

**DOMESTIC ABUSE: AN EXPLORATION  
OF SOCIO-COGNITIVE FACTORS**

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## **Abstract**

*Background:* Domestic abuse is a prevalent and persistent problem affecting over two million people a year in the UK, despite decades of research, new government legislation and intervention programmes. *Aims:* This thesis aims to gain further understanding about domestic abuse perpetration in the community and the relationship between socio-cognitive factors and domestic abuse. *Methods:* Four studies were completed, using a variety of methods: firstly, the properties and effectiveness of a police risk assessment tool for domestic abuse were evaluated. Secondly, a systematic review explored cognitive factors in domestic abuse perpetrators, which were then further explored in a research study which utilised three measures to assess theory of mind abilities, adverse childhood experiences and domestic abuse perpetration. Finally, a case study considered how adapting an intervention with awareness of socio-cognitive difficulties and specifically targeting these may support someone with domestic abuse and violence history. *Results:* The police risk assessment tool was not fit for purpose, with a new tool now utilised by police. Domestic abuse perpetrators were found to have cognitive and socio-cognitive difficulties in the review, also associated with adverse childhood experiences. This was supported by results from the research study, specifically exploring theory of mind. Finally, the case study demonstrated a reduction in aggression over a 6-month intervention, targeting emotion regulation and socio-cognitive skills. *Discussion:* Socio-cognitive abilities appear important to consider in relation to domestic abuse development and perpetration, which are not currently included in assessment or interventions.

Understanding more about how these abilities may affect other known trajectories and risk factors may increase our ability to prevent, reduce and manage domestic abuse perpetrators and support victims.

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## **Summary of the Forensic Psychology Doctorate Programme**

The forensic psychology doctorate programme contains two years of placements and teaching blocks, with the final year dedicated to completing the research thesis. Teaching blocks are a mixture of essential learning to assist with thesis chapter structure and design (e.g., a lecture relating to systematic reviews and meta-analysis) and relevant additional subjects of interest (e.g., research and interventions with those perpetrating sexual offences). Each student is examined on their research thesis and practical thesis via two viva voces, the latter of which evidences their clinical competencies throughout three placements in different environments, a practice log, a case study with a service user and a training package for professionals.

The placements that I undertook throughout my doctoral programme directly inspired the focus of my research for this thesis, which will be further explained below. It is also important to note that at the start of my doctorate, it was COVID-19 lockdown. Charities and other organisations had emphasised the elevated risk for those experiencing domestic abuse, being trapped in their homes with abusers. This campaign brought domestic abuse and how it is understood and managed, particularly in the community, to the forefront of my mind and motivated me to access research, national statistics and be curious in my clinical work with those perpetrating domestic abuse to identify a potential research opportunity as this was clearly a current and key issue for our society.

My initial placement was within probation services in London, where I provided cognitive behavioural therapy to men and women on probation orders in the community. A large proportion of the men and women I worked with had experience of domestic abuse. I reflected on the impact that domestic abuse perpetration was having on multiple aspects of both perpetrators and victims lives and society as a whole and became motivated to understand more about this offending behaviour.

My next two placements were within a medium secure and then low secure psychiatric hospital and again I was working with men who had perpetrated domestic abuse. From reviewing the literature, I was aware that there was considerable research into domestic abuse, although limited application to current interventions used by HMPPS and community services, with a predominantly cognitive behaviour style utilised in all, not representing the heterogeneity of the offending group. From my own clinical work, I could also observe that there were often differences in cognitive functioning and abilities among those who were perpetrating domestic abuse.

The societal context of COVID-19 increased public awareness of domestic abuse and my own clinical experience of working with both victims and perpetrators of domestic abuse inspired me to undertake the research documented in this thesis. It hopes to explore potentially relevant factors to domestic abuse perpetrators, based on observations and therapeutic discussions had with service users and consider the broader picture before narrowing in specificity and discussing individual differences and potential contributions to the field.

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## **Chapter One: Introduction**

Domestic abuse is a complex set of aggressive behaviours, heterogeneous in nature and a prevalent problem in society. This chapter will provide an overview of theories explaining domestic abuse, provide some legal and societal context and introduce a specific socio-cognitive factor, Theory of Mind. The potential relevance of Theory of Mind to domestic abuse is explored throughout this thesis.

### **Legal definitions and developments**

Domestic abuse, acts of domestic violence and intimate partner violence have been defined by the UK Government's Domestic Abuse Act (DAA, 2021) as "any incident or pattern of incidents of controlling, coercive, threatening behaviour, violence, or abuse between those aged 16 or over who are, or have been, intimate partners or family members regardless of gender or sexuality. The abuse can encompass, but is not limited to psychological, physical, sexual, financial, and emotional".

The DAA (2021) is described as a "cross government statutory definition of domestic abuse" which aims to ensure domestic abuse is understood, deemed unacceptable and opposed by both the public and statutory agencies. The DAA has included coercive control, which was reported as the one of the most experienced (51%) forms of domestic abuse, alongside physical abuse (51%) and psychological abuse (50%) in a study of people from England and Wales (Chopra et al., 2022). Controlling or coercive behaviour is that which causes the victim to fear violence, and/or distress and involves the perpetrator taking

control over the victim, exploiting, humiliating and/or isolating them from support (CPS, 2021, from DAA).

Society's understanding and response to domestic abuse has changed significantly since the first Act in 1976, which allowed a woman to take out a court order against her violent husband (Domestic Violence and Matrimonial Proceedings Act, 1976). Within this 1976 Act, domestic abuse was conceptualised as 'molestation' perpetrated by a husband to either his spouse or child within the family home.

However, after the 1976 Act, domestic abuse within marriage or relationships was generally not responded to by the Police with acts such as rape not criminalised within marriage until the case of R v. R (R v R [1991] UKHL 12). Other changes to legislation followed over the next 20 years including: The Family Law Act, 1996 (although this could only be applied in cases where those involved were family, or married), criminalisation of harassment (The Protection from Harassment Act, 1997), The Inter-Ministerial Group on Domestic Violence was established (2003), The Domestic Violence, Crime and Victims Act (2004) which then became the Domestic Violence, Crime and Victims (Amendment) Act (2012) and Clare's Law (Domestic Violence Disclosure Scheme, 2013), which allowed disclosure of previous offences to a partner.

### **Definitions used in this thesis**

#### *Domestic abuse*

Domestic abuse is challenging to define, with many behaviours and patterns of behaviour included within it. In this thesis it will be defined as in the DAA (2021) definition, as this is the current definition used in the UK and is felt to be inclusive of the variety of forms domestic abuse can take.

Behaviour is defined as abusive if it results in harm and has a negative impact on the victim. Psychological and emotional abuse can involve verbal abuse, bullying, threats, gaslighting which leads to psychological harm; physical abuse involves causing physical harm e.g., punching, pushing, slapping; sexual abuse includes sexual assault, non-consensual contact, rape. (Barrow Grint et al., 2022; Women's Aid, 2023)

This thesis will be specifically exploring domestic abuse within relationships in Chapter Four (research study), but other Chapters will consider domestic abuse as a whole phenomenon, as in the DAA (2021) definition. This is further explained in Chapter Four.

### *Adverse childhood experiences*

Adverse childhood experiences are events during childhood, varying in severity and chronicity, which cause stress, potential trauma and thereby impact on physical and mental health (Kalamakis et al., 2014; Scott et al., 2021) although were initially defined by Felitti and colleagues (1998) as simply "childhood abuse and household dysfunction".

As the research study in Chapter Four utilises the ACE-Q (Felitti et al., 1998), this thesis will consider items in the ACE-Q as childhood adverse experiences but hold in mind other examples of ACEs such as bullying, discrimination, and



community exposure to violence and poverty (Karatekin et al., 2021) when considering potential frameworks of domestic abuse.

### *Theory of mind*

When discussing theory of mind (ToM), one must note it shares similar traits and functions as other socio-cognitive constructs, namely emotion decoding, empathy and mentalisation, the latter two of which both have cognitive and affective components (Fortier et al., 2018; Preckel et al., 2018; Velotti et al., 2021). Research has attempted to separate them into discrete categories but there are significant overlaps with definitions used in research and how each is operationalised (Baron-Cohen et al., 2001; Oakley et al., 2016; Vegni et al., 2021) which are further discussed in Chapter Five and Six.

For the purpose of this thesis, ToM is defined as the ability to attribute mental states to self and others, perspective take, and imagine how another person might understand and perceive the world, which may be alternatively to them (Baron-Cohen et al., 2001; Premack & Woodruff, 1978; Quesque & Rossetti, 2020). Further discussion of such terms and their similarity and difference will be considered in Chapter Four and Five.

