Mental Health Diagnosis in Youth with a History of Offending: A Systematic Review and Meta-Analysis of the Prevalence of Post-Traumatic Stress Disorder and an Exploration of Stigma and Causal Attributions in Juror Decision Making

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Firstly, I would like to acknowledge the support of my nearest and dearest- to my fiancé Ricky, thank you for your continuous encouragement to follow my hearts desires and your sunny disposition on difficult days. It has helped me more than you know. My parents and my brother, Eric, for reminding me that I can do anything I put my mind to and taking care of things so I could focus on clinical training. My girls, Gail, Renita, and Jain- despite being in different countries, you have all shared in my highs and lows throughout this journey. Thank you, Harriet for all the shared banter since day one and agreeing to be filmed for the study!

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This work is dedicated to the children and young people who enter the criminal justice system, feeling vulnerable and frightened for their future. I wish to extend my gratitude to all the individuals tirelessly working towards better outcomes for young people in the system. It is my hope that the findings outlined in this portfolio will provide both laypeople and policymakers with a deeper understanding of children and young people's circumstances and for compassion to guide their decision-making processes in the legal system.

Glossary of terms

Criminal Justice System: This term can be described as a network of connected agencies; comprising of the police, courts, Ministry of Justice, and the Home office, each with its own bureaucratic interests and roles. They are involved with the detection and prevention of crime, prosecution, sentencing, imprisonment, and rehabilitation of offenders.

Defendant: In criminal proceedings, a defendant is an individual who is accused of committing an offence.

Juror: A member of the public (who serves as part of a jury) who has been chosen to hear and evaluate key evidence and render a verdict in court.

Youth with a history of offending: Otherwise known as 'young offender' is a young person under the age of 18 or aged 18 who is sentenced or remanded for an offence. In this portfolio, priority has been given to using person-first language to avoid further stigmatisation of this population.

Thesis Portfolio Abstract

Aims: This portfolio aims to understand the impact of mental health diagnosis in youth with a history of offending and its impact on factors that affect juror decision making in legal settings. This portfolio also investigates the prevalence of Post-Traumatic Stress Disorder (PTSD) in in youth with a history of offending.

Design: The portfolio outlines a general introduction, a systematic review and meta-analysis of the prevalence of PTSD, and an empirical paper exploring the impact of the diagnosis 'Severe Personality Disorder, Borderline Pattern' ICD-11 classification on mock juror decision making in a homicide trial. An overall discussion and critical evaluation chapter is also outlined. This study is a replication of Baker et al., (2022) in terms of its design, but it investigates the impact of mental health diagnosis for an adolescent on trial specifically.

Findings: The systematic review and meta-analysis findings are consistent with the existing literature; such that youth with a history of offending exhibit elevated levels of PTSD when compared with the general population, especially in female youth. The findings from the empirical paper suggest that the presence of mental health diagnosis does not impact mock juror decision making, stigmatising attitudes or causal attributions made for an adolescent on trial for homicide. Instead, the perception of the adolescent's personal control over their behaviour, significantly predicted mock jurors' decision regarding the legal defence of Diminished Responsibility.

Significance of the portfolio: This portfolio makes an important contribution to understanding factors that may influence juror decision making for an adolescent on trial. This has significant implications for the way clinical information about youth is presented in legal settings. The work in this portfolio also sheds light on the importance of timely and standardised assessments of PTSD for youth with a history of offending.

General Introduction

The prevalence of mental health difficulties amongst youth with a history of offending exceeds what is seen in the general population. Within the UK, in the year ending March 2020, 72% of children who received a criminal sentence were found to have a mental health difficulty (HM Inspectorate of Probation, 2023). The high prevalence of mental health difficulties in youth with a history of offending has also been observed across different countries (Chitsabesan et al., 2006 (England & Wales); Collins et al., 209 (Australia) and Abram et al., 2007 (United States of America). The most prevalent mental health difficulties are mood and anxiety disorders, substance use disorders, personality and conduct disorders (Colins et al., 2010; Aebi et al., 2019).

Despite the many individuals with mental health difficulties who enter the criminal justice system, only a few engage with mental health services (National Institute for Health and Care Excellence, NICE, 2017) with a small proportion receiving mental health placements (Herz, 2001). There is evidence to suggest that difficulties in accessing treatment are partially due to professionals being hesitant to provide services to individuals in the criminal justice system (Thornicroft et al., 2006), and limitations in appropriate assessment and monitoring at the start of a prison sentence (Slade et al., 2016).

The high prevalence of mental health difficulties amongst youth with a history of offending has significant implications for youth and the criminal justice system, especially when unrecognised and untreated. These implications are important at every stage of criminal justice processing; from appearing in court, fitness for trial and sentencing. For example, it is important to consider the cognitive abilities of youth in the context of ongoing mental health difficulties. Youth are considered 'developmentally immature' due to impulsive traits and poor regard for consequences when faced with stressful situations (Chein et al., 2011). This along with mental health difficulties may compromise individuals' ability to understand the nature of criminal charges or to differentiate between pleading guilty or not guilty (NICE, 2017). This may lead to an unfair trial, wrongful sentencing and inappropriate placement and disposal. Other studies have indicated that the presence of a mental health difficulty increases the chances of receiving harsh disposals such as placement in

confinement and residential treatment (Gebo, 2007; O'Donnell & Lurigio, 2008). Ultimately, due to reduced access to treatment, this may lead to a worsening of mental health difficulties and continued offending behaviour.

A mental health difficulty that has become widely recognised amongst youth with a history of offending is Post Traumatic Stress Disorder (PTSD). Studies have demonstrated that undetected and untreated PTSD in youth with a history of offending may contribute to elevated rates of impulsivity, hypervigilance and aggression, affecting social relationships (Kerig & Becker, 2015). Assessing PTSD accurately is complex, since PTSD is a heterogeneous disorder which includes symptoms such as re-experiencing, avoidance, hyperarousal, reactivity and cognitive/mood related symptoms (Miller, 2011) that make it difficult to differentiate between PTSD and other diagnoses due to overlapping symptoms. However, it is important to identify and treat these symptoms, as youth with a history of offending may otherwise display increased reactivity and aggression as an attempt to protect themselves from harm (Miller & Najavits, 2012) which may result in a variety of psychosocial issues and poor functioning (Wilson et al., 2013).

Another implication of untreated mental health difficulties in youth with a history of offending is mental health stigmatisation. Research has indicated that public attitudes associate mental health difficulties, ranging from depression to schizophrenia, with an increased risk of danger to oneself or others (Pescosolido et al., 2019). This perception of dangerousness can deter individuals with mental health difficulties from seeking treatment (Yocca, 2022). Certain mental health difficulties are heavily stigmatised compared to others, such as personality disorder (Lewis & Appleby, 1988) with high societal costs (Newton-Howes et al., 2015). These negative perceptions can lead to increased social rejection (Corrigan, 2016) which in turn can influence public attitudes in court, shaping perceptions of criminal responsibility and potentially leading to biased legal outcomes (Jung, 2015). Thus, unrecognised and untreated mental health difficulties have implications for youth with a history of offending, their access to treatment as well as overall public safety. Whilst it is important to assess and recognise mental health difficulties, it is also important to consider the perceptions of mental health difficulties which may ultimately affect decision making in court regarding appropriate disposals.

This thesis portfolio outlines research investigating the prevalence and impact of mental health diagnosis in youth with a history of offending. Chapter two presents a systematic review using meta-analytic methods to examine the prevalence of Post-Traumatic Stress Disorder (PTSD) in youth with a history of offending. The results of the meta-analysis are presented alongside clinical implications and limitations of the study design, such as considerable heterogeneity between the studies. Chapter three presents the empirical research paper which is an investigation of the impact of diagnostic terminology on jurors' decision making in a mock homicide trial. The specific focus was the diagnosis of Severe Personality Disorder, Borderline Pattern and how this impacted jurors' ratings of stigma and attributions of a young adolescent defendant on trial.

Chapter Two: Systematic Review and Meta-Analysis

The Prevalence of Post-Traumatic Stress Disorder in Youth with a History of Offending

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Abstract

Many youth with a history of offending have encountered trauma experiences, either prior to their involvement in offending behaviour or as a result of their interactions with the criminal justice system. These trauma experiences include adverse childhood experiences and community violence, which are prevalent among this population. Additionally, the process of offending and subsequent criminal justice involvement can be traumatic, contributing to the overall burden of trauma experienced by youth with a history of offending.

A systematic review and meta-analysis were conducted to determine the prevalence rates of PTSD in both male and female youth with a history of offending. Within this, gender differences, type of assessment measure (interview and self-report) and timeframe at which symptoms were assessed (current, lifetime and 'not specified') were explored. A total of 7302 participants from 15 countries were included in the study. The random- effects pooled prevalence for current PTSD in male youth was 13.3% (95% CI 8.4%-19.2%) and female youth was 22.8% (95% CI 12.2-35.7%). The random-effects pooled prevalence for lifetime PTSD in male youth was 9.0% (95% CI 2.3%-19.7%) and female youth was 22.6% (95% CI 6.9%-44.1%). Lastly, the random-effects pooled prevalence for 'not specified' timeframe PTSD in male youth was 22.0% (95% CI 12.9%-32.8%) and female youth was 44.6% (95% CI 36.4%-52.9%).

Overall, the highest prevalence of PTSD was noted in female youth with a history of offending, particularly in the 'not specified' timeframe. This study adds to the literature by highlighting differences in gender, measurement methods and assessment timeframes. Implications of the findings are discussed, including the importance of timely, gender responsive assessments and the use of validated assessment measures.

Keywords: Post-Traumatic Stress Disorder, trauma, prevalence, youth, offending, meta-analysis

Introduction

The number of children and adolescents entering the criminal justice system is significant. Each year 410,000 children are placed in prison and remand centres and an approximate one million children are held in police custody (Nowak, 2019). According to the Youth Justice Statistics, arrests of children increased by 9% in 2023, when compared to 2022, a significant increase seen in the last ten years (Youth Justice Board for England and Wales, 2024). Children and adolescents (referred to hereon as youths) with a history of offending can be defined as a young person under the age of 18 or aged 18 who is sentenced or remanded for an offence (Criminal Justice and Courts Act, 2015). Higher rates of psychiatric conditions have been observed in youth with a history of offending, when compared to the general population, with prevalence rates ranging from 40% to 90% (Heller et al, 2022). Common psychiatric conditions in detained male youth with a history of offending include Conduct Disorder, Substance Use Disorder and Attention Deficit Hyperactivity Disorder (Colins et al., 2010). Among female youth with a history of offending, Depression, Generalised Anxiety Disorder, Post-Traumatic Stress Disorder (PTSD) and emerging Borderline Personality Disorder are common psychiatric conditions (Livanou et al., 2019).

Youth with a history of offending have been found to encounter various trauma experiences prior to entering the criminal justice system with 95% reporting at least one traumatic experience and 84% reporting more than one traumatic experience in their lifetime (Abram et al., 2004). Considering the elevated prevalence of traumatic exposure, PTSD could be the most observed mental health condition among youths with a history of offending (McMackin et al., 1998). The Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5; American Psychiatric Association [APA], 2013) outlines PTSD as a disorder that can occur after traumatic experiences. The criteria for a diagnosis include exposure to actual/threatened death, injury or violence; the presence of unwanted memories, nightmares, flashbacks; the persistent avoidance of places/situations related to the traumatic event; and negative changes in cognition and mood. To receive a diagnosis of PTSD, symptoms must last longer than a month and have a significant impact on daily functioning (DSM-5; American Psychiatric Association [APA], 2022). The absence of treatment can cause PTSD to become chronic (Terr, 2003), leading to substantial personal and societal costs (Kessler, 2000).

Research has shown that youth with a history of offending in the USA, particularly those on probation awaiting sentencing, demonstrate high rates of PTSD when compared to the general youth population. For instance, PTSD prevalence rates are 11% amongst youth with a history of offending, compared to general population, with 3.7% amongst males and 6.7% amongst females (Wilson et al., 2013). Similarly, studies investigating both adolescent and adult prison populations have found higher rates of PTSD in the incarcerated population compared to the community populations (Facer-Irwin et al., 2019).

In terms of gender differences, PTSD is equally or more common among female youth with a history of offending compared to their male counterparts. A review by Hennessey et al., (2004) found that PTSD prevalence is high among female youth with a history of offending. Supporting this, a systematic review by Beaudry et al., (2021) reported current PTSD rates of 18.2% for female detained adolescents and 8.6% for male detained adolescents. Furthermore, a meta-analysis of 30 studies investigating the prevalence of mental disorders in incarcerated youth revealed significantly higher levels of PTSD among females compared to males (27% versus 9%; Livanou et al., 2019).

The type and accumulation of trauma experiences can also contribute to the prevalence estimates of PTSD. Youth with a history of offending can encounter multiple trauma experiences comprising life-threatening accidents, loss and bereavement and victimization which includes abuse and interpersonal violence (Ford et al., 2008). Finkelhor and colleagues (2005) investigated the concept of 'poly-victimization' which is defined as experiencing several types of victimization. They found that children were at high risk of developing trauma symptomology after experiencing several victimizations and that the number of victimization experiences was more important than the type of victimization. It has been found that youth with a history of offending often come from impoverished backgrounds and are more likely to be exposed to violence in the community and victimization (Kimonis et al., 2011 as cited in Wilson et al., 2013) increasing the possibility of offending behaviour (Rodriguez, 2013). Elevated rates of trauma experiences and symptomology in youth with a history of offending highlight the importance of assessing trauma symptoms in juvenile justice settings (Kerig et al., 2010.

Varying trauma experiences can affect the course of the development of PTSD (Kessler et al., 2017), for example, immediate vs delayed onset, chronic vs non-chronic (Santiago et al., 2013). For example, rates of PTSD symptoms have been observed to decline between 1- and 12-months following trauma experiences such as natural disasters or road traffic accidents, however the opposite has been observed following trauma experiences such as assault and war (Santiago et al., 2013). As a result, studies may show varying prevalence rates of PTSD due to differences in the types of trauma experiences experienced by the study population.

Another factor that may contribute to the variation in PTSD prevalence rates is the timeframe at which PTSD is assessed, i.e. within the past month, within the past year or at the time of the assessment (Garland et al., 2001). Some studies exclusively focus on current symptoms, whereas others focus on lifetime symptoms. For example, Spitzer et al., (2001) found that 36% of mixed youth in a forensic institution endorsed lifetime symptoms and 17% endorsed current symptoms of PTSD. A study by Ford et al., (2012) found that 10-19% of youth on probation reported lifetime symptoms of PTSD. PTSD is considered a heterogenous condition which poses a challenge in estimating prevalence rates, due to its clinical presentation. The variation in the development of PTSD can complicate assessments, due to the use of different look-back periods which can impact estimates of PTSD (Schein et al., 2021). For example, PTSD symptomology may be observed immediately after exposure to a traumatic event, or it may be delayed, and surface years after the exposure (Bryant et al., 2013). Therefore, PTSD may be underdiagnosed due to lack of insight into the development of symptoms (Yehuda et al., 2015).

Several challenges surface when assessing and diagnosing PTSD in youth with a history of offending. These include the presence of comorbid disorders, such as Anxiety Disorders, Mood Disorders or Substance Use Disorders (Wilson et al., 2013); underreporting of psychiatric conditions due to associated stigma (Foy et al., 2012); lack of trust in legal systems (Vincent et al., 2008); limited assessment measures specifically for youth with a history of offending (Ford et al., 2009). There can be long term implications if PTSD is not identified in youth with a history of offending. Lack of proper assessment and diagnosis may affect access to trauma-informed interventions, leading to a worsening of symptoms, co-morbid mental health disorders, substance use and high-risk sexual

behaviour, higher risk of recidivism and suicidal ideation (Abram et al., 2013; Ford et al., 2007, Cauffman et al., 2015; Wolff et al., 2017).

Given these challenges, focusing on investigating PTSD in youth with a history of offending is crucial. Trauma experiences can have long-lasting effects, increasing the likelihood of psychiatric, cardiovascular, metabolic and immune issues in adulthood (Lanius et al., 2010). In the short term, youth who encounter significant trauma experience immediate changes in mood, arousal and behaviour. Whilst many recover, about a third develop PTSD symptoms (Cohen et al., 2010). Adolescents experience higher rates of trauma exposure compared to adults, leading to an increased prevalence of PTSD, with 13% adolescents affected comparted to 7% adults (Nooner et al., 2012). This increased vulnerability to PTSD in adolescence may be attributed to the significant biological, social, and cognitive changes during this period, which can heighten risk-taking behaviours and exacerbate their susceptibility to trauma (Nooner et al., 2012).

Previous systematic reviews and meta-analysis have synthesized evidence on the prevalence of PTSD and other several mental health conditions amongst adolescents in juvenile detention and correctional facilities (Beaudry et al., 2021) and amongst incarcerated youth (Livanou et al., 2019). However, these reviews did not specifically focus on PTSD, which is particularly relevant given its association with trauma histories among youth with a history of offending. Whilst there has been research on PTSD treatment in these populations (Baetz et al., 2022) other reviews have not focused solely on the prevalence of PTSD in this population.

The aim of this systematic review and meta-analysis is to explore the prevalence of PTSD specifically in youth with a history of offending, with particular attention to variables that might influence prevalence rates such as gender and measurement type. By providing up-to-date prevalence estimates and identifying factors that may influence these rates, this review will contribute to the literature by offering a focused analysis of PTSD. This analysis will help reveal patterns specific to PTSD, informing future assessments and interventions for youth with a history of offending.

Method

This current systematic review and meta-analysis was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA; Moher et al., 2015). The research study protocol was registered on the PROSPERO database (CRD42023422110).

Search strategy

The systematic search of the literature was conducted using the following online databases including MEDLINE Ultimate (1966-2023), ProQuest (1995-2023), WebOfScience (1997-2023), Scopus (1997-2023) and PubMed (1992-2023). The full search of databases was completed on 10/08/2023. The limits of the search comprised of articles published between January 1966 - July 2023. The search also included reference lists of identified papers and unpublished literature.

Search terms used were subject headings and MESH terms relating to: Prevalence **(**Epidemiolog* OR Epidemiology OR Population* OR Prevalence) AND Young offender ("Young offend*" OR "Youth offend*" OR "juvenile offender" OR "court-referred adolescent*") OR (TI Delinqu*) AND PTSD (PTSD OR "Post-traumatic stress" OR "Post traumatic stress disorder") OR (TI trauma* OR "Adverse childhood experiences" OR ACEs).

Study Eligibility

This review investigated the prevalence of PTSD by extracting data reporting on clinically significant symptoms on validated measures in children and adolescent samples. The inclusion criteria were as follows: 1) Studies involving children and adolescents who have offended where the mean age was 18 and below. While there is variation on how adolescence is defined, a cut-off of 18 was selected as young people above the age of 18 are treated as adults by law in the UK (Gov.uk; Office of National Statistics, 2021); 2) Studies involving youth with a history of offending across prison, community, and probation settings; 3) The use of validated diagnostic measures of PTSD for children and adolescents (questionnaires and interview measures) 4) Quantitative studies reporting prevalence of PTSD symptoms; 5) Studies published in English.

Studies with the following criteria were excluded: 1) Studies using non validated diagnostic measures of PTSD; 2) Systematic reviews, meta-analyses, review papers including narrative and

scoping reviews; 3) Studies with a qualitative methodology, single case design and descriptive studies; 4) Studies with insufficient data to calculate prevalence rates; 5) Studies where participants had a mean age over 18years).

The final searches were completed using the criteria above. The initial 'screening' process comprised of title and abstract screening by the first author against the inclusion and exclusion criteria. At this stage, to determine the reliability of included studies, 15% of studies were rated by a secondary supervisor of the review. There was substantial agreement between the two raters, k= 0.77 (Landis and Koch, 1977).

Duplicates were removed automatically by reference managing software (Zotero) and manually by first author. The selected studies were then verified against the inclusion and exclusion criteria followed by full text review of articles. Any questions on the suitability of the study were resolved through discussion between authors. The preliminary search returned 729 articles (PRISMA Flowchart outlined in Figure 1).

Data extraction

A standardised form was used for data extraction. Where possible, the following data were extracted: Country, race/ethnicity, context/setting (e.g. detention, prison), sample size, proportion of youth with PTSD (male and female), age range, mean age, type of offence, name of the diagnostic measure, diagnostic measure classification system used and diagnostic measure type (i.e. questionnaire vs interview). PTSD rates were recorded under three timeframes; lifetime (symptoms present at any time in their life), current rates (symptoms present in the past month) and not specified- where the timeframe was not specified for PTSD symptoms. In certain cases, where data were provided for both interview and questionnaire; data from interview measures were extracted to be used in the analysis. Data extraction was completed by the first author which was cross-checked by a second author. Any discrepancies were discussed and resolved.

Quality assessment

The quality of included studies was appraised using an adapted version of the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Studies Reporting Prevalence Data. This adapted checklist was used in another prevalence review of young people with PTSD (Woolgar et al., 2022; Appendix B). The adapted checklist comprised of 6 questions which assessed the sample representativeness, response rates, recruitment and inclusion and exclusion criteria. The checklist provides, ratings of risk of bias (9-12= low risk of bias, 5-8= medium risk of bias, 0-4= high risk of bias). The first author quality assessed all papers, with a second author also assessing 20% of included papers for comparison. Any discrepancies were discussed between authors and agreements were made in all cases.

