Linking adverse childhood effects and attachment: A theory of etiology for sexual offending. *Trauma, Violence and Abuse. 18*(4), 433-444. doi:10.1177/1524838015627147

*Gratzer, T., & Bradford, J. M. W. (1995). Offender and offense characteristics of sexual sadists: A comparative study. *Journal of Forensic Sciences, 40*(3), 450-455. doi:10.1520/JFS13802J.

*Greenberg, D. M., Firestone, P., Nunes, K. L., Bradford, J. M., & Curry, S. (2005). Biological fathers and stepfathers who molest their daughters: psychological, phallometric, and criminal features. *Sexual Abuse: Journal of Research and Treatment, 17*(1), 39-46. doi:10.1177/107906320501700105

Griffin, D. W., & Bartholomew, K. (1994). The metaphysics of measurement: The case of adult attachment. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships, Vol. 5. Attachment processes in adulthood* (pp. 17-52). London, UK: Jessica Kingsley.

*Gudjonsson, G. H., & Sigurdsson, J. F. (2000). Differences and similarities between violent offenders and sex offenders. *Child Abuse and Neglect, 24*(3), 363-372. doi:10.1016/S0145-2134(99)00150-7

Haddock, G., Barrowclough, C., Shaw, J. J., Dunn, G., Novaco, R. W., & Tarrier, N. (2009). Cognitive–behavioural therapy v. social activity therapy for people with psychosis and a history of violence: Randomised controlled trial. *The British Journal of Psychiatry, 194*(2), 152-157. doi:10.1192/bjp.bp.107.039859.

Haddock, G., Lowens, I., Brosnan, N., Barrowclough, C., & Novaco, R. W. (2004). Cognitive-behaviour therapy for inpatients with psychosis and anger problems within a low secure environment. *Behavioural and Cognitive Psychotherapy, 32*(1), 77-98. doi:10.1017/S1352465804001055

Haggård-Grann, U., Hallqvist, J., Långström, N., & Möller, J. (2006). The role of alcohol and drugs in triggering criminal violence: A case-crossover study. *Addiction*, *101*(1), 100-108. doi: 10.1111/j.1360-0443.2005.01293.x

*Häkkänen-Nyholm, H., Repo-Tiihonen, E., Lindberg, N., Salenius, S., & Weizmann-Henelius, G. (2009). Finnish sexual homicides: Offence and offender characteristics. *Forensic Science International*, *188*(1), 125-130. doi:10.1016/j.forsciint.2009.03.030

Halpern, J., Maunder, R. G., Schwartz, B., & Gurevich, M. (2012). Attachment insecurity, responses to critical incident distress, and current emotional symptoms in ambulance workers. *Stress and Health*, *28*(1), 51-60. doi:10.1002/smi.1401

*Hamdi, N. R., & Knight, R. A. (2012). The relationships of perpetrator and victim substance use to the sexual aggression of rapists and child molesters. *Sexual Abuse: Journal of Research and Treatment, 24*(4), 307-327. doi:10.1177/1079063211420450

*Hanson, R. K., & Harris, A. J. R. (2000). Where should we intervene?: Dynamic predictors of sexual offense recidivism. *Criminal Justice and Behavior, 27*(1), 6-35. doi:10.4135/9781452229454.n23

Hanson, R. K., Morton, K. E., & Harris, A. J. R. (2003). Sexual offender recidivism risk: What we know and what we need to know. *Annals of New York Academy of Sciences, 989*(1), 154–166. doi:10.1111/j.1749-6632.2003.tb07303.x

Harkavy-Friedman, J. M., Nelson, E. A., Venarde, D. F., & Mann, J. J. (2004). Suicidal behavior in schizophrenia and schizoaffective disorder: Examining the role of depression. *Suicide and Life-Threatening Behavior*, *34*(1), 66-76. doi:10.1521/suli.34.1.66.27770

**Harsch, S., Bergk, J. E., Steinert, T., Keller, F., & Jockusch, U. (2006). Prevalence of mental disorders among sexual offenders in forensic psychiatry and prison. *International Journal of Law and Psychiatry, 29*(5), 443-449. doi:10.1016/j.ijlp.2005.11.001

*Harsch, S., Keller, F., & Jockusch, U. (2006). Vergleichende studie von sexualstraftatern im strafvollzug und in der forensischen psychiatrie [Sexual offenders in prison and in hospital-A comparative study]. *Recht und Psychiatrie, 24*(1), 26-31.

Hays, R. D., Hill, L., Gillogly, J. J., Lewis, M. W., Bell, R. M., & Nicholas, R. (1993). Response times for the CAGE, Short-MAST, AUDIT, and JELLINEK alcohol scales. *Behavior Research Methods, Instruments and Computers*, *25*(2), 304-307. doi:10.3758/BF03204515

Hays, R. D., Merz, J. F., & Nicholas, R. (1995). Response burden, reliability, and validity of the CAGE, Short MAST, and AUDIT alcohol screening measures. *Behavior Research Methods, Instruments and Computers*, *27*(2), 277-280. doi:10.3758/BF03204745

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*(3), 511-524. doi:10.1037/0022-3514.52.3.511

Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry, 5*(1), 1-22. doi:10.1207/s15327965pli0501_1

Hearne, R., Connolly, A., & Sheehan, J. (2002). Alcohol abuse: Prevalence and detection in a general hospital. *Journal of the Royal Society of Medicine*, *95*(2), 84-87. doi:10.1258/jrsm.95.2.84

Hedlund, J. L., & Vieweg, B. W. (1984). The Michigan Alcoholism Screening Test (MAST): A comprehensive review. *Journal of Operational Psychiatry, 15*, 55-65.

*Heitzman, J., Lew-Starowicz, M., Pacholski, M., & Lew-Starowicz, Z. (2014). Children sexual abuse in Poland - Study of 257 sexual offenders against minors. *Psychiatria Polska, 48*(1), 105-120. Retrieved from http://strona.ppol.nazwa.pl/uploads/images/PP_1_2014/HeitzmanEngVerPsychiatrPol2014v48i1.pdf

*Hill, A., Habermann, N., Berner, W., & Briken, P. (2007). Psychiatric disorders in single and multiple sexual murderers. *Psychopathology, 40*(1), 22-28. doi:10.1159/000096386

*Hoertel, N., Le Strat, Y., Schuster, J. P., & Limosin, F. (2012). Sexual assaulters in the United States: Prevalence and psychiatric correlates in a national sample. *Archives of Sexual Behavior, 41*(6), 1379-1387. doi:10.1007/s10508-012-9943-5

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognitive Therapy and Research, 36*(5), 427-440. doi:10.1007/s10608-012-9476-1

Home Office. (2013). *Offence classification index*. Retrieved from https://www.gov.uk/government/publications/counting-rules-for-recorded-crime

Hor, K., & Taylor, M. (2010). Suicide and schizophrenia: A systematic review of rates and risk factors. *Journal of Psychopharmacology*, *24*(Suppl. 4), 81-90. doi:10.1177/1359786810385490

Hornsveld, R. H., Muris, P., & Kraaimaat, F. W. (2011). The Novaco Anger Scale–Provocation Inventory (1994 version) in Dutch forensic psychiatric patients. *Psychological Assessment*, *23*(4), 937-944. doi:10.1037/a0024018

*Horvath, M. A., & Brown, J. (2006). The role of drugs and alcohol in rape. *Medicine, Science and the Law, 46*(3), 219-228. doi:10.1258/rsmmsl.46.3.219

Howells, K. (2009). Angry affect, aggression and personality disorder. In M. McMurran & R. Howard (eds.), *Personality, personality disorder and violence: An evidence-based approach*, (pp. 191-212). Chichester, UK: Wiley.

Howells, K. (2011). Cognitive behavioural approaches to formulating aggression. In S. Sturmey & M. McMurran (eds.), *Forensic case formulation*, (pp. 107-127). Chichester, UK: Wiley.

Howells, K., Daffern, M., & Day, A. (2008). Aggression and violence, in K. Soothill, P. Rogers, & M. Dolan (Eds.), *The handbook of forensic mental health*, (pp. 351-374). Devon, UK: Willan.

Howells, K., Day, A., Williamson, P., Bubner, S., Jauncey, S., Parker, A., & Heseltine, K. (2005). Brief anger management programs with offenders: Outcomes and predictors of change. *The Journal of Forensic Psychiatry and Psychology, 16*(2), 296-311. doi:10.1080/14789940500096099

Hsueh, Y. J., Chu, H., Huang, C. C., Ou, K. L., Chen, C. H., & Chou, K. R. (2014). Psychometric properties of the Chinese version of the Michigan Alcoholism Screening Test (MAST-C) for patients with alcoholism. *Perspectives in Psychiatric Care*, *50*(2), 83-92. doi:10.1111/ppc.12022.

Hudson, S. M., & Ward, T. (1997). Intimacy, loneliness, and attachment style in sexual offenders. *Journal of Interpersonal Violence, 12*(3), 323–339. doi:10.1177/088626097012003001

Hull, J. G., & Slone, L. B. (2004). Alcohol and self-regulation. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 466-491). New York, NY: Guilford Press.

*Iqbal, S., Dolan, M. C., & Monteiro, B. T. (2004). Characteristics of deaf sexual offenders referred to a specialist mental health unit in the UK. *The Journal of Forensic Psychiatry and Psychology, 15*(3), 494-510. doi:10.1080/14789940410001703291

Jacobson, N. S., Follette, W. C., & Revenstorf, D. (1984). Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy, 15*(4), 336-352. doi:0.1016/S0005-7894(84)80002-7

Jacobson, N. S. & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12-19. doi:10.1037/0022-006X.59.1.12

Jamieson, S., & Marshall, W. L. (2000). Attachment styles and violence in child molesters. *Journal of Sexual Aggression, 5*(2), 88–98. doi:10.1080/13552600008413301.

*Janisch, S., Meyer, H., Germerott, T., Albrecht, U. V., Schulz, Y., & Debertin, A. S. (2010). Analysis of clinical forensic examination reports on sexual assault. *International Journal of Legal Medicine, 124*(3), 227-235. doi:10.1007/s00414-010-0430-z

Jauhar, S., McKenna, P. J., Radua, J., Fung, E., Salvador, R., & Laws, K. R. (2014). Cognitive-behavioural therapy for the symptoms of schizophrenia: Systematic review and meta-analysis with examination of potential bias. *The British Journal of Psychiatry, 204*(1), 20-29. doi:10.1192/bjp.bp.112.116285

Johnson, J., Gooding, P. A., Wood, A. M., Taylor, P. J., Pratt, D., & Tarrier, N. (2010). Resilience to suicidal ideation in psychosis: Positive self-appraisals buffer the impact of hopelessness. *Behaviour Research and Therapy*, *48*(9), 883-889. doi:10.1016/j.brat.2010.05.013

*Juszczak, D., & Korzeniewski, K. (2016). The comparative analysis of selected psychosocial and psychopathological factors among sexual offenders acting under or without the influence of alcohol. *Seksuologia Polska*, *14*(1), 7-12.

*Juszczak, D., Korzeniewski, K., Czuprynska, K., & Furs, M. (2015). Charakterystyka sprawcow przestepstw seksualnych naduzywajacych alkoholu w swietle analizy opiniowania sadowego [The characteristics of sexual offenders abusing alcohol in view of forensic-psychiatric assessments]. *Polski Merkuriusz Lekarski, 38*(228), 326-328.

*Kafka, M. P., & Hennen, J. (2002). A DSM-IV Axis I comorbidity study of males (n = 120) with paraphilias and paraphilia-related disorders. *Sexual Abuse: Journal of Research and Treatment, 14*(4), 349-366. doi:10.1177/107906320201400405

Kano, M. Y., Santos, M. A. D., & Pillon, S. C. (2014). Use of alcohol in the elderly: transcultural validation of the Michigan Alcoholism Screening Test–Geriatric Version (MAST-G). *Revista da Escola de Enfermagem da USP*, *48*(4), 649-656. doi:10.1590/S0080-623420140000400011

Kaplan, H. B., Pokorny, A. D., Kanas, T., & Lively, G. (1974). Screening tests and self-identification in the detection of alcoholism. *Journal of Health and Social Behavior*, *15*(1), 51-56. doi:10.2307/2136926

Karila, L., Billieux, J., Benyamina, A., Lançon, C., & Cottencin, O. (2016). The effects and risks associated to mephedrone and methylone in humans: A review of the preliminary evidences. *Brain Research Bulletin, 126*(1), 61-67. doi: 10.1016/j.brainresbull.2016.03.005

Kassel, J. D., Wardle, M., & Roberts, J. E. (2007). Adult attachment security and college student substance use. *Addictive Behaviors*, *32*(6), 1164-1176. doi:10.1016/j.addbeh.2006.08.005.

Kealy, D., Tsai, M., & Ogrodniczuk, J. S. (2017). Attachment style and readiness for psychotherapy among psychiatric outpatients. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(2), 229-234. doi:10.1111/papt.12101

*Kirk, K. T., Jeglic, E. L., Calkins, C., & Spillane, N. S. (2017). Factors associated with substance use involvement in sexual offenses. *Alcoholism: Clinical and Experimental Research, 41*(Suppl. 1), 245A.

Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London, UK: Routledge.

*Kouri, E. M., Pope, H. G., Jr., Powell, K. F., Oliva, P. S., & Campbell, C. (1997). Drug use history and criminal behavior among 133 incarcerated men. *American Journal of Drug and Alcohol Abuse, 23*(3), 413-419. doi:10.3109/00952999709016886

Kraanen, F. L., & Emmelkamp, P. M. (2011). Substance misuse and substance use disorders in sex offenders: A review. *Clinical Psychology Review, 31*(3), 478-489. doi:10.1016/j.cpr.2010.11.006

*Kraanen, F. L., Scholing, A., & Emmelkamp, P. M. (2010). Substance use disorders in perpetrators of intimate partner violence in a forensic setting. *International Journal of Offender Therapy and Comparative Criminology, 54*(3), 430-440. doi:10.1177/0306624X08330189

**Kraanen, F. L., Scholing, A., & Emmelkamp, P. M. (2012). Substance use disorders in forensic psychiatry: Differences among different types of offenders. *International Journal of Offender Therapy and Comparative Criminology, 56*(8), 1201-1219. doi:10.1177/0306624X11420252

Kristenson, H., & Trell, E. (1982). Indicators of Alcohol Consumption: Comparisons between a questionnaire (Mm-MAST), interviews and Serum γ-Glutamyl Transferase (GGT) in a health survey of middle-aged males. *Addiction*, *77*(3), 297-304. doi:10.1111/j.1360-0443.1982.tb02459.x

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*(1), 159–174. doi:10.2307/2529310

Langevin, R. (Ed.). (1985). *Erotic preference, gender identity, and aggression in men: New research studies*. Hillsdale, NJ: Erlbaum.

*Langevin, R. (2003). A study of the psychosexual characteristics of sex killers: Can we identify them before it is too late? *International Journal of Offender Therapy and Comparative Criminology, 47*(4), 366-382. doi:10.1177/0306624X03253848

*Langevin, R. (2006a). Acceptance and completion of treatment among sex offenders. *International Journal of Offender Therapy and Comparative Criminology, 50*(4), 402-417. doi:10.1177/0306624X06286870

*Langevin, R. (2006b). Sexual offenses and traumatic brain injury. *Brain and Cognition, 60*(2), 206-207.