### **The significance of the topic**

The lasting impact of domestic abuse on victims, the National Health Service (NHS), HMPPS and charitable organisations is huge, with repercussions for all aspects of our society (Oliver et al., 2019; Women's Aid, 2023). Whilst some of the theoretical evidence outlined in the subsequent section of this introduction have been utilised to develop interventions, assessments, and

preventative measures, they still appear generic, failing to consider the wide variation in offending type and individual differences within the group.

Despite the DAA (2021) highlighting the variety of forms domestic abuse can take, which reportedly costs £66billion per annum (ONS, 2017, see Aldridge et al., 2021), there have been concerns about identification, prevention, and management of domestic abuse. The strategy focuses on increasing law enforcement strategies in response to domestic abuse acts rather than considering the problem more holistically and putting more preventative measures in place (Stockl & Quigg, 2021). Focusing on law enforcement to respond to domestic abuse acts and transforming the justice process has been made more complex and challenging due to devastating cuts to the services under austerity measures for over 10 years and police failings in response to domestic abuse acts (Aldridge, 2021; HMIC, 2014).

According to the Crime Survey for England and Wales (CSEW, ONS, 2022), 5% of adults (2.4 million people) experienced domestic abuse in the last year and statistics for the year ending March 2022 reported 910,980 domestic abuse related crimes recorded by the police (Office for National Statistics [ONS], 2022). This was an increase of 7.7% from the previous year and 14.1% higher than 2020. More people experienced domestic abuse from their partner or ex-partner (3.5%), compared to another family member (2.1%) perpetrating the abuse (ONS, 2022). This increase in domestic abuse related offences may be related, in part, to the COVID-19 lockdown restrictions increasing risk for victims trapped in the home with their abusers, but it is also important to note that there has been a gradual increase of domestic abuse related offences over

the last three years (as above). This increase may be associated with police recording more incidents as domestic abuse and victims feeling more able to come forward to police, as well as a potential increase in severity of domestic abuse offences necessitating victims to come forward or come to police attention.

However, it is important to note these may have been underestimated figures as the official CSEW (where the above data was collected) used to cap the maximum number of incidents in a series at five. Once this cap is removed, evidence suggests domestic abuse and violent incidents increase by up to 70% for women (Pullerits & Phoenix, 2023; NICE, 2021).

Similarly, there are barriers to victims disclosing to the police, with four in five victims believed to not report domestic abuse (Robinson & Clancy, 2021). Therefore, it is likely the rates of domestic abuse are much higher than ONS figures, highlighting the need for continued research in this area to explore different perspectives and understand how various risk factors may interact. A community sample was therefore chosen to study in this thesis as most research is completed with student or convicted samples, which are not always generalisable. A community sample can indicate the potential scale of the problem in non-convicted people, for which we have less information available. Theories do not seem to be combining evidence to create a more psychosocial approach thereby suggesting a trajectory or pathway, which would be helpful for early identification, prevention, education, and management. Recently, there has been more focus on social and cognitive theories and research surrounding cognitive needs of offending groups, but a lack of integration and

explanation of how such processes may link together to result in domestic abuse perpetration. The topic of domestic abuse and socio-cognitive abilities was therefore chosen as important to study as there continues to be a high prevalence of domestic abuse perpetration, despite revised legal definitions, new assessment tools utilised by police and changes to interventions offered by Her Majesty's Prison and Probation Service (HMPPS).

### **Theories of domestic abuse**

Various theories have been put forward to explain domestic abuse, complicated by the highly heterogenous nature of domestic abuse offenders, who often engage in other types of offending, including violent offending (see Robinson & Clancy, 2021). Theories are typically used as a framework for interventions for perpetrators of domestic abuse and attempt to identify and integrate a range of external and internal risk factors or provide a trajectory of how domestically abusive behaviour is perpetrated. Presently, domestic abuse is postulated to be explained by a multitude of factors from a variety of influences, for example neurological, social, and cognitive, but fail to integrate, resulting in less cohesion in our understanding and application. A brief overview of relevant models to this thesis will be outlined below.

#### *Cognitive Behavioural (CB) Theories*

CB theories can be utilised within the domestic abuse field via providing theoretical understanding and a framework for intervention. As a theory, CB postulates that aggressive behaviour (here domestic abuse) is the product of cognitions (e.g., beliefs, processing styles, distortions), emotional factors (e.g., dysregulation, high distress, poor stress tolerance) and behaviour

interacting (Casey et al., 2013). CB techniques combined with the Risk Need and Responsivity model (Andrew & Bonta, 2010) are predominantly used in domestic abuse interventions within HMPPS (MoJ and HMPPS, 2022) and focus on reducing reoffending by identifying and modifying cognitions and beliefs which support or justify aggression, particularly in intimate relationships (Eckhardt & Massa, 2022). The intervention also aims to improve problem solving skills (i.e., provide an alternative solution to aggression), improve perspective taking, reduce negative, intense emotions and reduce perpetrators' externalisation of their behaviour (Building Better Relationships, NOMS, 2015).

#### *Social Learning Theory*

Social Learning Theory (SLT; Bandura, 1978) proposes that children learn to model behaviour through observing their parents or other adults and develop positive attitudes relating to perpetration of violence (here domestic) when they perceive associated rewards with the behaviour. Therefore, if a child grows up in a household where they are exposed to violence, particularly domestic violence, they may learn to repeat such behaviour in their own adult relationships, particularly if they observed and developed offence supportive attitudes after witnessing positive outcomes for the perpetrator at home. This is also known as intergenerational transmission of violence, the hypothesis that exposure to familial violence in childhood, or having violent parents results in a higher likelihood of the child also developing violent behaviour (Farrington, 2002; Murrell et al., 2007; van de Weijer et al., 2014; Widom & Wilson, 2014).

However, not all children exposed to violence grow into violent adults, with some research suggesting that children in such households are also vulnerable to victimisation as an adult (Anda et al., 2006; Voith et al., 2020). In addition, there are many other risk factors and stressors likely present in a violent and dysfunctional household (Farrington, 2002; Klest, 2012) that may also affect propensity to use violence as an adult, rather than just learning and repeating behaviour perceived to result in a reward. For example, the violence exposure may lead to feelings of threat and paranoia as an adult, development of hostile attribution biases or violence supportive implicit theories, emotion dysregulation, trauma, and increased likelihood to utilise substances to manage emotions all of which are also associated with later risk of domestic abuse (Karatekin et al., 2021; Miller et al., 2015; Narayan et al., 2017).

#### *Social information processing theory*

Social information processing theory (SIP) involves a person's ability to decode and interpret relevant social and external information, clarify a goal, create a response, decide, and then act (Crick & Dodge, 1994; McFall, 1982). Throughout social information processing, each stage is monitored and interpreted (based on attitudes, cultural influences, learning) resulting in adaptation in schemas based on feedback from the environment and social interactions. Crick and Dodge (1994) also suggested that the process is circular whereby a chosen behaviour and subsequent interpretation and evaluation of it can affect perception and decoding of future social cues and interactions.

It is thought exposure to violence in the family home or other environments can negatively affect development of social information processing, resulting

in misinterpretation of social cues and attributions of social interactions and behaviour (Dodge et al., 1990, Weiss et al., 1992). This is due to children developing a processing style which prioritises cues of perceived or actual threat (Heleniak & McLaughlin, 2020; McLaughlin & Lambert, 2017; Weiss et al., 1992) and the child having less exposure to non-violent environments which disrupts development of other socio-cognitive skills, such as Theory of Mind (Heleniak & McLaughlin, 2020).

Males perpetrating domestic abuse had deficits in their SIP at the decoding stage and more hostile attribution biases towards their partner, being more likely to anticipate anger in response to situations (Holtzworth-Munroe, 2000; Holtzworth-Munroe & Smutzler, 1996; Taft et al., 2016). In addition, compared to non-domestically abusive men, those perpetrating domestic abuse showed SIP difficulties, aggressive supporting schemas and justified using aggression in relationships to solve conflict (Senkans et al., 2020; Riggs & Caulfield, 1997). Therefore, it is postulated that domestic abuse perpetrators have deficits at all stages of the SIP model (Murphy, 2013; Murphy et al., 2014), which may also relate to other known risk factors of domestic abuse, such as emotion regulation, trauma, and aggressive supportive schemas (Capaldi et al., 2012; Senkans et al., 2020).