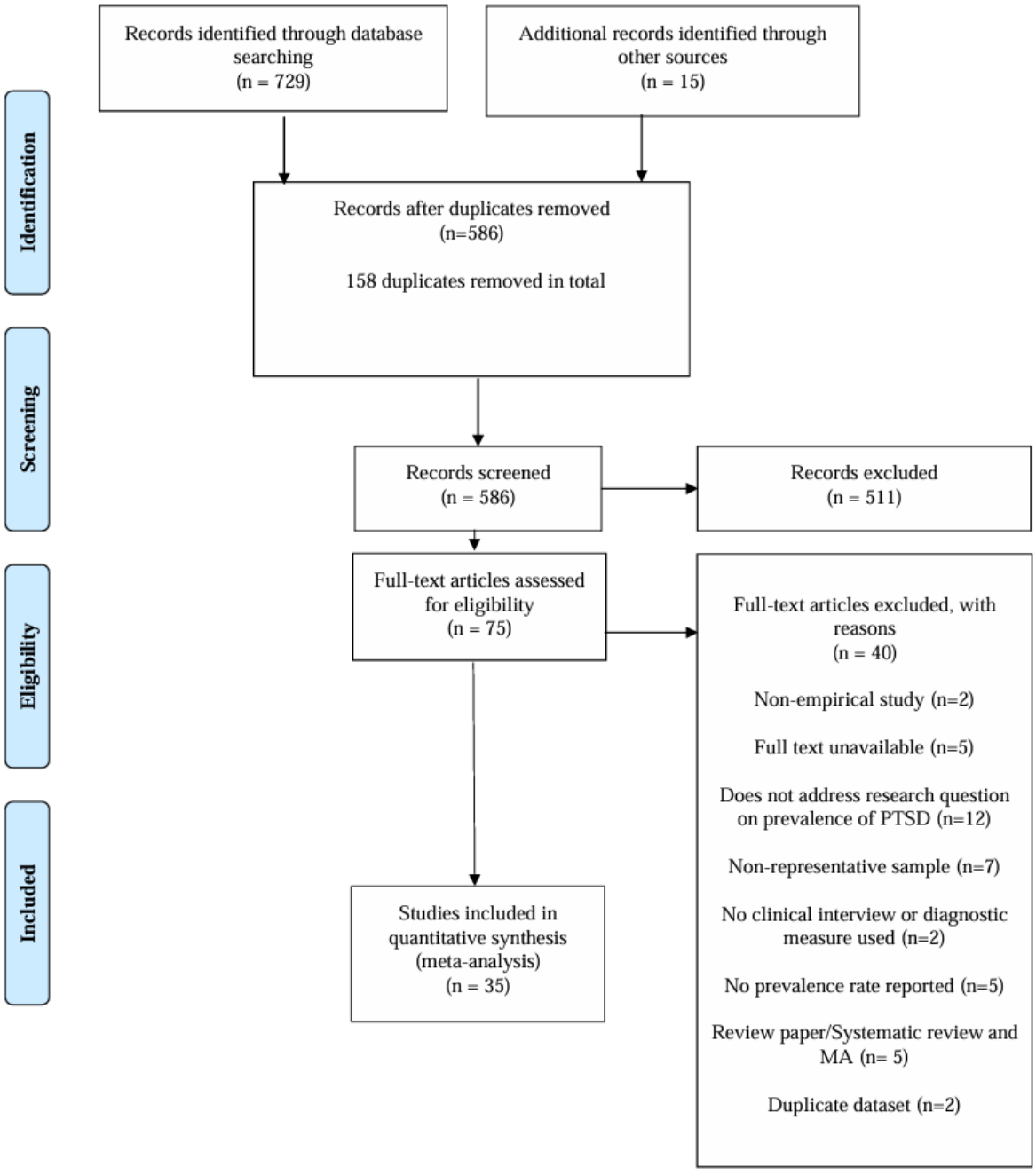
Statistical analysis

The analysis was conducted using the metafor package (version 3.4.0) in R (Viechtbauer, 2010). Random effects models were used to account for heterogeneity and the balanced weighting of studies (Borenstein et al., 2010). As studies reported prevalence rates across different timeframes (current PTSD, lifetime PTSD and not specified), the pooled prevalence estimates were separated by these categories. They were then further separated by gender (male and female).

The arcsine transformation was conducted to stabilise the variances in proportions (Barendregt et al., 2013). The measure of variability observed across several studies, also known as the heterogeneity of studies, was measured by the I^2 statistic (Higgins, 2002) and Cochran Q statistic was reported along with its statistical significance (Cochran, 1954). The I^2 statistic is the percentage of variation in outcome that is attributed to heterogeneity rather than sampling variability (Hoppen et al., 2024). I^2 values between 30%-60% may represent moderate heterogeneity, 50%-90% substantial heterogeneity and 75%-100% considerable heterogeneity (Deeks et al., 2001). The prediction intervals (PI) were also reported- this provides a range wherein the actual estimate is expected to fall in future studies (IntHout et al., 2016). To assess publication bias, Egger's test (Egger et al., 1997) was conducted when minimum number of studies was 10; and funnel plots investigated. A sensitivity analysis was conducted to determine how prevalence rates varied due to sample type. Studies that

reported on specific sample characteristics were excluded in the sensitivity analysis (i.e. youth with a history of sexual offending (McMackin et al., 2002) youth with a history of status offences only sample (Falk et al., 2014), psychiatric sample only (Ariga et al., 2008) and mental health sample only (Vitopolous et al., 2019).

Figure 1. *PRISMA* Study Selection Flowchart



Results

Study characteristics

Thirty-five studies met the inclusion criteria, with a total of 7302 young people with a history of offending and sample sizes ranging from 48 to 892. Key information and characteristics of the included studies are listed in Table 2.1. Male youth comprised 79% of the sample and female youth comprised of 21% of the sample. The mean age was 16.1 years and ranging from 10 to 22 years. Studies were conducted in 15 countries: Australia, Austria, Belgium, Canada, China, Iran, Japan, Malaysia, Portugal, Russia, South Korea, Sudan, Switzerland, United Kingdom, and United States of America. The majority of the studies provided detail on participant ethnicity; however, this was typically for the whole sample. Therefore, the prevalence of PTSD by ethnic group could not be assessed.

A variety of interview and questionnaire measures were used. Interview measures included the Kiddie Schedule for Affective Disorders and Schizophrenia Present and Lifetime Version ([K-SADS-PL], *k*=5, Kaufman et al., 1997), Kiddie Schedule for Affective Disorders and Schizophrenia ([K-SADS], *k*=3, Puig-Antich & Chambers, 1978), Diagnostic Interview Schedule for children Version IV ([DISC-IV], *k*=3, Schaffer et al., 2000), Diagnostic Interview Schedule for children 2.3 ([DISC 2.3], *k*=1, Schaffer et al., 1996), Voice Diagnostic Interview Schedule for children- IV ([Voice DISC], *k*=1, Wasserman et al., 2002), Practical Adolescent Dual Diagnostic Interview ([PADDI], *k*=1, Estroff & Hoffman, 2001), Mini International Neuropsychiatric Interview for children and adolescents ([MINI-KID], *k*=2, Sheehan et al., 1998), Mini International Neuropsychiatric Interview ([MINI], *k*=1, Sheehan et al., 1998), Clinician Administered PTSD Scale ([CAPS], *k*=2, Blake et al., 1995), UCLA Post-traumatic stress disorder reaction index for children/adolescents ([PTSD-RI], *k*=3, Pynoos & Steinberg, 2013), Psychiatric diagnostic interview-revised ([PDI-R], *k*= 2, Othmer et al., 1981), Diagnostic Interview for Children and Adolescents Revised ([DICA-R], *k*= 1, Reich et al., 1991), Childhood Post-traumatic Stress Reaction Index ([CPTS-RI], *k*=2, Pynoos, 2002), Structured Clinical Interview ([SCID], *k*=1, First al., 1997), and UCLA PTSD index for DSM-IV ([PTSD-I], *k*=1, Pynoos et al., 1998).

Questionnaire measures were the DSM-III and IV PTSD symptom checklist: *k*= 3, Trauma symptom checklist ([TSC], *k*= 1, Briere, 1996), Adolescent Psychopathology Scale-Short Form ([APS-SF], *k*= 1, Reynolds, 2000), Youth Self-Report ([YSR], *k*=1, Achenbach, 2001).

Table 2.1 Characteristics of Included Studies in the current review

Author, Year	Country	Sample (N)	Gender, Proportion of Males (%)	Age range, (Mean age)	Ethnicity %[a]	Setting	Offences type	Diagnostic Measure and Criteria	Diagnostic Measure Type	Timeframe of PTSD (Lifetime, Current, Not specified	% with PTSD, (N)	Quality appraisal rating
Abrams et al., 2004	USA	892	Mixed, 59% Males	10-18, (15)	African American 55%, Non-Hispanic White 17%, Hispanic 28%	Juvenile Detention	Not Reported	DISC-IV, DSM-IV	Interview	Lifetime	12% (106)	Low
Abrantes et al., 2005	USA	252	Mixed, 86% Males	13-18 (16)	Caucasian 88%, Native Americans 5%, Varied ethnic backgrounds 7%	Juvenile Detention	Non-violent offences 52%, substance related 43%, Violent offences 27%[b]	PADDI, DSM-IV	Interview	Lifetime	18% (45)	Medium
Aebi et al., 2015	Austria	260	Male 100%	14-20 (17)	Not Reported	Juvenile Detention	Property crime 33%, robbery 57%, violent crime 8%, drug related crime 11%, other crime 18%	MINI-KID, DSM-IV	Interview	Not Specified	25% (64)	Medium
Ali and Awedelkarim, 2016	Sudan	48	Mixed, 96% Males	12-18 (15)	Sudanese 100%	Juvenile Detention	Theft 33%, rape 29 %, homicide 16%, violence 8%, Alcohol 2%, other 10%, 2 % Not specified	MINI-KID, DSM-V	Interview	Current	10% (5)	Medium
Ariga et al., 2008	Japan	64	Female, Not applicable	16-19 (17)	Japanese 100%	Juvenile Detention	Drug related crime 41%, Violent crime 30%, pre-delinquent behaviours/prostitution 22%[a]	CAPS, DSM-IV	Interview	Current	23% (15)	Medium
Barra et al., 2022	Switzerland	342	Mixed, 65% Males	12-18 (16)	Swiss 86%, Not Specified 14%	Juvenile Justice Institution	Not Reported	K-SADS-PL, DSM-IV	Interview	Not specified	22% (74)	Medium
Becker and Kerig, 2011	USA	83	Male, 100%	12-17 (16)	Caucasian 70%, African American 24%, Latino 1% and multiracial 5%	Juvenile Detention	Range of unspecified offences from status offences to misdemeanours, and felonies	PTSD-RI, DSM-IV	Interview	Current	10% (8)	Medium
Burton et al., 1994	USA	91	Male, 100%	13-18 (16)	Black 40%, Hispanic 40%, Caucasian 10%, Asian 7% and other 3%	Secure camp (Confinement in a locked setting for up to one year)	Serious and repeated criminal behaviour involving two or more violent crimes against others 53%, arrested for two or more non-aggressive crimes 79%, used weapons 86%, had significant	Symptom checklist, DSM-III	Questionnaire	Current	24% (22)	Medium

Table 2.1 Characteristics of Included Studies in the current review

							substance abuse problems 83%					
Cauffman et al., 1998	USA	96	Female, Not applicable	13-22 (17)	White 23%, African American 21%, Hispanic 29%, Asian 5%, Bi-racial 12% and other 10%	Juvenile Rehabilitation	Violent crimes against 9%, property crimes 21% drug-related crimes 4%, and other crimes 6%	PDI-R, DSM-III	Interview	Lifetime and Current	Lifetime 65% (62) Current 49% (47)	Medium
Colins et al., 2009	Belgium	245	Male, 100%	12-17 (16)	Moroccan 22%, Belgian 78%	Juvenile Detention	Property offences 23%, violent offences 11% and versatile (property and violent) offences 66%	DISC-IV, DSM-IV	Interview	Lifetime	2% (5)	Low
Dixon et al., 2004	Australia	100	Female, Not applicable	14-19 (17)	Aboriginal 48% white 33%, Asian 6%, Polynesian/Māori 12%, African, African American 1%	Juvenile Detention	Violent crimes 71% property crimes 25%, drug related crimes 4%	K-SADS-PL, DSM-IV	Interview	Lifetime and Current	Lifetime 17% (17) Current 20% (20)	Medium
Duclos et al., 1998	USA	150	Male, 57%	12-18 (15)	American Indian 100%	Reservation based Juvenile Detention	Status offences 77%, not specified offences 23%	DISC 2.3, DSM-III-R	Interview	Lifetime	1% (2)	Medium
Erwin et al., 2000	USA	51	Male, 100%	Range not reported	Caucasian 57%, 28% African American, 12% Hispanic, 3% not specified	Juvenile Treatment	Property offences 28%, sexual assault 20%, physical assault or murder 45%, 7% Not Specified	PTSD checklist, DSM-IV	Questionnaire	Lifetime and Current	Lifetime 45% (23) Current 18% (9)	Medium
Falk et al., 2014	USA	161	Mixed, 48% Males	12-17 (15)	White/non-Latino 36%, Black/non-Latino 45%, Latino 5%, American Indian/Asian/Other 14%	Juvenile Detention	Status offences 100%	TSC-C, DSM-IV	Questionnaire	Not specified	21% (36)	Medium
Ford et al., 2008	USA	264	Mixed, 73% Males	10-17 (Not Reported)	White non-Hispanic 27%, African American, and Caribbean American 43%, Latino/Hispanic 30%	Pre-trial Detention (new admissions)	Violent crimes 23%, Not specified non-violent crimes 77%	PTSD-RI, DSM-IV	Questionnaire	Current	19% (50)	Medium
Ghanizadeh et al., 2012	Iran	100	Male, 100%	12-19 (17)	Iranian 100%	Prison	Robbery 26%, murder 23%, fighting 21%, kidnapping	K-SADS, DSM-IV	Interview	Current	20% (20)	High

Table 2.1 Characteristics of Included Studies in the current review

							14%, drug related crime 16%				
Ghazali et al., 2018	Malaysia	207	Mixed, 48% Males	12-17 (15)	Malays 38% Iban 31% Bidayuh 13% Chinese 9% and other 9%	Juvenile Detention	Violent crime 71% , property crimes 25%, drug related crime 4%	CPTS-RI, DSM-IV	Interview	Not Specified	21% (43)	Medium
Gretton and Clift, 2011	Canada	174	Mixed, 68% Males	13-18 (Male) 12-19 (Female) (16)	European 41%, Aboriginal 37%, part Aboriginal 14% or other descent 6%, 2% not specified	Youth Custody Centre	Male: Non-violent offences 94%, violent offences 77%, 5% sexual offences, 48% serious violence contact offences[c] Female: Non-violent offences 98%, violent offences 72%, sexual offences 2%, serious violent contact offences[c] 33%	DISC-IV, DSM-IV	Interview	Lifetime	5% (9)	Medium
Karnik et al., 2010	USA	790	Mixed, 83% Males	13-22 (17)	African American 28%, Hispanic 47%, Non-Hispanic White 17%, Other ethnicities 8% including Asian American, Native America, Filipino America, Pacific Islander	Juvenile Correction and Rehabilitation	Violent offences 54% property offences 29%, drug offences 6%, other offences 11%	SCID, DSM-IV	Interview	Current	9% (72)	High
Kerig et al., 2009	USA	289	Mixed, 69% Males	10-17 (14)	European American descent 69%, African American 22%, Latino 4%, multiracial 4% and American Indian/Pacific Islander 2%	Juvenile Detention (newly remanded)	Range of unspecified offences from status offences to assault	PTSD-I, DSM-IV	Interview	Not specified	32% (93)	Medium
Kim et al., 2017	South Korea	173	Male 100%	15-18 (18)	South Korean 100%	Juvenile Detention	Property crime 50%, violent crime 39%, sex crime 20%, drug crime 0.6%, traffic offences 24%, obstruction of justice 4%, drink driving 1%, other crime 12%	MINI, DSM-IV	Interview	Current	3% (5)	Medium

Table 2.1 Characteristics of Included Studies in the current review

Lemos and Faisca, 2015	Portugal	50	Male, 100%	13-18 (16)	Portuguese 88%, Not specified 12%	Juvenile Correctional	Violent offences 32%, acted with peers 88%	APS-SF, DSM-IV	Questionnaire	Not specified	32% (16)	Medium
Lennox et al., 2013	UK	219	Male, 100%	15-18 (17)	Caucasian 85%, Afro-Caribbean 6%, Asian 6%, Other Ethnic background 4%	Youth Offenders Institution	Violent offences 72%, not specified offences 28%	K-SADS, DSM-IV	Interview	Current	4% (9)	Medium
Lindblad et al., 2015	Russia	370	Male, 100%	14-19 (16)	Caucasian 98%, 2 % Not Specified	Juvenile Correction	Property crimes 51%, violence-related crimes 38%, sexual violence 6%, 5% Not Specified	K-SADS-PL, DSM-IV	Interview	Not specified	24% (87)	Medium
McMackin et al., 2002	USA	40	Male, 100%	12-17 (14)	White 57%, Hispanic 17%, African American 15%, Asian 2%, and Bi-racial 7%	Secure juvenile facility	Sexual offences 100%	PTSD-Checklist, DSM-IV	Interview	Not specified	65% (26)	Medium
Mitchell, 2011	UK	115	Male, 100%	15-17 (17)	White British 84%, Not specified 16%	Youth Offenders Institution	Violent offences 53%, 47% Not Specified	K-SADS, Not Reported	Interview	Not specified	13% (15)	High
Modrowski et al., 2017	USA	209	Mixed, 71% Males	13-19 (16)	White/Caucasian 50%, Black/African American 4%, Hispanic/Latino 30%, Native American/Alaskan Native 5%, Pacific Islander/Native Hawaiian 2%, multiracial 7%, and 1% other.	Juvenile Detention	Status offences to misdemeanours and felonies 95%, not specified offences 5%	PTSD-RI, DSM-IV	Questionnaire	Current	18% (37)	Medium
Moore et al., 2013	Australia	291	Mixed, 87% Males	13-21 (17)	Aboriginal 48% and Non-a Aboriginal 52%	Juvenile Justice and Correction	Not Reported	K-SADS-PL, DSM-IV	Interview	Not specified	20% (58)	Medium
Ruchkin et al., 2002	Russia	351	Male, 100%	14-19 (16)	Ethnic Slavs 98%, 2% Not Specified	Juvenile Detention	Property crime 51%, violence related crimes 38%, rape/sexual violence 6%, murder 5%	CPTS-RI, DSM-IV	Interview	Not specified	25% (87)	Medium
Steiner et al., 1997	USA	85	Male, 100%	13-20 (17)	Black 38% Hispanic 27%, White 30%, other 5%	Prison	Range of not specified offences ranging from auto theft, 1st degree murder and other violent crimes	PDI-R, DSM-III	Interview	Current	32% (27)	Medium

Table 2.1 Characteristics of Included Studies in the current review

Ulzen et al., 1998	Canada	49	Mixed, 78% Males	13-17 (15)	Not Reported	Secure Custody	Offences histories of the sample include Property offences 60%, physical assault 45%, sexual assault 13%, escape from custody 33%, failure to comply 51%	DICA-R, DSM-III	Interview	Not specified	25% (12)	High
Vitopoulos et al., 2019	Canada	100	Mixed, 50% Males	13-19 (16)	White 13%, Black 22%, Asian 6%, Other 9%	Juvenile Justice	Range of not specified non-violent, sexual, and violent offences	YSR (Post Traumatic Stress subscale), DSM	Questionnaire	Current	32% (32)	Medium
Wasserman et al., 2002	USA	292	Male, 100%	Age range not Reported, (17)	African American 54%, White 28%, Hispanic 16%, other 2%	Prison	One or more personal offences 36%, one or more property offences 48%, not specified offences 16%	Voice DISC-IV, DSM-IV	Interview	Current	9% (27)	Medium
Yoshinaga et al., 2004	Japan	48	Mixed, 82% Males	14-19 (17)	Japanese 100%	Juvenile Classification Home	Not Reported	CAPS, DSM-IV	Interview	Lifetime and current	Lifetime 15% (7) Current 6% (3)	Low
Zhou et al., 2012	China	232	Male, 100%	15-17 (17)	Chinese 100%	Juvenile Detention	Homicide 9%, assault 16%, rape 9%, robbery 37%, theft 24%, not specified offences 5%	K-SADS-PL, DSM-IV	Interview	Not specified	17% (4)	Medium

Note: K-SADS-PL= Kiddie Schedule for Affective Disorders and Schizophrenia; MINI-KID= Mini-International Neuropsychiatric Interview; DISC= Diagnostic Interview Schedule for children; PADDI= Practical Adolescent Dual Diagnostic Interview; CAPS= Clinician Administered PTSD Scale; PTSD-RI= UCLA Post-Traumatic Stress Disorder Reaction Index For Children/Adolescents; PTSD-I= UCLA Post-Traumatic Stress Disorder Index Adolescent Version TSC= Trauma Symptom Checklist; PDI-R= Psychiatric diagnostic interview-revised; DICA= Diagnostic Interview for Children and Adolescents- Revised; CPTSD-RI= Childhood PTSD Reaction Index; SCID= Structured Clinical Interview; APS-SF= Adolescent Psychopathology Scale-Short Form; YSR= Youth Self-Report

* Ethnicity provided on the entire sample and not separated by those with PTSD

a Approximately 10% were multiple offenders and 60% arrested at least twice

b Adolescents in this sample were arrested for two or more crimes resulting in double ratings

c Male and female youth were charged with more than one offences resulting in double ratings

Pooled Prevalence Estimates

Sixteen studies looked at the prevalence of current PTSD. For both male and female youth with a history of offending combined, the pooled prevalence estimate of 15.7% (95% CI 10.5%-21.6%) was observed, see Figure 2, with prediction interval (95% PI 1.2%-42.0%). The Q test was significant (Q= 187.0, *df*= 15; $p < .001$) with considerable heterogeneity observed between the studies (I^2= 93.2). For studies on male youth (*k*= 12), the pooled prevalence estimate of current PTSD was 13.3% (95% CI 8.4%-19.2%), see Figure 3, with the prediction interval (95% PI 1.1%- 35.8%). The Q test was significant with considerable heterogeneity observed (Q= 96.3, *df*= 11; $p < .001$; I^2= 91.1). For female youth (k= 7), the prevalence estimates of current PTSD was 22.9% (95% CI 12.2%-35.7%), see Figure 4, with prediction interval (95% PI 1.5%-58.5%). Considerable heterogeneity was observed between the studies (Q= 50.3, *df*= 6; $p < .001$; I^2= 89.7).

A total of nine studies looked at lifetime prevalence of PTSD. For male and female youth with a history of offending combined, a pooled prevalence estimate of 16.3% (95% CI 5.7%-30.9%) was observed, see Figure 5, with prediction interval range (95% PI 0.00% - 67.0%). The tests for heterogeneity indicated considerable heterogeneity between the studies (Q= 256.1, *df*= 8; $p < .001$; I^2= 98.1). For male youth (k= 7), the pooled prevalence estimate for lifetime PTSD was 9% (95% CI 2.3%-19.7%) see Figure 6, with prediction interval range (95% PI 0.00%- 44.5%). The tests for heterogeneity indicated considerable heterogeneity between the studies (Q= 93.0, *df*= 6; $p < .001$; I^2= 96.3). For female youth (k=7), the pooled prevalence estimate for lifetime PTSD was 22.7% (95% CI 6.9%-44.1%) with prediction interval range (95% PI 0.00% - 81.5%), see Figure 7. The tests for heterogeneity indicated considerable heterogeneity between studies (Q= 156.22, *df*= 6; $p < .001$; I^2= 96.7) indicating considerable heterogeneity between the studies.

A few studies did not specify the timeframe of measurement of PTSD (i.e. whether this was current or lifetime PTSD). For these studies (k= 13), the prevalence of not specified timeframe PTSD in both male and female youth combined was 23.1% (95% CI 16.0%-31.0%), see Figure 8, with prediction interval range (95% PI 3.1%-54.0%). The Q test for heterogeneity was significant (Q=

175.5, *df*= 12; $p < .001$) indicating considerable heterogeneity between the studies (I^2= 95.4). For male youth, studies where the timeframe was not specified (k= 10), the prevalence of PTSD was 22.0% (95% CI 12.9%-32.8%), see Figure 9, with prediction interval range (95% PI 0.9%-59.2%). Test results for heterogeneity were significant (Q= 160.5, *df*= 9; $p < .001$) with considerable heterogeneity between studies observed (I^2= 96.3). The prevalence of PTSD in female youth, where the timeframe was not specified (k=3), the prevalence of PTSD was 44.6% (95% CI 36.4%-52.8%), see Figure 10, with prediction interval range (95% PI 36.4%- to 52.8%). The Q test for heterogeneity was non-significant (Q=0.88, *df*=2; $p = 0.64$) with low heterogeneity between the studies (I^2= 0.00).