*Langevin, R., & Curnoe, S. (2014). Are dangerous offenders different from other offenders? A clinical profile. *International Journal of Offender Therapy and Comparative Criminology, 58*(7), 780-801. doi:10.1177/0306624X13481206

*Langevin, R., Curnoe, S., & Bain, J. (2000). A study of clerics who commit sexual offenses: Are they different from other sex offenders? *Child Abuse and Neglect, 24*(4), 535-545. doi:10.1016/S0145-2134(00)00113-7

*Langevin, R., Glancy, G. D., Curnoe, S., & Bain, J. (1999). Physicians who commit sexual offences: Are they different from other sex offenders? *Canadian Journal of Psychiatry, 44*(8), 775-780. doi:10.1177/070674379904400803

*Langevin, R., & Lang, R. A. (1990). Substance abuse among sex offenders. *Annals of Sex Research, 3*(4), 397-424. doi:10.1007/bf00850442

**Langevin, R., Langevin, M., Curnoe, S., & Bain, J. (2006). Generational substance abuse among male sexual offenders and paraphilics. *Victims and Offenders, 1*(4), 395-409. doi:10.1080/15564880600934153

Långström, N., Sjöstedt, G., & Grann, M. (2004). Psychiatric disorders and recidivism in sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, *16*(2), 139-150. doi:10.1177/107906320401600204

Lapham, S. (2004/2005). Screening and brief intervention in criminal justice settings. *Alcohol Research and Health, 28*(2), 85–93. Retrieved from https://pdfs.semanticscholar.org/8e99/3b30fa364c5a1d34f9e0387cf049523228e9.pdf

*Lee, C. Y., Chao, S. S., Chen, S. P., Chou, F. H., Su, C. Y., & Ho, W. W. (2010). The characteristics of and risk factors associated with incarcerated sex offenders in Taiwan. *International Journal of Law and Psychiatry, 33*(3), 144-148. doi:10.1016/j.ijlp.2010.03.003

*Leue, A., Borchard, B., & Hoyer, J. (2004). Mental disorders in a forensic sample of sexual offenders. *European Psychiatry, 19*(3), 123-130. doi:10.1016/j.eurpsy.2003.08.001

**Levenson, J. (2016). Adverse childhood experiences and subsequent substance abuse in a sample of sexual offenders: Implications for treatment and prevention. *Victims and Offenders, 11*(2), 199-224. doi:10.1080/15564886.2014.971478

Levinson, A., & Fonagy, P. (2004). Offending and attachment: The relationship between interpersonal awareness and offending in a prison population with psychiatric disorder. *Canadian Journal of Psychoanalysis*, *12*(2), 225-251. doi:10.1002/j.2167-4086.2009.tb00406.x.

Levy, K. N., Ellison, W. D., Scott, L. N., & Bernecker, S. L. (2011). Attachment style. *Journal of Clinical Psychology*, *67*(2), 193-203. doi:10.1002/jclp.20756

Lindqvist, J. K., Dåderman, A. M., & Hellström, Å. (2005). Internal reliability and construct validity of the Novaco Anger Scale-1998-S in a sample of violent prison inmates in Sweden. *Psychology, Crime and Law*, *11*(2), 223-237. doi:10.1080/10683160500036863

Litt, M. D., Cooney, N. L., & Morse, P. (2000). Reactivity to alcohol-related stimuli in the laboratory and in the field: Predictors of craving in treated alcoholics. *Addiction*, *95*(6), 889-900. doi:10.1046/j.1360-0443.2000.9568896.x

Lockhart, S. P., Carter, Y. H., Straffen, A. M., Pang, K. K., McLoughlin, J., & Baron, J. H. (1986). Detecting alcohol consumption as a cause of emergency general medical admissions. *Journal of the Royal Society of Medicine*, *79*(3), 132-136. doi:10.1177/014107688607900303

**Looman, J., & Abracen, J. (2011). Substance abuse among high-risk sexual offenders: Do measures of lifetime history of substance abuse add to the prediction of recidivism over actuarial risk assessment instruments? *Journal of Interpersonal Violence, 26*(4), 683-700. doi:10.1177/0886260510365871

*Looman, J., Abracen, J., Di Fazio, R., & Maillet, G. (2004). Alcohol and drug abuse among sexual and nonsexual offenders: Relationship to intimacy deficits and coping strategy. *Sexual Abuse: Journal of Research and Treatment, 16*(3), 177-189. doi:10.1177/107906320401600301

*Loza, W., & Clements, P. (1991). Incarcerated alcoholics' and rapists' attributions of blame for criminal acts. *Canadian Journal of Behavioural Science, 23*(1), 76-83. doi:10.1037/h0078964

*Luna Maldonado, A., Martinez, F., Osuna, E., & Garcia-Ferrer, R. (1988). Alcohol consumption and crimes against sexual freedom. *Medicine and Law, 7*(1), 81-86.

*Lung, F. W., & Huang, S. F. (2004). Psychosocial characteristics of criminals committing incest and other sex offenses: A survey in a Taiwanese prison. *International Journal of Offender Therapy and Comparative Criminology, 48*(5), 554-560. doi:10.1177/0306624X04265083

Magruder-Habib, K., Fraker, G. G., & Peterson, C. L. (1983). Correspondence of clinicians' judgments with the Michigan Alcoholism Screening Test in determining alcoholism in Veterans Administration outpatients. *Journal of Studies on Alcohol*, *44*(5), 872-884. doi:10.15288/jsa.1983.44.872

Magruder-Habib, K., Stevens, H. A., & Alling, W. C. (1993). Relative performance of the MAST, VAST, and CAGE versus DSM-III-R criteria for alcohol dependence. *Journal of Clinical Epidemiology*, *46*(5), 435-441. doi:10.1016/0895-4356(93)90020-2

Mallinckrodt, B., Porter, M. J., & Kivlighan, D. M., Jr. (2005). Client attachment to therapist, depth of in-session exploration, and object relations in brief psychotherapy. *Psychotherapy: Theory, Research, Practice, Training, 42*(1), 85-100. doi:10.1037/0033-3204.42.1.85

Marsa, F., O'Reilly, G., Carr, A., Murphy, P., O'Sullivan, M., Cotter, A., & Hevey, D. (2004). Attachment styles and psychological profiles of child sex offenders in Ireland. *Journal of Interpersonal Violence*, *19*(2), 228-251. doi:10.1177/0886260503260328

**Marshall, L. E., & Marshall, W. L. (2006). Sexual addiction in incarcerated sexual offenders. *Sexual Addiction and Compulsivity, 13*(4), 377-390. doi:10.1080/10720160601011281

Marshall, W. L. (1989). Intimacy, loneliness and sexual offenders. *Behaviour Research and Therapy*, *27*(5), 491-504. doi:10.1016/0005-7967(89)90083-1

Marshall, W. L. (1993). The role of attachment, intimacy, and loneliness in the etiology and maintenance of sexual offending. *Sexual and Marital Therapy, 8*(2), 109-121. doi:10.1080/02674659308408187

Marshall, W. L. (2010). The role of attachments, intimacy, and loneliness in the etiology and maintenance of sexual offending. *Sexual and Relationship Therapy*, *25*(1), 73-85. doi:10.1080/14681990903550191

Marshall, W. L., & Barbaree, H. E. (1990). An integrated theory of the etiology of sexual offending. In W. L. Marshall, D. R. Laws, & H. E. Barbaree (Eds.), *Handbook of sexual assault: Issues, theories, and treatment of the offender (*pp. 257–275). New York, NY: Plenum Press.

Marshall, W. L., Serran, G. A., & Cortoni, F. A. (2000). Childhood attachments, sexual abuse, and their relationship to adult coping in child molesters. *Sexual Abuse: A Journal of Research and Treatment*, *12*(1), 17-26. doi: 10.1177/107906320001200103

Mayfield, D., McLeod, G., & Hall, P. (1974). The CAGE questionnaire: Validation of a new alcoholism screening tool. *American Journal of Psychiatry, 131*(10), 1121−1123. doi:10.1176/ajp.131.10.1121

McAlinden, A-M., Farmer, M., & Maruna, S. (2017). Desistance from sexual offending: Do the mainstream theories apply? *Criminology and Criminal Justice, 17*(3), 266-283. doi:10.1177/1748895816670201

McAuley, T., Longabaugh, R., & Gross, H. (1978). Comparative effectiveness of self and family forms of the Michigan Alcoholism Screening Test. *Journal of Studies on Alcohol*, *39*(9), 1622-1627. doi:10.15288/jsa.1978.39.1622

**McCarthy, J. A. (2010). Internet sexual activity: A comparison between contact and non-contact child pornography offenders. *The Journal of Sexual Aggression, 16*(2), 181-195. doi:10.1080/13552601003760006

*McCauley, J. L., Ruggiero, K. J., Resnick, H. S., & Kilpatrick, D. G. (2010). Incapacitated, forcible, and drug/alcohol-facilitated rape in relation to binge

drinking, marijuana use, and illicit drug use: A national survey. *Journal of Traumatic Stress, 23*(1), 132-140. doi:10.1002/jts.20489

McCormack, J., Hudson, S. M., & Ward, T. (2002). Sexual offenders' perceptions of their early interpersonal relationships: An attachment perspective. *Journal of Sex Research*, *39*(2), 85-93. doi:10.1080/00224490209552127

McCormack, M., Tierney, K., Brennan, D., Lawlor, E., & Clarke, M. (2014). Lack of insight in psychosis: Theoretical concepts and clinical aspects. *Behavioural and Cognitive Psychotherapy, 42(*3), 327-338. doi: 10.1017/S1352465813000155

*McElroy, S. L., Soutullo, C. A., Taylor, P., Jr., Nelson, E. B., Beckman, D. A., Brusman, L. A., . . . Keck, P. E., Jr. (1999). Psychiatric features of 36 men convicted of sexual offenses. *Journal of Clinical Psychiatry, 60*(6), 414-420. doi:10.4088/JCP.v60n0613

McMurran, M., & Cusens, B. (2005). Alcohol and violent and non-violent acquisitive offending. *Addiction Research and Theory, 13*(5), 439-443. doi: 10.1080/16066350500096058

McNeill, F., Farrall, S., Lightowler, C., & Maruna, S. (2012). *How and why people stop offending: Discovering desistance*. Retrieved from https://www.iriss.org.uk/sites/default/files/iriss-insight-15.pdf

McSweeney, T., Webster, R., Turnbull, P. J., & Duffy, M. (2009). Evidence-based practice? The National Probation Service's work with alcohol-misusing offenders. Retrieved from http://lx.iriss.org.uk/sites/default/files/resources/Evidence-based%20practice.pdf

Meehan, J., Flynn, S., Hunt, I. M., Robinson, J., Bickley, H., Parsons, R., ... Shaw, J. (2006). Perpetrators of homicide with schizophrenia: A national clinical survey in England and Wales. *Psychiatric Services*, *57*(11), 1648-1651. doi:10.1176/appi.ps.57.11.1648

Meule, A., Mayerhofer, M., Gründel, T., Berker, J., Teran, C. B., & Platte, P. (2015). Half-year retest-reliability of the Barratt Impulsiveness Scale–Short Form (BIS-15). *SAGE Open*, *5*(1). doi:10.1177/2158244015576548

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford Press.

Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion*, *27*(2), 77-102. doi:10.1023/A:1024515519160

Miller, R. S., & Lefcourt, H. M. (1982). The assessment of social intimacy. *Journal of Personality Assessment*, *46*(5)*,* 514–518. doi:10.1207/s15327752jpa4605_12

Miller, W. R., & Rollnick, S. (2013). *Motivational interviewing: Helping people change* (3rd ed.)*.* New York, NY: Guilford Press.

Millon, T., Millon, C., & Grossman, S. (2015). *Millon Clinical Multiaxial Inventory - IV manual* (4th ed.). Bloomington, IN: Pearson.

Mischke, H. D., & Venneri, R. L. (1987). Reliability and validity of the MAST, Mortimer-Filkins Questionnaire and CAGE in DWI assessment. *Journal of Studies on Alcohol*, *48*(5), 492-501. doi:10.15288/jsa.1987.48.492

Moeller, S. B., Novaco, R. W., Heinola-Nielsen, V., & Hougaard, H. (2016). Validation of the Novaco Anger Scale–Provocation Inventory (Danish) with nonclinical, clinical, and offender samples. *Assessment*, *23*(5), 624-636. doi:10.1177/1073191115583713

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine*, *151*(4), 264-269. doi:10.1371/journal.pmed.1000097

Moore, R. A. (1971). The prevalence of alcoholism in a community general hospital. *American Journal of Psychiatry*, *128*(5), 638-639. doi:10.1176/ajp.128.5.638

Moore, R. A. (1972). The diagnosis of alcoholism in a psychiatric hospital: A trial of the Michigan Alcoholism Screening Test (MAST). *American Journal of Psychiatry*, *128*(12), 1565-1569. doi:10.1176/ajp.128.12.1565

Moritz, S., Favrod, J., Andreou, C., Morrison, A. P., Bohn, F., Veckenstedt, R., ... Karow, A. (2013). Beyond the usual suspects: Positive attitudes towards positive symptoms is associated with medication noncompliance in psychosis. *Schizophrenia Bulletin*, *39*(4), 917-922. doi:10.1093/schbul/sbs005

Mueller, G., Schumacher, P., Wetzlmair, J., & Pallauf, M. (2016). Screening questionnaires to identify problem drinking in the primary care setting: A systematic review. *Journal of Public Health*, *24*(1), 9-19. doi:10.1007/s10389-015-0694-3

Nanakorn, S., Fukuda, K., Ogimoto, I., Tangseree, T., & Treethiptikhun, S. (2000). Validation of the Short Michigan Alcoholism Screening Test-Thai version in northeastern Thailand. *The Southeast Asian Journal of Tropical Medicine and Public Health, 31*(4), 780-786. Retrieved from http://www.tm.mahidol.ac.th/seameo/2000_31_4/28-2522.pdf

National Institute for Health and Care Excellence. (2011). *Alcohol-use disorders: Diagnosis, assessment and management of harmful drinking and alcohol dependence*. Retrieved from https://www.nice.org.uk/guidance/cg115

National Institute for Health and Care Excellence. (2014). *Psychosis and schizophrenia in adults: Prevention and management*. Retrieved from https://www.nice.org.uk/guidance/cg178

Novaco, R. W. (1975). *Anger control: The development and evaluation of an experimental treatment.* Lexington, MA: Heath.

Novaco, R. W. (2003). *The Novaco anger scale and provocation inventory (NAS-PI) manual*. Los Angeles, CA: Western Psychological Services.

Novaco, R. W. (2011). Anger dysregulation: Driver of violent offending. *Journal of Forensic Psychiatry and Psychology, 22*(5), 650-668. doi:10.1080/14789949.2011.617536

Novaco, R. W. (2013). Reducing anger-related offending: What works. In L. A. Craig, L. Dixon, & T. A. Gannon (Eds.), *What works in offender rehabilitation* (pp. 211-236). Chichester, UK: Wiley.