#### *Development of implicit theories*

Implicit theories are automatic and unconscious belief systems, attitudes, or schemas relating to a person's understanding and expectations of the world (Fazio & Olsen, 2003; Greenwald & Lai, 2020). Research has indicated that offenders hold specific offence related implicit theories, which support their

offending behaviour (Ward, 2000). It is thought that what differentiates domestically abusive and non-domestically abusive people is their processing of social information, affected by the implicit theories they have developed and maintained throughout their life (Weldon & Gilchrist, 2012). Weldon and Gilchrist (2012) identified 11 implicit theories held by domestically abusive offenders, for example: women as provoking and a desire to remain in control. In addition, an overarching theme of 'violence is normal' was identified, related to the participants' believing violence was the normal way to resolve problems and conflict in situations, including intimate relationships. In the study, participants' implicit theory of 'violence is normal' was associated with their childhood and exposure to violence from a young age, observing it, being victimised, and resolving their problems with violence.

As outlined above, current theories are not integrating findings sufficiently, thereby resulting in difficulties translating knowledge into effective interventions and management. The inclusion of cognitive and SIP factors into an alternative model would allow the combining of multiple risk factors from various theories, thereby creating a wider more psychosocial model, better able to explain the heterogeneous and complex nature of domestic abuse.

The next sections will explore potentially relevant socio-cognitive factors to consider and the potential contributions for explanations for domestic abuse.

### **Theory of mind**

Theory of Mind (ToM) was a term first introduced in 1978 by Premack and Woodruff in their work on primates. It was defined as the ability to ascribe mental states to oneself and others. Baron-Cohen (pg. 174, 2001) later defined



ToM as “being able to infer the full range of mental states (beliefs, desires, intentions, imagination, emotions, etc.) that cause action. In brief, having a ToM is to be able to reflect on the contents of one’s own and other’s minds”. ToM develops throughout childhood, alongside social competence (Devine et al., 2016; Weimer et al., 2021) and is also argued to be involved in planning, specifically planning to create an emotional reaction in another person (Ho et al., 2022). ToM has a cognitive component – understanding another’s thoughts, beliefs, and attitudes (Derksen et al., 2018) and an affective one – understanding another person's feelings (Gabriel et al., 2021). ToM development can be affected by adverse childhood experiences including abuse, neglect, maltreatment, and parental substance misuse (Germine et al., 2015; Pang et al., 2022).

#### *Theory of Mind and Aggression*

Heleniak and McLaughlin (2020) identified ToM as a relevant social information processing skill in the perpetration of violence due to its impact on perception of social situations, interpreting mental states and perspectives of others. Similarly, a review suggested violence exposure in childhood can lead to dysfunctions in mechanisms required for moral decision making such as ToM, empathy, and inhibitory control (Zucchelli & Ugazio, 2019), which might suggest that deficient moral decision-making abilities may increase the chance of a person utilising violence over other methods.

Less advanced or deficient ToM skills have been associated with greater rates of aggression in children and adolescents (Kokkinos et al., 2016; Weimer et al., 2017; Weimer et al., 2021). However, the relationship between ToM and

aggression is less clear in adults. In specific groups, lower ToM scores were evidenced in sexual offenders, compared to controls (Castellino et al., 2011; Elsegood & Duff, 2010) and inpatients' aggression was predicted by ToM self-serving biases whereby their perception of themselves and others was distorted (Goldberg et al., 2007). A meta-analysis found negative correlations between ToM and aggression from 83 studies in adults and children (Ekerim-Akbulut et al., 2021) but another study found impaired empathy in violent offenders, with no significant differences in ToM to controls (Winter et al., 2017).

Current theoretical models and potentially relevant factors for domestic abuse have been discussed above to consider available knowledge for this research topic. Following this, consideration will be given to how domestic abuse is currently managed and consider how this thesis may contribute to our understanding, theoretical frameworks, and applications.

### **Management of domestic abuse**

The current method of assessing risk of domestic abuse by the UK police is explored further in Chapter Two and until recently (September 2022) used a measure called the Domestic Abuse, Harassment, Stalking and Honor Based Violence tool (DASH; Richards, 2009). In research settings a variety of measures exist to assess risk and identify frequency and prevalence, for example the SARAv3 (Kropp & Hart, 2015) and the Revised Conflict Tactics Scale (Straus et al., 1996; utilised in Chapter Four). The DASH was used routinely by police but failed to adequately incorporate recent empirical

findings and concerns were raised during reviews of the police response to domestic abuse by HMIC (2014, 2019).

Regarding interventions, perpetrators can be referred to the Building Better Relationships (BBR) programme through HMPPS services, initiated in 2013. BBR is a group intervention of 30 sessions, for medium to high-risk men. It utilises CBT theory and Risk Need Responsivity principles (Andrews & Bonta, 2010), with the main aim described as reducing reoffending (HMPPS, 2013; Renehan, 2021). The intervention offered is “one size fits all” approach (Akoensi et al., 2013; Bates et al., 2017) and does not reflect heterogeneity of the group. The primary treatment needs targeted by BBR are reported as pro-offending thinking styles, emotional awareness and management and relationship problems (Teasdale et al., 2023 for HMIC). The material has been described as complex and dense (Hughes, 2017) and there is little to no research at present to ascertain its effectiveness as it is highly complex to do so (Renehan, 2021; Teasdale, 2023). In addition, there are high rates of attrition – figures from HMIP (2018) reported 65,000 men were convicted, 4,452 enrolled in the programme (2016-2017) but only 2,041 completed. In addition, only one out of 21 community rehabilitation companies met the required delivery standards in an evaluation (Teasdale et al., 2023).

Other difficulties have been identified as insensitivity to unique needs of clients, presence of a “care-less” environment, limited resources and a lack of a trauma informed approach and cognizance of other difficulties clients may present with (Renehan, 2021).

## **Conceptual framework – adding new perspectives to existing theories**

This thesis aims to add new perspectives to existing theories of domestic abuse, which it is argued are not presently giving enough focus to specific skills required for socio-cognitive and social information processing functions, developed in childhood. In addition, childhood experiences, particularly adversity are already known risk factors for domestic abuse (Capaldi et al., 2012; Narayan et al., 2017; Navarro et al., 2022) as are social information processing deficits (Holtzworth-Munroe, 2000; Holtzworth-Munroe & Smutzler, 1996; Murphy et al., 2013). However, whilst these theories attempt to explain domestic abuse, they do not adequately integrate evidence, lacking a wider, more generalisable framework encompassing many factors.

This thesis considers whether current social information processing and cognitive theories for domestic abuse may benefit from considering an additional factor, Theory of Mind and whether there may be a pathway for domestic abuse offenders, initiated from childhood adverse experiences which then impact development of socio-cognitive and information processing skills, including Theory of Mind, which may affect propensity of a person to utilise domestic abuse (in the context of an intimate relationship). Therefore, this thesis suggests a more psychosocial framework (as described by Murphy et al., 2013, 2014 and Senkans et al., 2020) including known and potential risk factors for domestic abuse and considering how these appear to affect interpretation and reaction to social interactions, specifically within relationships.

This thesis discusses how improving our understanding of deficits in ToM in potential relation to perpetration of domestic abuse may thereby help with adapting interventions and assessments, measuring change and ways of working with this offender group, the police, and families affected.

### **Contributions and impact**

The exploration of a specific socio-cognitive factor, ToM, has not been investigated in relation specifically to domestic abuse, in addition to its potential interaction with adverse childhood experiences, of which the relevance and contribution to domestic abuse risk is well documented (e.g., Capaldi et al., 2012; Murrell et al., 2007; Narayan et al., 2017; Navarro et al., 2022; Ruddle et al., 2017; Song et al., 2022). Social information processing and other cognitive functions have been evidenced as relevant to domestic abuse offenders and perpetration (Covell et al., 2007; Holtzworth-Munroe, 2000; Persampiere et al., 2012; Romero- Martinez et al., 2013, 2016, 2019; Senkans et al., 2020) and therefore this thesis contributes a further relevant factor to consider in how such abusive behaviour may develop, be maintained and perpetrated. This allows a wider lens to be applied when thinking about domestic abuse, drawing together theories from developmental, psychological, cognitive, and social which is argued is more appropriate when attempting to explain a complex set of behaviours.

Furthermore, research is not commonplace in community populations, meaning data contributing to our understanding of how domestic abuse may present, be perpetrated, and reported in non-convicted community samples is

valuable for identifying further directions in research and highlighting the scope of the problem.

The potential impact of this could include changes to screening tools prior to assessments to further understand cognitive and socio-cognitive abilities; adapting with additional cognitive training if required; improved individualisation to interventions and assessments to ensure suitability of risk and need; more trauma informed working and directions for further research.