Sensitivity Analysis

Sensitivity analyses and the removal of four studies revealed lower prevalence rates of PTSD across current and not specified timeframe (Table 2.2). The analyses revealed a slightly lower current prevalence rate for male and female youth combined of 14.1% (95% CI 9.0%-20.2%) with prediction interval (95% PI 0.7%-40.0%) with considerable heterogeneity between studies (Q= 158.3, *df*=13; $p <.001$; I^2= 93.5). Similarly, the prevalence rate for not specified timeframe, for both male and female combined was lower 20.3% (95% CI 14.5%- 26.8%) with prediction interval range (95% PI 4.4%-43.7%) with considerable heterogeneity between studies (Q= 140.8, *df*= 10, $p <.001$; I^2= 93.3). The remaining outcomes by gender are outlined in Table 2.2. The prevalence rates remain unchanged for the not specified and lifetime rates of PTSD as no studies were removed for the sensitivity analyses.

Publication Bias

The Eggers test was conducted when n ≥10 (Egger et al., 1997). The test revealed that there was no strong evidence of asymmetry in male not specified rate of PTSD (*P*= 0.15), in male current rate of PTSD (*P*= 0.07) and in the male and female current rate of PTSD (*P*= 0.41) However, there was potential asymmetry for male and female, not specified rate of PTSD (*P*= 0.04).

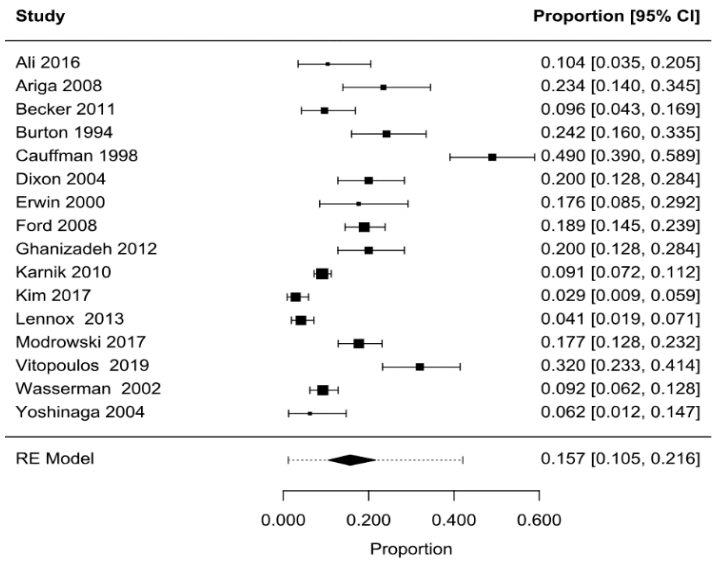


Figure 2. Total prevalence of current PTSD (Male and Female)

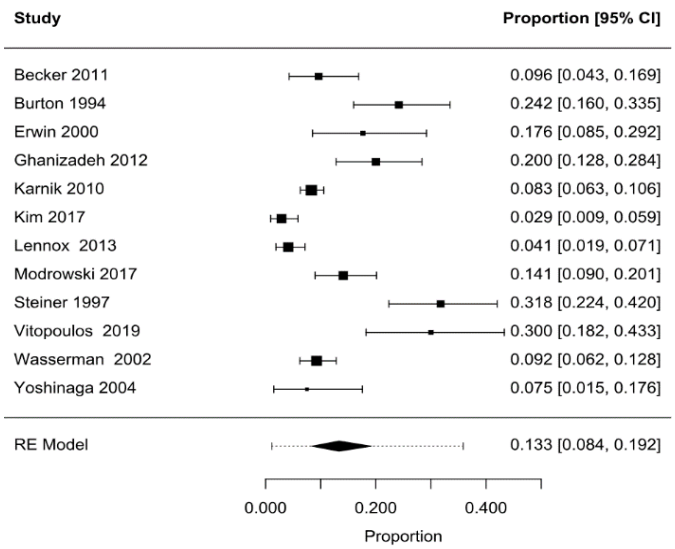


Figure 3. Prevalence of current PTSD (Male)

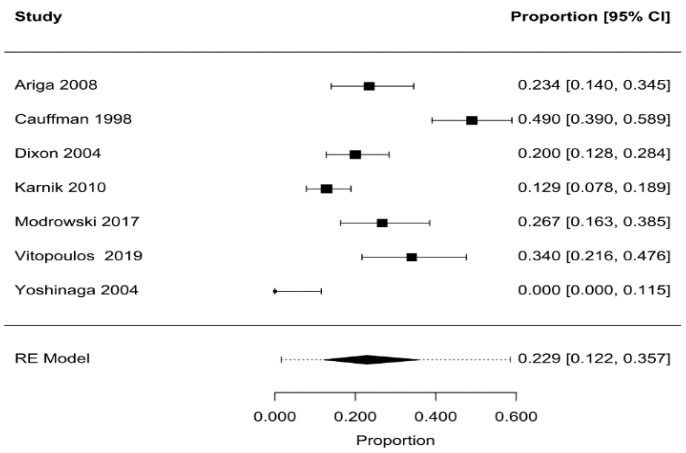


Figure 4. Prevalence of current PTSD (Female)

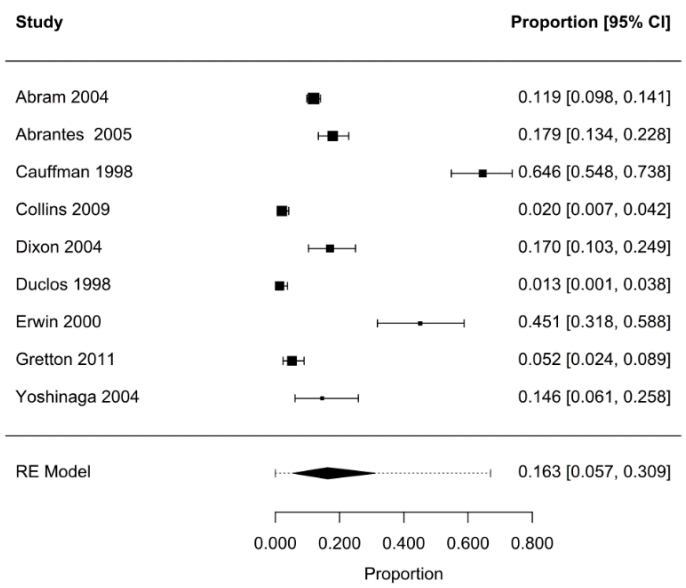


Figure 5. Total prevalence of lifetime PTSD (Male and Female)

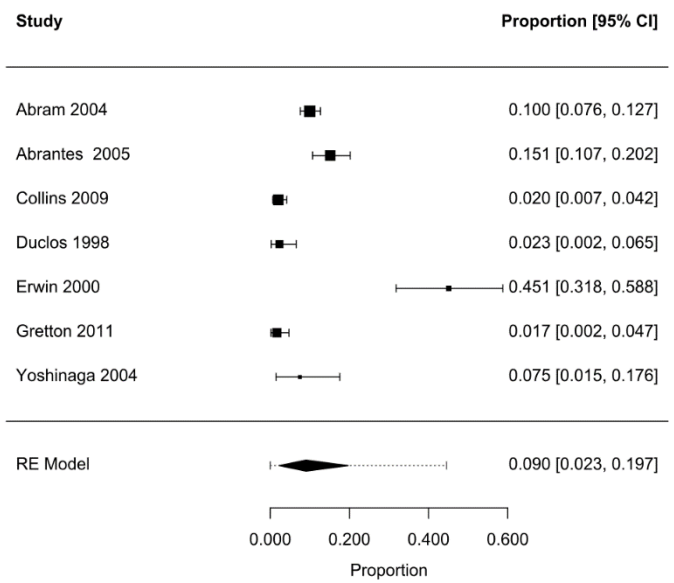


Figure 6. Prevalence of lifetime PTSD (Male)

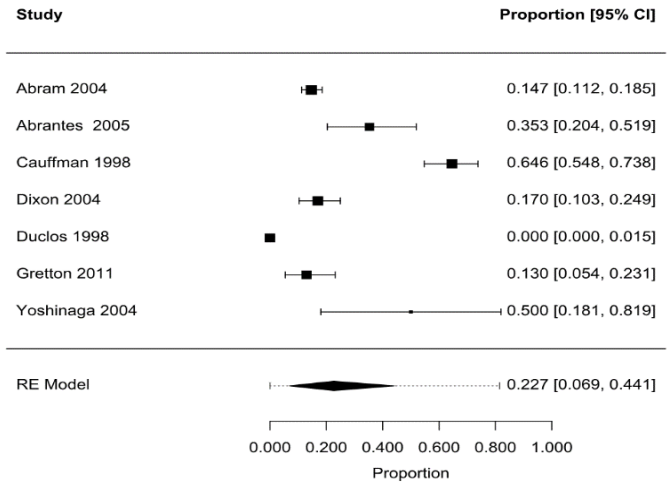


Figure 7. Prevalence of lifetime PTSD (Female)

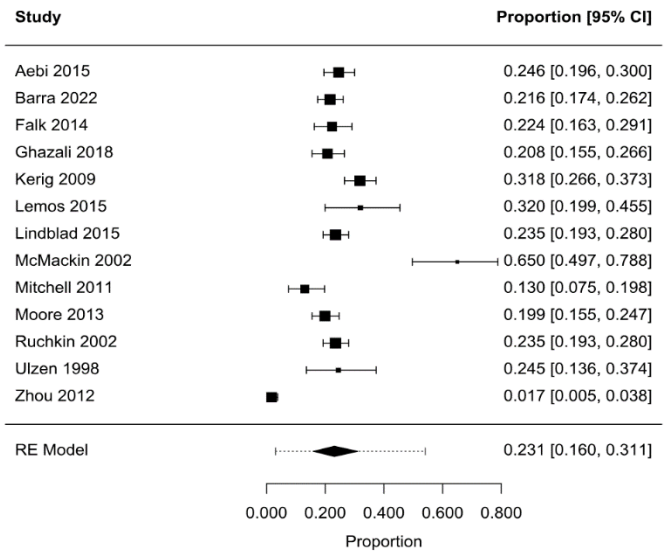


Figure 8. Total prevalence of Not specified timeframe PTSD (Male and Female)

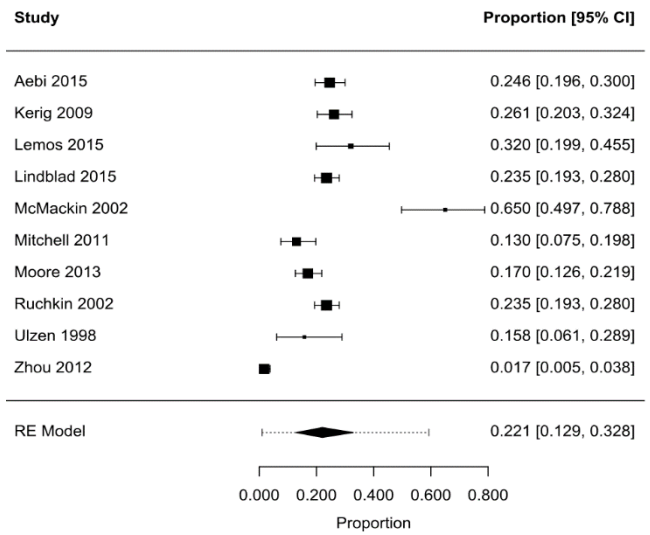


Figure 9. Prevalence of Not specified timeframe PTSD (Male)

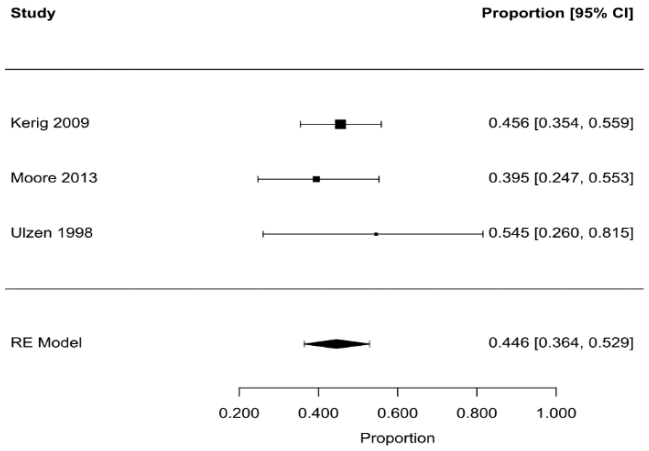


Figure 10. Prevalence of Not specified timeframe PTSD (Female)

Table 2.2. Main meta-analysis Prevalence and Sensitivity Analyses Outcome

Analysis	k	N	Prevalence estimate	95% CI	Q	I^2	Prediction Interval
Main analyses:							
Current prevalence							
Total (Male and Female)	16	2728	15.7%	10.5% - 21.6%	187.0	93.2	1.2% - 42.0%
Male	12	1983	13.3%	8.4% - 19.2%	96.3	89.3	1.1% - 35.8%
Female	7	518	22.9%	12.2% - 35.7%	50.3	89.7	1.5% - 58.5%
Lifetime prevalence							
Total (Male and Female)	9	2008	16.3%	5.7% - 30.9%	256.1	98.1	0.00% - 67.0%
Male	7	1291	9.0%	2.3% - 19.7%	93.0	96.3	0.00% - 44.5%
Female	7	717	22.6%	6.9% - 44.1%	156.2	96.7	0.00% - 81.5%
Not specified prevalence							
Total (Male and Female)	13	2776	23.1%	16.0% - 31.0%	175.5	95.4	3.1% - 54.0%
Male	10	1927	22.0%	12.9% - 32.8%	155.8	96.3	0.9% - 59.2%
Female	3	139	44.6%	36.4% - 52.9%	0.88	0.00	36.4% - 52.8%
Sensitivity analyses:							
Current prevalence							
Total (Male and Female)	14	2564	14.1%	9.0% - 20.2%	158.3	93.5	0.7% - 40.0%
Male	11	1933	12.2%	7.5% - 17.7%	83.0	90.6	1.0% - 33.0%
Female	5	404	19.7%	5.8% - 39.0%	47.8	94.1	0.00% - 67.2%
Lifetime prevalence							
Total (Male and Female)	9	2008	16.3%	5.7% - 30.9%	256.1	98.1	0.00% - 67.0%
Male	7	1291	9.0%	2.3% - 19.7%	93.0	96.3	0.00% - 44.5%
Female	7	717	22.6%	6.9% - 44.1%	156.2	96.7	0.00% - 81.5%
Not specified prevalence							
Total (Male and Female)	11	2575	20.3%	14.5% - 26.8%	140.8	93.3	4.4% - 43.7%
Male	9	1887	18.4%	2.7% - 43.4%	122.6	93.4	2.7% - 43.4%
Female	3	139	44.6%	36.4% - 52.9%	0.88	0.00	36.4% - 52.8%

Discussion

This systematic review and meta-analysis investigated the prevalence of PTSD in youth with a history of offending across gender, type of measure and timeframe at which PTSD was assessed. A total of thirty-five papers were included with 7302 participants across fifteen countries. Due to the variation in timeframe at which PTSD was assessed across the studies, prevalence rates were presented for current PTSD, lifetime PTSD or 'not specified' if this could not be determined. The prevalence rates were also separated by gender to better understand gender differences.

The pooled prevalence rates indicated high incidences of PTSD in youth with a history of offending with females exhibiting higher rates of PTSD when compared to males. For current PTSD the prevalence was 22.9% for females and 13.3% for males; lifetime PTSD was 22.6% for females and males was 9.0%; then for the 'not specified' timeframe, it was 44.6% for females and 22.0% for males. These findings are consistent with other meta-analyses demonstrating that rates of PTSD are higher in female youth with a history of offending (Ford et al., 2007; Abram et al., 2004). These rates of PTSD are also observed to be higher than the prevalence of PTSD in the general population of children and adolescents with a trauma experience with 8% girls and 2% boys reporting on symptoms of PTSD (Merikangas et al., 2010). In comparison, the random-effects pooled point prevalence was 6% in male adult prisoners and 21% in female adult prisoners (Baranyi et al., 2018).

Prevalence of PTSD rates were highest in the not specified timeframe for both male and female youth. A possible explanation for this could be that studies included in the 'not specified' timeframe may have included aggregated data on both current and lifetime rates of PTSD, leading to increased prevalence rate. Data on comorbid mental health and substance use difficulties were not extracted or investigated in this review, which may have contributed to the higher levels of PTSD prevalence. For example, a study by Mills et al., (2006) found that the highest rates of PTSD were observed amongst those with amphetamine and opioid use disorders. This can be attributed to the risk lifestyle which subsequently increases the risk of trauma exposure and PTSD (Chilcoat & Breslau, 1998).

Additionally, a large proportion of 'not specified' timeframe studies comprised of youth who were convicted of violent offences, pointing to the possible link between violence and PTSD. Whilst this association has mainly been observed in military veterans, this is also observed in the general population (Gillikin et al., 2016). Another explanation could be that studies included a variety of diagnostic measures (questionnaire and interview) with differing cut off rates for a diagnosis of PTSD leading to higher prevalence rates. Significant publication bias was also noted in studies reporting on not specified timeframe of PTSD, posing a threat to the validity of the findings. Lastly, one of the studies included in the not specified timeframe reported a very high prevalence rate of PTSD of 65% in a sexual offending population (McMackin et al., 2002) which may have contributed to the elevated not specified prevalence rate. Thus, it is not possible to make definitive conclusions regarding the prevalence rates of PTSD in youth with a history of offending.

A considerable amount of heterogeneity was observed between studies reporting on current prevalence and lifetime prevalence. This could be attributed to variation in study methodologies, such as the type of measure used to assess PTSD, i.e. structured clinical interview vs questionnaire, the study sample and criminal justice setting. However, heterogeneity was observed to be low for studies reporting on the prevalence of PTSD in female youth for the 'not-specified' timeframe. This could be because prevalence data were drawn from studies with similar participant groups and settings (mainly juvenile detention) along with similarities in type of measure used (mainly interview). Although, these factors were not specifically analysed in relation to heterogeneity.

Additionally, the data for time-point at which youth with a history of offending were assessed (i.e. at intake, two weeks after intake) was not always reported. The time-point at which youth are assessed can impact the overall prevalence rates of PTSD. The type of diagnostic measure (questionnaire versus interview), the type of event assessed ('worst traumatic event' or 'any other traumatic event') and the timeframe in which PTSD symptoms (current, lifetime or not specified) were assessed can have an influence of the prevalence rates. More generally, it has been found that the use of structured interview led to less PTSD diagnoses when compared to the use of questionnaire measures (Schincariol et al., 2023). Questionnaires that ask respondents to report symptoms based on the 'worst event' tend to find higher rates of PTSD when compared to questionnaires that ask to report

symptoms based on an 'unspecified event' (Koenen et al., 2017). Due to the small number of subgroups, it was not possible to explore data looking at the comparisons by type of diagnostic measure when split by timeframe.

Higher prevalence rates of PTSD in female youth with a history of offending could be due to factors such as differing trauma experiences, coping mechanisms and help-seeking behaviours compared to male youth. For example, girls report more frequent episodes of interpersonal victimization such as sexual assault, abuse, and punishment (Hennessey et al., 2004)- whilst boys report increased incidences of witnessing violence (Foy et al., 2012). Despite the elevated rates of trauma for both male and female young offenders, more female young offenders meet criteria for PTSD (Abram et al., 2004). A quantitative review of sex differences in PTSD found that regardless of the study design, sample or assessment type, women and girls are more likely to meet criteria for PTSD (Tolin & Foa, 2006).

Strengths and Limitations

The high heterogeneity seen in the findings are consistent with the notion that PTSD is a heterogeneous disorder often with comorbidities (Nandi et al., 2009; Waelde et al., 2005). This can comprise various stress responses depending on the type of trauma experience and the neurobiological and environmental influences (Nugent et al., 2012). Furthermore, the methodological differences observed in the studies on mental health difficulties in youth with a history of offending, including the different settings and measures used, predicts high levels of between-study heterogeneity (Beaudry et al., 2021). Attempts were made to explore heterogeneity, and it was found that heterogeneity between studies reduced due to the removal of specific sample studies in the sensitivity analyses. However, the high heterogeneity observed does limit the conclusions that can be drawn regarding the prevalence of PTSD in youth with a history of offending. In terms of bias, a large proportion of studies included in the analyses ranged from medium to high risk of bias which can affect the validity of the findings.

A novel category ‘not specified’ timeframe was created to addressed gaps in PTSD reporting. Whilst this may be less significant clinically, this has methodological considerations for future research. Without clear distinctions reported between current and lifetime prevalence rates, there is a potential risk of misclassifying cases of PTSD, influencing the interpretation of the overall prevalence rate. Whilst the category ‘not specified’ allows for a comprehensive review of PTSD, it may limit our understanding of PTSD symptoms and development. This review highlights the need for more standardised reporting practices in future PTSD research to improve accuracy and comparability of findings.

Consistent with other reviews in the topic area, the search term ‘forensic’ was not included in the search terms (Beaudry et al., 2021; Livanou et al., 2019). It was anticipated that the selected terms would be sufficient to find relevant studies, however the review could have been improved with the inclusion of ‘forensic’ in search terms. Despite the focus of the review being solely on youth samples, the final data included a considerable number of youth samples over the age of 18 years. This was because different countries included in the study considered youth to be up to the age of 25. To avoid omission of important studies it was decided that studies with participants mean age of 18 years would be included. However, this resulted in a significant number of over 18s being included, diversifying the sample further. As such, it is harder to draw conclusions from the findings as other variables such as developmental stage, criminal justice setting (remand/custody/residential home) and geographical location and associated jurisdiction could impact the results. Additionally, different age groups may experience trauma symptoms differently, which can influence recommendations made for trauma-informed interventions.

The majority (76%) of the studies included in the review were from countries considered W.E.I.R.D (Western, Educated, Industrialised, Rich, and Democratic; (Henrich et al., 2010) affecting the generalisability of findings. As not all countries included in the analysis are of similar socio-economic status, this can make comparisons across different countries difficult. Baranyi and colleagues (2018) found a higher prevalence of PTSD in prisoners in high-income countries, especially in the USA compared to other countries. Another limitation is that most measures in this

review were primarily based on one diagnostic classification system (DSM-III, IV or 5) compared to the International Classification of Diseases (ICD). The two classification symptoms conceptualise PTSD differently, such as the DSM-5 outlines PTSD as a 'multifaceted syndrome' with twenty symptoms in four clusters, whereas the ICD-11 includes six PTSD symptoms, reducing the number of possible overlapping symptoms (Cao et al., 2020). This has implications for the way PTSD is understood and subsequently assessed according to the converging diagnostic classification systems.

Subgroup analyses were not completed in the current review due to the limited number of studies reporting additional data. While several studies reported on the ethnic composition of the sample, prevalence rates by ethnicity were rarely provided. It is important to examine the role of ethnicity in prevalence rates of PTSD- a study by Andrews and colleagues (2015) found that Hispanic and Black adolescents experienced elevated rates of PTSD and exposure to more than one type of traumatic experience. Individuals from different ethnic backgrounds may present symptoms differently compared with other racial groups, and clinicians may treat all racial groups similarly (Kunen et al., 2005). The type of setting may contribute to variation in prevalence rates of PTSD; however this was not analysed. Prison and detention centres may increase the risk of trauma-related symptoms (Covington, 2008) due to challenging triggers such as strip searches, enforced discipline and authority and limited movement (Owens et al., 2008 as cited in Miller & Najavits, 2012). Additionally, trauma exposure prior to entering the criminal justice system might contribute to the prevalence of PTSD. Female youth experience increased rates of sexual abuse and assault (Abram et al., 2004; Abrantes et al., 2005) with male youth experiencing community violence (Kerig et al., 2009). Future studies would benefit from investigating prevalence rates of PTSD due to the type of trauma experience.