Novaco, R. W., Ramm, M. & Black, L. (2001). Anger treatment with offenders. In C. Hollin (Ed.), *Handbook of offender assessment and treatment* (pp. 281-296). Chichester, UK: Wiley.

Novaco, R. W. & Taylor, J. L. (2004). Assessment of anger and aggression in male offenders with developmental disabilities. *Psychological Assessment, 16*(1), 42-50. doi:10.1037/1040-3590.16.1.42

Office for National Statistics. (2012). *Crime in England and Wales, year ending June 2012*. Retrieved from http://www.ons.gov.uk/ons/dcp171778_283456.pdf

Office for National Statistics. (2017a). *Focus on violent crime and sexual offences, England and Wales: Year ending March 2016.* Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/compendium/focusonviolentcrimeandsexualoffences/yearendingmarch2016

Office for National Statistics. (2017b). *User guide to crime statistics for England and Wales*. Retrieved from http://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/methodologies/crimeandjusticemethodology

Okay, T., Şengül, C., Açıkgöz, Ç., Ozan, G., & Dilbaz, N. (2010). Prevalence of alcohol dependence and abuse in a general hospital; sensitivity and specificity of MAST. *European Journal of General Medicine*, *7*(1), 9-16. doi:10.29333/ejgm/82787

*Parkhill, M. R., Abbey, A., & Jacques-Tiura, A. J. (2009). How do sexual assault characteristics vary as a function of perpetrators' level of intoxication? *Addictive Behaviors, 34*(3), 331-333. doi:10.1016/j.addbeh.2008.11.003

Parrott, D. J., & Giancola, P. R. (2004). A further examination of the relation between trait anger and alcohol-related aggression: The role of anger control. *Alcoholism: Clinical and Experimental Research*, *28*(6), 855-864. doi:10.1097/01.ALC.0000128226.92708.21

Parrott, D. J., & Giancola, P. R. (2007). Addressing "the criterion problem" in the assessment of aggressive behavior: Development of a new taxonomic system. *Aggression and Violent Behavior, 12*(3), 280-299. doi:10.1016/j.avb.2006.08.002

Parsons, K. J., Wallbrown, F. H., & Myers, R. W. (1994). Michigan Alcoholism Screening Test: Evidence supporting general as well as specific factors. *Educational and Psychological Measurement*, *54*(2), 530-536. doi:10.1177/0013164494054002027

Patil, V. H., Singh, S. N., Mishra, S., & Donavan, D. T. (2007*). Parallel analysis engine to aid determining number of factors to retain* [Computer software]. Available from http://ires.ku.edu/*smishra/parallelengine.htm.

Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt Impulsiveness Scale. *Journal of Clinical Psychology, 51*(6), 768-774. doi:10.1002/1097-4679(199511)51:6<768::AID-JCLP2270510607>3.0.CO;2-1

Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of social psychological attitudes, Vol. 1. Measures of personality and social psychological attitudes* (pp. 17-59). San Diego, CA: Academic Press.

Penn, D. L., Mueser, K. T., Tarrier, N., Gloege, A., Cather, C., Serrano, D., & Otto, M. W. (2004). Supportive therapy for schizophrenia: Possible mechanisms and implications for adjunctive psychosocial treatments. *Schizophrenia Bulletin*, *30*(1), 101-112. doi:10.1093/oxfordjournals.schbul.a007055

Persons, J. B. (2008). *The case formulation approach to cognitive-behavior therapy*. New York, NY: Guilford Press.

Peters, R. H., Greenbaum, P. E., Steinberg, M. L., Carter, C. R., Ortiz, M. M., Fry, B. C., & Valle, S. K. (2000). Effectiveness of screening instruments in detecting substance use disorders among prisoners. *Journal of Substance Abuse Treatment*, *18*(4), 349-358. doi:10.1016/S0740-5472(99)00081-1

Peugh, J., & Belenko, S. (2001a). Alcohol, drugs and sexual function: A review. *Journal of Psychoactive Drugs*, *33*(3), 223-232. doi:10.1080/02791072.2001.10400569

*Peugh, J. & Belenko, S. (2001b). Examining the substance use patterns and treatment needs of incarcerated sex offenders. *Sexual Abuse: A Journal of Research and Treatment*, *13*(3), 179-195. doi:10.1023/A:1009536200242

Pokorny, A. D., Miller, B. A., & Kaplan, H. B. (1972). The brief MAST: A shortened version of the Michigan Alcoholism Screening Test. *American Journal of Psychiatry, 129*(3), 342-345. doi:10.1176/ajp.129.3.342

**Poortinga, E., Lemmen, C., & Majeske, K. (2007). A comparison of criminal sexual conduct defendants based on victim age. *Journal of Forensic Sciences, 52*(6), 1372-1375. doi:10.1111/j.1556-4029.2007.00571.x

Pottenger, M., McKernon, J., Patrie, L. E., Weissman, M. M., Ruben, H. L., & Newberry, P. (1978). The frequency and persistence of depressive symptoms in the alcohol abuser. *Journal of Nervous and Mental Disease. 166*(8), 562-570. doi:10.1097/00005053-197808000-00003

Prochaska, J., & DiClemente, C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 51*(3), 390-395. doi:10.1037//0022-006X.51.3.390

Public Health England. (2017a). *Adult substance misuse statistics from the National Drug Treatment Monitoring System (NDTMS).* Retrieved from https://www.ndtms.net/Publications/downloads/Adult%20Substance%20Misuse/Adult-statistics-from-the-national-drug-treatment-monitoring-system-2016-17.pdf

Public Health England. (2017b). *Secure setting statistics from the National Drug Treatment Monitoring System (NDTMS).* Retrieved from https://www.ndtms.net/Publications/downloads/Secure-setting-statistics-from-the-national-drug-treatment-monitoring-system-2015-2016.pdf

Public Health Resource Unit. (2006). *Critical Appraisal Skills Programme (CASP): Making sense of evidence.* England: Public Health Resource Unit. Retrieved from http://www.casp-uk.net/casp-tools-checklists/

*Rada, R. T. (1975). Alcoholism and forcible rape. *The American Journal of Psychiatry, 132*(4), 444-446. doi:10.1176/ajp.132.4.444

*Rada, R. T. (1976). Alcoholism and the child molester. *Annals of the New York Academy of Sciences, 273*(1), 492-496. doi:10.1111/j.1749-6632.1976.tb52920.x

*Rada, R. T., Kellner, R., Laws, D. R., & Winslow, W. W. (1978). Drinking, alcoholism, and the mentally disordered sex offender. *Bulletin of the American Academy of Psychiatry and the Law, 6*(3), 296-300. Retrieved from http://jaapl.org/content/jaapl/6/3/296.full.pdf

*Rada, R. T., Laws, D. R., & Kellner, R. (1976). Plasma testosterone levels in the rapist. *Psychosomatic Medicine, 38*(4), 257-268. doi:10.1097/00006842-197607000-00004

Ravitz, P., Maunder, R., Hunter, J., Sthankiya, B., & Lancee, W. (2010). Adult attachment measures: A 25-year review. *Journal of Psychosomatic Research, 69*(4), 419-432. doi:10.1016/j.jpsychores.2009.08.006

*Raymond, N. C., Coleman, E., Ohlerking, F., Christenson, G. A., & Miner, M. (1999). Psychiatric comorbidity in pedophilic sex offenders. *American Journal of Psychiatry, 156*(5), 786-788. doi:10.1176/ajp.156.5.786

Read, J., van Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis and schizophrenia: A literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica*, *112*(5), 330-350. doi:10.1111/j.1600-0447.2005.00634.x

Rehm, J., & Room, R. (2017). The cultural aspect: How to measure and interpret epidemiological data on alcohol-use disorders across cultures. *Nordic Studies on Alcohol and Drugs*, *34*(4), 330-341. doi:10.1177/1455072517704795

Renwick, S. J., Black, L., Ramm, M., & Novaco, R. W. (1997). Anger treatment with forensic hospital patients. *Legal and Criminological Psychology*, *2*(1), 103-116. doi:10.1111/j.2044-8333.1997.tb00336.x

Robin, R. W., Saremi, A., Albaugh, B., Hanson, R. L., Williams, D., & Goldman, D. (2004). Validity of the SMAST in two American Indian tribal

populations. *Substance Use and Misuse*, *39*(4), 601-624. doi:10.1081/JA-120030062

*Rodenas, J. M., Osuna, E., & Luna, A. (1989). Alcohol and drug use by rapists and their victims. *Medicine and Law, 8*(2), 157-164.

Ross, H. E., Gavin, D. R., & Skinner, H. A. (1990). Diagnostic validity of the MAST and the alcohol dependence scale in the assessment of DSM-III alcohol disorders. *Journal of Studies on Alcohol*, *51*(6), 506-513. doi:10.15288/jsa.1990.51.506

Ross, T., & Pfäfflin, F. (2007). Attachment and interpersonal problems in a prison environment. *Journal of Forensic Psychiatry and Psychology*, *18*(1), 90-98. doi:10.1080/14789940601063345

Rounsaville, B. J., Weissman, M. M., Wilber, C. H., & Kleber, H. D. (1983). Identifying alcoholism in treated opiate addicts. *The American Journal of Psychiatry, 140*(6), 764-766. doi:10.1176/ajp.140.6.764

Rumpf, H. J., Hapke, U., Hill, A., & John, U. (1997). Development of a screening questionnaire for the general hospital and general practices. *Alcoholism: Clinical and Experimental Research*, *21*(5), 894-898. doi:10.1111/j.1530-0277.1997.tb03854.x

Saltstone, R., Halliwell, S., & Hayslip, M. A. (1994). A multivariate evaluation of the Michigan Alcoholism Screening Test and the Drug Abuse Screening Test in a female offender population. *Addictive Behaviors*, *19*(5), 455-462. doi:10.1016/0306-4603(94)90001-9

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction*, *88*(6), 791-804. doi:10.1111/j.1360-0443.1993.tb02093.x

Scharfe, E., & Bartholomew, K. (1994). Reliability and stability of adult attachment patterns. *Personal Relationships, 1*(1), 23-43. doi:10.1111/j.1475-6811.1994.tb00053.x

Searles, J. S., Alterman, A. I., & Purtill, J. J. (1990). The detection of alcoholism in hospitalized schizophrenics: A comparison of the MAST and the MAC. *Alcoholism: Clinical and Experimental Research*, *14*(4), 557-560. doi:10.1111/j.1530-0277.1990.tb01199.x

Seidman, B. T., Marshall, W. L., Hudson, S. M., & Robertson, P. J. (1994). An examination of intimacy and loneliness in sex offenders. *Journal of Interpersonal Violence*, *9*(4)*,* 518–534. doi:10.1177/088626094009004006

Selzer, M. L. (1971). The Michigan alcoholism screening test: The quest for a new diagnostic instrument. *American Journal of Psychiatry*, *127*(12)*,* 1653-1658. doi:10.1176/ajp.127.12.1653

Selzer, M. L., Gomberg, E. S., & Nordhoff, J. A. (1979). Men and women's responses to the Michigan Alcoholism Screening Test. *Journal of Studies on Alcohol*, *40*(5), 502-504. doi:10.15288/jsa.1979.40.502

Selzer, M. L., Vinokur, A., & van Rooijen, L. (1975). A self-administered Short Michigan Alcoholism Screening Test (SMAST). *Journal of Studies on Alcohol, 36*(1), 117-126. doi:10.15288/jsa.1975.36.117

Seto, M. C., & Barbaree, H. E. (1995). The role of alcohol in sexual aggression. *Clinical Psychology Review*, *15*(6), 545-566. doi:10.1016/0272-7358(95)00033-L

Shields, A. L., Howell, R. T., Potter, J. S., & Weiss, R. D. (2007). The Michigan Alcoholism Screening Test and its shortened form: A meta-analytic inquiry into score reliability. *Substance Use and Misuse*, *42*(11), 1783-1800. doi:10.1080/10826080701212295

Simons, D. A., Wurtele, S. K., & Durham, R. L. (2008). Developmental experiences of child sexual abusers and rapists. *Child Abuse and Neglect*, *32*(5), 549-560. doi:10.1016/j.chiabu.2007.03.027

Skinner, H. A. (1979). A multivariate evaluation of the MAST. *Journal of Studies on Alcohol*, *40*(9), 831-844. doi:10.15288/jsa.1979.40.831

Skinner, H. A. (1982). The drug abuse screening test. *Addictive Behaviors*, *7*(4), 363-371. doi:10.1016/0306-4603(82)90005-3

Skinner, H. A., & Sheu, W. J. (1982). Reliability of alcohol use indices. The Lifetime Drinking History and the MAST. *Journal of Studies on Alcohol*, *43*(11), 1157-1170. doi:10.15288/jsa.1982.43.1157

Smallbone, S. W., & Dadds, M. R. (1998). Childhood attachment and adult attachment in incarcerated adult male sex offenders. *Journal of Interpersonal Violence*, *13*(5), 555-573. doi:10.1177/088626098013005001

Smallbone, S. W., & Dadds, M. R. (2001). Further evidence for a relationship between attachment insecurity and coercive sexual behavior in nonoffenders. *Journal of Interpersonal Violence*, *16*(1), 22-35. doi:10.1177/088626001016001002

Smallbone, S. W., & McCabe, B. A. (2003). Childhood attachment, childhood sexual abuse, and onset of masturbation among adult sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, *15*(1), 1-9. doi:10.1177/107906320301500101

Smith, M. J., Thirthalli, J., Abdallah, A. B., Murray, R. M., & Cottler, L. B. (2009). Prevalence of psychotic symptoms in substance users: A comparison across substances. *Comprehensive Psychiatry, 50*(3), 245-250. doi: 10.1016/j.comppsych.2008.07.009

Soothill, K., Francis, B., Ackerley, E., & Humphreys, L. (2007). Changing patterns of offending behaviour among young adults. *The British Journal of Criminology*, *48*(1), 75-95. doi:10.1093/bjc/azm039

Spielberger, C. D. (1999). *Professional manual for the state-trait anger expression inventory-2 (STAXI-2)*. Tampa, FL: Psychological Assessment Resources.