### **Aims of this thesis**

This thesis aims to contribute to social information processing and related models of domestic abuse by considering a less researched factor, namely Theory of Mind and how it may be related to domestically abusive behaviour. In addition, the aim is to gather data about rates of domestic abuse perpetration in community settings, to better understand the scale of the problem in a less researched sample group. Applying these findings to current methods of assessing risk and working with offenders will be discussed and improvements suggested.

The key objectives were:

- To explore cognitive and socio-cognitive factors in those perpetrating domestic abuse
- To consider if theory of mind is a relevant factor to be added to current theories of why some people commit domestic abuse

- To explore additional relationships between socio-cognitive factors and other relevant factors identified from literature and research findings in the thesis
- To evaluate how the UK Police assess risk of domestic violence and explore improvements which could be made
- To discuss findings in relation to current intervention and assessments and consider improvements

### **Overview of this thesis**

After this introduction to the topic (Chapter One), Chapter Two presents a critique and scoping review of a risk assessment used by UK police to assess risk of domestic abuse, the Domestic Abuse, Stalking and Honour Based Violence (DASH) tool. The DASH was implemented in 2009 and used routinely by all frontline police officers responding to a domestic abuse incident. After completion of this chapter, a new tool, the Domestic Abuse Risk Assessment (DARA), was introduced and has now replaced the DASH for frontline staff. The improvements of the DARA are briefly discussed.

Chapter Three contains a systematic review to explore cognitive functioning more broadly in domestic abuse offenders and provide evidence to the scale of the potential relationship. The systematic review identified three key themes from 15 papers: neuropsychological functioning, socio-cognitive functioning and implicit theories, whereby domestic abuse offenders had higher levels of dysfunction in both cognitive areas and more offence supportive implicit theories than controls or other groups.

Chapter Four presents an empirical research study expanding upon findings from Chapter Three where socio-cognitive functioning was indicated as an area which was less researched, but potentially relevant to contributing to our understanding of domestic abuse perpetrators. An online study with three measures collected data from three factors: Theory of Mind abilities, domestic abuse frequencies and adverse childhood experiences. Relationships between these factors are discussed.

Chapter Five presents a research case study, regarding the relationship between socio-cognitive functioning, such as Theory of Mind abilities and domestic abuse and considers how understanding more about socio-cognitive functioning may support clinical work with a service user.

The final chapter, Chapter Six, discusses overall findings from this thesis, and considers their applicability and contributions to current theoretical models. Future directions for research based on findings in this thesis and a summary of practical and theoretical implications are discussed.

*Word count: 4487*



## **Chapter Two - Exploring the DASH's psychometric properties and use within the UK Police Force**

### **Abstract**

The Domestic Abuse, Harassment, Stalking and Honour Based Violence tool (DASH; Richards et al., 2008, 2009) is a 27-item domestic abuse risk assessment, which has been in use by Police in the United Kingdom since 2009. However, there is a lack of empirical research to evidence development, validation of psychometric properties, and longitudinal studies into its effectiveness. This critique presents information regarding the development of the DASH, its use by police forces across the UK and considers available evidence of its validity and reliability. Considerations for future developments and potential improvements are discussed, in comparison to other widely used domestic abuse and general risk assessment tools.

*Word count: 5416*

## **Foreword**

From findings presented in the previous introductory chapter and the author's clinical work experience (outlined on page four), information relating to assessment and management of domestic abuse in clinical and custodial settings (e.g., within HMPPS) has been outlined. However, there has not yet been consideration of how domestic abuse is assessed and managed by police in the community, which is felt to be important to understand societal context of such behaviour, as well as potential difficulties with the method.

As this thesis includes a community sample for the empirical study in Chapter Four, the DASH (Richards et al., 2008) assessment tool was selected for a scoping review, to contribute to understanding of community assessment and management of domestic abuse. The next chapter will discuss how the DASH was created, what its psychometric properties are, how effective it is and consider possible improvements.

Information from this chapter will then be further considered in Chapter Four and Five, by way of exploring the potential benefit of including socio-cognitive measures when considering domestic abuse assessment.

## **Introduction**

### *Overview of risk assessments in domestic abuse cases*

Domestic abuse is a serious health and social issue, which affected an estimated 2.4 million adults in 2021-2022 (Office of National Statistics, 2022). Repeat offending is common (Flatley et al., 2010; Morgan et al., 2018) and as above millions of adults are affected each year, making accurate risk assessment an important procedure to understand, identify and manage risk of domestic abuse. Risk assessments predict outcomes such as likelihood of future offending or categorise perpetrators' risk level allowing identification of the most suitable intervention and allocation of resources (Kropp et al., 2008; Nicholls et al., 2013).

Two main approaches are used: actuarial methods categorise risk from frequency or prevalence of empirically tested risk factors and their relationship to outcomes (van der Put et al., 2019), and structured professional judgement tools draw conclusions based on identification of risk factors and professional knowledge (Kropp, 2008; Wheller & Wire, 2014). As with any predictive method there are difficulties. Consistency is not always maintained by professionals and risk and needs can be inaccurately matched to the function of the actual risk assessment (Viljoen et al., 2018). Similarly, it is difficult to control for heuristic biases which can affect perception (e.g., emotions influencing decisions) and outcomes (Silva, 2020; Slovic & Peters, 2006). Tools are more effective when staff are trained, used strictly according to guidelines, and a more specialised approach utilised (Aguilar Ruiz, & Calderón, 2020; Saxton et al., 2020; Viljoen et al., 2018).

Domestic abuse risk assessment can be more complex than general violence alone, as numerous variables refer to characteristics of the victim as well as the perpetrator (Wheller & Wire, 2014). Domestic abusers are a heterogeneous group, often 'generally criminal' rather than specifically domestically violent offenders, making the process of identifying relevant risk factors for individual cases more complex (Robinson & Clancy, 2021). High rates of false positives and negatives are also often seen (Heckert & Gondolf, 2004; Myhill & Kohl, 2019), which mean those categorised as high risk may not reoffend but had unnecessary intervention and those marked as low risk incorrectly may have support withdrawn (Viljoen et al., 2018).

Gathering information on risk of domestic abuse can be challenging. Obtaining statements immediately from witnesses and victims is more effective, with greater information and detail recalled (Hope et al., 2014; Penrod, Loftus & Winkler, 1982; Rubin & Wenzel, 1996). However, in domestic abuse cases, this needs to be handled sensitively due to the nature of the offence and psychological impact on the victim. It is also difficult to determine accuracy of information, as victims may underreport to protect the perpetrator (ONS, 2017; Robinson et al., 2016). Therefore, one problem associated with immediate risk assessment involves the professionals (most likely police) who complete the assessment, which Her Majesty's Inspectorate of Constabulary (HMIC, 2014) highlighted as a difficulty in managing the risk.

During 2020, domestic abuse incidents and the need for victim services increased (ONS, 2020), attributed to lockdown measures with victims spending more time with their abusers. Therefore, the need for an effective method to

assess risk of domestic violence and allocate appropriate resources is even greater.

*The Domestic Abuse, Stalking and Harassment and Honour Based Violence tool*

Since 2009, UK Police have used the 27-item Domestic Abuse, Stalking and Harassment and Honour Based Violence tool (DASH; Richards, 2009) which was developed in partnership with leading organisations (Coordinated Action Against Domestic Abuse; CAADA) and accredited by the Association of Chief Police Officers (ACPO).

The DASH aims to assess risk of future harm from domestic abuse and create a shared determination of risk levels, used by multiple agencies. Richards (2008) noted that the tool aims to provide a “first time, right time” policy and be a proactive method to assess risk of domestic abuse. The DASH should allow frontline workers (such as police) to identify high risk cases so they can be referred to a Multi-Agency Risk Assessment Conference (MARAC) and receive appropriate support (Richards, 2008). A MARAC is a multi-agency meeting with the purpose of sharing information about high-risk cases to properly allocate resources and create care plans to increase victim safety (HMIC, 2014).

The DASH has four sections: “the current situation”, “children/dependents”, “domestic violence history” and “abuser(s)”. Items in each section are marked “yes” or “no” for presence, with prompts to include additional examples. Also included are two supplementary questions, which ask specifically about honour-based violence, stalking and harassment. Despite the variety of items

and different sections, no subscales are provided to consider for interpretation. Once completed, the assessor provides an initial risk classification (standard, medium, high), which should be judged by a secondary, specialised assessor to ensure accuracy. A score of 14 or above would be marked as “high risk”, with each item equivalent to one point. The DASH aims to become a record of risk that can be referred to by future agencies to allocate resources effectively.

The risk categorisation used in the DASH is based on the Offender Assessment System (OASys) and used by the prison and probation service (Home Office, 2002, OASys, 2006). There are three risk categories which could form the outcome of the DASH and suggest imminence of harm to others; see Table 1. The DASH Manual states a “high risk” categorisation should lead to a MARAC referral, but also emphasises that professional judgement should be used. Therefore, assessors are advised to use judgement if they felt a case was “high risk” but scored less than 14.