Implications and future research

The finding that elevated rates of PTSD was observed across all timeframes for female youth has several implications. This includes the need for gender sensitive and trauma-informed screening, assessment and treatment approaches to meet the needs of female youth with a history of offending (Wright et al., 2012). These approaches acknowledge that PTSD and trauma experiences play a

central role in offending behaviour, leading to rehabilitative support vs punishment and punitive approaches. Despite the over-representation of male youth sample in this review, female youth had higher rates of PTSD. Understanding the gender-specific risk factors can help understand pathways to offending behaviour. This has implications for rehabilitation and preventing recidivism in female youth with a history of offending. More broadly, addressing the needs of female youth with a history of offending can help develop effective interventions to break cycles of trauma and delinquency.

Research conducted thus far focuses on female youth predominantly in juvenile detention, correctional facilities, whereas many female youths remain in the community (Sickmund, 2009). As a result, little information is known about the prevalence, risk and protective factors to developing PTSD for female youth in community-based settings prior to entering the criminal justice system.

Other implications include the need for accurate screening and assessment measures that are validated for its use with youth with a history of offending for improved diagnostic accuracy. Future research can focus on reducing heterogeneity by performing sub-group analyses to explore the impact of different trauma experiences and how they contribute to PTSD prevalence and severity. Future studies can improve study designs to reduce bias through robust and transparent reporting.
To better understand the impact of developmental stage and the trajectory of PTSD symptoms, future studies can stratify samples by age or developmental stage to better understand how these factors influence PTSD prevalence. To improve the generalisability of findings, future research can be expanded a range of countries and socio-economic diversity to ensure that findings are more applicable globally. Research has demonstrated that certain ethnic groups are overrepresented in the criminal justice system (Andrews et al., 2015) and further investigation would enable a better understanding of the prevalence of PTSD across different ethnic groups.

Conclusion

The findings of this meta-analysis reveal that PTSD is prevalent in both male and female youth with a history of offending, with female youth displaying higher rates of PTSD. Different methods were used to explore this, for example by assessment measure (interview and self-report) and timeframe at which PTSD was assessed (current, lifetime and ‘not specified’). If left undetected and

untreated, PTSD has far-reaching implications which necessitates the importance of screening and assessments that are timely and gender sensitive and responsive. Future studies can strengthen findings using measures that are validated for youth with a history of offending, as well as the methodological design of the study to understand risk factors and the long-term impact of PTSD and offending.

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Chapter Three: Bridging Chapter

Chapter one revealed elevated rates of PTSD in youth with a history of offending. Current prevalence rates of PTSD for male and female youth combined was 15.7%, lifetime was 16.3% and 'not specified' timeframe was 23.1%. These rates are observably higher than those in the general population of youth with a trauma experience with prevalence rates at 8% for females and 2% for males (Merikangas et al., 2010). The high prevalence rates underscore the importance of the identification of mental health diagnosis in youth with a history of offending.

Individuals with a mental health diagnosis experience stigma and face discrimination in day-to-day life (Levi & Golding, 2024). It may be reasonable to conclude that stigma and discrimination may affect outcomes for individuals in the criminal justice system too. Various public attitudes and beliefs may arise because of mental health diagnosis; for example, individuals may be viewed as dangerous and responsible for their illness (Hyler et al., 1991). These biases may affect decision making in court, for individuals with a mental health diagnosis. Certain mental health diagnoses generate more negative attitudes than others. For example, attitudes towards schizophrenia, mania and more recently Anti-Social Personality Disorder (Kelley et al., 2019; Pescosolido, 2013) are perceived negatively in adults in the criminal justice system. However, less is known about the impact of mental health diagnoses in adolescents in the criminal justice system. Are they also viewed negatively in relation to their mental health diagnosis? And does this affect sentencing?

This empirical study explored this gap in literature by replicating a study by Baker et al., (2022). The mock homicide trial design investigated the impact of the mental health diagnosis of Severe Personality Disorder, Borderline Pattern for an adolescent on trial and its impact on mock juror decision making.

Chapter Four: Empirical Paper

Mock Juror Decision Making for an Adolescent on Trial: The Impact of Diagnostic Terminology and Stigma

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Abstract

Juror decision-making in legal proceedings is influenced by various factors, including diagnostic terminology and labels used to describe defendants, stigmatising attitudes towards them and attributions made for their behaviour. However, there is limited evidence of whether these factors impact juror-decision making for adolescent defendants, particularly in the case of the partial defence of Diminished Responsibility in relation to murder. This study aims to investigate the effect of diagnostic terminology- specifically whether the adolescent defendant labelled as having a "Severe Personality Disorder, Borderline Pattern" or "Complex Mental Health Problem" has an impact on juror decision making in a homicide trial. The present study also investigates if stigma and causal attributions about the defendant's behaviour affect the overall verdict. Primary analyses revealed no significant differences in stigmatising attitudes or causal attributions between the two mental health diagnostic terms. However, secondary analyses identified that the most influential factor in juror-decision making was the perception of the defendant's personal control over his actions and behaviour that contributed to jurors rendering a verdict if Diminished Responsibility. These findings suggest that perceptions of personal control may be an important determinant in cases involving the legal defence of Diminished Responsibility. This has implications for legal, mental health professionals and policymakers to ensure a fair and just outcome in legal proceedings involving adolescent defendants with mental health difficulties.

Keywords: Stigma, mental health, juror, personality disorder

Introduction

Adolescence and crime

Adolescence, as defined by the World Health Organisation (WHO), is a period between the ages of 10 and 19 years (WHO, 2003). It is characterised by considerable changes in brain function and structure (Aronson, 2007) including but not limited to a gradual onset of skills in self-regulation and cognitive control (Ryberg, 2014). Adolescents can be regarded as 'developmentally immature' due to impulsivity, poor regard for consequences when faced with stressful decisions and are increasingly influenced by the presence of peers; compared to adults (Chein et al., 2011). Adolescents might act on emotive situations without consideration for consequences which might increase the risk of offending behaviours (Romer, 2010). In this context, the term 'offending behaviour' is used to describe a vast range of behaviours including physical aggression, vandalism, truancy, theft, and property damage (Lopez et al., 2017). The term 'young offenders' and 'youth with a history of offending' are used to describe a young person who has committed a criminal offence (Young et al., 2017).

There is evidence to suggest that age is strongly correlated with crime; with crime rates increasing during adolescence and declining immediately after (Elliott et al.,1986). This 'age-crime curve' is a trend that has been observed in several industrialised and developing countries (Fairchild & Smaragdi, 2017). In addition to age, other factors such as poly-victimisation (Arseneault et al., 2010), parental abuse (Moylan et al., 2010), poverty or low socio-economic status (Sariaslan et al., 2014) are known to increase the risk of offending behaviour during adolescence.

Prevalence of Mental Health Difficulties in Youth with a History of Offending

Research on the prevalence of mental health difficulties (MHD) in young people in the criminal justice system is developing. Evidence demonstrates that the prevalence of MHD in detained youth is significantly higher than young people in the general population (Kessler et al., 2005). Heller and colleagues (2022) found the prevalence of psychiatric disorders (Conduct Disorder, Attention

Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, Depression and Anxiety disorders) in incarcerated youth to be 82.6%, with the presence of more than one disorder simultaneously.

Studies investigating the prevalence of MHD in the wider global context have also found high rates. A study by Teplin et al., (2002) in the USA found that 20.4% of sentenced youth had one diagnosable disorder and 45.9% met criteria for two or more disorders. Another study concerning serious and violent youth in British Columbia found that all females (100%) and almost all males (91.9%) met criteria for one mental health diagnosis (Gretton & Clift, 2011). Amongst male youth with a history of offending, conduct disorder has been found to be the most frequent diagnosis with prevalence rates ranging from 31% to 100% (Vreugdenhil et al., 2004). Another diagnosis observed more frequently in male youth is Antisocial Personality Disorder (ASPD) with prevalence rates ranging between 76% to 81% (Vaughn et al., 2015). It is important to acknowledge the inherent circularity in the prevalence of ASPD and CD amongst youth with a history of offending as offending behaviour forms part of the components required for a diagnosis to be made.

A study by Kaszynski et al., (2014) demonstrated a high prevalence of Personality Disorders (PDs) in detained adolescent females; with diagnosis of ASPD at 91% and Borderline Personality Disorder (BPD) at 41%. The comorbidity of ASPD and BPD has been found to be strongly linked with violence (Howard et al., 2014). Studies demonstrate higher incidences of aggression and violent behaviour in offenders with PD (Dunne et al., 2018) with individuals being three times more likely to engage in violence (Yu et al., 2012).

Personality Disorder

The International Classification of Diseases (ICD-11) defines PDs as “problems in functioning of aspects of the self (e.g., identity, self-worth, accuracy of self-view, self-direction), and/or interpersonal dysfunction (e.g., ability to develop and maintain close and mutually satisfying relationships, ability to understand others' perspectives and to manage conflict in relationships)” (World Health Organisation, 2019 as cited in Blüml & Doering, 2021). The term ‘personality disorder’ is outlined as the most “negative, stigmatising, pejorative, marginalising and objectifying” by individuals who have received this diagnosis (Griffiths, 2011, p.19).

Recent changes to the ICD-11 criteria for PD have implications for clinical practice and research. For example, the main changes have included a shift from categorical to a dimensional system, with the emphasis on the severity of the traits of PD versus categories. Similarly, the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association [APA], 2013) has proposed changes to reflect a hybrid categorical-dimensional system with the Level of Personality Functioning Scale (LPFS) in its 'alternative model' in Section 3 of the DSM. An advantage of this approach has been to resolve comorbidities in PD (Fonagy, 2016) which has implications for case formulation and intervention. However, it is unknown whether elements of the proposed approach- for instance the inclusion of adjectives describing severity in the ICD-II (e.g. 'severe personality disorder')- may not themselves be stigmatising. Other changes to the ICD-II criteria include categorising PD into mild, moderate, and severe depending on its effect on functioning; traits such as disinhibition, negative affect, detachment, and lastly a borderline pattern qualifier (McCartan & Davidson, 2020). The borderline qualifier outlines prominent diagnostic characteristics such as pervasive instability in relationships, sense of self, affect, marked impulsivity (e.g., efforts to avoid abandonment, increased frequency in self-harming behaviours and emotional instability).

There is much debate about the clinical utility of the diagnosis of PD, especially for children and adolescents in the UK (Kingsley, 2022). However, it has been widely used in Europe, Australia, and USA. Despite this, clinicians identify the diagnosis as associated with negative consequences, with one study highlighting that 64% percent of 52 psychiatrists in the UK believe that a diagnosis of PD in adolescence was 'harmful and inappropriate' (Griffiths, 2011). Research by Chartonas et al. (2017) found health professionals have less empathy towards individuals with this diagnosis including poor perceptions of their recovery. These stigmatic perspectives can be perpetuated by the language used between service users and health professionals (Sewell, 2018). However, Chanen et al. (2022) articulated that the diagnosis of PD can also be helpful, especially when generic diagnoses like Depression are not an accurate representation of children and adolescents' difficulties. Additionally, it can also provide opportunities for early intervention (Chanen, et al., 2022) and in the legal context, it can serve as an explanation, aggravating or mitigating factor for individuals involved in crime or

offending behaviours (Vaughn et al., 2008). Certain diagnoses can be related to different treatment outcomes, for example the retention of the 'borderline' specifier in the ICD-11 was intended to support clinicians in identifying symptoms and subsequently treatment specific interventions (Sharan et al., 2023).

Stigma

Goffman (1963) outlined stigma as "social rejection" resulting from negatively perceived characteristics. He elaborated that this "social rejection" leads to a "spoiled identity" of the individual being stigmatised. Stigma can be conceptualised through three components: prejudice, discrimination, and stereotypes (Corrigan & Watson, 2002). Stigma can manifest itself as public, whereby individuals are ostracised based on their identity in the stigmatised group (Bos et al., 2013) and self-stigma whereby the individual believes that the negative attitudes are true (Corrigan et al., 2005). This may lead to depression and low self-esteem (Sheehan et al., 2016). Stigma towards individuals with MHD has been widely researched. Findings demonstrate that stereotypes towards those with MHD can invoke unfair and biased treatment towards them. Common stereotypes include individuals with MHD being perceived as dangerous, incompetent, and irresponsible (Corrigan et al., 2014). Those perceived as dangerous and irresponsible are more likely to be segregated or avoided in society and blamed for their illnesses.

Studies have indicated that PD may be more stigmatised more than other psychiatric diagnoses (Catthoor et al., 2015). Common reactions to PD include frustration, fear and beliefs that individuals with PDs should be able to demonstrate control over their behaviour (Adebowale, 2010; Aviram et al., 2006). This perspective can further stigmatise individuals with PD as they can be perceived as blameworthy for their difficulties. Furnham et al., (2015) suggest that the public have less sympathy towards individuals with a PD and perceive them to be in less in need of help. This could be due to limited mental health literacy about PD further alienating those with the diagnosis (Sheehan et al., 2016).

Causal Attributions

Attribution theory provides a framework to describe the link between stigmatising attitudes and discriminatory actions (Weiner, 1985, as cited in Corrigan et al., 2003). This theory outlines the underlying cognitive and emotional process that relate to these actions. For this paper, we will focus specifically on causal attributions in relation to criminal behaviour. Weiner (1986) posited that causal attributions include three dimensions; locus, stability, and controllability where causes of outcomes or events are perceived to be internal or external to a person (*locus*), whether causes are stable or unstable over time *(stability)* and whether the cause is controllable or uncontrollable (*controllability)*.

When thinking about causes of criminal behaviour, the dimension locus is linked to perceptions of controllability and responsibility (Murray et al., 2011). This suggests that the way individuals perceive criminal behaviour will significantly impact what the outcome should be. For example, a study with potential jurors considered an offender with High-Functioning Autism Spectrum Disorder to be less blameworthy for their actions due to less perceived control of their behaviour (Berryessea et al., 2015). We want to understand if adolescents in the criminal justice system are considered less blameworthy for their actions by virtue of age and maturity. Research by Rudebeck and Woody (2002, as cited in Walker & Woody, 2011) investigated the effect of age on sentencing and found that jurors were more likely to convict older defendants than younger defendants. Similarly, Bradley et al. (2012) found that mock jurors viewed 11-year-old as less responsible and punishable for murder when compared to a 14-year-old; and a 14-year-old less responsible than a 17-year-old. However, there have been mixed findings; Ghetti and Redlich (2001) found that age of the defendant did not influence severity of the sentence, although the type of crime did.

Diminished Responsibility and Expert Witness Testimony

The partial legal defence of Diminished Responsibility (s.2 Homicide Act 1957, as amended by s.52 Coroners and Justice Act, 2009) is available to a defendant with a mental health condition when they are charged with an offence of murder. If the criteria are found to be met, the defendant is convicted of manslaughter as opposed to murder. The practical implications following a successful application of this defence is the potential to avoid a mandatory life sentence which must otherwise be imposed if the conviction is for murder (s.1, Murder (Abolition of Death Penalty) Act 1965). The sentences that can be imposed on an offender found guilty of manslaughter on the grounds of diminished responsibility include a 'hospital order' under Section 37 of the Mental Health Act (1983), a s.45A 'hybrid order', or a determinate prison sentence.

The Diminished Responsibility defence requires the presence of an 'abnormality in mental functioning' which:

A) arose from a recognised medical condition

B) substantially impaired the defendant's ability to do one or more of:

   1. understand the nature of their conduct
   2. to form a rational judgement
   3. exercise self-control and

C) provides an explanation for the defendant's acts and omissions in doing or being a party to the killing.

The concept *'actus reus'* can be defined as 'the external behaviour or conduct which is prohibited by the criminal law' (Cross, 2010, p. 16). In the case of an offence of murder, the *actus reus* is the 'unlawful killing of another person' (Cross, 2010, p.16). For a conviction, however, the prosecution must also prove *mens rea* to establish criminal responsibility. *Mens rea* refers to the defendant's intention, recklessness or mental state at the time of the act (Mann, 2010). Partial defences such as Diminished Responsibility or insanity are available when excusatory or justificatory factors reduce the defendant's culpability and responsibility.

The M'Naghten rules are the legal tests for the insanity defence, which is available under section 2 of the Trial of Lunatics Act 1883. The rules were established following the case of R v M'Naghten (1843). Here, M' Naghten was tried for the 'wilful murder' of Edward Drummond. The key issue in the M'Naghten case was whether the defendant could be held legally responsible for these actions due to his mental state at the time. Under the M'Naghten rules (1843) the defendant may be found not guilty by reason of insanity, if at the time of the alleged act(s) or omission,

a) the accused was labouring under a defect of reasoning
b) the defect arose from a disease of the mind, and
c) as a consequence of the defect of reasoning, the accused either:
   (i) did not know the nature and quality of the act he or she was doing, or
   (ii) did not know that what he or she was doing was wrong (Rix, 2019, p. 45).

The jury decides whether to allow the partial defence of Diminished Responsibility or to find the defendant not guilty by reason of insanity. For both defences, the 'burden of proof' is on the defendant. The defendant is to prove to the jurors that the criteria of Diminished Responsibility or insanity are met, on the balance of probabilities.

Expert witness clinicians, typically a psychiatrist or psychologist may be asked to provide their clinical opinion as to whether the defendant met criteria laid out for Diminished Responsibility or insanity. An expert witness would give an account of the extent and severity to which the defendant's difficulties arose from a recognised medical condition, which impaired their ability to understand the nature of their conduct, form a rational judgement and/or exercise self-control (Mackay, 2018).

An expert witness would complete a comprehensive medico-legal assessment including interviewing the client and gathering collateral information/file information to inform their decision. Expert witnesses can provide recommendations on prognosis, treatment and management in their field. For example, psychologists may suggest appropriate psychological interventions whereas a psychiatrist, as a Registered Medical Professional, may recommend hospital orders under the Mental Health Act (1983, 2007).

It is important to consider the role of mental health difficulties in adolescents on trial as they could have considerable cognitive and psychiatric impairments that may make them unfit to stand trial (Burrell et al., 2008). This can lead to unfair proceedings and inadequate defence, undermining the justice process for youth with a history of offending (National Centre for State Courts [NCSC], 2023).

The Current Study

The summary above has described factors that can affect juror decision making, including mental health diagnosis, stigmatising attitudes and causal attributions for a defendant's criminal behaviour and how these can influence the Diminished Responsibility verdict. The labels used to describe individuals with PD coupled with withdrawal or rejection of these individuals can perpetuate and worsen stigmatising attitudes towards them. Stigmatising attitudes may also influence the attributions made for the individual's behaviour, wherein, if an individual is seen as responsible or in control of their behaviour, they are less deserving of help or treatment. These elements can have an impact on lay people's attitudes, and ultimately jurors who are chosen to determine a verdict.

Currently, there is little research into the role of stigma towards an adolescent defendant with a mental health diagnosis. Additionally, very little is known if adolescents are considered less blameworthy by virtue of their age or mental health diagnosis. A previous study by Baker et al.,

(2022) examined mock juror attitudes and causal attributions towards an adult defendant in a fictitious homicide trial. It was found that a diagnosis of 'Severe Personality Disorder' was linked in some ways to higher levels of stigma when compared to a diagnosis of a 'complex mental health problem'. A limitation of the study, however, was that all mock jurors endorsed a plea of Diminished Responsibility for defendants, irrespective of the mental health diagnosis. The authors of the study suggested that the vignette used in the study made mental health factors overly salient. Moreover, the study was completed with an adult defendant, and it is unclear whether the use of the same term in a younger defendant would influence decision-making in the same way.

This study will explore the impact of stigma and perceptions of causal attributions on juror decision making for an adolescent defendant with PD. It will be presented to mock jurors in a fictitious homicide trial to determine if mental health diagnosis affects jurors' beliefs and attributions regarding the defendant's crime and if this results in any differences in juror's ratings of Diminished Responsibility.

Hypothesis

This study investigates whether the use of the diagnosis 'Severe Personality Disorder, Borderline Pattern' for an adolescent defendant in a fictitious homicide trial has an impact on stigmatising attitudes, causal attributions, and endorsements of Diminished Responsibility verdict. This was compared to a control condition 'Complex Mental Health Problem'. These terms are identical to those used in Baker et al. (2022).

First hypothesis: A diagnosis of Severe Personality Disorder will result in higher stigmatising attitudes towards the adolescent defendant when compared to the control condition.

Second hypothesis: A diagnosis of Severe Personality Disorder will result in differences in causal attributions regarding the adolescent defendant's behaviour when compared to the control condition. This is specified non-directionally as extant literature could imply an effect in either direction.

Third hypothesis: A diagnosis of Severe Personality Disorder will result in higher ratings of diminished responsibility when compared to the control condition.

Method

Design

This study investigated the impact of stigmatising attitudes, causal attributions on individual ratings of Diminished Responsibility for homicide in a fictitious criminal trial. This method comprised of a film trial reconstruction where a defendant with a mental health difficulty is on trial for homicide. The trial reconstruction and study were presented on an online platform to participants taking on the role of mock jurors.

The study used a between-subjects design using quantitative data to investigate differences between two conditions. The first condition described the defendant's mental health difficulty as a 'complex mental health problem' and the second condition described the defendant's mental health difficulty as a 'Severe Personality Disorder, Borderline Pattern'. The information presented to participants was the same in both conditions, except for a manipulation of the mental health diagnosis given to the defendant.

Materials

Mock trial

This study is a modified replication of a mock homicide trial by Baker et al., (2022) who produced a filmed trial reconstruction with actors. Whilst the Baker and colleagues focused on an adult defendant, this study concerned an adolescent defendant. A series of videos were created for the study; 1) a video outlining the expert witness testimony by a clinical psychologist 2) videos outlining the trial reconstruction, including the prosecution and defence arguments 3) the judge's instructions to the mock jurors.

In the present study, participants were recruited via a paid online platform Prolific (www.prolific.co). Inclusion/exclusion criteria were listed on the website and was based on the criteria of the Juries Act 1974. Participants were asked to fill out a set of screening questions prior to the start of the study.

Platforms such as Prolific have been used for conducting behavioural research and has been found to have high data quality (Peer et al., 2021) when compared to alternative platforms such as Mechanical Turk. Prolific includes robust procedures to validate a participant's identity, thus reducing the risk of 'bots' influencing the outcome.

Expert witness testimony

The expert witness testimony was presented by a Clinical Psychologist in a video (See Appendix C for the script). The aim of the testimony was to present a psychological formulation and diagnosis describing the defendant's mental health difficulty in relation to the alleged acts/crime. As mentioned above, the script from the study by Baker et al., (2022) was modified to reflect an adolescent defendant with a mental health difficulty. The script was also modified from the previous study as all participants opted for a Diminished Responsibility verdict. The modifications to the vignette were included with the aim of portraying a balanced portrayal of the defendant's circumstances. These included details such as names of the defendant, increased detail on the diagnosed mental health difficulty and its associated symptoms, as well as accounts of the defendant's self-harm. The nature of the crime was not outlined in the expert testimony video. This ensured that measurements of participants stigma- related beliefs were based on the diagnosis and psychological formulation of the defendant's mental health difficulty and not the crime.

Case scenario

The written case scenario that was presented to the mock jurors was derived from the Baker et al., (2022) study. This outlined the circumstances and the events leading up to the crime (Appendix D). Information on the partial defence of Diminished Responsibility was also provided at this stage in the study (Appendix E).