Spinella, M. (2007). Normative data and a short form of the Barratt Impulsiveness Scale. *International Journal of Neuroscience*, *117*(3), 359-368. doi:10.1080/00207450600588881

Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., Grisso, T., ... Silver, E. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of General Psychiatry*, *55*(5), 393-401. doi :10.1001/archpsyc.55.5.393

Steele, C. M., & Josephs, R. A. (1990). Alcohol myopia: Its prized and dangerous effects. *American Psychologist, 45*(8), 921-933. doi: 10.1037/0003-066X.45.8.921

Steinert, T., Wölfle, M., & Gebhardt, R. P. (2000). Measurement of violence during in-patient treatment and association with psychopathology. *Acta Psychiatrica Scandinavica, 102*(2), 107-112. doi:10.1034/j.1600-0447.2000.102002107.x

Stirpe, T., Abracen, J., Stermac, L., & Wilson, R. (2006). Sexual offenders' state-of mind regarding childhood attachment: A controlled investigation. *Sexual Abuse: A Journal of Research and Treatment*, *18*(3), 289-302. doi:10.1177/107906320601800307

Storgaard, H., Nielsen, S. D., & Gluud, C. (1994). The validity of the Michigan alcoholism screening test (MAST). *Alcohol and Alcoholism*, *29*(5), 493-503. doi:10.1093/oxfordjournals.alcalc.a045578

*Susic, E., Gruber, E. N., Kovacic, I., & Superba, M. (2013). Komorbiditetne dijagnoze kod osoba koje uz zatvorsku kaznu imaju i izrecenu sigurnosnu mjeru obveznog psihijatrijskog lijecenja na odjelu forenzicke psihijatrije zatvorske bolnice Zagreb [Comorbidities diagnosed in prisoners on obligatory psychiatric treatment at Department of Forensic Psychiatry, Prison Hospital in Zagreb]. *Socijalna Psihijatrija, 41*(3), 164-173.

Tang, M. (2001). Clinical outcome and client satisfaction of an anger management group program. *The Canadian Journal of Occupational Therapy, 68(*4), 228-236. doi:10.1177/000841740106800406

Tarrier, N., & Wykes, T. (2004). Is there evidence that cognitive behaviour therapy is an effective treatment for schizophrenia? A cautious or cautionary tale? *Behaviour Research and Therapy*, *42*(12), 1377-1401. doi:10.1016/j.brat.2004.06.020

Taylor, C., Passmore, N., Kilbane, P., & Davies, R. (1986). Prospective study of alcohol-related admissions in an inner-city hospital. *The Lancet*, *328*(8501), 265-268. doi:10.1016/S0140-6736(86)92082-9

Taylor, J. L. & Novaco, R. W. (2005). *Anger treatment for people with developmental disabilities: A theory, evidence and manual based approach*. Chichester, UK: Wiley.

Teitelbaum, L. M., & Carey, K. B. (2000). Temporal stability of alcohol screening measures in a psychiatric setting. *Psychology of Addictive Behaviors*, *14*(4), 401-404. doi:10.1037/0893-164X.14.4.401

Teitelbaum, L. M., & Mullen, B. (2000). The validity of the MAST in psychiatric settings: A meta-analytic integration. Michigan Alcoholism Screening Test. *Journal of Studies on Alcohol*, *61*(2), 254-261. doi:10.15288/jsa.2000.61.254

Thombs, D. L. (1991). Expectancies versus demographics in discriminating between college drinkers: Implications for alcohol abuse prevention. *Health Education Research*, *6*(4), 491-495. doi:10.1093/her/6.4.491

Thorberg, F. A., & Lyvers, M. (2006). Attachment, fear of intimacy and differentiation of self among clients in substance disorder treatment facilities. *Addictive Behaviors*, *31*(4), 732-737. doi:10.1016/j.addbeh.2005.05.050

Thorberg, F. A., & Lyvers, M. (2010). Attachment in relation to affect regulation and interpersonal functioning among substance use disorder in patients. *Addiction Research and Theory*, *18*(4), 464-478. doi: 10.3109/16066350903254783

Thurber, S., Snow, M., Lewis, D., & Hodgson, J. M. (2001). Item characteristics of the Michigan Alcoholism Screening Test. *Journal of Clinical Psychology*, *57*(1), 139-144. doi:10.1002/1097-4679(200101)57:1<139::AID-JCLP14>3.0.CO;2-V

*Tolfrey, M., Fox, S., & Jeffcote, N. (2011). Beliefs about substance use and the attribution of blame for offending. *Journal of Forensic Psychiatry and Psychology, 22*(2), 266-277. doi:10.1080/14789949.2010.534804

Turkington, D., Kingdon, D., & Weiden, P. J. (2006). Cognitive behavior therapy for schizophrenia. *The American Journal of Psychiatry, 163*(3), 365–373. doi:10.1176/appi.ajp.163.3.365

*Tzeng, O. C. S., Robinson, R. L., & Karlson, H. C. (1999). Demographic correlates and judicial determinations of child sexual abuse offenses. *Journal of Social Distress and the Homeless, 8*(2), 55-77. doi:10.1023/a:1021330326366

*Ullman, S. E., Karabatsos, G., & Koss, M. P. (1999). Alcohol and sexual aggression in a national sample of college men. *Psychology of Women Quarterly, 23*(4), 673-689. doi:10.1111/j.1471-6402.1999.tb00391.x

*Valenca, A. M., Meyer, L. F., Freire, R., Mendlowicz, M. V., & Nardi, A. E. (2015). A forensic-psychiatric study of sexual offenders in Rio de Janeiro, Brazil. *Journal of Forensic and Legal Medicine, 31*, 23-28. doi:10.1016/j.jflm.2015.01.003

*van der Kraan, J., Verkes, R. J., Goethals, K., Vissers, A., Brazil, I., & Bulten, E. (2014). Substance use disorders in forensic psychiatric patients. *International Journal of Law and Psychiatry, 37*(2), 155-159. doi:10.1016/j.ijlp.2013.11.009

van Groenestijn, M. A. C., Akkerhuis, G. W., Kupka, R. W., Schneider, N., & Nolen, W. A. (1998). *Gestructureerd klinisch interview voor DSM-IV As-I stoornissen*. [Structured clinical interview for the assessment of DSM-IV Axis-I disorders]. Lisse: Swets en Zeitlinger.

van Ijzendoorn, M. (1995). Adult attachment representations, parental responsiveness, and infant attachment. A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin, 117*(3), 387–403. doi:10.1037/0033-2909.117.3.387

Wallin, D. J. (2007). *Attachment in psychotherapy*. New York, NY: Guilford Press.

Walsh, E., Buchanan, A., & Fahy, T. (2002). Violence and schizophrenia: examining the evidence. *The British Journal of Psychiatry, 180*(6), 490-495. doi:10.1192/bjp.180.6.490

Ward, T., Hudson, S. M., & Marshall, W. L. (1996). Attachment style in sex offenders: A preliminary study. *Journal of Sex Research, 33*(1), 17–26. doi:10.1080/00224499609551811

Ward, T., Hudson, S. M., Marshall, W. L. & Siegert, R. (1995). Attachment style and intimacy deficits in sex offenders: A theoretical framework. *Sexual Abuse: A Journal of Research and Treatment, 7*(4), 317-335. doi:10.1177/107906329500700407

Ward, T., & Siegert, R. J. (2002). Toward a comprehensive theory of child sexual abuse: A theory knitting perspective. *Psychology, Crime and Law*, *8*(4), 319-351. doi: 10.1080/10683160208401823

Warren, L. J., Mullen, P. E., Thomas, S. D., Ogloff, J. R., & Burgess, P. M. (2008). Threats to kill: A follow-up study. *Psychological Medicine*, *38*(4), 599-605. doi:10.1017/S003329170700181X

Watson, C. G., Detra, E., Fox, K. L., Ewing, J. W., Gearhart, L. P., & Demotts, J. R. (1995). Comparative concurrent validities of five alcoholism measures in a psychiatric hospital. *Journal of Clinical Psychology*, *51*(5), 676-684. doi:10.1002/1097-4679(199509)51:5<676::AID-JCLP2270510513>3.0.CO;2-L

Westermeyer, J., Yargic, I., & Thuras, P. (2004). Michigan Assessment-Screening Test for Alcohol and Drugs (MAST/AD): Evaluation in a clinical sample. *The American Journal on Addictions*, *13*(2), 151-162. doi:10.1080/10550490490435948

Witt, K., van Dorn, R., & Fazel, S. (2013). Risk factors for violence in psychosis: systematic review and meta-regression analysis of 110 studies. *PloS One, 8*(2), e55942. doi:10.1371/journal.pone.0055942

Wittchen, H.-U., Zaudig, M., & Fydrich, T. (1997). *SKID. Strukturiertes Klinisches Interview für DSM-IV. Achse I und II. Handanweisung*. Göttingen: Hogrefe.

World Health Organization. (2013). *Alcohol problems in the criminal justice system: An opportunity for intervention*. Retrieved from

http://www.euro.who.int/__data/assets/pdf_file/0006/181068/e96751-ver-2.pdf?ua=1

Wyse, J. J., Harding, D. J., & Morenoff, J. D. (2014). Romantic relationships and criminal desistance: Pathways and processes. *Sociological Forum, 29*(2), 365-385. doi:10.1111/socf.12088

**Young, M. H., Justice, J. V., & Edberg, P. (2010). Sexual offenders in prison psychiatric treatment: A biopsychosocial description. *International Journal of Offender Therapy and Comparative Criminology, 54*(1), 92-112. doi:10.1177/0306624X08322373

Yudko, E., Lozhkina, O., & Fouts, A. (2007). A comprehensive review of the psychometric properties of the Drug Abuse Screening Test. *Journal of Substance Abuse Treatment, 32*(2), 189-198. doi:10.1016/j.jsat.2006.08.002

*Zawacki, T., Abbey, A., Buck, P. O., McAuslan, P., & Clinton-Sherrod, A. M. (2003). Perpetrators of alcohol-involved sexual assaults: How do they differ from other sexual assault perpetrators and nonperpetrators? *Aggressive Behavior, 29*(4), 366-380. doi:10.1002/ab.10076

Zung, B. J. (1978). Factor structure of the Michigan Alcoholism Screening Test. *Journal of Studies on Alcohol*, *39*(1), 56-67. doi:10.15288/jsa.1978.39.56

Zung, B. J. (1979). Psychometric properties of the MAST and two briefer versions. *Journal of Studies on Alcohol, 40*(9), 845-859. doi:10.15288/jsa.1979.40.845

Zung, B. J. (1980a). Factor structure of the Michigan Alcoholism Screening Test (MAST) in a psychiatric outpatient population. *Journal of Clinical Psychology*, *36*(4), 1024-1030. doi:10.1002/1097-4679(198010)36:4<1024::AID-JCLP2270360437>3.0.CO;2-O

Zung, B. J. (1980b). Unidimensionality of the Michigan Alcoholism Screening Test. *Addiction, 75*(4), 389-391. doi:10.1111/j.1360-0443.1980.tb01403.x

Zung, B. J. (1982). Evaluation of the Michigan Alcoholism Screening Test (MAST) in assessing lifetime and recent problems. *Journal of Clinical Psychology*, *38*(2),

425-439. doi: 10.1002/1097-4679(198204)38:2<425::AID-JCLP2270380239>3.0.CO;2-6

Zung, B. J., & Ross, M. (1980). Factor structure of the Michigan Alcoholism Screening Test (MAST) among acutely disturbed psychiatric patients. *Journal of Clinical Psychology*, *36*(3), 806-812. doi:10.1002/1097-4679(198007)36:3<806::AID-JCLP2270360339>3.0.CO;2-Z

N.B. DOIs not available for all articles

** Excluded from systematic review (see Appendix C).*

*** Included in systematic review (see Tables 4 and 5).*

Appendix A. Search Syntax

OVID: PsycINFO (1806 to October Week 4 2017), search completed 30th October 2017

#	SEARCH SYNTAX USED	RESULTS
1	(sexual offen* or sex* offen*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	11691
2	(rap* or rapis*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	106650
3	(sexual crim* or sex* crim*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	1026
4	(child molest* or molest*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	1781
5	(child sexual abus* or child sex* abus*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	5948
6	(sexual abus* or sex* abus*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	26831
7	(sexual assault* or sex* assault*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	5816
8	(sexual violen* or sex* violen*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	4050
9	(paedophil* or pedophil*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	2174
10	groom*.mp.	4590
11	indecent expos*.mp.	64
12	exp sex offenses/ or exp pedophilia/ or exp child abuse/ or exp sexual abuse/ or exp rape/	48911
13	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12	161696
14	"substance use*".mp.	34025
15	substance abus*.mp.	34891
16	substance misuse*.mp.	2796
17	substance dependen*.mp.	3145
18	substance addict*.mp.	519
19	"substance use disorder*".mp.	12474
20	substance abuse disorder*.mp.	1758
21	"alcohol use*".mp.	30042
22	alcohol abus*.mp.	23337
23	alcohol misuse*.mp.	1942
24	alcohol dependen*.mp.	11134
25	alcohol addict*.mp.	1584
26	alcoholi*.mp.	45882
27	"drug use*".mp.	35803
28	drug abus*.mp.	54354
29	drug misuse*.mp.	1272
30	drug dependen*.mp.	14746
31	drug addict*.mp.	15025
32	"drug use disorder*".mp.	1121
33	exp alcoholism/ or exp alcohol abuse/ or exp drug dependency/ or	102897

	exp drug abuse/	
34	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33	186354
35	(offen* or offend*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	46247
36	(crim* or criminal*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	80116
37	perpetrator*.mp.	12981
38	exp perpetrators/ or exp criminal behavior/ or exp criminals/	45787
39	35 or 36 or 37 or 38	116951
40	12 and 13 and 33 and 34 and 39	359

OVID: MEDLINE (1946 to October Week 4 2017), search completed 30th October 2017

#	SEARCH SYNTAX USED	RESULTS
1	(sexual offen* or sex* offen*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	9255
2	(rap* or rapis*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	979058
3	(sexual crim* or sex* crim*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	462
4	(child molest* or molest*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1551
5	(child sexual abus* or child sex* abus*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	2587
6	(sexual abus* or sex* abus*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	12631
7	(sexual assault* or sex* assault*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	4640
8	(sexual violen* or sex* violen*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	2753
9	(paedophil* or pedophil*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1164
10	groom*.mp.	6987
11	indecent expos*.mp.	44
12	exp pedophilia/ or exp child abuse, sexual/ or exp sex offenses/ or	22930

	exp rape/	
13	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12	1010067
14	"substance use*".mp.	29852
15	substance abus*.mp.	50846
16	substance misuse*.mp.	2192
17	substance dependen*.mp.	2856
18	substance addict*.mp.	532
19	"substance use disorder*".mp.	10697
20	substance abuse disorder*.mp.	1089
21	"alcohol use*".mp.	30344
22	alcohol abus*.mp.	15501
23	alcohol misuse*.mp.	2393
24	alcohol dependen*.mp.	12023
25	alcohol addict*.mp.	1454
26	alcoholi*.mp.	144805
27	"drug use*".mp.	58145
28	drug abus*.mp.	20172
29	drug misuse*.mp.	2651
30	drug dependen*.mp.	6037
31	drug addict*.mp.	11600
32	"drug use disorder*".mp.	939
33	exp substance-related disorders/ or exp alcoholism/ or exp alcohol-related disorders/	267287
34	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33	395392
35	(offen* or offend*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	30501
36	(crim* or criminal*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	59068
37	perpetrator*.mp.	5106
38	exp crime/ or exp criminals/	129263
39	35 or 36 or 37 or 38	171316
40	12 and 13 and 33 and 34 and 39	1490