This review aims to examine the risk assessment tool The Domestic Abuse, Stalking and Harassment and Honour Based Violence tool (DASH; Richards, 2008, 2009), in terms of its psychometric properties, current use by the UK Police and discuss further considerations.

**Table 1.**

*Descriptions of Risk Levels from the DASH Manual*

| Risk level | Description   |
|------------|---|
| Standard   | Current evidence does not indicate likelihood of causing serious harm.  |
| Medium     | There are identifiable indicators of risk of serious harm. The offender has the potential to cause serious harm but is unlikely to do so unless there is a change in circumstances, for example, failure to take medication, loss of accommodation, relationship breakdown, and drug or alcohol misuse. |
| High       | There are identifiers of serious harm. The potential event could happen at any time and the impact would be serious.  |

**Methods**

To consider research exploring the DASH and other risk assessments, a scoping search was completed. Ovid and PsychNET were searched on 7<sup>th</sup> August 2021 with the search terms: "domestic abuse" OR "domestic violence" OR "intimate partner violence" AND "risk assessment" OR "domestic abuse risk assessment". 615 results were found on Ovid and 738 on PsychNET. Once screened, most papers did not explore the DASH; therefore, searches were attempted with inclusion of "DASH". To support identification of additional relevant papers, reference lists and citation screening were also used.

No reviews of domestic abuse risk assessments that this paper identified, included the DASH. One paper commented on the use of the DASH as “based on a model apparently developed by one individual without external validation” (Fazel & Wolf, 2017, pg. 41). Despite this, the DASH continued to be routinely used in serious cases, where the risk of harm to victims was high.

To comment on the effectiveness of a tool, its psychometric properties need consideration, to assess accuracy and consistency. Reliability can be considered in terms of interrater reliability and internal consistency and refers to the consistency of assessors’ ratings and the homogeneity of items in a scale (DeVellis, 2003; Graham et al., 2019). Validity determines accuracy and how able a tool can measure what it sets out to. Predictive validity, namely sensitivity and specificity, are vital to correctly identify those who are likely to reoffend (Almond et al., 2019; Graham et al., 2021) and are therefore key when reviewing risk assessment tools. These attributes will be considered when reviewing the DASH and improvements will also be discussed. A summary of key findings has been presented in Table 2.



**Table 2.***A Summary of Findings Relating to DASH's Psychometric Properties*

| Psychometric Property | Relevant research findings for the DASH   |
|-----------------------|---|
| Internal consistency  | 45.6% of police forces used DASH as advised (Robinson et al., 2016).<br><br>Lack of regular training was highlighted as a concern (HMIC, 2014; Robinson et al. 2016).   |
| Test- retest ability  | Varying methods of use noted among all 43 police forces (HMIC, 2019).<br><br>DASH risk categorisations were often disputed by secondary assessors (HMIC, 2019; Robinson et al., 2016).<br><br>Presence of specific risk factors had a varying impact on risk categorisation which was not consistent across police forces (HMIC, 2014). |
| External validity     | No available evidence that DASH's effectiveness was tested prior to circulation.  |
| Content validity      | DASH was developed from 30 domestic homicide cases, rather than a larger sample of data from domestic abuse offences.<br><br>Police failed to consider coercion or financial abuse as a key risk factor (HMIC, 2019).<br><br>Categorisation of risk was influenced by the police officer completing the DASH (Myhill et al., 2023).     |
| Predictive validity   | A false negative rate of 67% was found in serious or fatal domestic abuse cases in Dorset, 63% in Hampshire and 90% Thames Valley.  |

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A false positive rate of 99% was found with the DASH (Chalkley & Strang, 2017).

50% of deaths in 13 cases were not categorised as high risk (Walklate & Mythen, 2011).

4/27 items of the DASH were associated with domestic abuse recidivism (Almond et al., 2017).

94% of serious harm recidivism cases were categorised wrongly; police under predicted re-victimisation by 34% (Turner et al., 2019)

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## **Discussion**

### *Development*

The DASH is a structured professional judgement risk assessment with 27 items, previously identified as risk factors after reviewing 30 domestic homicide cases (Richards et al. 2004; 2006; 2008). There is no available evidence to suggest the DASH was subject to standardisation, nor that it was updated to reflect changes to definitions of the psychological attributes it aims to measure, i.e., domestic abuse after the recent Domestic Abuse Act, 2021. Published research regarding the DASH comments on its lack of peer reviewed publications to validate and determine effectiveness. Both the DASH and its predecessor (SPECSS+, 2003) were developed and used in practice without sufficient evidence to demonstrate their ability to correctly identify high risk offenders or victims which is a cause for concern (Almond et al., 2017; Bland, 2014; Chalkley & Strange, 2017; Matczak et al., 2011; Myhill & Hohl, 2019;

Robinson et al., 2016; Thornton, 2017; Turner et al., 2019; Walklate & Mythen, 2011; Wheller & Wire, 2014).

The use of large representative samples and publication in peer reviewed journals, are identified as important to demonstrate a tool's effectiveness (Douglas et al., 2017; Fazel & Wolf, 2017). The DASH provided no available evidence of peer reviewed research into its development, piloted use, or longitudinal studies of its effectiveness since its circulation within UK Police in 2009. Whilst it is unclear what methods were used when creating the DASH, large representative samples are unlikely, as 30 domestic homicide cases over one year were accessed to identify key risk factors which formed the DASH (Richards et al., 2008).

#### *Use by UK Police: Reliability*

Internal consistency refers to a ratio that compares the variance of responses to items on a scale (Graham et al., 2019). It is typically measured using Cronbach's  $\alpha$  (Cronbach, 1951) and ranges from 0-1, with higher values indicating a greater internal consistency and those  $>0.7$  viewed as adequate. As empirical data is lacking regarding completion methods, it is difficult to determine the DASH's exact internal consistency; however, one can consider research findings to explore available evidence. One study found 13% of UK Police completed only a frontline risk assessment and no further professional evaluation, 41.3% had a subset of the DASH reviewed by a secondary assessor, and 45.6% used it as advised (Robinson et al., 2016). The DASH Manual provides detailed instructions regarding the most effective method to gather information and what to explore for each item. If followed correctly by all

assessors, this would lead to greater internal consistency. This suggests methods which could increase internal consistency are not utilised.

The importance of regular training to ensure internal consistency is emphasised in the DASH manual (Richards, 2009). However, lack of regular training was highlighted as a concern by HMIC (Chalkley, 2015; HMIC, 2014; Robinson et al 2016; Thornton, 2011). One role of training is to ensure correct and shared understanding of risk to identify 'high risk' cases (Richards, 2009). If assessors are not aware of what constitutes 'high risk' or key risk factors, they may have their own assumptions about what does. Therefore, one can assume a level of individuality when completing and scoring the DASH, a large variance of responses for items and overall categorisation of risk, suggesting low internal consistency.

#### *Test retest*

Test-retest ability is fundamental to a 'good' test and refers to the same score, or here risk categorisation, being achieved with different scorers, or the same scorer over two attempts (Salkind, 2010). With the DASH, each present risk factor equates to one point with a score over 14 indicative of high risk. No available rationale was provided for this cut off. Again, test retest is difficult to quantify with the DASH, although research reported varying methods of use among all 43 UK Police Forces (HMIC, 2014, 2019; Robinson et al., 2016). Some forces completed the assessment using the form, some at the scene of the crime (as advised by Richards, 2009) and others 'some time' later, suggesting a large variety in responses and categorisation of risk. Moreover, risk categorisations provided by Police were often disputed by secondary

assessors (HMIC, 2014, 2019; Robinson et al., 2016) and therefore it can be postulated test-retest ability would be low.

Furthermore, presence of specific risk factors marked in the DASH had a varying impact on the overall categorisation of risk, which was not consistent across forces (HMIC, 2014). For example, item one which refers to 'injury at current incident' had the strongest predictive value for the case being classed as high risk (Robinson et al., 2016) despite this not identified as a 'key risk factor' by Richards. As above, there is little evidence police staff are regularly trained in using the DASH or in other relevant areas, which is advised to give correct weight to factors and more consistent risk classifications (HMIC, 2014). Giving different weights to factors such as: believability of the victim, personal assumptions or beliefs, the setting, the context, could all contribute to different risk categorisations.