Trial reconstruction

This section of the study includes the prosecution and defence arguments in relation to the partial defence of Diminished Responsibility, as well as the judge's instructions to the mock jurors (Appendix F). Within the trial reconstruction, the prosecution's argument portrayed the defendant as

in control of their actions and the defence argument portrayed the defendant as an individual with an experience of trauma due to early experiences of abuse.

The judge's instructions to the mock jurors summarised the arguments and asked the jurors to consider if the partial defence of Diminished Responsibility applies to the defendant. The judge outlined the possible verdicts which included, the defendant being found guilty of murder, or manslaughter on the grounds of Diminished Responsibility.

Experimental manipulation

The experimental manipulation in this study was related to the clinical information presented in the expert witness testimony and trial construction. Whilst the scripts were identical for both conditions, the only experimental manipulation was the use of the diagnosis of 'Severe Personality Disorder, Borderline Pattern' or 'complex mental health problem'. There were no other differences between the case scenarios.

Measures

The Attribution Questionnaire-27(AQ-27)

The AQ-27 measures stigmatising beliefs about a defendant (Corrigan et al., 2003; Appendix G). Typically, the AQ-27 outlines a written vignette about a man named Harry with Schizophrenia. However, for this study, the questionnaire was adapted from Baker et al. (2022) to reflect "defendant and their problems" and did not refer to the circumstances of the case. The AQ-27 comprises of 27 questions which relate to 9 domains namely anger, avoidance, blame, coercion, dangerousness, fear, help, pity, segregation. Each question is rated on a 9-point scale. The questions corresponding to the help, pity and avoidance domains were reverse scored. Higher numbers on the measure indicate higher stigmatising beliefs. From the data obtained in this study, the AQ-27 had an internal consistency of $\alpha = .93$ which is considered 'good internal consistency' (Cortina, 1993). This measure has been used across different samples with internal consistency ranging from 0.82-0.88 (Pingnani et al., 2011; Akyurek et al., 2019).

The Revised Causal Dimension Scale (CDS-II)

The CDS-II measures participants attributions relating to the cause of a defendant's behaviour (McAuley et al., 1992, Appendix H). The questionnaire examines whether the defendant's behaviour is attributed to internal causes (i.e. the defendant has control over their actions) or external causes (i.e. the defendant does not have control over their actions). The questionnaire comprises 12 items which relate to four subscales (personal controllability, external controllability, locus of causality and stability). Each question is rated on a 9-point scale. High scores demonstrate that the causes of the defendant's behaviour is highly controllable, with a high locus of control, greater stability. From the data obtained in this study, the internal consistency for each subscale was as follows: personal controllability α=.84, external controllability α=.65, stability α= .13 and locus of causality α=.23. Another study found internal consistencies for personal controllability, external controllability, stability, and locus of causality as 0.93, 0.80, 0.77 and 0.88 respectively (Dong et al., 2013). Due to the very low internal consistencies of subscales stability and locus of causality in the current study, these subscales were removed from any further analysis.

The Diminished Responsibility Questionnaire (DRQ)

The DRQ measures participants' individual judgements and ratings in relation to the partial defence of Diminished Responsibility (Baker et al., 2022, Appendix I). This questionnaire outlines circumstances of the crime, which has been separated into four scenarios. Each scenario is rated against the five elements of the legal test used for Diminished Responsibility. The five elements are as follows: a) was the defendant's behaviour related to a medical condition? b) Could the defendant form a rational judgement? c) Could the defendant exercise self-control? d) Could the defendant understand the nature of their conduct? e) Do any of these factors explain how the defendant acted?

Each question is rated on a 7-point scale. Scores are added and calculated for the five subscales and a total DRQ score was calculated by adding together the responses on 'do any of these factors explain how the defendant acted'? The responses on the questions relating to conduct, self-control and rational judgement were reverse scored. Higher scores demonstrated the likelihood of a

diminished responsibility plea. From the data obtained in this study, the internal consistency for the overall measure was α=.96. Baker et al. (2022) found the internal consistency of the DRQ measure to be α=.94.

Participants

Based on a primary power analysis, a minimum sample size of 100 participants (up to 50 in each condition) was required for the study. The power analysis was conducted using G* Power software (Appendix J). A total of 101 participants completed the study in full. Participants were recruited through an online platform to ensure it was representative of the population of the UK. This method of recruitment allowed for flexibility as well as achieving a large sample size. A breakdown of participants age, ethnicity, gender and education level across the two study conditions is outlined in Table 4.1

Table 4.1 *Demographics of participants per condition*

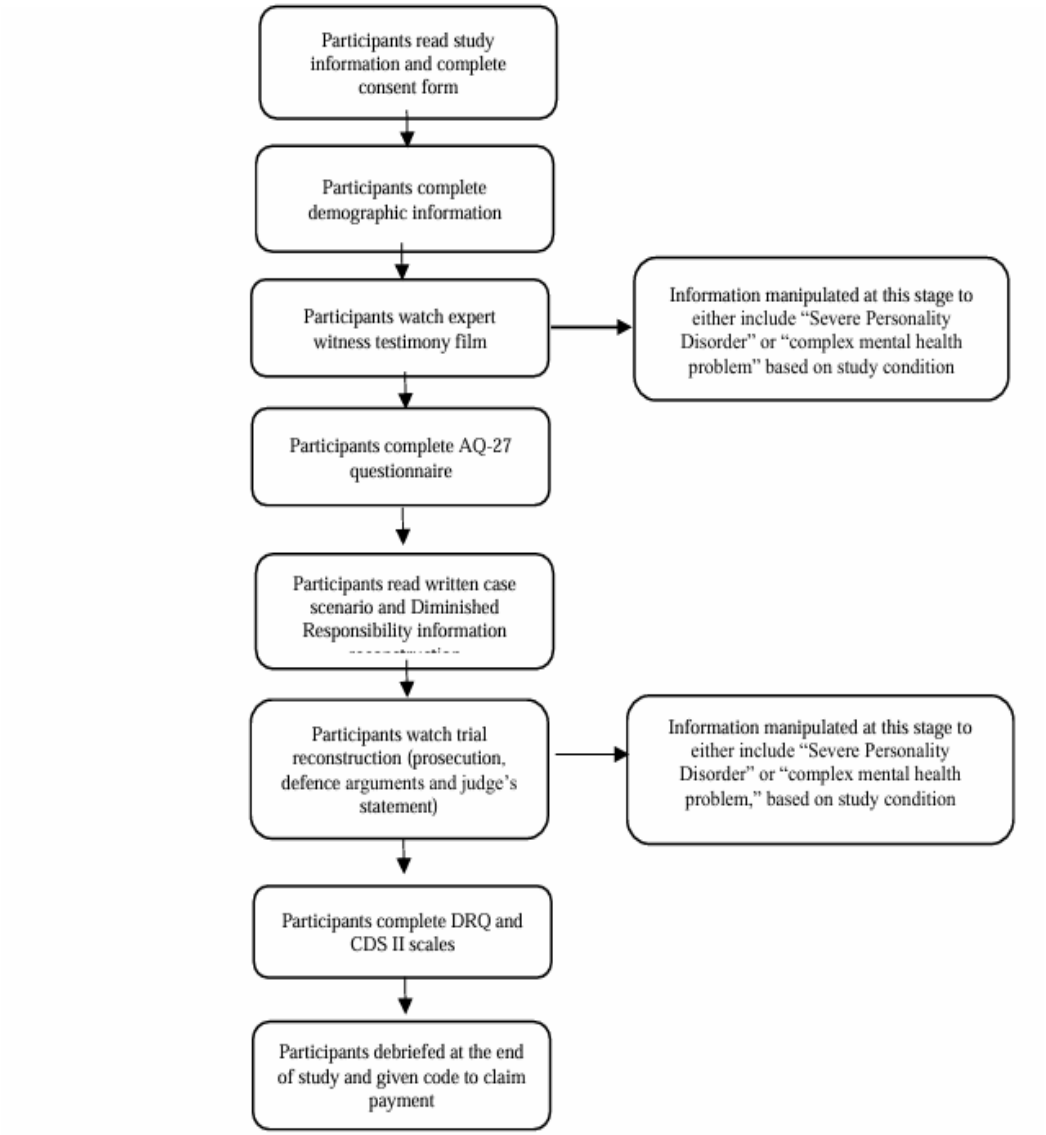
		Severe Personality Disorder (n=55)	Complex Mental Health Problem (n=46)	Total (n=101)
Age				
	Mean	35.6	37.5	
	Median	33.0	35.5	
Gender				
	Male	22	16	38
	Female	33	29	62
	Prefer not to say	0	1	1
Ethnicity				
	White & Black African	3	1	4
	White British/Irish	51	42	93
	Asian, Black, Mixed, Other	1	3	4
Highest Education Level				
	Secondary school	5	3	8
	Higher education	5	7	12
	College	10	4	14
	Undergraduate	23	19	42
	Postgraduate	11	12	23
	Doctoral or PhD	1	1	2

Procedure

The study survey was designed using PsyToolkit, which is an open access psychological tool designed to enable researchers and students to create and conduct experimental studies and surveys in laboratory and online environments (Stoet, 2017). The study survey was then listed on the online platform Prolific, which is increasingly used by researchers to conduct experiments, surveys, and research studies (Prolific, 2024). Participants were directed to the participant information sheet (Appendix K) which outlined the overall aims of the study and were presented with a consent form (Appendix L). Participants were randomly assigned into one of two conditions "Severe Personality Disorder, Borderline Pattern" and "Complex Mental Health Problem"; however, they did not know what condition they were placed in.

Participants watched the expert witness testimony video and were then asked to complete the AQ-27 (Corrigan et al., 2003) The expert witness testimony video contained limited details of the offence, and the AQ-27 was administered at this point to ensure that attitudes and stigma were assessed primarily in relation to the mental health elements of the presentation. Subsequently, participants were asked to read a written case scenario which outlined the details of the crime. Then, they were asked to read the information on the partial defence of Diminished Responsibility before watching the trial reconstruction. This included videos from the defence, prosecution, and the judge's instructions. Participants were asked to complete the CDS-II measure (McAuley et al., 1992) and the DRQ (Baker et al., 2022). Participants took approximately 25 minutes to complete the entire study. Once completed, participants attained a unique completion code to enter onto the Prolific website to receive their payment of £2.50. This payment is in line with the minimum payment guidelines as stipulated by the Prolific platform (Prolific' s payment principles (Prolific, 2024). The study procedure is outlined in Figure 11.

Figure 11. *Flowchart outlining the Study Procedure*



Ethical Approval

Ethical approval was attained from the University of East Anglia Faculty of Medicine and Health Sciences ethics panel (Appendix M for the approval document). Given the nature of the case scenario relating to a fictitious trial, participants were provided additional information on seeking support following the completion of the study. This was provided in case participants were distressed by the material they had heard/read (Appendix N).

Analysis plan

This study used a single independent variable with two levels: 'Severe personality disorder, borderline pattern' and 'complex mental health problem'. The study assessed differences in 16 variables in total. AQ-27 variables included anger, avoidance, blame, coercion, dangerousness, fear, help, pity, segregation. A total AQ-27 score was computed by adding together the scores on all variables. CDS-II variables included personal controllability and external controllability. DRQ variables included recognisable medical condition, understanding conduct, rational judgement, self-control and explaining actions. A DRQ total explaining action score was computed as the overall Diminished Responsibility verdict.

A series of independent samples *t*-tests were used to compare means for each variable between the two groups. To control for multiple comparisons, a 'conservative' significance threshold of 0.01 instead of 0.05 was implemented to reduce the likelihood of Type I (false positive) errors (Palesch. 2014). The Bonferroni correction was also considered for comparison, however, this method has been regarded as 'too conservative' especially when several tests are conducted, as it increases the risk of Type II (false negative) errors (Etymologia, 2015). However, in this case, the outcomes did not differ significantly across the two approaches.

Subsequently, two regression analyses were conducted to examine the relationship between AQ-27 variables (stigma) and CDS-II variables (personal and external control) and diminished responsibility verdict. To fulfil the assumptions of the independent samples t-test, a Shapiro-Wilks test was conducted to determine normality of the data distribution. The results demonstrated that the data were normally distributed, and the appropriate parametric tests were conducted (Appendix O).

Additionally, homogeneity of variance was confirmed after the Levene's test for equality of variances was conducted (Appendix P).

Results

To test the hypotheses, the analysis included a series of independent *t*-tests to examine differences in stigma-related beliefs, causal attributions, and Diminished Responsibility ratings between the two conditions. Subsequently, a regression analysis was conducted to examine the relationship between causal attributions, stigma, and the Diminished Responsibility verdict.

Preliminary analysis

The preliminary analysis plan involved a series of independent samples *t*-tests to investigate differences in stigma-related beliefs, causal attributions, and individual diminished responsibility verdicts between the two groups. The different factors from the three outcome measures resulted in a total of 16 variables. In summary, no significant differences were observed in stigma-related beliefs, causal attributions, and Diminished Responsibility ratings between the two conditions, namely, Severe Personality Disorder, Borderline Pattern and Complex Mental Health Problem. The application of the Bonferroni correction had no impact on the overall results (Appendix L). The mean scores for stigma-related beliefs, causal attributions, and diminished responsibility, along with their mean differences, standard errors, 99% confidence interval, *t* statistic and Cohen's *d* effect sizes are outlined in Table 4.2. Effect sizes are considered small when $d = 0.2$, medium when $d = 0.5$ and large when $d = 0.8$ (Cohen, 1988).

Secondary analysis

A post hoc power analysis was conducted to evaluate the statistical power of the regression analysis, based on the observed effect size, sample size, and significance level. This analysis aimed to assess the likelihood that the study had sufficient power to detect the observed effects. The result of this power analysis is outlined in Appendix K.

Two regression analysis were conducted to examine the effects of the predictor variables (AQ-27 and CDS-II subscales personal and external control) on the Diminished Responsibility verdict. A hierarchical regression was conducted with the Diminished Responsibility (DRQ explaining actions as the total score) as the outcome variable. The AQ-27 total score was entered at stage one of the regression and CDS-II subscales personal and external control entered at stage two.

The hierarchical regression demonstrated that stage one of the regression model was significant $F(1,99) = 6.51$, $p< 0.05$. Stigma contributed significantly to the model and accounted for 6.2% of the variation in Diminished Responsibility verdict ($\beta = - .24$, t = -2.55, $p = <.05$). The regression demonstrated that stage two of the regression model was also significant $F(3,97) =22.72$, $p <0.05$. The CDS-II subscale variables of personal and external control accounted for 41.3% of the variance in the Diminished Responsibility verdict. Within the second model and the introduction of the CDS-II subscale variables, the total AQ-27 variable was no longer a significant predictor and personal control remained the only significant predictor ($\beta = .62$, $t = 7.48$, $p < .05$). The subscale external control did not contribute significantly to the overall model. Whilst stigma was significant in the first regression model, it was no longer a significant predictor whilst controlling for the personal control variable.

Subsequently, a stepwise regression was conducted with the nine AQ-27 variables (i.e. the subscale level scores), two CDS-II subscale variables and the condition entered at different stages. The intention of this approach was to determine any preliminary evidence for the importance of specific AQ-27 subscales on decision-making. The nine AQ-27 stigma-related variables were entered at the first stage of the regression model. The subscale variables personal control and external control from the CDS-II scale were entered at the second stage and the two mental health conditions was entered at the third stage.

Overall, the results showed that the first model was non-significant, $F (9,91) = 1.72$, $p = 0.095$. The AQ-27 variables were not associated with the overall Diminished responsibility verdict and none of the subscales were chosen by the algorithm to be entered into the model. The AQ-27 variables contributed 14.6% of variation in the Diminished responsibility verdict. Subsequently, the second model was significant, $F(11,89) = 5.99$, $p <0.05$. The addition of the CDS-II subscale

variables personal and external controllability was significantly associated with the Diminished Responsibility verdict. The variables explained 42.5% (an additional 26%) variation in the overall Diminished Responsibility verdict. Personal control was the only significant predictor within this model (β = .62, t = 6.41, p < .001) with higher scores in personal control relating to causes of behaviour located within the individual. External control did not contribute to the overall model.

Lastly, the addition of the variable 'mental health conditions' in the final stage of the regression demonstrated an overall significant model, $F(12,88) = 5.43$, $p < .001$. However, the mental health condition itself was not a significant predictor. Personal control remained the only significant predictor within this model (β = .62, t= 6.34, p < .001). Tests to assess if data met the assumption of collinearity were conducted. Variation inflation factor (VIF) demonstrated that multicollinearity of variables was not a concern as the VIFs for all variables were under 10 (range= 1.1 - 7.1).

Table 4.2. *Between-Group Attribution Questionnaire-27, Causal Dimension Scale-II and Diminished Responsibility Questionnaire statistics, t-statistics and effect sizes*

	Severe Personality Disorder (n=55)		Complex Mental Health Problem (n=46)		Mean Difference	99% Confidence Interval of the Difference (Lower, Upper)	Standard Error Difference	*t*-test (df), *p* value (0.01)	Cohens' *d*
	Mean	Standard Deviation	Mean	Standard Deviation					
AQ Anger	10.18	5.12	9.78	4.47	0.39	-2.14,2.93	0.96	*t*(99)= 0.41, *p*=.342	0.08
AQ Avoidance	17.98	4.98	18.41	4.99	-0.43	-3.04,2.18	0.99	*t*(99)= 0.43, *p*=.956	0.08
AQ Blame	12.70	3.85	13.06	4.50	-0.35	-2.54,1.82	0.83	*t*(99)=-0.42, *p*=.283	0.08
AQ Coercive	18.94	5.13	17.41	5.68	1.53	-1.29,4.36	1.07	*t*(99)= 1.42, *p*=.816	0.28
AQ Dangerousness	16.41	5.90	16.21	6.36	0.20	-3.01,3.41	1.22	*t*(99)= 0.16, *p*=.634	0.33
AQ Fear	13.69	6.45	13.84	6.58	-0.15	-3.57,3.26	1.30	*t*(99)=-0.12, *p*=.923	0.02
AQ Help	13.78	5.22	14.47	5.03	-0.69	-3.39,2.00	1.02	*t*(99)=-0.67, *p*=.642	0.01
AQ Pity	10.23	4.45	10.00	5.01	0.23	-2.23,2.71	0.94	*t*(99)= 0.25, *p*=.216	0.05
AQ Segregation	11.41	3.91	10.76	3.74	-0.77	-3.78,2.22	1.14	*t*(99)= 0.68, *p*= .387	0.13
DRQ Understand	14.92	5.83	15.39	6.10	-0.46	-3.59,2.66	1.19	*t*(99)=-0.39, *p*= .726	0.07
DRQ Medical Condition	15.10	5.61	15.13	6.13	-0.21	-3.09,3.05	1.17	*t*(99)=-0.18, *p*= .437	0.00
DRQ Rational Judgement	16.87	6.34	17.06	5.99	-0.19	-3.43,3.05	1.23	*t*(99)=-0.15, *p*=.622	0.03
DRQ Self-control	17.65	6.11	17.80	6.71	-0.14	-3.50,3.20	1.27	*t*(99)=-0.11, *p*=.633	0.02
DRQ Explaining actions	17.18	5.63	17.60	6.74	-0.42	-3.66,2.80	1.23	*t*(99)=-0.34, *p*=.281	0.06
CDS Personal control	9.67	2.89	9.673	3.43	-0.00	-1.65,1.65	0.63	*t*(99)=-0.00, *p*=.258	0.00
CDS External control	10.56	2.45	10.69	2.58	-0.13	-1.45,1.18	0.50	*t*(99)=-0.26, *p*= .967	0.05

Discussion

This study contributes to the research on juror decision making and perceptions of mental health difficulties in an adolescent on trial. The purpose of the study was to examine the impact of diagnostic terminology on mock jurors' perceptions of an adolescent defendant with a mental health difficulty, in a mock homicide trial. This study was an adapted replication of a previous research by Baker et al., (2022), with the key differences being the use of a younger defendant, and an adapted written vignette. The diagnostic terminology was manipulated to reflect a younger defendant's mental health difficulty; namely 'Severe Personality Disorder (Borderline Pattern) or 'Complex Mental Health Problem'. The diagnostic terms were outlined as part of a psychological formulation provided by the expert witness Clinical Psychologist in the trial. The study hypotheses proposed there would be between-group differences in stigmatising attitudes towards the defendant, differences in causal attributions for the defendant's behaviour and differences in the overall diminished responsibility verdict.

The results of this study indicate that mock jurors had relatively low levels of stigmatising attitudes towards the adolescent defendant. This finding may suggest that mock jurors were not impacted by the manipulation in diagnostic terminology. Additionally, the diagnostic terminology was not associated with any differences in mock jurors' causal attributions or Diminished Responsibility verdict for an adolescent on trial. This finding suggests that participants were no more or less likely to give a Diminished Responsibility verdict to the defendant with Severe Personality Disorder, Borderline Pattern compared to the Complex Mental Health Problem.

Initially, this may suggest that the exposure to the different diagnostic terminology was not particularly important in the decision-making process about Diminished Responsibility. This may suggest that the term 'Severe Personality Disorder' does not create more stigma in this context when compared with a more neutral term. The diagnostic terminology was not associated with any more or less stigma nor was it associated with differences in Diminished Responsibility decision-making.

These findings could be attributed to jurors' attitude towards extra-legal factors, like the defendant's age; being more lenient towards younger defendants, leading to less punitive treatment. This is in line with research on attitudes and bias towards younger age groups (Charlesworth & Banaji, 2019; De Paula Couto et al., 2021) as well as research on sentencing when younger defendants are compared with their older counterparts (Bergeron & McKelvie, 2004).

However, secondary analysis demonstrated that the 'personal control' subscale of the CDS-II appeared to be more important in understanding jurors' decision-making processes and apparently more important than overall stigmatising attitudes. Findings suggest that personal control significantly predicted a Diminished Responsibility verdict; such that, if the defendant is perceived as having more personal control over their behaviour, they were less likely to be given a Diminished Responsibility verdict. This finding was independent of the diagnostic terminology and mock jurors stigmatising attitudes. It could be that aspects of the factor 'personal control' closely align with the legal standards of individual responsibility in relation to a crime, suggesting an instinctive process in decision making. This has practical implications for mental health and legal professionals involved in the care of a defendant with a mental health condition, charged with a serious offence. For instance, if mental health or legal professionals depict the defendant's mental health condition as being out of their control, they are more likely to be given a Diminished Responsibility verdict.

At first glance, these findings appear to some degree in tension with those from Baker et al., (2022) and the literature that has previously highlighted high levels of stigma towards PD (Catthoor, 2015; Sheehan, 2016). This current finding can be understood in the context of low levels of stigmatising attitudes towards the defendant. The lack of differences in stigmatising attitudes could be because mock jurors held moderate views towards the adolescent defendant due to their age. This is in line with research stating that adolescents are considered 'psychosocially immature' when compared to their adult counterparts and that adolescents are considered less punishable by virtue of age (Cauffman et al., 2018).

This finding may also relate to the fundamental attribution error- the tendency to attribute other's behaviour to personality traits rather than situational factors (Dripps, 2003). In the context of the regression model, personal control remained a significant predictor of the diminished responsibility verdict, whereas the mental health condition did not. This suggests that individuals may emphasize factors related to the defendant's personal control over their behaviour, rather than considering the mental health condition as a significant situational factor. Despite the relevance of mental health conditions to the crime, the regression model may have underestimated their predictive power due to potential fundamental attribution error bias. The implications of this are important, as it suggests that mental health conditions could be overlooked, leading to neglect in addressing the role of mental health in legal judgements.