OVID: EMBASE (1974 to 2017 Week 44), search completed 30th October 2017

#	SEARCH SYNTAX USED	RESULTS
1	(sexual offen* or sex* offen*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	3869
2	(rap* or rapis*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	1181590
3	(sexual crim* or sex* crim*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	10353
4	(child molest* or molest*).mp. [mp=title, abstract, heading word,	1571

	drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	
5	(child sexual abus* or child sex* abus*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	9596
6	(sexual abus* or sex* abus*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	24249
7	(sexual assault* or sex* assault*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	5963
8	(sexual violen* or sex* violen*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	3870
9	(paedophil* or pedophil*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	1443
10	groom*.mp.	7976
11	indecent expos*.mp.	46
12	exp sexual crime/ or exp child sexual abuse/ or exp pedophilia/ or exp child abuse/ or exp sexual abuse/ or exp sexual assault/ or exp rape/ or exp sexual violence/	61291
13	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12	1245430
14	"substance use*".mp.	36271
15	substance abus*.mp.	63953
16	substance misuse*.mp.	3011
17	substance dependen*.mp.	3764
18	substance addict*.mp.	611
19	"substance use disorder*".mp.	12821
20	substance abuse disorder*.mp.	1408
21	"alcohol use*".mp.	40995
22	alcohol abus*.mp.	36595
23	alcohol misuse*.mp.	2890
24	alcohol dependen*.mp.	17234
25	alcohol addict*.mp.	2335
26	alcoholi*.mp.	178359
27	"drug use*".mp.	157101
28	drug abus*.mp.	75720
29	drug misuse*.mp.	8218
30	drug dependen*.mp.	56708
31	drug addict*.mp.	14639
32	"drug use disorder*".mp.	1108
33	exp substance abuse/ or exp drug abuse/ or exp drug misuse/ or exp drug dependence/ or exp alcoholism/ or exp alcohol abuse/	310104
34	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33	543428
35	(offen* or offend*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	36720
36	(crim* or criminal*).mp. [mp=title, abstract, heading word, drug	71385

	trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word]	
37	perpetrator*.mp.	5983
38	exp offender/ or exp crime/ or exp criminal behaviour/	84140
39	35 or 36 or 37 or 38	129907
40	12 and 13 and 33 and 34 and 39	1647

ProQuest: Applied Social Sciences Index and Abstracts (ASSIA), search completed 30th October 2017

all (rap* OR rapis* OR "child molest*" OR molest* OR "child sex* abus*" OR "sex* abus*" OR "sex* assault*" OR "sex* violen*" OR paedophil* OR pedophil* OR groom* OR "indecent expos*") (75,495)

AND

all ("substance abus*" OR "substance dependen*" OR "substance abuse disorder*" OR "alcohol abus*" OR "alcohol dependen*" OR alcoholi* OR "drug abus*" OR "drug dependen*" OR "drug addict*") (68,113)

AND

all ("sex* perpetrator*" OR "sex* crim*" OR "sex* offen*") (9,180)

Total hits: 959

Web of Science (Science Citation Index Expanded (SCI-EXPANDED); Social Sciences Citation Index (SSCI); Arts and Humanities Citation Index (A&HCI); Conference Proceedings Citation Index — Science (CPCI-S); Conference Proceedings Citation Index — Social Science and Humanities (CPCI-SSH) (1900-2017), search completed 30th October 2017

TS=(rap* OR rapis* OR "child molest*" OR molest* OR "child sex* abus*" OR "sex* abus*" OR "sex* assault*" OR "sex* violen*" OR paedophil* OR pedophil* OR groom* OR "indecent expos*") Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH Timespan = All years (1,385,577)

AND

TS=("substance use*" OR "substance abus*" OR "substance dependen*" OR "substance addict*" OR "substance use disorder*" OR "substance abuse disorder" OR "alcohol use*" OR "alcohol abus*" OR "alcohol misuse*" OR "alcohol dependen*" OR "alcohol addict*" OR alcoholi* OR "drug use*" OR "drug abus*" OR "drug misuse*" OR "drug dependen*" OR "drug addict*" OR "drug use disorder*") Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH Timespan = All years (266,464)

AND

TS=("sex* perpetrator*" OR "sex* crim*" OR "sex* offen*")
Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH Timespan = All years (5,951)

Total Hits: 116

Cochrane Library, search completed 30th October 2017

(“sex* offen*" OR rap* OR rapis* OR "sex* crim*" OR "child molest*" OR molest* OR "child sex* abus*" OR "sex* abus*" OR "sex* assault*" OR "sex* violen*" OR paedophil* OR pedophil* OR groom* OR "indecent expos*") AND ("substance use*" OR "substance abus*" OR "substance dependen*" OR "substance addict*" OR "substance use disorder*" OR "substance abuse disorder" OR "alcohol use*" OR "alcohol abus*" OR "alcohol misuse*" OR "alcohol dependen*" OR "alcohol addict*" OR alcoholi* OR "drug use*" OR "drug abus*" OR "drug misus*" OR "drug dependen*" OR "drug addict*" OR "drug use disorder*") AND (perpetrator* OR crim* OR offen*):ti,ab,kw (Word variations have been searched) in Title, Abstract, Keywords in Cochrane Reviews' (13 results from 9,999 records)

Appendix B. Inclusion/Exclusion Pro-Forma

Author(s), Date, Country:

Inclusion Criteria	*Criterion Met?*	*Comments*
Population: *Does the population consist of a male offending population aged 18 or over?*	Yes No Unclear	
Intervention / Exposure: *Have at least some of the participants committed a sexual offence?*	Yes No Unclear	
Comparison: *Is there a comparison group of other sexual offenders/non-sexual offenders/non-offenders?*	Yes No Unclear N/A	
Outcome: *Has the study measured alcohol use?*	Yes No Unclear	
Has the study measured drug use?	Yes No Unclear	
Has the study measured substance use?	Yes No Unclear	
Study Design: *Is the study a cross-sectional, case control or cohort design?*	Yes No Unclear	

Appendix C. Relevant Studies Excluded

Study	Reason for Exclusion
Abbey, Clinton-Sherrod, McAuslan, Zawacki, & Buck (2003)	Population, Exposure, Outcome
Abbey, McAuslan, & Ross (1998)	Population, Exposure, Outcome
Abracen, Looman, & Anderson (2000)	Pre-2006
Abracen et al. (2004)	Outcome
Allnutt, Bradford, Greenberg, & Curry (1996)	Population, Comparison – unclear*
Aromäki & Lindman (2001)	Pre-2006
Bader, Schoeneman-Morris, Scalora, & Casady (2008)	Population, Outcome
Balasundaram, Frazer, & Wood (2009)	Population
Barnard, Holzer, & Vera (1979)	Population
Briken, Nika, & Berner (2000)	Language
Carlstedt, Innala, Brimse, & Söderström Anckarsäter (2005)	Population
Chuang, Liebschutz, Cheng, Raj, & Samet (2007)	Population, Exposure, Comparison, Outcome
de Chabalier & Forzan (2009)	Language
Doyle, Ogloff, & Thomas (2011)	Population, Outcome
Dunsieth et al. (2004)	Pre-2006
Eher, Grunhut, Fruhwald, & Hobl (2001)	Language
Eher, Neuwirth, Fruehwald, & Frottier (2003)	Pre-2006
Erdogan et al. (2011)	Language
Fazel, Hope, O'Donnell, & Jacoby (2002)	Pre-2006
Fazel, Långström, Hjern, Grann, & Lichtenstein (2009)	Population
Felson, Burchfield, & Teasdale (2007)	Population, Exposure, Comparison, Outcome
Firestone, Bradford, Greenberg, & Larose (1998)	Pre-2006
Firestone et al. (1999)	Comparison
Firestone, Dixon, Nunes, & Bradford (2005)	Pre-2006
Gorenc, Nakahodo, Peredo Rivera, & Oblitas (1994)	Language
Gratzer & Bradford (1995)	Pre-2006
Greenberg, Firestone, Nunes, Bradford, & Curry (2005)	Pre-2006
Gudjonsson & Sigurdsson (2000)	Outcome
Häkkänen-Nyholm, Repo-Tiihonen, Lindberg, Salenius, & Weizmann-Henelius (2009)	Population
Hamdi & Knight (2012)	Outcome
Hanson & Harris (2000)	Outcome
Harsch, Keller, & Jockusch (2006)	Language
Heitzman, Lew-Starowicz, Pacholski, & Lew-Starowicz (2012)	Population, Outcome
Hill, Habermann, Berner, & Briken (2007)	Population
Hoertel, Le Strat, Schuster, & Limosin (2012)	Population, Exposure
Horvath & Brown (2006)	Population, Exposure, Outcome
Iqbal, Dolan, & Monteiro (2004)	Population
Janisch et al. (2010)	Population, Outcome
Juszczak & Korzeniewski (2016)	Population

Juszczak, Korzeniewski, Czuprynska, & Furs (2015)	Language
Kafka & Hennen (2002)	Population
Kirk, Jeglic, Calkins, & Spillane (2017)	Conference Abstract
Kouri, Pope, Powell, Oliva, & Campbell (1997)	Population, Outcome
Kraanen, Scholing, & Emmelkamp (2010)	Population, Exposure
Langevin (2003)	Population
Langevin (2006a)	Conference Abstract
Langevin (2006b)	Population
Langevin & Curnoe (2014)	Exposure
Langevin, Curnoe, & Bain (2000)	Pre-2006 – unclear*
Langevin, Glancy, Curnoe, & Bain (1999)	Pre-2006 – unclear*
Langevin & Lang (1990)	Pre-2006 – unclear*
Lee et al. (2010)	Population
Leue, Borchard, & Hoyer (2004)	Pre-2006 – unclear*
Looman et al. (2004)	Pre-2006
Loza & Clements (1991)	Outcome
Luna Maldonado, Martinez, Osuna, & Garcia-Ferrer (1988)	Population, Outcome
Lung & Huang (2004)	Outcome
McCauley, Ruggiero, Resnick, & Kilpatrick (2010)	Population, Exposure, Comparison, Outcome
McElroy et al. (1999)	Pre-2006
Parkhill, Abbey, & Jacques-Tiura (2009)	Population, Exposure, Comparison, Outcome
Peugh & Belenko (2001b)	Outcome
Rada (1975)	Population - unclear
Rada (1976)	Pre-2006
Rada, Kellner, Laws, & Winslow (1978)	Pre-2006
Rada, Laws, & Kellner (1976)	Pre-2006
Raymond, Coleman, Ohlerking, Christenson, & Miner (1999)	Pre-2006 – unclear*
Rodenas, Osuna, & Luna (1989)	Population, Outcome
Susic, Gruber, Kovacic, & Superba (2013)	Language
Tolfrey, Fox, & Jeffcote (2011)	Outcome
Tzeng, Robinson, & Karlson (1999)	Population
Ullman, Karabatsos, & Koss (1999)	Population, Exposure, Outcome
Valenca, Meyer, Freire, Mendlowicz, & Nardi (2015)	Outcome
van der Kraan et al. (2014)	Outcome
Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod (2003)	Population, Exposure, Outcome

* Author contacted for further clarification where reporting was unclear

Appendix D. Quality Assessment Tool

Author(s), Date, Country:

Screening Question	***Comments***
Did the study address a clearly focused issue?	Yes No
Was the study design appropriate to address the research question(s)?	Yes Partially No
<u>Sampling & Selection Bias</u>	
Were participants recruited in an appropriate/acceptable way?	Yes Partially No Unclear
Were any comparison group(s)/controls selected in an acceptable way?	Yes Partially No Unclear N/A
Were individuals selected to participate in the study likely to be representative of the target population?	Yes Partially No Unclear
Overall Sampling & Selection Bias:	*High Partial Low Unclear N/A*
<u>Attrition Bias</u>	
Were dropout rates reported?	Yes No Unclear N/A
Were non-participation rates reported?	Yes No Unclear N/A
Overall Attrition Bias:	*High Partial Low Unclear N/A*
<u>Measurement Bias</u>	
Did the authors acknowledge potential confounding factors?	Yes No Unclear

Did the authors take into account/attempt to control for the potential confounding factors in the design?	Yes Partially No Unclear
Were measurement tools indicated to be valid?	Yes Partially No N/A
Were measurement tools indicated to be reliable?	Yes Partially No N/A
Were measurement tools consistent across participant groups?	Yes Partially No Unclear
Overall Measurement Bias:	*High Partial Low Unclear N/A*
<u>Results</u>	
Was the chosen statistical analysis appropriate for the study?	Yes No
Did the authors take into account/attempt to control for the potential confounding factors in the analysis?	Yes Partially No Unclear
Was the power reported?	Yes No
If yes, was there enough power?	Yes No Unclear N/A
Was missing data dealt with?	Yes No Unclear N/A
Overall Bias in Results:	*High Partial Low Unclear N/A*

Overall Risk of Bias: High Partial Low Unclear

Appendix E. Data Extraction Pro-Forma

General Information	***Comments***
Date of Data Extraction	
Author	
Article Title	
Year	
Source/Volume/Pages	
Country of Origin	
Specific Information	**Comments**
Study Characteristics	
Population	
Intervention/Exposure	
Comparison	
Outcome	
Study Design	
Population Characteristics and Exposure/Comparison Conditions	
Target population	
Inclusion criteria	
Exclusion criteria	

Location (inpatient facility/correctional facility etc.)	
Recruitment procedure	
Characteristics of participants	Age(s) Ethnicity Geographical Region(s) Other
Type(s) of sexual offender included in study	
Comparison group(s) (if included in study)	1. 2. 3. 4.
Number of participants in each group	1. 2. 3. 4.
Were dropout rates reported? If so, what were they?	Yes / No
Were non-participation rates reported? If so, what were they?	Yes / No

Outcome and Outcome Measures			
Definition used to refer to outcome measure (e.g. substance misuse, abuse)			
Were alcohol/drug/substance use measured? (circle)	Alcohol	Drug	Substance
How were these measured? Measurement tool(s) used?			
Were there any other outcome measures (i.e. confounding variables) considered?	Yes / No		
If yes, what were they and how were they measured?			
Who carried out the measurement?			
Were measurement tools valid?	Yes / No		
Were measurement tools reliable?	Yes / No		
Analysis			
What statistical analysis was carried out?			
Did this account for confounding factors? If so, how?	Yes / No		
How was missing data dealt with?			
Was the power reported? If so, what was it?	Yes / No		

Appendix F. Michigan Alcoholism Screening Test (MAST)

Original 25-item version (Selzer, 1971):

Answer Yes or No for each question as it applies to you.