### *Validity*

A good tool should have external validation, meaning it should have been tested with a different set of data to the one used in its creation (Fazel & Wolf, 2017). No available evidence demonstrated the DASH's effectiveness was tested prior to circulation within the UK Police Force. Therefore, one cannot ascertain external validity but might assume it to be low, considering available evidence. Richards (2008, 2009) reported that 30 domestic homicides (male to female) were used to develop the DASH. However, the DASH FAQs state that it can be utilised to assess domestic abuse risk in female to male or same sex relationships. This is of concern as risk factors vary when assessing female

to female, female to male or male to male relationships and a blanket approach is not advisable. (HMIC, 2019; Kimmes et al., 2017).

Then there remains the issue of the failings of police to consider coercion or financial abuse as a key risk factor, instead focusing on physical or previous violence (HMIC, 2014, 2019). This can be seen in a recent study into the implementation of the DASH which found that victim responses to the tool were influenced by the officer completing it, with the effect strongest in items relating to coercive and controlling behaviour and weakest in relation to physical injuries (Myhill et al., 2023).

Coercion is pervasive, hard to identify and is a risk factor for severe violence (Brennan et al., 2019; Hardesty et al., 2015; Myhill & Hohl, 2016; Myhill & Hohl, 2019). However, whilst the DASH states that 17 out of 27 questions cover coercion, threats, or intimidation, these are not immediately obvious and without adequate training, frontline workers would be unlikely to gather valuable information.

In contrast to coercion, the DASH highlights the importance of previous violence as a risk factor for escalating violence, stating: "research indicates that general violence tends to escalate as it is repeated" and "previous domestic violence is the most effective indicator that further domestic violence will occur" (Richards, 2009, pg.13). This is a claim not sufficiently corroborated, and one paper demonstrated that a focus on previous violence would result in 73% of domestic murders in Dorset as not being identified, based on prior reporting (Chalkley, 2015). Similarly, a review of over 30,000

domestic abuse cases in Suffolk found no evidence for an increase in severity of violence as a risk factor and most serious harm cases had no prior police contact (Bland, 2014).

*Evaluation of overall validity and reliability*

Content validity is the extent to which a tool sampled the research area it attempts to measure and thereby allows operationalisation of concepts. It ensures that each item on a tool measures what it sets out to and is essential to the overall validity of a tool (Waltz, Strickland & Lenz, 1991; Wynd et al., 2003). When developing a tool, statistical analysis (e.g., factor analysis) would typically be undertaken to demonstrate each item contributes meaningfully to the overall validity and effectiveness of the tool (Graham et al., 2019). Once again, no such evidence was provided for the DASH. Richards (2009) reported the 27 items were identified as 'key risk factors' after reviewing 30 domestic homicide cases, which occurred between January 2001 and April 2002 (Chalkley & Strang, 2017; Richards, 2004, 2006; Richards et al., 2008). Therefore, these items appear more valid to predict domestic homicide, rather than the heterogeneous nature of domestic abuse generally. It appears the DASH views domestic abuse as homogenous and fails to account for the different types of violence, relationships and context that have a large impact on the likelihood of future violence (Thornton et al., 2011).

Similarly, one cannot comment on how prevalent each 'key item' was in each of the 30 cases and how they were rationalised as such, as no justification is provided. There are no reports of a comparison group of domestic abuse cases that didn't result in homicide and therefore it is unclear if these results were

valid. It was also not possible to gather valuable information from victims, as they were homicide victims. Regardless, the DASH did not have a control group to compare results to and identified risk factors cannot be argued to be necessarily 'strong' (Thornton, 2011).

Furthermore, Richards (2009) emphasised the importance of multiple items (3<sup>1</sup>, 6, 7, 8, 9, 11, 14, 15, 16, 17, 18, 19, 20, 22, 24, 25) suggesting more weight should be given when considering risk categorisation. However, with 16 out of 27 risk factors identified as 'high risk factors' it is unclear whether the presence of one, several or all would be needed for a 'high risk' categorisation. Again, the need for regular training, based on evidence, becomes paramount.

#### *Predictive validity*

Predictive validity allows a tool to correctly differentiate between risk levels and includes specificity and sensitivity or false positive and false negative rates (Almond et al., 2017). The DASH has been demonstrated to have a false negative rate of 67% in serious or fatal domestic harm cases in Dorset, 63% in Hampshire and 90% in Thames Valley, with a false positive rate of 99% (Chalkley & Strang, 2017; Thornton, 2011). It could be argued these rates still safeguard victims with a 'better safe than sorry' policy, or the high false positive rate resulted from successful MARAC prevention planning as these cases received more support and intervention, so therefore did not reoffend. However, if cases are being categorised incorrectly it is likely that some high-

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<sup>1</sup> Examples of items 3-15 to demonstrate variety of "high risk factors": "What are you afraid of? Is it further injury or violence?", "Have you separated or tried to separate from X within the past year?", "Is there conflict over child contact?", "Does X constantly text, call, contact, follow, stalk or harass you?", "Are you pregnant or have you recently had a baby in the past 18 months?", "Has X ever threatened to hurt or kill the children?", "Is the abuse getting worse?", "Does X try to control everything you do and/or are they excessively jealous?"



risk cases did not receive adequate support and low risk cases received more support than was necessary to prevent reoffending.

Other research noted DASH's poor predictive validity; 13 domestic abuse homicides were explored and 50% of deaths reported were not categorised as high risk (Walklate & Mythen, 2011). When predictive validity of individual risk factors was evaluated, to identify those at risk of recidivism, only four risk factors were found to be associated with domestic abuse recidivism of any type and only two could differentiate between recidivist and non-recidivist groups (Almond et al. 2017). This suggests that factor analysis was not carried out during the development of the DASH and therefore items may not be relevant or necessary to categorise risk accurately. Furthermore 94% of serious harm recidivism cases were categorised wrongly, with police under predicting re-victimisation by 34% (Turner et al., 2019). A possible reason for low predictive validity is that risk factors are not relevant for all cases, due to the highly heterogeneous nature of violence generally and domestic abuse more specifically.

Again, one of the main difficulties with the DASH and risk assessments more generally is a lack of national guidelines for police to determine moderate or low risk. Each force is likely to have different thresholds for risk, meaning that attempts to validate the DASH would only be valid for each individual police force examined (HMIC, 2014).

Therefore, one might consider how valid is the DASH – is it identifying those at risk of further harm or is it simply identifying those that should be signposted to other agencies?

*General comments*

Among self-report items, under or inflated reporting, subjectivity, assumptions and biases all impact on overall effectiveness of a tool. As outlined earlier, risk assessments often demonstrate low predictive validity, making it necessary to gather information from multiple sources and use risk assessment alongside case management (Viljoen et al., 2018; Silva, 2020). Furthermore, the nature of responding to a domestic abuse call and the context of completing an assessment in the aftermath of a potentially serious incident, with the victim, should be considered as it is likely a stressful environment, not conducive to completing accurate assessment. Moreover, it has been suggested that general violence risk assessment tools can and do outperform specific domestic abuse tools (Ulmer, 2015; Viljoen et al., 2018) with better predictive validity.

Risk assessment was described as “fundamental” by HMIC, with its main function safeguarding victims and raising referrals to specialist services (HMIC, 2014). The competency of police officers to complete structured professional judgement tools has been questioned, as it is not their main responsibility and officers are unlikely to have sufficient understanding of this complex area (Chalkley & Strang, 2017; Myhill & Kohl, 2019; Robinson et al, 2016). Even when trained professionals complete risk assessment it remains difficult to accurately predict risk using clinical judgement as factors can be weighed incorrectly or misinterpreted (Dawes et al., 1989; van Der Put et al., 2019).

Domestic abuse risk assessment is a challenging task and there will likely always be shortcomings with any tool. It *is* positive that UK Police are using a tool, engaging with victims, and gathering information. Notwithstanding shortcomings with the DASH, in police forces where the DASH is used correctly by regularly trained police, it *can* gather valuable information (HMIC, 2014, 2019). However, the rate of which this is happening is not clear and requires further, longitudinal research. HMIC (2019) described a pilot underway to evaluate a revised risk assessment tool, which considers aggravating factors, to increase quality of information collected. The initial risk assessment was found less likely to be re-graded by a secondary assessor than the DASH with more coercive control crimes identified, which is encouraging (HMIC, 2019).

There may be some potential to improve the use of the DASH to compensate for the above difficulties. The benefit of using collateral information to categorise overall risk is used in various other risk assessments, such as HCR-20v3 (Douglas et al., 2013) which considers historical, clinical, and future risks to then create scenarios and management plans. The HCR-20v3 is typically assessed and scored by a multidisciplinary team and uses various documents to supplement background information and gain a clear picture of a person and their risk level. This method could be utilised with the DASH, to enhance understanding of the context, the perpetrator, and the victim, as well as plan for future scenarios. Similarly, a glossary of terms used in the DASH could be provided to improve understanding of concepts and reduce the impact of assumptions regarding certain terms or behaviours.