Strengths and Limitations

It is important to note that this study is the first of its kind to evaluate stigma-related beliefs towards an adolescent defendant with a mental health difficulty on trial for homicide. Due to the nature of online recruitment, a significant strength was a larger sample size as compared to Baker et al., (2022).

This study poses several limitations which must be considered when interpreting the results. One limitation is in relation to CDS-II measure used to determine causal attributions of the defendant's behaviour. The low internal consistency of the factors 'locus of causality' and 'stability' suggested poor inter-relatedness of the items and thereby had to be removed from overall analysis. In the context of the current study, this may suggest some issues with these specific factors and researchers should be cautious in using this scale, or when investigating these factors without further validation. Additional research may be needed to revalidate this scale. Additionally, the DRQ (Baker et al., 2022) used in this study has not been validated beyond the original study; with items corresponding to the legal framework of the Coroners and Justice Act (2009). Although, the measure demonstrated a high level of internal consistency, it would benefit from a factor analysis to test the construct validity of the overall measure (Rattray & Jones, 2007). Future research can consider alternative measurements of stigmatising attitudes towards individuals with a history of offending with mental health conditions. The current study used the AQ-27 and adapted the original vignette that was designed for the measure. The Public Attitudes Towards Offenders with Mental Illness Scale (PATOMI; Walkden et al., 2021) is an appropriate valid and reliable scale designed to assess public perceptions towards offenders with a mental illness.

Another limitation observed was that overall, participants were inclined to endorse a DR verdict. Whilst the continuous measure of DR was adopted in this study which has the benefit of increased statistical power due to increased variability in data; in a court setting, jurors would need to reach a definitive DR verdict. It may be that the process of 'forcing' a decision may be more vulnerable to the effects of stigma and bias, when compared to a continuous measure. Hence, future studies may be advised to use both continuous and categorical approaches to measurement of legal outcomes. This may be particularly important in research which includes the process of jury

deliberation as part of the study design, as previously examined by Baker et al. (2022). Whilst this was not feasible in this study due to the online design, it presents as a limitation. This process of deliberation which occurs in a jury, is an important consideration as it might fulfil an integral part of decision making. This group deliberation may be most influenced by stigma in a different way when compared to decision making by an individual juror. Previous research has suggested that within group discussion, "the knowledge, perspectives and memories of the individual members are compared and combined, and individual errors and biases are discovered and discarded, so that the final verdict is forged on the shared understanding of the case" (Ellsworth, 1989, p.58).

The manner in which the study characteristics were described on the research platform and information sheet, may have influenced a certain participant demographic interested in mental health difficulties and stigma. This may have led to an increased sympathetic response towards the defendant. Participants in the current sample were predominantly female (62%), White- British (93%) and well-educated (post graduate education 42%), which may have had an impact on the perceptions of the defendant, their mental health diagnosis and the offence committed. For instance, studies have shown that individuals with higher levels of education have greater mental health literacy when compared to their less educated counterparts (Carr & Furnham, 2021) with high levels of literacy rendering fewer stigmatising attitudes towards mental health difficulties in offenders (Wittman et al., 2021). Future studies should consider the implications of online recruitment, such as the overrepresentation of certain demographic groups.

Another limitation to consider is the ecological validity of this research, due to the online nature of the study (including and not limited to recruitment, set up of the mock trial and online questionnaires). Despite the study replicating a condensed version of a mock homicide trial, the online nature may have reaffirmed mock juror's perception of the artificiality of the trial. This may have impacted mock juror's true engagement in the study as well as being less careful in their decision making. Whilst a possible means to address this concern, would be to recruit 'shadow juries'; a group of individuals similar in demographics to an actual jury that provide feedback in relation to various aspects of the trial, this would still raise the issue of representativeness of the sample as well as the inability to use real juries by law. It has been suggested that an immersive design and method might

be more conducive to evaluating stigma in a real setting (Lam et al., 2016), however additional methodological considerations that could potentially increase the ecological validity of the future research of a case simulation design would be to include a jury deliberation stage. Another consideration would be to facilitate a focus group to gain qualitative insight into the decision-making process at the end of the trial (Baker et al., 2022). Additionally, a method of recording jurors process of deliberation, through anonymised transcripts may influence jurors' behaviour and subsequent outcomes (Ross, 2023) which might provide a feasible approximation to the case simulation methodology.

Future research

The findings from the study suggest several directions for future research in juror decision making. Despite a strength of the current study being the large sample size, future studies would benefit from an alternative recruitment strategy that best represents the general public, whilst factoring in the limitations of the study outlined above. Additionally, future research could include the jury deliberation phase of the trial, which would consider juror's negative attitudes and biases when faced with decision making. Future research may benefit from devising a categorical and continuous verdict approach when considering the legal defence of DR, instead of a continuous measure alone.

Future research can aim to mitigate the fundamental attribution error bias by including a further analysis that equally considers situational factors. This can be done by refining measures of mental health condition or analysing additional situational factors that may interact with personal control, for example, race and cultural context, adverse childhood experiences (ACEs). A replication study with a larger sample size and an adequate power calculation can give more insight into the role of mental health condition and personal factors such as personal control on the verdict of diminished responsibility.

The interaction between diagnostic terminology and stigmatising attitudes towards adolescents in the criminal justice system with a mental health difficulty can be investigated in different contexts and amongst different professional groups they encounter. For example, probation

officers in a youth offending team, psychiatrists and mental health nurses in secure units or youth offender institution and education staff in schools.

Lastly, this study was concerned with the legal question of Diminished Responsibility in a homicide trial. Future research can consider different legal questions in various settings regarding adolescent youth with a history of offending and mental health difficulties. The methodology of juror decision making studies can be enhanced by the selection of appropriately validated measures, implementing shadow juries to enhance ecological validity of the research. A broader scope of the study could involve a jury deliberation phase prior to decision making.

Conclusion

This study contributes to the research of mock juror decision making, particularly in relation to the diagnosis of a personality disorder. This is a replication of a study by Baker et al., (2022) investigating the impact of diagnostic terminology on mock juror stigmatising attitudes, causal attributions and overall diminished responsibility verdicts for an adolescent on trial. Findings suggest that diagnostic terminology did not significantly influence mock jurors' decision making. However, the extent to which an individual can regulate, manage their behaviour and over which the individual has power is considered to have an impact on decision making. This has practical and legal implications for professionals, and the way in which they describe a defendant's ability to manage and control their behaviour as this can have an impact on the sentence imposed and can affect the defendant's right to a fair trial.

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Chapter Five: Overall Discussion and Critical Evaluation

This chapter outlines the overall discussion and critical evaluation of the thesis portfolio. It presents the summary of the findings, followed by the strengths and limitations of both papers specifically. The chapter concludes with clinical implications of the findings, which are outlined alongside future research.

Overview of thesis portfolio and main findings

The aims of the thesis portfolio were to explore mental health diagnosis in youth with a history of offending within the criminal justice system. The systematic review and meta-analysis (Chapter 2) examined the prevalence of PTSD in youth with a history of offending stratified by gender and PTSD measurement type (i.e. interview vs self-report). The prevalence of PTSD was examined by timeframe; namely, current and lifetime. However, following data extraction, a novel category, 'not specified timeframe' was created to address a gap in research studies that did not explicitly state timeframe at which PTSD was measured. Thirty-five studies were analysed, and the findings revealed that the highest prevalence of PTSD was observed in female, as compared to male, youth with a history of offending. High heterogeneity was observed between studies included in the analyses. This could be attributed to variations in sample demographics (age ranges of participants, gender differences, cultural and socioeconomic backgrounds), study design (variation in PTSD assessment measures, criminal justice settings) and variation in trauma experiences experienced by youth with a history of offending.

Overall, these findings suggest that PTSD prevalence is a significant issue in youth with a history of offending. The high levels of heterogeneity suggest that youth with a history of offending are a diverse group with complex emotional and psychological needs. These complexities may also shape how youth are perceived in legal settings. This provided a broader context for the empirical paper (Chapter 3) which indicates the potential importance of mock juror's perception of 'personal control' in legal outcomes, especially in the case of particularly stigmatising mental health difficulties. Results from the empirical study demonstrated no difference in stigmatising attitudes and causal attributions made for an adolescent defendant's behaviour when labelled as having a 'Severe

Personality Disorder, Borderline Pattern' compared to a diagnostic label of 'Complex Mental Health Problem'. It was found that the perception of the defendant's personal control over their behaviour was the most important factor in determining the overall verdict of diminished responsibility.

Critical Appraisal of Systematic Review and Meta-Analysis

The findings of high prevalence of PTSD in female youth with a history of offending support existing research on elevated rates of PTSD in female youth compared to male youth in both offending and general populations, although rates of PTSD in both samples were high. One possible explanation for the difference is that female populations are more prone to mental health difficulties due to chronic trauma experiences within relationships, such as ongoing interpersonal violence (Olff et al., 2007). Another theory suggests that a diagnosis of PTSD may better align with symptom patterns commonly reported by women (Ainamani et al., 2020; Tekin et al., 2016) than their male counterparts. For example, it has been argued that girls and women may be more likely to internalize their distress, whereas boys and men may be more prone to externalizing it (Maschi et al., 2008). The findings from the meta-analysis also align with research suggesting that females may be more vulnerable to developing PTSD due to psychobiological factors. For example, females have been found to have an increasingly sensitized hypothalamus-pituitary-axis compared to males (Olff, 2017). These findings appear to echo research conducted in broader, non-offending youth samples, where girls tend to demonstrate higher rates of PTSD than boys. This underlines the importance of considering gender differences in mental health outcomes and may warrant a re-evaluation of theoretical models, such as emotional processing theory (Foa & Fozak, 1986) or dual representation theory (Brewin et al., 1996), that may not fully account for these differences in trauma responses.

The review focused solely on PTSD- this allowed a broad focus on PTSD measurement tools, diagnostic criteria and timeframes at which PTSD was assessed. This rendered more actionable recommendations for clinical practice and future research. However, the analysis in this review is constrained by the definitions and diagnostic cut-offs used in the underlying studies. Whilst PTSD is known to interact with a range of mental and physical health problems (Sareen, 2014) and 93% of detained youth experience at least one comorbid psychiatric disorder alongside PTSD (Abram et al.,

2013), studies in this review may not have consistently accounted for these comorbidities. This may limit the ability to fully capture the complexity of PTSD and its interactions with other mental health difficulties.

Another limitation was the omission of the term ‘forensic’ within the search terms used to identify offender samples. The search terms were decided by reviewing related systematic reviews (Beaudry et al., 2021; Livanou et al., 2019). The omission of the term ‘forensic’ may have led to several studies being missed, although it is also reasonable to reflect that the final obtained sample is healthy. This may lead to less generalisable results as studies may not fully represent the population of interest. Additionally, forensic populations might display higher levels of PTSD due to the nature of the offences and criminal justice settings- which may have not been captured in this review. To reduce heterogeneity of the included studies, sub-group analysis was considered by grouping PTSD measurement type (interview vs self-report). However, due to the limited numbers in these groups, this analysis could not be conducted.

Critical Appraisal of the Empirical Paper

The findings from the empirical paper suggest that a diagnosis of ‘Severe Personality Disorder’ did not have an impact on stigma related beliefs, causal attributions for the defendant’s behaviour and ultimately the Diminished Responsibility verdict. However, the perception of ‘personal control’ that the adolescent had over their behaviour was more important when considering a Diminished Responsibility verdict. If the adolescent was regarded as having more 'personal control’ (i.e. that the adolescent had the power and ability to manage and regulate his behaviour), a Diminished Responsibility verdict was less likely to be endorsed. These findings appear to be somewhat in tension with the findings from Baker et al., (2022) where a diagnosis of ‘Severe Personality Disorder, Borderline Pattern’ meant that participants thought the defendant to be more dangerous and in need of treatment when compared to a control condition. The findings also challenge pre-existing research which indicates that diagnostic labels can increase stigma and bias (Corrigan & Watson, 2002). This nuanced finding adds to the literature suggesting that in certain contexts, jurors may focus more on the perceived control and behaviour of the defendant as opposed

to the diagnostic label itself. Additionally, when viewed through the lens of attribution theory- which posits that individual's perceptions of the causes of behaviour (internal vs external) influence their judgements and attitudes (Weiner, 1985)- the present study found that perceptions of personal control, a key component of internal attribution, was more influential in juror decision-making that the presence of a diagnosis. This suggests a complex interaction between mental health, personal responsibility and legal judgements.

A strength of the empirical paper was that it examined the impact of mental health diagnosis for an adolescent on trial using a mock juror study design. This study was a replication of the study by Baker et al., (2022) that investigated juror decision making for an adult defendant. Another strength was the relatively large sample size, owing to the online recruitment process. This study also implemented a case-simulation design as opposed to previous mock-jury research that implemented vignettes only (Thomas, 2010).

The study presented several limitations; the main one being the lack of deliberation stage in decision-making which forms an integral part of jury decision making, especially in jurisdictions in England and Wales. The absence of a deliberation stage may have impacted jurors' ability to engage in 'slow thinking' processes which involve analytical and effortful thinking which is crucial to complex decision-making processes to reach a rational verdict. (Kahneman, 2011). On the contrary, jurors may have engaged in 'fast thinking' processes which involve intuitive and automatic thinking based on heuristics and biases (Bornstein, 2004). Jurors might base their judgements on information that is most readily accessible in their minds. Jurors might make decisions based on how closely the defendant characteristics or behaviour fits with a preconceived stereotype, leading to less a rational verdict.

Despite the large sample there was an over representation of certain participant demographics, such as those who were White British, highly educated participants. These characteristics may have influenced overall stigma-related beliefs, causal attributions, and Diminished Responsibility verdict; as it suggested that individuals who are highly educated may have greater mental health literacy (Wittman et al., 2021). Future studies would benefit from measuring Mental Health Literacy as part of the study to determine its effect on decision making. The measure used to assess stigma (AQ-27) was

adapted and modified from Baker et al. (2022). Whilst it has been used in a similar study, it is unclear if it accurately measures stigma as a construct. Similarly, the Diminished Responsibility questionnaire (Baker et al., 2022), designed as a continuous measure has benefits for increased statistical power due to its ability to capture variation in data, however it does not replicate the process involved in making binary decisions in court. Future studies could benefit from devising a categorical and continuous measure.

Another limitation of the study was the lack of consideration for whether mock juror participants were parents. Given the nature of the case in the mock simulation, parental status could have influenced jurors' perceptions of the adolescent defendant. Parents, for instance, may empathise with the adolescent defendants' circumstances leading to less punitive sentences. Alternatively, parents may have been less sympathetic towards the adolescent due to their personal experiences or biases related to their role in guiding the moral development of their own children (Kohlberg, 1981). Recording whether mock juror participants were parents could have provided valuable insight into how this factor may have shaped their judgments.

Future Research

While the systematic review and meta-analysis highlight the elevated rates of PTSD in female youth with a history of offending compared to male youth, an important question remains as to how such diagnoses may influence legal outcomes. Specifically, future research could explore whether gender differences in PTSD prevalence affect juror decision-making, particularly in the application of diminished responsibility verdicts. Longitudinal studies should monitor the onset, chronicity, and progression of PTSD in youth with a history of offending while considering how these factors interact with legal proceedings. Understanding the long-term development of PTSD symptoms may provide crucial insights into how trauma-related mental health conditions could influence perceptions of culpability, especially in cases involving youth with a history of offending.

Additionally, previous research has demonstrated cross-cultural differences in PTSD prevalence (Patel & Hall, 2021), yet most studies are conducted in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries. Future studies could examine local and indigenous

populations conceptions of trauma and mental health, expanding the understanding of PTSD's manifestation in different cultural contexts. Doing so would not only improve diagnostic criteria but also provide a more nuanced understanding of how clinicians, legal professionals and jurors' from diverse backgrounds interpret mental health conditions in the courtroom.

The empirical study on juror decision-making suggests that personal control, rather than mental health conditions like Severe Personality Disorder, was a significant predictor of diminished responsibility verdicts. This raises important questions for future research: does Severe personality disorder, particularly when considered alongside demographic variables like gender or ethnicity, influence perceptions of personal control? Further studies could address whether jurors' are more inclined to view youth with Severe Personality Disorder as having diminished personal control over their actions, especially in cases involving female youth with a history of offending. This could also be explored through qualitative methods, allowing researchers to better understand jurors' reasoning processes.

In terms of juror decision-making research, incorporating a deliberation phase into future studies is critical to better simulate real-world dynamics and provide more ecologically valid insights. Juror deliberation allows for 'slow thinking processes,' mitigating biases and encouraging analytical, effortful thinking, as opposed to intuitive, heuristic-based decisions. Given the role of demographic factors, including education and mental health literacy, it is essential for future studies to include diverse participant demographics. A more varied sample—by race, age, education, and parental status—would provide insights into how these factors moderate decision-making and stigma.

Finally, future research should investigate whether certain types of diagnoses are more or less likely to influence jurors' views on diminished responsibility verdicts, especially in relation to gender or cultural background. This could lead to recommendations for courtroom procedures, such as more nuanced instructions for jurors' regarding the consideration of mental health in determining personal control and responsibility.

Clinical implications

The findings in this thesis portfolio have several clinical implications including improving mental health screening and intervention and enhancing legal-mental health collaborations. The elevated rates of PTSD in female youth with a history of offending across all timeframes, point to the importance of the need for routine, gender-sensitive trauma screening. Early identification of PTSD or trauma-related symptoms can ensure timely intervention, potentially reducing recidivism. Gender sensitive approaches also recognise the substantial inequalities in the care women and girls receive in mental health services, particularly concerning medication, diagnoses and responses to trauma (Chandra et al., 2019). Mental health professionals' attitudes are shaped by their own gender biases which can lead to subpar services for women (Gattino et al., 2020a). Therefore, gender remains a pivotal element in optimising mental wellbeing for women and girls as they continue to face distinct mental health risks and vulnerabilities (Chandra et al., 2019). Other implications include preventative interventions that target at-risk female youth prior to entering the criminal justice system, such as school-based interventions and community outreach programmes.

In relation to perceptions of responsibility and control, youth justice services should consider rehabilitative strategies and interventions that promote self-regulation and emotional control in reducing recidivism amongst youth with a history of offending. Jurors may benefit from more education about the nature of mental health difficulties, particularly PTSD and the concept of personal control. More so for legal practitioners, understanding that jurors might prioritise personal control over diagnostic labels could inform defence arguments in cases involving mental health,
More generally, the findings of this study highlight the limitations of focusing solely on diagnostic labels, as seen in the limited impact of the 'Severe Personality Disorder' diagnosis on juror's perceptions. This suggests that the diagnostic labels alone may not fully capture the complexities of mental health difficulties in youth with a history of offending, Therefore, it may be important to adopt holistic mental health assessment approaches that consider a broader range of psychological, social and environmental factors, rather than relying exclusively on a single diagnosis to guide treatment and decision-making.

Conclusion

The thesis portfolio investigated the role of mental health diagnosis in legal settings, noting the elevated prevalence rates of PTSD in female youth with a history of offending. Further research is needed to understand the onset and development of PTSD in youth with a history of offending. Additionally, evidence suggested that mock juror perceptions of an adolescent defendant's ability to regulate and manage their behaviour predicted the endorsement of a Diminished Responsibility verdict. This remains an under researched area and further research is required to fully understand factors that affect decision making in court for youth with a history of offending.

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Appendices

Appendix A: Journal Author Guidelines

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Updated 30-10-2023

Appendix B: Quality Checklist for Prevalence Meta-Analysis

Checklist to assess each study's quality.

Score 0, 1 or 2 for each question on each study.

Assessed by: _____

Population

Were participants and setting well described?

(2)Information regarding the characteristics (age, gender, ethnicity) of the sample and trauma variables (type, severity, duration) are well described with the setting well reported (health setting, country, geography)

(1)Some information regarding participants characteristics and trauma variables are reported, with limited information on the setting

(0)Sample characteristics, trauma variables and setting information are not reported in any detail

Was participation rate of those eligible at least 50%?

(2)More than 50% of those eligible to participate took part

(1)Less than 50% of those eligible to participate took part

(0)The number of eligible potential participants was not reported

Were reasons for non-response described?

(2)Reasons for non-response were described with the number of those participants not responding reported

(1)Reasons were described for non-responders but no numbers provided OR Numbers of non-responders are reported but with no reasons

(0)Non-response rates were not reported in the study

Was the sample representative – were there differences between those participants taking part and those not?

(2)There were no significant differences in demographics or trauma variables between those participating and those not

(1)Reported significant differences between those participating and those not

(0)Differences between participants and those not taking part were not reported

Were participants recruited in an appropriate way?

(2)Consecutive or random sampling was used to recruit potential participants in person by the research team

(1)Consecutive or random sampling was used to recruit potential participants via letter or phone call

(0)Recruitment procedures were not reported in the study

Were inclusion and exclusion criteria explicit and appropriate?

(2)Inclusion and exclusion criteria were reported in detail

(0)Inclusion and exclusion criteria were not reported

Appendix C: Script for the Expert Witness (Clinical Psychologist) Testimony (Narrative Formulation)

1) Experimental "Severe Personality Disorder, Borderline Pattern" condition

This case concerns a 16-year-old male called Chris Roberts, who had recently been diagnosed with a mental health problem consistent with a presentation of ***Severe Personality Disorder, Borderline Pattern***. He experiences a high degree of anxiety with panic attacks, which he finds very difficult to cope with. Due to his ***Severe Personality Disorder***, he experiences rapid and extreme variations in his mood which can be difficult for him to understand and to regulate, particularly when he is under stress. He finds his anxiety and his moods difficult to predict, which have meant that he has been unable to attend college consistently for the past several months, after being asked to leave after an altercation with a male member of staff at the college. As part of his ***Severe Personality Disorder***, Chris can find it difficult to maintain stable relationships with other people, as he can feel a range of intense emotions and go from feeling adoration to jealousy, anger, and betrayal. He can also misperceive situations as more threatening than they are, which makes him feel very unsafe and angry. This has often led to him having a panic attack or becoming impulsively aggressive toward himself or others, which has led to contact with the police on several occasions. Part of this tendency to read situations as threatening, as part of his severe personality disorder presentation, is his difficulty in making sense of the thoughts, intentions, and perspectives of other people.

Chris struggles to cope with his unstable moods and anxiety, as well as being unable to go to college. As a result, Chris has often felt depressed and hopeless and had suicidal thoughts. Chris sometimes thinks about ending his life but has not made any plans to do this recently. However, Chris has made attempts on his life in the past, which had led to him being recently diagnosed with ***Severe Personality Disorder*** at age 16 after taking an overdose. He had been under the care of Mental health services since he was 14. The most recent attempt on his life was a year ago when he severely harmed himself by cutting his wrists. In the past year, he had gone to A+E six times, having punched a wall repeatedly.