Yes(0)	No(2)	1. Do you feel you are a normal drinker?
Yes(2)	No(0)	2. Have you ever awakened the morning after some drinking the night before and found you could not remember a part of the evening before?
Yes(1)	No(0)	3. Does your partner (or do your parents) ever worry or complain about your drinking?
Yes(0)	No(2)	4. Can you stop drinking without a struggle after one or two drinks?
Yes(1)	No(0)	5. Do you ever feel bad about your drinking?
Yes(0)	No(2)	6. Do friends or relatives think you are a normal drinker?
Yes(0)	No(0)	7. Do you try to limit your drinking to certain times of the day or to certain places?
Yes(0)	No(2)	8. Are you always able to stop drinking when you want to?
Yes(5)	No(0)	9. Have you ever attended a meeting of Alcoholics Anonymous (AA)?
Yes(1)	No(0)	10. Have you gotten into fights when drinking?
Yes(2)	No(0)	11. Has drinking ever created problems with you and your partner?
Yes(2)	No(0)	12. Has your partner (or other family member) ever gone to anyone for help about drinking?
Yes(2)	No(0)	13. Have you ever lost friends or girlfriends/boyfriends because of drinking?
Yes(2)	No(0)	14. Have you ever gotten into trouble at work because of drinking?
Yes(2)	No(0)	15. Have you ever lost a job because of drinking?
Yes(2)	No(0)	16. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?
Yes(1)	No(0)	17. Do you ever drink before noon?
Yes(2)	No(0)	18. Have you ever been told you have liver trouble? Cirrhosis?
Yes(5)	No(0)	19. Have you ever had delirium tremens (DTs), severe shaking, heard voices, or seen things that weren't there after heavy drinking?
Yes(5)	No(0)	20. Have you ever gone to anyone for help about your drinking?
Yes(5)	No(0)	21. Have you ever been in a hospital because of drinking?
Yes(2)	No(0)	22. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was a part of the problem?
Yes(2)	No(0)	23. Have you ever been seen at a psychiatric or mental health clinic, or gone to a doctor, a social worker, or clergy for help with an emotional problem in which drinking had played a part?
Yes(2)	No(0)	24. Have you ever been arrested, even for a few hours, because of drunk behavior?
Yes(2)	No(0)	25. Have you ever been arrested for drunk driving after drinking?

N.B. Term wife replaced by partner

24-item version (Selzer et al. 1975):

Please circle either Yes or No for each item as it applies to you.

1. Do you feel you are a normal drinker? (By normal we mean you drink less than or as much as most other people.)	Yes	No
2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening?	Yes	No
3. Does your wife, husband, a parent , or other near relative ever worry or complain about your drinking?	Yes	No
4. Can you stop drinking without a struggle after one or two drinks?	Yes	No
5. Do you ever feel guilty about your drinking?	Yes	No
6. Do friends or relatives think you are a normal drinker?	Yes	No
7. Are you able to stop drinking when you want to?	Yes	No
8. Have you ever attended a meeting of Alcoholics Anonymous (AA)?	Yes	No
9. Have you gotten into physical fights when drinking?	Yes	No
10. Has your drinking ever created problems between you and your wife, husband, a parent, or other relative?	Yes	No
11. Has your wife, husband (or other family members) ever gone to anyone for help about your drinking?	Yes	No
12. Have you ever lost friends because of drinking?	Yes	No
13. Have you ever gotten into trouble at work or school because of drinking?	Yes	No
14. Have you ever lost a job because of drinking?	Yes	No
15. Have you ever neglected your obligations, your family or your work for two or more days in a row because you were drinking?	Yes	No
16. Do you drink before noon fairly often?	Yes	No
17. Have you ever been told you have liver trouble? Cirrhosis?	Yes	No
18. After heavy drinking have you ever had Delirium Tremens (D.T.s) or severe shaking, or heard voices or seen things that really were not there?	Yes	No
19. Have you ever gone to anyone for help about your drinking?	Yes	No
20. Have you ever been in a hospital because of drinking?	Yes	No
21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem that resulted in hospitalization?	Yes	No
22. Have you ever been seen at a psychiatric or mental health clinic, or gone to any doctor, social worker, or clergyman for help with an emotional problem, where drinking was part of the problem?	Yes	No
23. Have you ever been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages? (If YES, how many times? _____)	Yes	No
24. Have you ever been arrested, or taken into custody even for a few hours, because of other drunk behavior? If YES, how many times?_____)	Yes	No

N.B. Scoring system is the same as for the original 25-item version, except for Q7 (Do you ever try to limit your drinking to certain times of the day or to certain places?), which has been omitted.

22-item version:

	YES = 1 NO = 0
1. Do you feel you are a normal drinker? (normal drink as much or less than most other people	_____
2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening?	_____
3. Does any near relative or close friend every worry or complain about your drinking?	_____
4. Can you stop drinking without difficulty after one or two drinks?	_____
5. Do you ever feel guilty about your drinking?	_____
6. Have you ever attended a meeting of Alcoholics Anonymous?	_____
7. Have you ever gotten into physical fights when drinking?	_____
8. Has drinking ever created problems between you and a near relative or close friend?	_____
9. Has any family member or close friend gone to anyone for help about your drinking?	_____
10. Have you ever lost friends because of your drinking?	_____
11. Have you ever gotten into trouble at work because of drinking?	_____
12. Have you ever lost a job because of drinking?	_____
13. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?	_____
14. Do you drink before noon fairly often?	_____
15. Have you ever been told you have liver trouble such as cirrhosis?	_____
16. After heavy drinking have you ever had delirium tremens (DT's), severe shaking, visual or auditory hallucinations?	_____
17. Have you ever gone to anyone for help about your drinking?	_____
18. Have you ever been hospitalized because of drinking?	_____
19. Has your drinking ever resulted in your being hospitalized in a psychiatric ward?	_____
20. Have you ever gone to any doctor, social worker, clergyman or mental health clinic for help with any emotional problem in which drinking was part of the problem?	_____
21. Have you been arrested more than once for driving under the influence of alcohol?	_____
22. Have you ever been arrested, even for a few hours because of other behavior while drinking? (if yes how may times_____)	_____

Appendix G. Brief Michigan Alcohol Screening Test (BMAST)

Instructions: Place a X on the line indicating your response.

	Yes	No
1. Do you feel you are a normal drinker?	____	____
2. Do friends or relatives think you are a normal drinker?	____	____
3. Have you ever attended a meeting of Alcoholics Anonymous AA?	____	____
4. Have you ever lost friends or girlfriends/boyfriends because of your drinking?	____	____
5. Have you ever gotten into trouble at work because of drinking?	____	____
6. Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking?	____	____
7. Have you ever had delirium tremens DTs, severe shaking, after heavy drinking?	____	____
8. Have you ever gone to anyone for help about your drinking?	____	____
9. Have you ever been in a hospital because of your drinking?	____	____
10. Have you ever been arrested for drunk driving or driving after drinking?	____	____

Appendix H. Short Michigan Alcoholism Screening Test (SMAST)

Instructions: For your answer place an X on the appropriate line following each question.

	Yes	No
1. Do you feel you are a normal drinker?	____	____
2. Do your spouse or parents worry or complain about your drinking?	____	____
3. Do you ever feel bad about your drinking?	____	____
4. Do friends or relatives think you are a normal drinker?	____	____
5. Are you always able to stop drinking when you want to?	____	____
6. Have you ever attended a meeting of Alcoholics Anonymous AA?	____	____
7. Has drinking ever created problems between you and your	____	____
8. Have you ever gotten into trouble at work because of drinking? spouse?	____	____
9. Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking?	____	____
10. Have you ever gone to anyone for help about your drinking?	____	____
11. Have you ever been in a hospital because of your drinking?	____	____
12. Have you ever been arrested even for a few hours because of drinking?	____	____
13. Have you ever been arrested for drunk driving or driving after drinking?	____	____

Appendix I. Initial Information and Instruction Sheet for OMs

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

INFORMATION AND INSTRUCTION SHEET

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

Thank you very much for your help in agreeing to recruit participants for the above study.

This will require you to invite the identified service users to participate in the study during your next supervision session, and to provide them with the attached information sheet.

The aim of this research is to investigate attachment style and substance use of individuals, and examine whether a combination of the two can predict specific types of offending behaviour. Participants will only be required to complete six short questionnaires, which should take approximately 15-20 minutes.

Should the service user agree then it will be arranged for them to meet with the researcher to complete the questionnaires. This will take place at the Probation office and at a time convenient to both the service user and yourself (this could be after a supervision session or separate appointment).

Please can you emphasise to the service user that they have been randomly selected to be invited to take part, that participation is voluntary, and that their responses will be anonymous, confidential, and only be used for research purposes.

Thank you again for your help.
If you have any further questions please do not hesitate to contact the researchers.

Maria Stokes **lwxamst@nottingham.ac.uk**
Vincent Egan **vincent.egan@nottingham.ac.uk**

Appendix J. Amended Information and Instruction Sheet for OMs

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

INFORMATION AND INSTRUCTION SHEET

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

Thank you very much for your help in agreeing to recruit participants for the above study. This will require you to invite any service users you currently supervise in the community to participate in the study during your next supervision session, and to provide them with the attached information sheet.

The aim of this research is to investigate attachment style and substance use of individuals, and examine whether a combination of the two can predict specific types of offending behaviour. Participants will only be required to complete six short questionnaires, which should take approximately 15-20 minutes.

Should the service user agree, depending on what is most convenient, either it will be arranged for them to meet with the researcher at a later date to complete the questionnaires, or for this to take place at the end of a supervision session.

You have been provided with an envelope containing a consent form, some demographic questions, six questionnaires, and a debrief sheet. If completing this at the end of a supervision session could you ensure that the participant reads the information sheet and signs the consent form before answering the demographic questions and questionnaires.

There are instructions provided for each questionnaire so participants should find them straightforward to complete; however, if they should ask you to clarify or explain questionnaire content please try to provide a neutral response (e.g. "just try to answer according to how you interpret the statement"). Completed paperwork should then be placed and sealed in the envelope, and the participant sign over the seal. They should keep the debrief sheet. The researcher will then collect any envelopes with completed questionnaires from you.

Please can you emphasise to the service user that their participation is voluntary, and that their responses will be anonymous, confidential, and only be used for research purposes.

Thank you again for your help. If you have any further questions please do not hesitate to contact the researchers.

Maria Stokes **lwxamst@nottingham.ac.uk**
Vincent Egan **vincent.egan@nottingham.ac.uk**

PARTICIPANTS WANTED FOR STUDY

investigating attachment & substance use

YOU WILL BE REQUIRED TO MEET WITH
A DOCTORAL STUDENT FROM THE UNIVERSITY OF NOTTINGHAM
TO COMPLETE **SIX SHORT QUESTIONNAIRES**

THE QUESTIONNAIRES WILL TAKE APPROXIMATELY **15 MINUTES** TO COMPLETE

FOR MORE DETAILS OR TO PARTICIPATE PLEASE CONTACT
LWXAMST@NOTTINGHAM.AC.UK

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA



Appendix L. Participant Information Sheet (Offending Sample)

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

PARTICIPANT INFORMATION SHEET

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Ask us if there is anything that is not clear.

What is the purpose of the study?

The purpose of the study is to investigate attachment style and substance use of individuals and examine whether a combination of the two can predict specific types of offending behaviour.

Why have I been invited?

You have been randomly selected to be invited to take part because we are investigating attachment style and substance use of individuals. We are inviting 120 participants like you to take part. Please note that you must be male and over the age of 18 to take part.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to refuse to answer individual questions, and withdraw from the study at any time without giving a reason. This would not affect your legal rights.

What will happen to me if I take part?

If you consent to taking part in this research you will first be asked to provide some information about yourself (your age, whether you are currently in a relationship and whether you have ever been convicted of a sexual offence), which will be kept confidential. You will then need to complete six short questionnaires that will require you to read and respond to statements. Instructions for how to respond will differ for each individual questionnaire so

make sure you read the information provided at the top of the page for each one. The questionnaires will take approximately 15-20 minutes to complete.

Expenses and payments

Participants will not be paid to participate in the study.

What are the possible disadvantages and risks of taking part?

It is not expected that there are any disadvantages or risks associated with taking part in the study. However, the researcher is investigating feelings about close relationships and previous substance use which you might find uncomfortable to disclose. You are reminded that you do not have to take part and that you are free to withdraw at any time during the task. You will also be provided with contact numbers for helpline services after the task should you need them.

What are the possible benefits of taking part?

We cannot promise that the study will help you but the information we get from this study may help with the advancing of knowledge about the link between attachment style and substance use of individuals and the impact on offending behaviour. The combination of attachment patterns (and related interpersonal difficulties) and substance abuse on offending could have important implications in terms of improving effectiveness of offender services and outcomes for offenders and the public.

What happens when the study stops?

After you have completed the task, your data will be stored securely on a password protected computer and accessible only to the researchers, although it may be viewed by other authorised individuals at the University of Nottingham. The data will then be analysed.

What if there is a problem?

If you have a concern about any aspect of this study, you should direct requests for further information, complaints, and queries to your probation provider.

Will my taking part in the study be kept confidential?

We will follow ethical and legal practice and all information about you will be handled in confidence. If you join the study, the data collected for the study will be looked at by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.
All information which is collected about you during the course of the research will be kept **strictly confidential** in accordance with the Data Protection Act (1998), and will be stored in a secure and locked office on a password protected database. Any information accessed through the National Offender Management

Service/probation records or that you provide will be anonymised (will have your name removed) and a unique code will be used so that you cannot be recognised from it. All research data will be kept securely for 7 years. After this time your data will be disposed of securely. During this time all precautions will be taken by all those involved to maintain your confidentiality and only members of the research team will have access to your personal data.

What will happen if I don't want to carry on with the study?

Your participation is voluntary and you are free to withdraw at any time, without giving any reason, and without your legal rights being affected. If you withdraw then the information collected so far may still be used in the data analysis.

What will happen to the results of the research?

This research is being conducted as part of the researcher's doctorate qualification and will be submitted as a report to be marked by the University of Nottingham and as an article to be submitted for journal publication. Your results will be part of this write-up but you will not be identified. If you wish to obtain a summary of the results then you will be able to do so via your probation provider after the report has been submitted and assessed (approximately 2017).

Who has reviewed the study?

All research is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by the National Offender Management Service and University of Nottingham's School of Medicine Research Ethics Committee.

Appendix M. Participant Information Sheet (Non-Offending Sample)

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

PARTICIPANT INFORMATION SHEET

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Ask us if there is anything that is not clear.

What is the purpose of the study?

The purpose of the study is to investigate attachment style and substance use of individuals and examine whether a combination of the two can predict specific types of offending behaviour.

Why have I been invited?

You have been invited to take part because we are investigating attachment style and substance use of individuals. We are inviting 120 participants like you to take part. Please note that you must be male and over the age of 18 to take part.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to refuse to answer individual questions, and withdraw from the study at any time without giving a reason. This would not affect your legal rights.

What will happen to me if I take part?

If you consent to taking part in this research you will first be asked to provide some information about yourself (your age, whether you are currently in a relationship and whether you have ever been convicted of a sexual offence), which will be kept confidential. You will then need to complete six short questionnaires that will require you to read and respond to statements. Instructions for how to respond will differ for each individual questionnaire so

make sure you read the information provided at the top of the page for each one. The questionnaires will take approximately 15-20 minutes to complete.

Expenses and payments

Participants will not be paid to participate in the study.

What are the possible disadvantages and risks of taking part?

It is not expected that there are any disadvantages or risks associated with taking part in the study. However, the researcher is investigating feelings about close relationships and previous substance use which you might find uncomfortable to disclose. You are reminded that you do not have to take part and that you are free to withdraw at any time during the task. You will also be provided with contact numbers for helpline services after the task should you need them.

What are the possible benefits of taking part?