*Note.* Since writing this report (early 2022), the College of Policing (September 2022) has responded to the review by Robinson et al., (2016) and the HMICFRS inspection of the police response to domestic abuse. The College has accepted criticisms made of the DASH, all of which are documented in this chapter and focused on the inconsistencies of implementation, the issues with recording information incorrectly and incompletely and not capturing ongoing patterns of abusive behaviour and other relevant information (College of Police, 2022).

The College of Policing have therefore developed and piloted a new tool (mentioned in this chapter's conclusion) - Domestic Abuse Risk Assessment (DARA). This tool was developed utilising consultations with victims, police officers, charity support services and researchers (which, to the author's knowledge, was absent in the development of the DASH) with the aim to allow officers to be better able to identify coercive control, respond more consistently and collect more accurate and detailed information thereby improving their ability to assess risk. The DARA altered 10 of the DASH questions to allow victims to report how often certain behaviour was occurring, so that patterns of behaviour, frequency and severity could be better identified, and risk assessed. In addition, specific questions relating to coercive control, physical violence and likelihood of future serious violence were included and questions were re-written to be clearer for both victims and officers. Fifteen questions from the DASH were excluded from the DARA as they were vague and it was argued that such information should be gathered from the investigation. The DARA also aimed to allow better consideration of the victim's state of mind and ability to disclose certain information just after an offence has occurred. The

DARA tool includes 16 questions in total, 12 of which are scored for frequency, two for presence and the final question is scored on a scale of 1-10 based on likelihood of future violence from the victim's perception. There is also a free text section for the officer to complete to document their thoughts about how scared the victim appeared, whether they think the victim was unable to disclose abuse, the level of control the perpetrator had over the victim and any other factors which may exacerbate the risk of serious harm.

The DARA has been piloted and evaluated (Wire & Myhill, 2018) in three police forces and results indicated an improvement on the DASH whereby police officers' risk assessments were more consistent with specialists', the DARA was more able to identify coercive control and stalking, and police officers reported they preferred to use the DARA. Therefore, the DARA has now been identified as the favoured risk tool for officers to use when they respond to an incident of domestic abuse (i.e., first responders). However, officers conducting secondary assessments are continuing to use the DASH, as well as partner agencies as the DARA is for first responders only.

It is vital therefore, that the concerns raised by researchers, HMIC and evidence presented in this chapter relating to the DASH is taken into consideration for the DARA. Research should be undertaken with the DARA to evidence its predictive validity, reliability and demonstrate each question is relevant for overall risk categorisation. Police forces should be advised and given regular training of how to use the DARA effectively (as designed) to ensure quality data input and output and ensure it can be used for both research and clinical decision making (which the DASH was not sufficient for).

## **Conclusions**

This chapter discussed available evidence regarding the DASH's psychometric properties. The DASH does not meet inductive, deductive, or empirical strategies; there is no evidence to suggest a factor analysis was undertaken by Richards and her team, and her papers document small samples used to identify items, from one year of London domestic homicides. There are no subscales in the DASH which again suggest no factor analysis was completed, meaning it is unclear whether the tool is valid. The deductive method develops a theory for the topic of interest, which here would relate to items being selected using previous knowledge of risk factors for domestic abuse. However, as described above, the sample was small and has also not been updated considering more recent research.

The new tool – DARA, recently developed by College of Policing appears to have promising results, has been subject to more empirical tests than the DASH was before its circulation, and demonstrates vital work is underway to improve risk assessment of such a common and harmful violence. In addition, it is now the preferred tool to be used by frontline police officers in cases of domestic abuse, confirming the unsuitability of the DASH for this purpose and corroborating evidence presented in this chapter.

This chapter has demonstrated the importance of empirical evidence for any widely used tool, as it can become 'normal' once in use, with agencies such as police, being less aware of the importance of validity and reliability when categorising risk. As domestic abuse is a serious health issue, affecting a large

proportion of the population, efforts to improve identification and management of those committing such offences is of vital importance.

Future research should focus on not just continuing the development of the DARA, a more valid and reliable tool, but also emphasise regular, relevant training for frontline workers who will be responsible for determining risk and therefore support and interventions for high-risk victims and perpetrators.

Evaluation of the DASH has demonstrated that the measure should be subject to significant revision, which it appears is already ongoing from the introduction of a new assessment tool, the DARA which is now used by frontline police. The DASH was unable to identify high risk cases effectively, did not utilise empirical evidence sufficiently, lacked trained professionals to complete it and was not reliable nor valid. Therefore, it is difficult to accurately assess domestic abuse perpetration in the community, the level of risk present in cases and it appears HMPSS and NHS struggle to adequately manage and mitigate risk of domestic abuse, safeguard victims and provide intervention to perpetrators.

Evidence presented at this stage in the thesis has focused on theoretical models, community settings and risk management of domestic abuse. Therefore, the next chapter aims to investigate what is known about specific factors, focused on in the remainder of the thesis (socio-cognitive factors). A systematic review has been completed to explore what is known about cognitive functioning in domestic abuse perpetrators which will then act to inform the next empirical study, narrowing in its specificity.

## **Chapter Three - Cognitive functioning in those who are domestically abusive: A systematic review**

### **Abstract**

This paper presents findings from a systematic review exploring domestic abuse perpetrators and their cognitive functioning. Databases were systematically searched and after excluding duplicates, applying eligibility criteria and quality assessment criteria, fifteen papers were included. Three different themes were identified when studies were explored in detail: neuropsychological functioning, socio-cognitive abilities, and implicit theories.

Results suggested domestic abuse perpetrators have higher levels of neuropsychological dysfunction than controls, particularly in impulsivity and executive functioning, as well as deficits in empathy and emotion decoding. Furthermore, higher levels of implicit theories supporting domestic abuse offences were seen in perpetrators, compared to controls. The relationship between these three distinct areas of cognitive functioning is discussed in relation to implications for treatment and further research.

*Word count: 10,957*



## **Introduction**

Domestic abuse is a highly prevalent phenomena, affecting approximately 5% of adults in England and Wales (CSEW, 2022). However, accurate rates are difficult to quantify as it is thought less than 24% of domestic abuse is reported to Police (HMIC, 2019) and less than 13% of arrests lead to convictions (ONS, 2019). One of the methods to reduce domestic abuse and support victims is to provide effective interventions for perpetrators, to decrease the likelihood of recidivism and future harm to victims (Robinson & Clancy, 2021; Home Office, 2022).

Interventions for perpetrators are derived from theories of domestic abuse and were previously informed by The Duluth Model (Pence & Paymar, 1993), based on feminist ideas of patriarchal power and control over women leading to violence. A move away from Duluth Model aimed to incorporate more evidence-based practice and in the UK, interventions currently derive from cognitive behavioural models (Hughes, 2017; Murphy et al., 2020). The intervention currently offered by HMPPS – Building Better Relationships (BBR; HMPPS, 2018) focuses on Cognitive Behavioural type skills and less on individualised work which may be more useful to reduce risk of reoffending and improve overall wellbeing of attendees.

Whilst this was an improvement due to the theoretical basis, individualised 'add on' modules are not routinely used and a "one size fits all" model continues (HMPPS, 2020; Renehan, 2021), which opposes the Risk, Need, Responsivity model (RNR; Andrew et al., 2011). RNR can reduce the risk of reoffending (Andrews, Bonta & Wormith, 2011; preliminary results for those

perpetrating DA, Stewart et al., 2013) as it can meet individual needs and ensure resources are not provided to those who do not need them.

Domestic abuse perpetrators are a heterogeneous group, with typologies identified which relate to distinct levels of risks and needs (Dixon & Brown 2003; Holtzworth-Munroe & Stuart, 1994; Lishak et al., 2019). For example, Holtzworth-Munroe and Stuart (1994) identified subtypes such as family-only perpetrators who have lower recidivism than the generally violent/antisocial group (who commit other acts of violence and antisocial behaviour). The groups also differ in terms of victims and severity of violence. Current UK interventions do not reflect the heterogeneity of the domestically abusive group, which may contribute to recidivism rates seen in domestic abuse perpetrators, which are approximately 20% (Morgan et al., 2019). Further investigation of domestic abuse is needed to understand aetiology, maintenance, and desistance of the behaviour, to translate into intervention and other tools, such as risk assessments, to prevent and reduce domestic abuse.

#### *Current approaches to understanding domestic abuse*

To provide an overview of what is currently known about domestic abuse perpetrators, several approaches will be briefly described below. In addition, risk factors relevant to increased likelihood of perpetrating domestic abuse will be outlined.