Chris suffered physical and sexual abuse from his stepbrother from the age of 6 until he was 14, when he was able to make the abuse stop. He told his mother about the abuse, although his mother did not believe him and thought he was trying to break up their family. Due to this, he felt rejected by his mother and could not turn to anyone else for help. Chris often has anxieties and fears around being rejected by others, which can underlie his difficult feelings and changing moods. Chris has wondered whether his younger sister, Meg, might have also been abused although Meg does not want to discuss this. Between the ages of 14 and 16, he had a series of difficult relationships with abusive men and suffered several physical and sexual assaults, which led to his overdose and his diagnosis of ***Severe Personality Disorder, borderline Pattern***. Since then, he has engaged with mental health services on a few occasions and currently sees a nurse from the ***Personality Disorder team***.

2) Control condition with "Severe Personality Disorder, Borderline Pattern" removed.

This case concerns a 16-year-old male called Chris, who has ***complex mental health problems***. He experiences a high degree of anxiety with panic attacks, which he finds very difficult to cope with. Due to his ***complex mental health problems***, he experiences rapid and extreme variations in his mood which can be difficult for him to understand and to regulate, particularly when he is under stress. He finds his anxiety and his moods difficult to predict, which have meant that he has been unable to attend college consistently for the past several months, after being asked to leave after an altercation with a male member of staff at the college. As part of ***his complex mental health problems,*** Chris can find it difficult to maintain stable relationships with other people, as he can feel a range of intense emotions and go from feeling adoration to jealousy, anger, and

betrayal. He can also misperceive situations as more threatening than they are, which makes him feel very unsafe and angry. This has often led to him having a panic attack or becoming impulsively aggressive toward himself or others, which has led to contact with the police on several occasions. Part of this tendency to read situations as threatening, as part of his ***complex mental health problems,*** is his difficulty in making sense of the thoughts, intentions, and perspectives of other people.

Chris struggles to cope with his unstable moods and anxiety, as well as being unable to go to college. As a result, Chris has often felt depressed and hopeless and had suicidal thoughts. Chris sometimes thinks about ending his life but has not made any plans to do this recently. However, Chris has made attempts on his life in the past, which had led to him being recently diagnosed with ***complex mental health problems*** at age 16 after taking an overdose. He had been under the care of Mental health services since he was 14. The most recent attempt on his life was a year ago when he severely harmed himself by cutting his wrists. In the past year, he had gone to A+E six times, having punched a wall repeatedly.

Chris suffered physical and sexual abuse from his stepbrother from the age of 6 until he was 14, when he was able to make the abuse stop. He told his mother about the abuse, although his mother did not believe him and thought he was trying to break up their family. Due to this, he felt rejected by his mother and could not turn to anyone else for help. Chris often has anxieties and fears around being rejected by others, which can underlie his difficult feelings and changing moods. Chris has wondered whether his younger sister, Meg, might have also been abused although Meg does not want to discuss this. Between the ages of 14 and 16, he had a series of difficult relationships with abusive men and suffered several physical and sexual assaults, which led to his overdose. Since then, he has engaged with mental health services on a few occasions and currently sees a nurse from the ***mental health team.***

Appendix D: Written case scenario

(This was given to participants to support the filmed section of the study scenario)

Case details summary

Chris Roberts a 16-year-old male, is accused of the murder of Ashley King, 18. They were known to each other before the event, as they lived nearby in the same suburban estate in Colchester and shared mutual friends. Although they did not know each other well, Chris would walk past Ashely's house and wave to him occasionally on his walk to college. Chris and Ashley met each other fully on the 13th of August, 2021 when they both attended a house party held by one of Chris's friends on the estate. Chris had gone to the barbeque with his younger sister, Meg (15) who on later questioning said that she had persuaded Chris to go, as he had been feeling particularly low and short-tempered recently and that the house party might cheer him up.

During the party, Ashley having had several alcoholic drinks, struck up a conversation with Meg and over the course of the evening, they became increasingly close and flirtatious as they joked together. At one point in the evening, Chris became angry at Ashley, and they began to have a heated argument. Chris had not been drinking alcohol. From questioning of witnesses of the argument, Chris accused Ashley of "crowding" his sister, and called him a "creep". After a couple of minutes of arguing, Chris threw a drink in Ashley's face and shoved him, after which Meg told him to go home, and that she would see him later at home.

Chris returned home. On later questioning he reported that he was "fucking fuming" and that he tried to calm down at home. Back at the house party, in the aftermath of the argument Meg apologised to Ashley and said that her brother had "anger issues" and "overprotective of me because of issues with men in his past". Ashley had then said to Meg that he felt bad about arguing with Chris and that he wanted to apologise and bring him back to the party. While Meg asked Ashley not to invite Chris back, later unknown to her, Ashley left the house party and went to Chris and Meg's house. Ashley arrived at their home and knocked first on the door, and then on an adjacent open window in the kitchen of their house, while calling for Chris. Chris entered the kitchen area and on seeing Ashley became verbally abusive to him. From a neighbour's report, they heard Chris shouting at him and calling him "a fucking creep, first coming for my little sister and now me in my house". It is not known what Ashley said in response, but it appears that while he was apologetic at first, he began to argue back. The neighbour's report described shouting for around half a minute. Chris then became increasingly aggressive and distressed in his tone, screaming at Ashley, and throwing small items out of his kitchen window at him.

Chris then took a kitchen knife from the side, opened his front door and stabbed Ashley in the neck, causing major injuries. A neighbour who had heard the commotion called the police, who found Ashley in a critical condition. Chris had fled the scene, but was later found by police, distressed on a nearby housing estate. Ashley was declared deceased shortly after being found by police at the scene. When questioned by police, Chris said that he felt frightened when she saw Ashley come to his house. He said that Ashley reminded him of him of his stepbrother as he wore a similar Colchester football shirt, and he felt "creeped out" by him. Chris said that he "lost it" when she stabbed Ashley in the neck as he would not 'shut up'. Chris expressed that he regretted what he had done.

Appendix E: Juror information: Diminished Responsibility Information

You have now heard information about the defendant and their mental health problems, as well as the events of the crime committed.
The video clips you are about to see explain that while there is no doubt that the defendant committed the act of killing the victim, their plea is that they are guilty to manslaughter, not murder, on the grounds of **Diminished Responsibility** due to their mental health problems.
The Prosecution and Defence arguments will debate whether **Diminished Responsibility** applies when considering the defendant's actions.
Diminished Responsibility is a legal defence in cases of homicide. It means that a defendant is judged as less responsible for their actions because of their mental health problem. It affects the sentence handed to the defendant by the judge. It could mean that a person is treated for their mental health problems in a secure psychiatric hospital rather than a prison, or there can be time in hospital before going to prison once these mental health problems are treated. It can also mean that a person's sentence (their punishment for the crime) is reduced by years.
As a jury, you are asked to consider whether you think the defendant had **Diminished Responsibility** for the crime.
For Diminished Responsibility to apply, the following criteria must be met. Please consider these criteria carefully, and whether you think these apply to the defendant in this case.
There must be an abnormality of mental functioning which:

A) arose from a recognised medical condition
B) substantially impaired the defendant's ability to do one or more of:
    1. **understand the nature of their conduct** during the situation
    2. **to form a rational judgement** about the situation and their actions
    3. **to exercise self-control** during the situation
C) provides an explanation for the defendant's actions.

If you think that the defendant's mental functioning was affected by a medical condition, and that this affected their ability to understand their conduct, make a rational judgement, or exercise self-control over their actions during the crime, and this explains their actions, then **Diminished Responsibility** would apply.

Appendix F: Scripts for Trial Reconstruction

Note: These scripts are provided for the "Severe Personality Disorder" condition. For the control condition, all references to this are replaced with "complex mental health problems" and are otherwise unchanged.

Initial Prosecution statement

Your honour, members of the jury, I represent the Prosecution in this case. The defendant, Chris Roberts, is charged with the common law offence of murder. He has been found to have attacked and stabbed the victim, Ashley King, causing serious bodily harm resulting in his death. The Defence's plea on this matter, however, is guilty to manslaughter on the grounds of diminished responsibility, one that the Prosecution rejects. Let us consider the question of what murder itself entails and contemplate whether this applies in this case to a point of being beyond reasonable doubt. Murder, in English law, means the unlawful killing of another human being with malice aforethought, meaning that the defendant intended to kill or at the least intended to cause serious harm to the victim, Ashley King. If we consider the facts of the case in relation to the intention to cause serious harm; to have intention, there must be knowledge of a certain consequence following an action- namely, that serious harm is a virtually certain result of assault with a knife. It is argued that the defendant knew this well. Additionally, in considering the point of malice in his intentions, it is argued that he foresaw the risk that serious harm or killing would occur as a result of his actions. And hence, he deliberately took this risk. The defendant, Chris Roberts was able to consider his actions as he carried them out, was aware of the consequences and risks and chose this as part of malicious intention to cause the victim serious harm or death. To the jury, as you make your deliberations, should you agree that Mr Chris Roberts killed the victim unlawfully with malice aforethought, you must find the defendant guilty of murder.

Defence case

Your honour, members of the jury, I represent the Defence in this case. As we have heard, the defendant's plea in this case guilty to manslaughter, not to murder, on the grounds of Diminished Responsibility. We have heard the Prosecution's argument that the defendant acted purposefully and with intent to cause at least serious harm during the events that led up to the death of Mr King. I will present the facts of this case with respect to the nature of the defendant's mental health difficulties, and argue that, contrary to the Prosecution's claims, the criteria of Diminished Responsibility do in fact apply in this case. I hope to convince you that you should find him not guilty of murder, but instead guilty of manslaughter on the grounds of Diminished Responsibility. Given the nature of his ***Severe Personality Disorder,*** he was not able to understand the nature of his conduct, to form a rational judgement, nor to exercise self-control over his actions. I will suggest to you, members of the jury, that his Severe Personality Disorder substantially impaired his ability to do those things. When you have heard our evidence, if you believe that it is more likely than not that the criteria of Diminished Responsibility does apply in this case, your verdict should be one of manslaughter and not murder.

In support of the view of the Defence, I present as evidence the report of Dr Jane Bellbottom, a psychiatrist instructed to interview the defendant and determine whether the defendant's mental health condition meant that the Diminished Responsibility criteria do in fact apply. As this report confirms, Dr Bellbottom agrees that the defendant suffers from ***Severe Personality Disorder (Borderline Pattern)***, which is a recognised medical condition. When Dr Bellbottom assessed him, Chris Roberts showed pronounced anxiety and a fluctuating emotional state, consistent with earlier observations from the personality disorder community mental health team. Dr Bellbottom notes that stressful events can trigger extreme emotional variations and impulsive behaviours which are difficult to control. She describes a pronounced fear of abandonment and rejection from others, which leads him to behave in potentially manipulative ways to avoid this. These, together with the defendant's history of severe sexual and physical abuse, are significant explanatory factors in the defendant's actions during the crime, which means you can properly find him not guilty of murder and guilty of manslaughter on the grounds of Diminished Responsibility.

If we consider Dr Bellbottom's views of the criteria for diminished responsibility, one or most must apply. The criteria are the defendant's ability to understand his conduct, to form a rational judgement and to exercise self- control. Dr Bellbottom expresses the view that the defendant understood his

conduct during the evening and the incident but this was dependent on the other two criteria. She expressed the view that that defendant's ability to form a rational judgement was substantially impaired at the time of the crime. Dr Bellbottom argues that this was part of his ***Severe Personality Disorde***r and was less able to make a rational judgement. He saw the situation as more dangerous and threatening as the victim's appearance resembled his historical abuser. Dr Bellbottom argues that given that the defendant could not rationally judge the danger of the situation, extreme fear and stress meant that he could not control his impulsive and aggressive behaviours and could not exercise self-control as he stabbed the victim. In summary of Dr Bellbottom's report, the impairments relate to the factors of the ability to form a rational judgement, and to exercise self-control during the incident. Both are judged by Dr Bellbottom to be substantially impaired, due to the defendant's ***Severe Personality Disorder,*** and so the level of responsibility and culpability in this case is lowered. Dr Bellbottom recommends that the defence of Diminished Responsibility does apply in this case. May I remind you that this need only exist on the balance of probabilities – if you feel that these criteria apply to the defendant, the defence applies, and the charge is one of manslaughter. Members of the jury, I would invite you to consider everything that has been presented here as you make your deliberations, and find the defendant not guilty of murder, but guilty of manslaughter on the grounds of diminished responsibility. Thank you.

3. The Prosecution Response to the Defence Evidence on Diminished Responsibility

Having heard the defence case for diminished responsibility, the prosecution will present its evidence on the issue.

Prosecution vignette script

Your honour, members of the jury, the Prosecution rejects the Defence's case and we present our own evidence on the issue. Now, there is no dispute that the incident of the killing of the victim, Ashley King, by the defendant has occurred. However, the Defence suggests that the legal defence of Diminished Responsibility applies due to the defendant's mental health state, making him less responsible for his actions. Today, I urge you to reject that view; I put it to you that the defendant was in fact able to form a rational judgement, and exercise self-control over his actions. It is the Crown's view that the criteria of Diminished Responsibility do not apply in this case. If you believe that the defendant did not have Diminished Responsibility, the verdict must be that the defendant is guilty to the charge of murder.

I suggest to you that this was a straightforward case of Chris Roberts acting deliberately, in a calm and considered manner; he stabbed Ashley King intending to cause him serious harm. In support of the view of the Crown, I present evidence by Dr Michael Albert, a psychiatrist commissioned to interview and provide a clinical opinion on whether the defendant's mental health problems at the time of the crime qualify for the criteria of Diminished Responsibility.

Dr Albert's view is that the defendant's mental health problems are consistent with ***Severe Personality Disorder (Borderline Pattern)*** a recognised medical condition. As part of this condition, unstable emotions, interpersonal difficulties, and impulsive behaviours are present, and these fluctuate markedly over time. He notes that Chris Roberts has manipulative traits as well, he could appear helpless or feign other symptoms of mental illness to affect the behaviour of others. While these may be contributing factors in this situation, it is Dr Albert's view that the defendant bears a high degree of responsibility for the crime, and that his mental health problems do not explain his actions. The defendant understood what he was doing, formed a rational judgment about how to behave, and exercised self-control. It is Dr Albert's view that the defendant was jealous of the victim at the party and orchestrated many of the earlier events of the evening, such as getting into an argument, throwing a drink in the victim's face and leaving. When the victim arrived at the defendant's home, the defendant, became aggressive and stabbed him without restraint. Summarising this report, we consider Dr Albert's views of the potential impairments under the Diminished Responsibility criteria: Firstly, Chris Roberts fully understood what he was doing during the events of the day, including at the time of the fatal stabbing. His ***Severe Personality Disorder*** did not by itself account for his actions. Second, While it can be said that the defendant's judgements and thought processes might differ from that of a person without these problems, I suggest to you that his ***Severe Personality Disorder*** does not rule out a capacity to form a rational judgement about his actions. Third, Dr Albert notes that while impulsive behaviours can be in part due to ***Severe Personality Disorder***, he believes

that the extreme actions taken by the defendant reflected something more sinister- an intention to cause severe harm to the victim, due to his anger and jealousy. Chris Roberts did not lose self-control, rather that he acted deliberately, with purpose, and intentionally killed Mr King. In summary, Dr Albert's report states Chris Roberts was fully responsible for his actions in this case and that the Diminished Responsibility criteria do not apply. Members of the jury, it is your duty to consider the facts of this case. Recognise this brutal killing for what it was: a deliberate, considered series of actions by a man fully in control of his actions and wholly responsible for them. The proper verdict in this case must be that he is guilty of murder. Thank you.

Trial Judge's directions to the Jury:

Members of the jury, my role is to explain to you what the law is and then your task is to apply the law to the facts of the case before you. You, in the course of your duty, have a responsibility for the verdict in this case. You have taken an oath to try the case based upon the evidence given in this court, and you must base your verdict upon this alone.

It is very important that you do not undertake any research of your own on the internet; you must judge the case solely on the evidence you have seen and heard here in court. The defendant is charged with murder. In English law, murder is the unlawful killing of another person with malice aforethought. You may ask, what does that mean? In English law today, malice aforethought means that the defendant intended to kill another person or intended to cause another person serious harm. It does not mean that he planned the killing ahead of time, not that he acted with malice in a loose moral sense.

The question for you to decide is whether, at the time at which he stabbed the victim, he intended to cause at least serious harm to him. The prosecution's case is that he did intend to cause at least serious harm. Whether he did, is for you to decide. If you are not sure that he did intend to cause serious harm to him, then your verdict must be one of, not guilty on the charge of murder, but guilty instead of manslaughter. The defence case is that Chris Roberts was suffering from diminished responsibility at the time of the killing.

Appendix G: The Attribution Questionnaire 27 (AQ-27)

Now that you have watched the description of the defendant and their problems by the clinical psychologist expert witness, please read each of the following statements about the defendant and choose the answer that represents how you might feel towards them, if you met them or were put in charge of what could happen to them.

1. **I would feel aggravated by the defendant.**

1	2	3	4	5	6	7	8	9

Not at all Very much

2. **I would feel unsafe around the defendant.**

1	2	3	4	5	6	7	8	9

Not at all Very much

3. **The defendant would terrify me.**

1	2	3	4	5	6	7	8	9

Not at all Very much

4. **I would feel angry at the defendant.**

1	2	3	4	5	6	7	8	9

Not at all Very much

5. **If I oversaw the defendant's mental health treatment, I would require them to take their medication and/or attend therapy.**

1	2	3	4	5	6	7	8	9

Not at all Very much

6. **If I were an employer, I would consider interviewing the defendant for a job, after they had served their sentence.**

1	2	3	4	5	6	7	8	9

Not at all Very much

7. **I think the defendant poses a risk to their neighbours unless they are put in prison.**

1	2	3	4	5	6	7	8	9

Not at all Very much

8. **I would be willing to talk to the defendant about their problems.**

1	2	3	4	5	6	7	8	9

Not at all Very much

9. **I feel pity for the defendant.**

1	2	3	4	5	6	7	8	9

Not at all Very much

10. I would think that it was the defendant's own fault that the crime occurred.

1	2	3	4	5	6	7	8	9

Not at all Very much

11. How controllable, do you think, is the cause of the defendant's behaviour?

1	2	3	4	5	6	7	8	9

Not controllable Totally controllable

12. I would feel irritated by the defendant

1	2	3	4	5	6	7	8	9

Not at all Very much

13. How dangerous would you feel the defendant is?

1	2	3	4	5	6	7	8	9

Not at all Very much

14. How much do you agree that the defendant should be forced into treatment for their mental health problems, even if they do not want to?

1	2	3	4	5	6	7	8	9

Not at all Very much

15. I think it would be best for the defendant's community if they were put into prison.

1	2	3	4	5	6	7	8	9

Not at all Very much

16. I would share a lift by car with the defendant every day.

1	2	3	4	5	6	7	8	9

Not likely Very likely

17. **How much do you think a prison, where the defendant can be kept away from their neighbours, is the best place for them?**

1	2	3	4	5	6	7	8	9

Not at all Very much

18. I would feel threatened by the defendant.

1	2	3	4	5	6	7	8	9

Not at all Very much

19. How scared of the defendant would you feel?

1	2	3	4	5	6	7	8	9

Not at all Very much

20. How likely is it that you would help the defendant?

1	2	3	4	5	6	7	8	9

Not likely Very likely

21. How certain would you feel that you would help the defendant?

1	2	3	4	5	6	7	8	9

Not certain Very certain

22. How much sympathy would you feel for the defendant?

1	2	3	4	5	6	7	8	9

Not at all Very much

23. How responsible, do you think, is the defendant for the crime?

1	2	3	4	5	6	7	8	9

Not at all Very much

24. How frightened of the defendant would you feel?

1	2	3	4	5	6	7	8	9

Not frightened Very frightened

25. If I were in charge of the defendant's treatment, I would force them to live in a group home or facility.

1	2	3	4	5	6	7	8	9

I would not I would

26. If I were a landlord, I probably would rent an apartment to the defendant.

1	2	3	4	5	6	7	8	9

I probably would I would not

27. How much concern would you feel for the defendant?

1	2	3	4	5	6	7	8	9

No concern a lot of concern

Appendix H: The Revised Causal Dimension Scale-II

Instructions: Think about the case that has been presented to you thus far. The items below concern your impressions or opinions of the cause or causes of the defendant's behaviour. Choose one number for each of the following questions.
Is this cause(s) something:

1.	That reflects an aspect of the defendant	9	8	7	6	5	4	3	2	1	reflects an aspect of the situation
2.	Manageable by the defendant	9	8	7	6	5	4	3	2	1	not manageable by the defendant
3.	Permanent	9	8	7	6	5	4	3	2	1	temporary
4.	The defendant can regulate	9	8	7	6	5	4	3	2	1	The defendant cannot regulate
5.	Over which others have control	9	8	7	6	5	4	3	2	1	over which others have no control
6.	Inside of the defendant	9	8	7	6	5	4	3	2	1	outside of the defendant
7.	Stable over time	9	8	7	6	5	4	3	2	1	variable over time
8.	Under the power of other people	9	8	7	6	5	4	3	2	1	not under the power of other people
9.	Something about the defendant	9	8	7	6	5	4	3	2	1	something about others
10.	Over which the defendant has power	9	8	7	6	5	4	3	2	1	over which the defendant has no power
11.	Unchangeable	9	8	7	6	5	4	3	2	1	changeable
12.	Other people can regulate	9	8	7	6	5	4	3	2	1	other people cannot regulate

Appendix I: The Diminished Responsibility Questionnaire (DRQ)

You are now going to think about the facts of these case, and rate whether the Diminished Responsibility criteria apply to each part of the situation.

1. The victim arrived at the defendant's house, and the defendant was verbally abusive to the victim, calling them "a F****** creep, first coming for my little sister and now me in my house".

Was this related to a recognised medical condition?

Not related to a recognised medical condition	1	2	3	4	5	6	7	Entirely due to a recognised medical condition

Could the defendant understand their conduct, form a rational judgement, or exercise self-control?

Totally unable to understand the nature of her conduct	1	2	3	4	5	6	7	Fully able to understand the nature of her conduct
Totally unable to form a rational judgement	1	2	3	4	5	6	7	Fully able to form a rational judgement
Totally unable to exercise self-control	1	2	3	4	5	6	7	Fully able to exercise self-control

Do any of these factors explain how the defendant acted?

These do not explain their actions	1	2	3	4	5	6	7	One or more of these factors fully explains their actions

2. The defendant became increasingly aggressive and distressed in her tone, screaming at the victim and throwing small items out of their kitchen window at the victim.

Was this related to a recognised medical condition?

Not related to a recognised medical condition	1	2	3	4	5	6	7	Entirely due to a recognised medical condition

Could the defendant understand their conduct, form a rational judgement, or exercise self-control?

Totally unable to understand the nature of her conduct	1	2	3	4	5	6	7	Fully able to understand the nature of her conduct
Totally unable to form a rational judgement	1	2	3	4	5	6	7	Fully able to form a rational judgement
Totally unable to exercise self-control	1	2	3	4	5	6	7	Fully able to exercise self-control

Do any of these factors explain how the defendant acted?

These do not explain their actions	1	2	3	4	5	6	7	One or more of these factors fully explains their actions

3. The defendant then took a kitchen knife from the side, opened their front door and stabbed the victim in the neck, causing major injuries.

Was this related to a recognised medical condition?

Not related to a recognised medical condition	1	2	3	4	5	6	7	Entirely due to a recognised medical condition

Could the defendant understand their conduct, form a rational judgement, or exercise self-control?