We cannot promise that the study will help you but the information we get from this study may help with the advancing of knowledge about the link between attachment style and substance use of individuals and the impact on offending behaviour. The combination of attachment patterns (and related interpersonal difficulties) and substance abuse on offending could have important implications in terms of improving effectiveness of offender services and outcomes for offenders and the public.

What happens when the study stops?

After you have completed the task, your data will be stored securely on a password protected computer and accessible only to the researchers, although it may be viewed by other authorised individuals at the University of Nottingham. The data will then be analysed.

What if there is a problem?

If you have a concern about any aspect of this study, you should direct requests for further information, complaints, and queries to the researchers.

Will my taking part in the study be kept confidential?

We will follow ethical and legal practice and all information about you will be handled in confidence. If you join the study, the data collected for the study will be looked at by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.
All information which is collected about you during the course of the research will be kept **strictly confidential** in accordance with the Data Protection Act (1998), and will be stored in a secure and locked office on a password protected database. All research data will be kept securely for 7 years. After this time your

data will be disposed of securely. During this time all precautions will be taken by all those involved to maintain your confidentiality and only members of the research team will have access to your personal data.

What will happen if I don't want to carry on with the study?

Your participation is voluntary and you are free to withdraw at any time, without giving any reason, and without your legal rights being affected. If you withdraw then the information collected so far may still be used in the data analysis.

What will happen to the results of the research?

This research is being conducted as part of the researcher's doctorate qualification and will be submitted as a report to be marked by the University of Nottingham and as an article to be submitted for journal publication. Your results will be part of this write-up but you will not be identified. If you wish to obtain a summary of the results then you will be able to do so by contacting the researcher after the report has been submitted and assessed (approximately 2017).

Who has reviewed the study?

All research is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by the National Offender Management Service and University of Nottingham's School of Medicine Research Ethics Committee.

Appendix N. Consent Form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

CONSENT FORM

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary, that I can refuse to answer individual questions, and that I am free to withdraw at any time, without giving any reason, and without my legal rights being affected. I understand that should I withdraw then the information collected so far cannot be erased and that this information may still be used in the project analysis. ☐

3. I understand that the data collected in the study may be looked at by authorised individuals from the University of Nottingham, the researchers and regulatory authorities where it is relevant to my taking part in the study. I give permission for these individuals to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐

4. I agree to take part in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person Taking Consent	Date	Signature

Appendix O. Demographic Information Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

PARTICIPANT DEMOGRAPHIC INFORMATION

Participant Code: _____ *(to be filled out by researcher)*

What is your age? _____

Are you currently in a relationship?

YES	NO
☐	☐

Have you ever been convicted of a sexual offence?

YES	NO
☐	☐

Appendix P. Instruction Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

INSTRUCTION SHEET

Thank you very much for participating in this study.

You will shortly be given six brief questionnaires to complete.

Each will require you to read and respond to statements.

Instructions for how to respond will differ for each individual questionnaire so make sure you read the information provided at the top of the page for each one.

The questionnaires will take approximately 15-20 minutes to complete.

If you have any questions please feel free to ask the researcher.

Remember that all data will be kept confidential and anonymous and used for research purposes only.

Appendix Q. Drug Abuse Screening Test (DAST-10)

The following questions concern information about your possible involvement **with drugs** during the past 12 months.

Please Note
Drug abuse refers to
(1) the use of prescribed or over-the-counter drugs in excess of the directions, and
(2) any nonmedical use of drugs.

This **does not** include alcoholic beverages.

Carefully read each question then tick the appropriate box ("YES" or "NO"). Please answer every question. If you are unsure then choose the response that is mostly right.

In the past 12 months…

	YES	NO
1. Have you used drugs other than those required for medical reasons?		
2. Have you abused more than one drug at a time?		
3. Have you been unable to stop using drugs when you wanted to?		
4. Have you had blackouts or flashbacks as a result of drug use?		
5. Have you felt bad or guilty about your drug use?		
6. Has your partner (or parents) complained about your involvement with drugs?		
7. Have you neglected your family because of your use of drugs?		
8. Have you engaged in illegal activities in order to obtain drugs?		
9. Have you experienced withdrawal symptoms (felt sick) when you stopped taking drugs?		
10. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?		

Appendix R. Miller Social Intimacy Scale (MSIS)

A number of phrases are listed that describe the kind of relationships people have with others. Please rate each one by circling the appropriate number to indicate how you would **describe your current relationship with the person closest to you**, where 1 is '*very rarely*' or 'not much', 5 is '*some of the time*' or '*a little'* and 10 is '*almost always'* or '*a great deal'*. This person can be either gender and should be someone whom you consider to be closest to you at this time (e.g. a partner, friend or family member).

	Very Rarely				**Some of the time**					**Almost Always**
1. When you have leisure time, how often do you choose to spend it with him/her alone?	1	2	3	4	5	6	7	8	9	10
2. How often do you keep very personal information to yourself and do not share it with him/her?	1	2	3	4	5	6	7	8	9	10
3. How often do you show him/her affection?	1	2	3	4	5	6	7	8	9	10
4. How often do you confide very personal information to him/her?	1	2	3	4	5	6	7	8	9	10
5. How often are you able to understand his/her feelings?	1	2	3	4	5	6	7	8	9	10
6. How often do you feel close to him/her?	1	2	3	4	5	6	7	8	9	10

	Not Much				**A Little**					**A Great Deal**
7. How much do you like to spend time alone with him/her?	1	2	3	4	5	6	7	8	9	10
8. How much do you feel like being encouraging and supportive to him/her when he/she is unhappy?	1	2	3	4	5	6	7	8	9	10
9. How close do you feel to him/her most of the time?	1	2	3	4	5	6	7	8	9	10
10. How important is it to you to listen to his/her very personal disclosures?	1	2	3	4	5	6	7	8	9	10
11. How satisfying is your relationship with him/her?	1	2	3	4	5	6	7	8	9	10
12. How affectionate do you feel towards him/her?	1	2	3	4	5	6	7	8	9	10
13. How important is it to you that he/she understands your feelings?	1	2	3	4	5	6	7	8	9	10
14. How much damage is caused by a typical disagreement in your relationship with him/her?	1	2	3	4	5	6	7	8	9	10
15. How important is it to you that he/she be encouraging and supportive to you when you are unhappy?	1	2	3	4	5	6	7	8	9	10
16. How important is it to you that he/she shows you affection?	1	2	3	4	5	6	7	8	9	10
17. How important is your relationship with him/her in your life?	1	2	3	4	5	6	7	8	9	10

Appendix S. Relationship Scales Questionnaire (RSQ)

Please carefully read each of the following statements and rate by circling the appropriate number the extent to which you believe each statement best describes your **feelings about close relationships** where 1 is '*not like me at all*', 3 is '*somewhat like me*' and 5 is '*very much like me*'.

	Not at all like me		**Somewhat like me**		**Very much like me**
1. I find it difficult to depend on other people.	1	2	3	4	5
2. It is very important to me to feel independent.	1	2	3	4	5
3. I find it easy to get emotionally close to others.	1	2	3	4	5
4. I want to merge completely with another person.	1	2	3	4	5
5. I worry that I will be hurt if I allow myself to become too close to others.	1	2	3	4	5
6. I am comfortable without close emotional relationships.	1	2	3	4	5
7. I am not sure that I can always depend on others to be there when I need them.	1	2	3	4	5
8. I want to be completely emotionally intimate with others.	1	2	3	4	5
9. I worry about being alone.	1	2	3	4	5
10. I am comfortable depending on other people.	1	2	3	4	5
11. I often worry that romantic partners don't really love me.	1	2	3	4	5
12. I find it difficult to trust others completely.	1	2	3	4	5
13. I worry about others getting too close to me.	1	2	3	4	5
14. I want emotionally close relationships.	1	2	3	4	5
15. I am comfortable having other people depend on me.	1	2	3	4	5
16. I worry that others don't value me as much as I value them.	1	2	3	4	5
17. People are never there when you need them.	1	2	3	4	5
18. My desire to merge completely sometimes scares people away.	1	2	3	4	5
19. It is very important to me to feel self-sufficient.	1	2	3	4	5

	Not at all like me			Somewhat like me	Very much like me
20. I am nervous when anyone gets too close to me.	1	2	3	4	5
21. I often worry that romantic partners won't want to stay with me.	1	2	3	4	5
22. I prefer not to have other people depend on me.	1	2	3	4	5
23. I worry about being abandoned.	1	2	3	4	5
24. I am somewhat uncomfortable being close to others.	1	2	3	4	5
25. I find that others are reluctant to get as close as I would like.	1	2	3	4	5
26. I prefer not to depend on others.	1	2	3	4	5
27. I know that others will be there when I need them.	1	2	3	4	5
28. I worry about having others not accept me.	1	2	3	4	5
29. Romantic partners often want me to be closer than I feel comfortable being.	1	2	3	4	5
30. I find it relatively easy to get close to others.	1	2	3	4	5

Appendix T. Short Michigan Alcoholism Screening Test (SMAST)

The following questions concern information about your **involvement with alcohol** during the past 12 months.

Carefully read each question then tick the appropriate box (‘*YES*’ or ‘*NO*’). Please answer every question. If you are unsure then choose the response that is mostly right.

In the past 12 months…

	YES	NO
1. Do you feel that you are a normal drinker? (by normal we mean do you drink less than or as much as most other people.)		
2. Has your partner, a parent, or other near relative or friend ever worried or complained about your drinking?		
3. Have you ever felt guilty about your drinking?		
4. Do friends or relatives think you are a normal drinker?		
5. Have you always been able to stop drinking when you wanted to?		
6. Have you ever attended a meeting of Alcoholics Anonymous (AA)?		
7. Has your drinking ever created problems between you and your partner, a parent or other close relative or friend?		
8. Have you ever gotten into trouble at work because of your drinking?		
9. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?		
10. Have you ever gone to anyone for help about your drinking?		
11. Have you ever been in a hospital because of drinking?		
12. Have you ever been arrested for drunken driving, driving while intoxicated, or driving under the influence of alcoholic beverages?		
13. Have you ever been arrested, even for a few hours, because of other drunken behaviours?		

Appendix U. Balanced Inventory of Desirable Responding (BIDR)

Please carefully read each of the following statements and rate each one by circling the appropriate number to indicate **how true it is** where 1 is '*not true'*, 4 is '*somewhat true'* and 7 is '*very true'.*

	Not True			**Somewhat True**			**Very True**
1. My first impressions of people usually turn out to be right.	1	2	3	4	5	6	7
2. It would be hard for me to break any of my bad habits.	1	2	3	4	5	6	7
3. I don't care to know what other people really think of me.	1	2	3	4	5	6	7
4. I have not always been honest with myself.	1	2	3	4	5	6	7
5. I always know why I like things.	1	2	3	4	5	6	7
6. When my emotions are aroused, it biases my thinking.	1	2	3	4	5	6	7
7. Once I've made up my mind, other people can seldom change my opinion.	1	2	3	4	5	6	7
8. I am not a safe driver when I exceed the speed limit.	1	2	3	4	5	6	7
9. I am fully in control of my own fate.	1	2	3	4	5	6	7
10. It's hard for me to shut off a disturbing thought.	1	2	3	4	5	6	7
11. I never regret my decisions.	1	2	3	4	5	6	7
12. I sometimes lose out on things because I can't make up my mind soon enough.	1	2	3	4	5	6	7
13. The reason I vote is because my vote can make a difference.	1	2	3	4	5	6	7
14. My parents were not always fair when they punished me.	1	2	3	4	5	6	7
15. I am a completely rational person.	1	2	3	4	5	6	7
16. I rarely appreciate criticism.	1	2	3	4	5	6	7
17. I am very confident of my judgments.	1	2	3	4	5	6	7
18. I have sometimes doubted my ability as a lover.	1	2	3	4	5	6	7
19. It's all right with me if some people happen to dislike me.	1	2	3	4	5	6	7
20. I don't always know the reasons why I do the things I do.	1	2	3	4	5	6	7

	Not True			Somewhat True			Very True
21. I sometimes tell lies if I have to.	1	2	3	4	5	6	7
22. I never cover up my mistakes.	1	2	3	4	5	6	7
23. There have been occasions when I have taken advantage of someone.	1	2	3	4	5	6	7
24. I never swear.	1	2	3	4	5	6	7
25. I sometimes try to get even rather than forgive and forget.	1	2	3	4	5	6	7
26. I always obey laws, even if I'm unlikely to get caught.	1	2	3	4	5	6	7
27. I have said something bad about a friend behind his/her back.	1	2	3	4	5	6	7
28. When I hear people talking privately, I avoid listening.	1	2	3	4	5	6	7
29. I have received too much change from a salesperson without telling him or her.	1	2	3	4	5	6	7
30. I always declare everything at customs.	1	2	3	4	5	6	7
31. When I was young I sometimes stole things.	1	2	3	4	5	6	7
32. I have never dropped litter on the street.	1	2	3	4	5	6	7
33. I sometimes drive faster than the speed limit.	1	2	3	4	5	6	7
34. I never read sexy books or magazines.	1	2	3	4	5	6	7
35. I have done things that I don't tell other people about.	1	2	3	4	5	6	7
36. I never take things that don't belong to me.	1	2	3	4	5	6	7
37. I have taken sick-leave from work or school even though I wasn't really sick.	1	2	3	4	5	6	7
38. I have never damaged a library book or store merchandise without reporting it.	1	2	3	4	5	6	7
39. I have some pretty awful habits.	1	2	3	4	5	6	7
40. I don't gossip about other people's business.	1	2	3	4	5	6	7

Appendix V. Debrief Sheet (Offending Sample)

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

DEBRIEF SHEET

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

Thank you very much for your participation in this study.

The aim of this research is to investigate attachment style and substance use of individuals and examine whether a combination of the two can predict specific types of offending behaviour.

Remember that all data will be kept confidential and anonymous and used for research purposes only – information provided will not be passed on to your offender manager.

If you have any questions about the issues covered in this study, please contact your probation provider.

Useful telephone numbers:

The following points of contact might also be of use and are able to provide any information you may need:

Drugsline	08081 606 606	www.drugsline.org
Drinkline	0800 917 8282	
Samaritans	08457 90 90 90	www.samaritans.org.uk

Appendix W. Debrief Sheet (Non-Offending Sample)

DEBRIEF SHEET

Short Title of Study: Attachment Style, Substance Use, and Offending Behaviour

Names of Researchers: Vincent Egan and Maria Stokes

Thank you very much for your participation in this study.

The aim of this research is to investigate attachment style and substance use of individuals and examine whether a combination of the two can predict specific types of offending behaviour.

Remember that all data will be kept confidential and anonymous and used for research purposes only.

Useful telephone numbers:

The following points of contact might also be of use and are able to provide any information you may need:

Drugsline	08081 606 606	www.drugsline.org
Drinkline	0800 917 8282	
Samaritans	08457 90 90 90	www.samaritans.org.uk

Appendix X. Offence Classification List

Sexual Offences

Assault on a female by penetration
Assault on a female child under 13 by penetration
Attempted rape of a female aged 16 or over
Committing an offence with intent to commit a sexual offence
Exposure (Sexual Offences Act 2003)
Incite female family member aged under 13 to engage in sexual activity by offender aged under 18 - penetration
Inciting a female child under 13 to engage in sexual activity - offender aged 18 or over - penetration
Inciting a male child under 13 to engage in sexual activity - no penetration
Indecent assault on female aged 16 years and over
Indecent exposure with intent to insult any female
Miscellaneous Sexual Offences
Possession of indecent photograph of a child
Rape
Rape of a female aged 16 or over
Rape of a female aged under 16
Rape of a female child under 13 by a male
Rape of a male child under 13 by a male
Sexual activity with a female child under 13 - offender aged 18 or over - no penetration
Sexual activity with a female child under 16 - offender aged 18 or over - no penetration
Sexual activity with a female child under 16 - offender aged under 18
Sexual assault of a female child under 13
Sexual assault on a female
Sexual assault on a male
Sexual Offences - Miscellaneous
Taking, permitting to be taken or making, distributing or publishing indecent photographs or pseudo-photographs of children

Violent Offences

Assaults occasioning actual bodily harm
Breach of Restraining Order
Causing death by dangerous driving
Common and other types of assault
Common assault and battery
False imprisonment
Harassment under the Protection from Harassment Act 1997
Kidnapping
Knowingly holding another person in slavery or servitude
Making threats to kill
Malicious wounding and other like offences
Manslaughter
Migrated Violent Offences
Murder
Murder (incl abroad) of infants under 1 year of age
Murder (incl abroad) of persons aged 1 year or over/Genocide
Racially aggravated harassment, alarm or distress
Resist or obstruct constable in execution of duty
Shooting, wounding, etc, with intent to do grievous bodily harm etc, or to resist apprehension
Violent disorder
Wounding and other acts endangering life
Wounding or inflicting grievous bodily harm (inflicting bodily injury with or without weapon)

Other Offences

Absconding from lawful custody
Aggravated burglary in a dwelling
Arson endangering life
Arson not endangering life
Blackmail
Breach of a Non-Molestation Order
Breach of Sexual Offences Prevention Order (Sex Offs Act 2003) & Restraining Order
Burglary
Burglary (dwelling) with intent to commit, or the commission of an offence triable only on indictment
Burglary in a dwelling
Carrying a loaded or unloaded or imitation firearm or air weapon in public place
Causing an affray
Class A - Cocaine - Having possession of
Class A - Heroin - Having possession with intent to supply
Class B - Amphetamine - Having possession of
Class B - Amphetamine - Having possession with intent to supply
Class B - Cannabis - Production or being concerned in production of
Class C - Cannabis - Supplying or offering to supply
Criminal Damage (£5000 or less) and Malicious Damage
Driving etc after consuming alcohol or taking drugs
Driving or attempting to drive with a breath, urine or blood alcohol concentration in excess of the prescribed limit
Failure to comply with Notification Order or Interim Notification Order requirement (Sexual Offences Act 2003)
Handling stolen goods
Having an article with a blade or point in a public place
Improper use of public electronic communications network
Intimidating a juror or witness or person assisting in the investigation of offences
Making off without payment
Migrated Breach Offences
Other Class B - Supplying or offering to supply
Owner or person in charge allowing dog to be dangerously out of control in a public place injuring any person
Possessing etc firearm or ammunition without firearm certificate
Possession etc. of articles for use in frauds
Possession of a firearm or imitation firearm, with intent to cause fear of violence
Possession of firearms etc with intent to endanger life or injure property etc
Possession of offensive weapons without lawful authority or reasonable excuse
Rioting
Robbery
Robbery and assaults with intent to rob
Shops Act
Stealing from shops and stalls (shoplifting)

Appendix Y. Patient Consent Form

The University of Nottingham

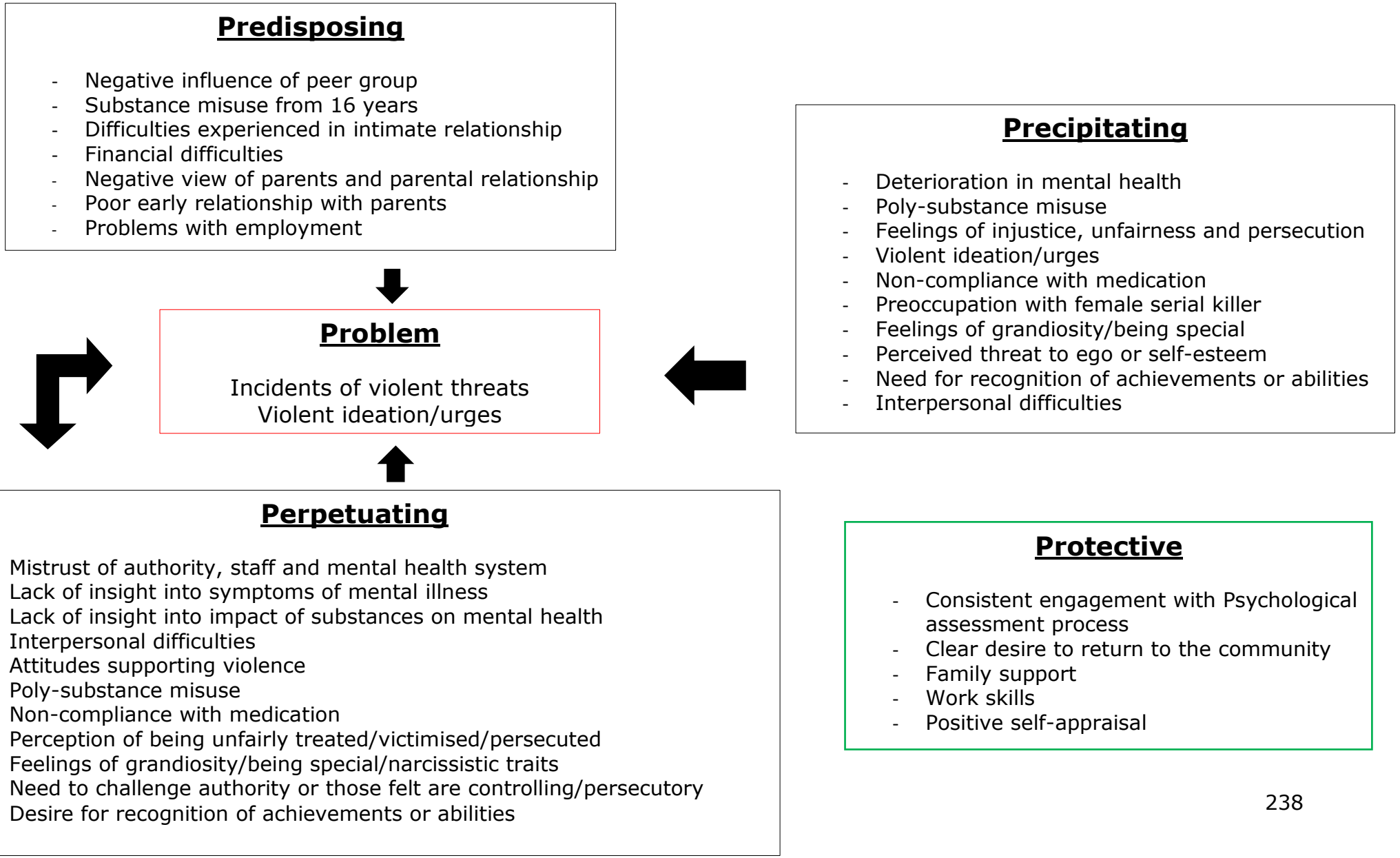
UNITED KINGDOM · CHINA · MALAYSIA

CASE STUDY CONSENT FORM

1. I understand that Maria is a Forensic Psychologist in Training who would like to use information about me and the work we have been completing as part of a case study for her doctorate thesis.
2. Maria has explained the purpose of the case study and I have been given the chance to ask questions.
3. I agree to have details of my case and treatment used anonymously as part of Maria's doctoral thesis.
4. I understand that relevant sections of my clinical notes may be looked at by Maria, only where it is relevant to my assessment and treatment and necessary for inclusion in this case study. I give permission for Maria to have access to these records and, in line with the Data Protection Act 1998, to collect, store, analyse and academically publish information obtained from my participation in this case study.
5. I understand that my personal details will be kept confidential and anonymous, and I will not be personally identified in any published articles or within the thesis itself.
6. I understand that my agreement to have my details used is voluntary and that I am free to withdraw my consent for them to be used within Maria's academic work at any time.
7. I understand that details of my case and treatment as outlined in this case study may be looked at by authorised individuals from the University of Nottingham and regulatory authorities to ensure ethical conduct. I give permission for these individuals to have access to this information.

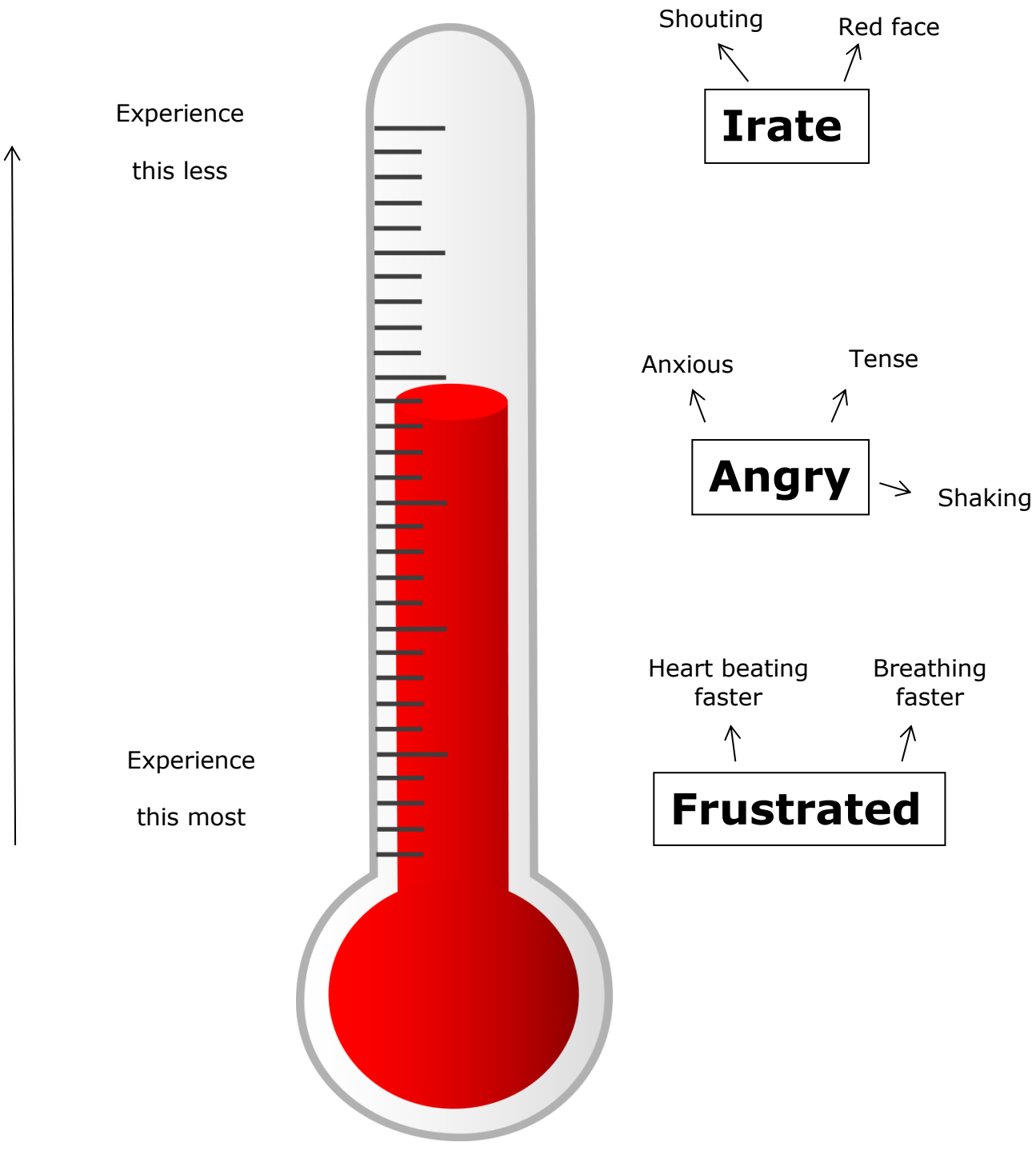
[redacted]	25.08.2016	[redacted]
Name of Patient	Date	Signature
Maria Stokes	25/8/16	
Name of Researcher	Date	Signature

Appendix Z. 5 P's Formulation for Mr D



Appendix AA. Worksheet 1: My experience and expression of anger

My Experience and Expression of Anger



Appendix BB. Worksheet 2: My hierarchy of anger triggers

A hierarchy of **my** triggers:



Most anger-provoking

Being ignored

Being betrayed

Being lied to

Being misjudged

Failing at something

Being on the receiving end of aggression

Being on medication

Being sectioned/locked away

Less anger-provoking

Being out of shape and unfit

Appendix CC. Worksheet 3: My action plans for anger-provoking situations

My Action Plans

		Coping Strategies		
High-Risk Situation 1	**Factors Affecting Tolerance**	**Challenging Thoughts**	**Reducing Physical Arousal**	**Changing Behaviour**
Specific: "Seeing my CPN who I threatened" *General:* Feeling like members of my professional care team are being incompetent or treating me unfairly	Anxiety levels *- Monitor* *- Breathing/yoga techniques* Stress levels *- Monitor* *- Do something to chill out* Further perceived incompetence *- Think about potential consequences of threatening/being aggressive*	Angry thoughts I might have: *- "I'm going to get angry"* *- "How dare they"* More helpful positive thoughts: *- "It's not worth it"* *- "I might do something I regret"*	How I might react physiologically: *- Feel tense* *- Heart beating faster* How I can calm myself down: *- Use my breathing techniques* *- Count to 10*	How I might react: *- Be aggressive (shout, swear)* *- Make threats* What I can do instead: *- Walk away* *- Talk to someone else about how I am feeling e.g. advocate* *- Watch volume/tone of voice* *- Watch for intimidating/threatening body language*

		Coping Strategies		
High-Risk Situation 2	**Factors Affecting Tolerance**	**Challenging Thoughts**	**Reducing Physical Arousal**	**Changing Behaviour**
Specific: "My dad being annoying" *General:* Feeling like my family are being unsupportive or not understanding me	Anxiety levels *- Monitor* *- Breathing/ yoga techniques* Stress levels *- Monitor* *- Do something to chill out* Repeated provocation *- Think about it from their point of view*	Thoughts I might have: *- "Hypocrite"* *- "You need to know my limit"* More helpful positive thoughts: *- "I need to stay calm"* *- "Let me think about it from their point of view"*	How I might react physiologically: *- Feel tense* *- Heart beating faster* How I can calm myself down: *- Use my breathing techniques* *- Count to 10*	How I might react: *- Be aggressive (shout, swear)* *- Make threats* What I can do instead: *- Walk away* *- Change topic of conversation* *- Answer questions calmly* *- Watch volume/tone of voice* *- Watch for intimidating/threatening body language*