Totally unable to understand the nature of her conduct	1	2	3	4	5	6	7	Fully able to understand the nature of her conduct
Totally unable to form a rational judgement	1	2	3	4	5	6	7	Fully able to form a rational judgement
Totally unable to exercise self-control	1	2	3	4	5	6	7	Fully able to exercise self-control

Do any of these factors explain how the defendant acted?

These do not explain their actions	1	2	3	4	5	6	7	One or more of these factors fully explains their actions

4. The defendant fled the scene but was later found by police on a nearby housing estate, in a distressed condition.

Was this related to a recognised medical condition?

Not related to a recognised medical condition	1	2	3	4	5	6	7	Entirely due to a recognised medical condition

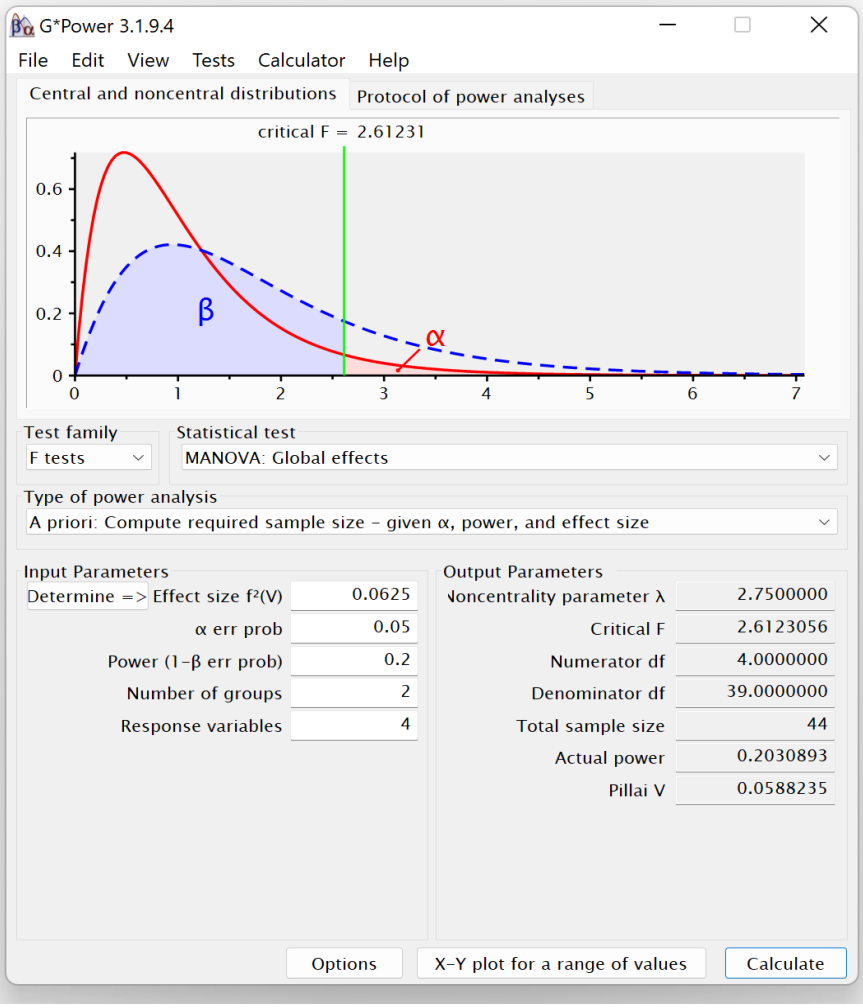
Could the defendant understand their conduct, form a rational judgement, or exercise self-control?

Totally unable to understand the nature of her conduct	1	2	3	4	5	6	7	Fully able to understand the nature of her conduct
Totally unable to form a rational judgement	1	2	3	4	5	6	7	Fully able to form a rational judgement
Totally unable to exercise self-control	1	2	3	4	5	6	7	Fully able to exercise self-control

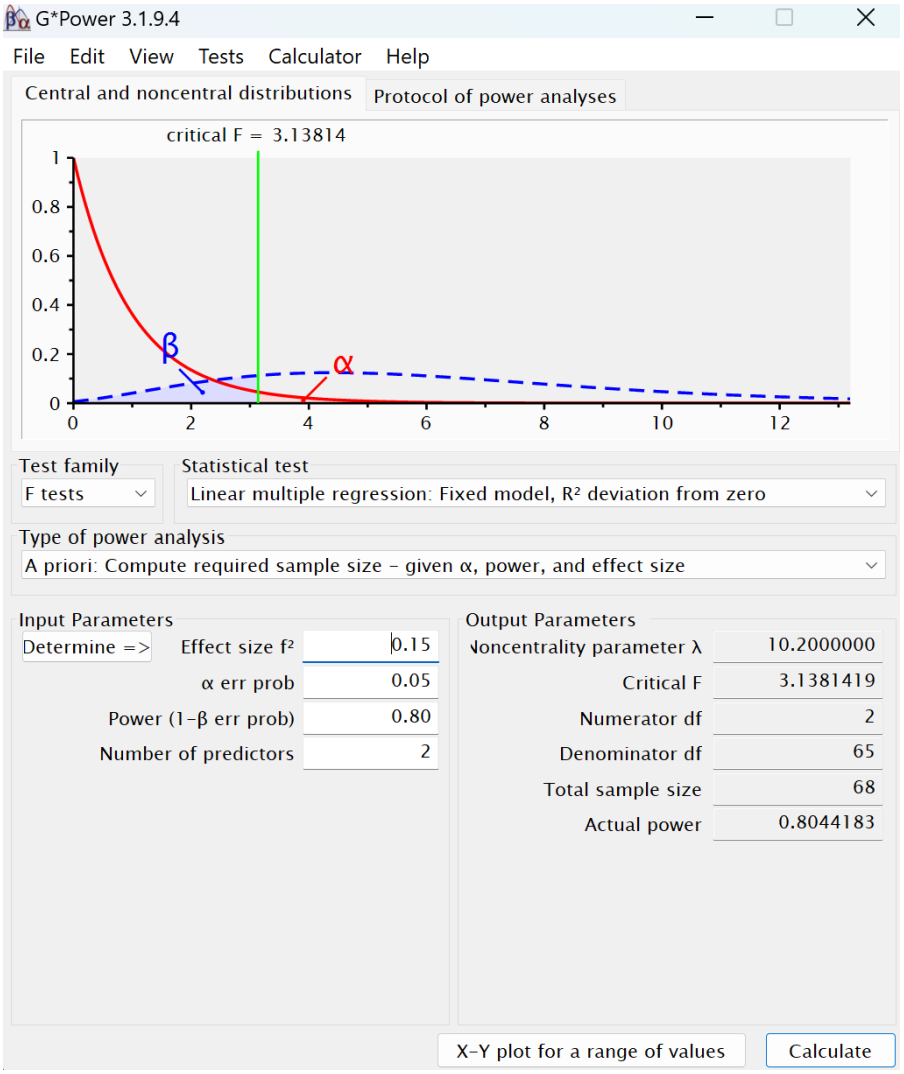
Do any of these factors explain how the defendant acted?

These do not explain their actions	1	2	3	4	5	6	7	One or more of these factors fully explains their actions

Appendix J: G* Power calculation (*t-test)*



Appendix K: G* Power calculation (*Regression)*



Appendix L: Participant Information Sheet

Study Title: Mock juror decision making for an adolescent on trial

Thank you for your interest in this project. It is important to take time to read through the information on this page to help you decide if you would like to participate in the study. If you have any questions or would like further information, I will be happy to answer any questions you may have about the study, via email at anjora.gomes@uea.ac.uk.

What is the study about and why is it important?

The study hopes to understand how people make judgements about a fictional murder case where the person accused (defendant) of murder has mental health difficulties. We want to understand what people think might have caused the defendant, to commit the offence. This is important because people in the public might be called upon to take part in jury service, deciding the fate of defendant. It is important to find out what information is weighed up by the jury when someone is charged with murder or manslaughter; especially when the defendant has mental health difficulties. This is a key factor in the study as people's attitudes towards mental disorder can vary and ultimately affect decision making in court.

Do I have to participate in the study?

Participation in this study is optional and you do not have to take part in this research if you do not want to. To take part, we will need to check if you are eligible and then complete a consent form. You can choose to withdraw from the study at any time and can do so without any reason. Please see section below 'What happens if I withdraw from the study' for further information.

What will I be asked to do?

Once you have completed reading the study information sheet and completing the consent form, you will be asked to complete demographic questions. You will then be given a link to a platform to access the study. Then, you will watch a series of video clips and written information which will outline a criminal trial. In addition to this, you will be asked to fill out a series of questionnaires at different points through the study; some looking at your thoughts on general attitudes towards people with a mental disorder as well as those who have committed a criminal offence.

After reading this information page and completing the consent form on the next page, you will be shown a series of video clips and written information which outline a criminal trial. You will also be asked to complete questionnaires at various points during the study. The videos will show an expert witness testimony by a Clinical Psychologist who describes the defendant's mental health disorder. You will then be asked to read information on what the diminished responsibility means and asked to decide whether the defendant should be given the verdict of 'diminished responsibility' or not.

To receive your payment via Prolific you must complete the study. You will receive a unique code to input into Prolific. The study will take you approximately 30 minutes.

Are there risks in taking part?

The study involves reading and watching videos which outlines a fictional case where a person has been killed. It also includes psychological information about mental health difficulties and traumatic events like sexual abuse. Whilst the study will only outline necessary information to help with decision making, it will omit any details about the case. It is important for you to consider if you would be affected by the study before taking part.

If you do experience distress, you will be able to contact myself and Dr Peter Beazley (Research supervisor) on Peter.Beazley@uea.ac.uk as a means of support. Additionally, you will be signposted to charities like Samaritans, you can access their services by calling 116 123 as well as speaking to your GP.

If you wish to make a complaint to a member of staff independent of the research, please contact Niall Broomfield, Dean of the Norwich Medical School on N.Broomfield@uea.ac.uk

What happens if I want to withdraw from the study?

You may withdraw from the study, the information and answers you provide will be permanently destroyed. You can do this by closing your browser and exiting the link for the study. You can also withdraw from the study after you have finished, if you change your mind, by contacting myself via the email address noted below. To do this, you will have to provide us with the unique code you received when you completed the study so we can match your answers to your ID and delete all data.

What happens with my information?

For the purposes of the study, only non-identifiable information is recorded, anonymised, and stored securely on OneDrive. Initials are requested at the start of the study and then replaced by a participant ID. Data are stored according to the General Data Protection Regulation Act (2018). Only the main researchers and supervisors will access the data.

What will happen once the data is analysed?

As the study is part of my Doctorate in Clinical Psychology, it will be submitted to the University of East Anglia for marking. The results will also be submitted to a relevant journal for publication and presented at a conference at the university. If you would like to receive the results of the study, please email anjora.gomes@uea.ac.uk and a summary of the results will be sent to you upon completion.

Who is overseeing and funding this research?

This research is part of my Doctorate in Clinical Psychology with the University of East Anglia. It is organised by myself but is overseen by my Research Supervisor and subject to internal review processes within the Doctorate in Clinical Psychology Programme department. The research is funded by the University of East Anglia.

Who has approved this study?

This research has been reviewed and approved by the Faculty Research Ethics Panel of the University of East Anglia.

For further information on the study or discussion, please do not hesitate to contact myself (Anjora Gomes, Trainee Clinical Psychologist): anjora.gomes@uea.ac.uk and and Dr Peter Beazley (Research supervisor) Peter.Beazley@uea.ac.uk

You have the right to receive feedback about the overall results from this study and can request this by contacting the primary researcher via the email address provided. This feedback will be in the form of a one-page lay summary and will be available on request at the end of the study.

Appendix M: Participant Consent Form

Thank you for your interest in this study. Please ensure that you have read the **Participant Information Sheet** thoroughly and have considered whether you would like to take part in this research study.

If you are unsure about taking part and have any questions prior to completing the study, you may contact the researchers via email: anjora.gomes@uea.ac.uk, Project supervisor(s): Peter Beazley peter.beazley@uea.ac.uk.

If you are happy to take part, please answer each item to show your understanding and consent to participate in this research.

I am over 18 years of age
Yes No
I have read the Participant Information Sheet and understand what the study involves and what I will be asked to do.
Yes No
I am aware that my information and study data will be held securely, and that I have the right to access or withdraw or correct it if I wish before it has been analysed and I understand I will require my completion receipt number to do so.
Yes No
I am aware that I can withdraw my consent to participate, as well as my information and data gathered, at any point before submitting my responses without giving a reason.
Yes No
I would like to take part in this research.
Yes No

By continuing to the next page, you are confirming that you have answered the above questions truthfully and agree to take part in this research.

Appendix N: Study Ethical approval document

Ethics ETH2223-1699 (Significant amendments): Miss Anjora Gomes

Date Created	13 Mar 2023
Date Submitted	13 Mar 2023
Date forwarded to committee	13 Mar 2023
Researcher	Miss Anjora Gomes
Category	PGR
Supervisor	Dr Peter Beazley
Faculty	Faculty of Medicine & Health Sciences
Current status	Approved

Ethics application

Amendment type

Type of amendment
Change to research protocol

Is this amendment related to Covid-19?
No

Change research protocol

Change your original application submitted in Ethics Monitor

Select the relevant tab(s) from your original ethics application to edit:
Human participants - selection and recruitment

If other, fully describe the changes below.

Attach any documentation which relates to the changes described.

Human participants - selection and recruitment

How many Participant Groups are there who will receive tailored participant information?:
One

Name of Participant Group 1.
Prolific

How will the participants be selected/recruited?
The research study will be set up on Prolific and advertised on the platform. A poster will be created which will outline the study's aims and methodology and shared on Prolific as well as social media platforms. A survey will be developed on an online survey platform and embedded into Prolific which participants will access. The study's inclusion criteria will be clearly set out as screening information when participants access Prolific. Once the required number of participants has been inputted into

Prolific and recruited, the study will be closed on Prolific and no excess participants can be recruited. If a participant takes the study twice (resulting in excess) then we will simply delete the second submission from the data set by matching the submissions using the participant's Prolific ID. If we do not recruit the minimum number of participants via Prolific; participants will be recruited via social media advertisements and directed to the study or via poster adverts displayed at the university.

In terms of UEA participants only, will you be advertising the opportunity to take part in this project to?:
None of the above (i.e. UEA's Student Insight Review Group (SIRG) does not need to be informed)

What are the characteristics of the participants?
The inclusion/exclusion criteria for participants is based on the Juries Act 1074 in England and Wales.

Inclusion criteria:

- Adult lay population between 18-76 years

- Adults who have lived in England for atleast 5 years, since they were 13 years old and a UK resident

Exclusion criteria:

- Adults under the age of 18 years

- Adults with a criminal conviction in the past 10 years resulting in a prison sentence or currently on bail

Will the project require the cooperation of a gatekeeper for initial access to the individuals/groups to be recruited?
No

Is there any sense in which participants might be 'obliged' to participate?
No

Will the project involve vulnerable groups?
No

Will payment or any other incentive be made to any participant?
Yes

If yes, provide details.
Having reviewed Prolific fees which were inadvertently not considered in the earlier application, we incorrectly stated that the participant payment would be £4. If we utilize the entire thesis budget available, i.e. £400, then the amount paid to a participant would be £2.50. This is within the Prolific minimum payment guidelines for the length of time of the study. We note the concern regarding payment was originally raised by the ethics committee in terms of a potential risk of bias in sampling. In this regard, we note that this is indeed a concern but is a somewhat inherent issue in jury decision-making research, and given the limited scope of research in the field, we think this is an acceptable approach. We note whilst the approach is less likely to produce a representative sample than a more

involved approach (e.g. utilizing un-used jury samples) it is likely to be far more representative that other approaches commonly used in the literature (e.g. recruiting only students).

How and when will participants receive this material?
The study will be advertised on Prolific. Participants can follow a study link or scan the QR code which will take them to the main page of the study.

Include any other ethical considerations regarding participation.
There are no issues regarding participation as participation is voluntary. Participants can drop out at any time throughout the study.

Appendix O: Participant Debrief Information

Thank you for taking part in this research study. This sheet will provide additional information including the purpose of the study in which you participated.

What is the study about?

This study is interested in attitudes towards adolescents with a diagnosis of Severe personality disorder. We are looking at whether the presence of this diagnosis affected attitudes and judgements made about them and the outcome of a serious offence in a fictional case. Whilst all participants were made aware of the nature of the crime and events leading up to it, some participants were told that the defendant had a 'severe personality disorder, borderline patten' and others were told the defendant had a 'complex mental health problem'.

The initial questionnaire looked at attitudes towards offenders with a mental disorder. You were then asked to watch the expert witness testimony film of a Clinical Psychologist outlining psychological information about the defendant. After this, you were asked to complete two further questionnaires looking at your attitudes to the defendant and the causes or 'attributions' about their behaviour in relation to the serious offence. Then you were shown the prosecution and defence arguments and judges summary and asked to come to a decision if the defendant should be granted 'diminished responsibility' due to their mental health disorder. This means that you had to decide if the defendant could be treated in a hospital for their mental health disorder instead of being sentenced to life imprisonment for their serious offence.

This is important especially when we consider the way information about mental health disorders is presented in court and pre-sentence reports. This helps us to better understand the way in which jurors come to a suitable decision. The way information is presented in court can help jurors have a better understanding of a defendant and their mental health difficulties. This is especially important when certain diagnosis such as personality disorder face stigmatising attitudes within the criminal justice system.

What to do if you need further support following taking part in this study

If you need further support or are feeling distressed following taking part in this study, please contact the main researcher, Anjora Gomes (anjora.gomes@uea.ac.uk) who will signpost you to sources of support, such as Samaritans (to access please call 116 123) or your GP.

If you have further queries or would like to complain, please contact the research supervisor for this study, Dr Peter Beazley on peter.beazley@uea.ac.uk.

If you wish to make a complaint to a member of staff independent of the research, please contact Niall Broomfield, Dean of the Norwich Medical School on N.Broomfield@uea.ac.uk.

What to do if you would like to withdraw from this study

If you decide you want to withdraw from the study, please let the main researcher (Anjora Gomes) know by emailing on anjora.gomes@uea.ac.uk

Thank you for your participation.

Appendix P: ***Normality (Shapiro-Wilks) result for each variable by study condition***

	Severe Personality Disorder (n=55)			Complex Mental Health Problem (n=46)		
	Shapiro-Wilk Statistic	df	Sig	Shapiro-Wilk Statistic	df	Sig
AQ[1] Anger	0.923	55	.002*	0.967	46	.205
AQ Avoidance	0.960	55	.063	0.964	46	.158
AQ Blame	0.973	55	.244	0.975	46	.418
AQ Coercive	0.963	55	.088	0.975	46	.404
AQ Dangerousness	0.965	55	.113	0.964	46	.165
AQ Fear	0.960	55	.064	0.966	46	.190
AQ Help	0.981	55	.553	0.976	46	.470
AQ Pity	0.952	55	.028*	0.928	46	.007*
AQ Segregation	0.965	55	.114	0.955	46	.075
DRQ[2] Understand	0.979	55	.445	0.976	46	.441
DRQ Medical condition	0.960	55	.066	0.964	46	.163
DRQ Rational judgement	0.974	55	.268	0.977	46	.482
DRQ Self-control	0.967	55	.138	0.959	46	.108
DRQ Explaining actions	0.904	55	.000*	0.960	46	.117
CDS[3] Personal control	0.938	55	.007*	0.954	46	.067
CDS External control	0.960	55	.063	0.945	46	.030*

[1] AQ= Attribution Questionnaire
[2] DRQ= Diminished Responsibility Questionnaire
[3] CDS= Revised Causal Dimension Scale
* Significance based on $p<.05$

Appendix Q: ***Levene's test for equality of variance for each variable***

		Levene's Test for Equality of Variances		*t*-test for Equality of Means					95% Confidence Interval of the Difference	
Variable		F	Sig	*t*	df	Sig. (2 tailed)	Mean Difference	Std Error Difference	Lower	Upper
AQ[1] Anger	Equal variances assumed	.910	.342	.413	99	.681	.399	.966	-1.519	2.317
	Equal variances not assumed			.418	98.807	.677	.399	.955	-1.495	2.294
AQ Avoid	Equal variances assumed	.003	.956	-.433	99	.666	-.431	.996	-2.409	1.546
	Equal variances not assumed			-.433	95.782	.666	-.431	.997	-2.410	1.547
AQ Blame	Equal variances assumed	1.164	.283	-.428	99	.670	-.356	.831	-2.006	1.294
	Equal variances not assumed			-.422	89.058	.674	-.356	.831	-2.006	1.320
AQ Coercion	Equal variances assumed	.054	.816	1.423	99	.158	1.532	1.076	-.604	3.669
	Equal variances not assumed			1.410	91.763	.162	1.532	1.086	-.626	3.690
AQ Dangerousness	Equal variances assumed	.228	.634	.164	99	.870	.200	1.222	-2.225	2.627
	Equal variances not assumed			.163	92.981	.871	.200	1.231	-2.244	2.645
AQ Fear	Equal variances assumed	.009	.923	-.121	99	.904	-.156	1.301	-2.739	2.425
	Equal variances not assumed			-.120	95.146	.904	-.156	1.303	-2.745	2.431
AQ Help	Equal variances assumed	.218	.642	-.678	99	.499	-.696	1.026	-2.733	1.341
	Equal variances not assumed			-.681	97.022	.498	-.696	1.023	-2.727	1.334
AQ Segregate	Equal variances assumed	.004	.947	.857	99	.394	.657	.767	-.865	2.179

	Equal variances not assumed			.860	97.234	.392	.657	.764	-.859	2.173
AQ Pity	Equal variances assumed	1.548	.216	.251	99	.803	.236	.942	-1.634	2.106
	Equal variances not assumed			.248	90.977	.805	.236	.952	-1.656	2.106
CDS[2] Personal Control	Equal variances assumed	1.296	.258	-.002	99	.999	-.001	.630	-1.252	1.250
	Equal variances not assumed			-.002	88.393	.999	-.001	.640	-1.273	1.271
CDS External Control	Equal variances assumed	.002	.967	-.262	99	.793	-.132	.502	-1.129	.865
	Equal variances not assumed			-.261	93.882	.794	-.132	.505	1.135	.871
DRQ[3] Understand	Equal variances assumed	.124	.726	-.390	99	.698	-.464	1.190	-2.826	1.898
	Equal variances not assumed			-.388	94.175	.699	-.464	1.195	-2.838	1.910
DRQ Medical Condition	Equal variances assumed	.609	.437	-.018	99	.958	-.021	1.170	-2.343	2.300
	Equal variances not assumed			-.018	92.327	.986	-.021	1.179	-2.364	2.321
DRQ Rational Judgement	Equal variances assumed	.245	.622	-.156	99	.877	-.192	1.236	-2.645	2.260
	Equal variances not assumed			-.156	97.505	.876	-.192	1.230	-2.633	2.248
DRQ Self-control	Equal variances assumed	.230	.633	-.117	99	.907	-.149	1.277	-2.684	2.384
	Equal variances not assumed			-.116	92.147	.908	-.149	1.288	-2.707	2.408
DRQ Explaining Actions	Equal variances assumed	1.176	.281	-.347	99	.730	-.426	1.231	-2.871	2.017
	Equal variances not assumed			-.341	87.935	.734	-.426	1.251	-2.914	2.060

[1]AQ= Attribution Questionnaire
[2]CDS= Revised Causal Dimension Scale
[3]DRQ= Diminished Responsibility Questionnaire