### *Impact of childhood experiences*

Adverse childhood experiences are known to negatively affect a person's development by way of developing an insecure attachment style (Bowlby 1988, 1989; Howe, 1999), which can lead to later psychopathology (Anda et al., 2006; McLaughlin et al., 2012), as well as the development of offence or violence supportive attitudes, beliefs, and behaviours (McCloskey et al., 2003). This phenomenon has been named "the cycle of violence" (Widom, 1989) and exposure to domestic abuse as a child has been demonstrated to be a robust predictor for later perpetration of domestic abuse (Gil-Gonzalez et al., 2008; Jung et al., 2019; Stith et al., 2000). As outlined in Chapter One, exposure to violence in childhood has also been shown to affect social information processing abilities, which lead a person to struggle to interpret and respond to social cues, understand consequences of their behaviour, and respond appropriately (Crick and Dodge, 1994, Dodge et al., 1995, Heleniak & McLaughlin, 2020). It is argued that violence exposure in childhood leads to hyper-sensitivity to perceived threats and may mean a person is more likely to attribute threat or hostility to neutral stimuli, leading to more aggressive behaviour (Griffith et al., 2021; Weiss et al., 1992).

Trauma in childhood has also been associated with specific cognitive dysfunctions such as poor attention and executive functioning deficits, theory of mind difficulties and lack of empathy (Heleniak & McLaughlin, 2020; Majer et al., 2010). These cognitive dysfunctions are also risk factors for domestic abuse (Kimber et al., 2018; Narayan et al., 2017), suggesting that childhood is a potential source of multiple risk factors for later domestic abuse

perpetration and early intervention could be key to reduce likelihood of violence to partners or family members. Other factors such as personality type, association with antisocial peers, low socio-economic status (SES), stress, and substance misuse have also been associated with later perpetration of domestic abuse (Capaldi et al., 2012).

### *Cognitive Functioning*

The impact that cognitive functioning can have on the propensity to perpetrate domestic abuse has been investigated from various angles. As raised in Chapter One, implicit theories which minimise, normalise or shift blame for acts of domestic abuse have been identified in domestic abuse offenders (Gilchrist, 2009; Weldon & Gilchrist, 2012). These theories develop through childhood and adverse childhood experiences, attachment difficulties and antisocial peer influence can lead to more offence supportive beliefs (Ehrensaft et al., 2003). Such beliefs influence the behaviour of those likely to be domestically abusive and can also be targeted in interventions (Dempsey & Day, 2011). However, implicit theories are difficult to identify and explore objectively due to biases from the investigators and impression management from participants (Weldon & Gilchrist, 2012). Moreover, implicit theories do not account for the sometimes-unpredictable nature of domestic abuse in various contexts and most studies utilise small sample sizes, making results more difficult to generalise (Weldon & Gilchrist, 2012).

Research exploring risk factors and theoretical approaches of domestic abuse, has started to focus on socio-cognitive abilities such as empathy, decision making and Theory of Mind, reflecting the advances made in theories of sexual

offending. In such theories, more emphasis has been put on integration to explain heterogeneity (see Integrated theory of sexual offending, Ward & Beech, 2006) and a biopsychosocial approach used in both assessment of needs and intervention (e.g., Good Lives Model and the new Kaizen interventions). It has been suggested that such socio-cognitive abilities may reflect difficulties with interpreting emotions or behaviour in others, which are often due to negative childhood experiences (Dodge et al., 1995) with the presence of other traits such as hostile attribution bias and angry rumination leading to increased aggression towards partners or family members (Chen et al., 2012; Ruddle et al., 2017; Thomas & Weston, 2020).

Neuropsychological factors such as attention, memory, and executive functioning (involving decision making and cognitive flexibility) have been associated with general violence and domestic abuse perpetration, although more recent studies appear lacking (Cohen et al., 1999; Donovan-Westby & Ferraro, 1999; Pinto et al., 2010). A link between neuropsychological functioning and higher rates of head injury in those perpetrating domestic abuse has also been suggested (Cohen et al., 1999), although is not sufficient to explain the perpetration of domestic abuse (Romero-Martinez et al., 2013). Authors have postulated that such factors may interact and affect a person's ability to attend to and understand certain social cues, make thoughtful decisions, and inhibit inappropriate responding, e.g., hostility or aggression, particularly in the presence of a disinhibitor such as alcohol (Romero-Martinez et al., 2013; Ruddle et al., 2017).

## **Rationale for review**

Previous research into domestic abuse has demonstrated perpetrators can present with cognitive dysfunction which may increase risk of future violence or escalation. However, no systematic review has yet explored all types of cognitive functioning, choosing instead to focus on one element, such as alcohol use, brain injury, executive functioning, and theory of mind.

The role of cognitive functioning in domestic abuse offending has been a topic of research since the 1990s (see Jones, 1992; Warnken et al., 1994) yet has not significantly impacted assessment or intervention. Cognitive functioning has become more instrumental in violence theories (e.g., General Aggression Model, Allen et al., 2018) and in sexual offending theories (Gannon, 2009; Ó Ciardha & Ward, 2013; Ward & Beech, 2016) which could be similarly applied to understanding domestic abuse perpetration. In addition, other areas of management, such as screening and assessment do not include information regarding cognitive functioning which could improve reliability and validity if demonstrated to be an additional factor of relevance. Cognitive functioning could provide additional information in the formation of a general pathway to domestic abuse which can then structure assessments and intervention, as was done in sexual offending.

### *Review objectives*

This review will assess what is known about cognitive functioning throughout those who commit domestic abuse, to draw together previous findings and identify gaps in the literature which warrant further investigation.

For this chapter, domestic abuse will be defined by the most recent definition provided in the Domestic Abuse Act, 2021 (Home Office, 2021), further explained in Chapter One ('Definitions used in this thesis'). The behaviour is defined as 'abusive' if it consists of physical or sexual harm, violent or threatening behaviour, controlling or coercive behaviour, economic abuse or psychological or emotional abuse (Domestic Abuse Act, 2021).

Cognitive functioning will include neuropsychological functions such as attention, executive functioning, memory, impulsivity as well as cognitions such as implicit theories. In addition, socio-cognitive functions such as empathy and theory of mind will be considered, due to recent research suggesting the potential key role they play in the perpetration of offending, including domestic abuse.

## **Methods**

### *Criteria for selecting studies*

A research question was identified to ensure studies were correctly selected during searching. The question "what is known about cognitive functioning in domestically abusive people?" was then compared to key components (Counsell, 1997; Richardson et al. 1995) following the Population, Intervention, Comparison, Outcome (PICO) acronym. The PICO (see Figure 1) was planned alongside creation of the protocol and after completion of a scoping search. The scoping search revealed no recent research (within the last five years) exploring all cognitive functioning, so a broad review was felt appropriate to answer the question and allow exploration of consistency of

findings, as well as generalisation. The PICO aided creation of a search matrix (refer to Appendix, pg. 198). A protocol was written, to be referred to throughout the review, which identified inclusion and exclusion criteria, see Appendix (pg. 195).

**Figure 1.**

*PICO*

| PICO characteristic | Description  |
|---------------------|--|
| Population          | Any perpetrator of domestic abuse over 16 years of age.  |
| Intervention        | Cognitive abilities or deficits (identified from scoping search) measured by psychometrics (or any valid measure).                 |
| Comparison          | Control group (i.e. participants who are not domestically abusive) <i>or</i> low versus high scores on cognitive ability measures. |
| Outcome             | Any domestic violence measure, including official conviction reports, self-reports and victim reports, follow up reports.          |



Any studies which included people over age 16, used a reliable and valid measure to measure or capture the cognition or cognitive function or deficit, clearly defined and had data provided (for example if measuring executive functioning, the tool used should be named and the results section should include data from that tool). The study needed a sample size of over 20 to be included (a review of literature suggested N = 20 as a minimum, e.g., Baker et al., 2021) and have an experimental design. As research methodology and the legal definition of domestic abuse has changed significantly in recent decades, studies from before 1976 were not included; due to the Domestic Violence Act (1976) being passed. To be included, an outcome measure of offending or reoffending (or similar, e.g., victim self-reports, perpetrator self-reports, police data) of domestic violence was required, in order to consider the impact the cognitive function measured had on domestic abuse. Studies also needed to be in English, as there was no access to a translator.

### *Search strategy*

The search terms were identified from the search matrix and truncations were used depending on the database utilised. A sample of search terms is included below, please refer to the Appendix for a full list and the databases used with. An example search was: "*domesti\* violen\* or domesti\* abuse or intimate partner violence or batterer AND cogniti\* or cogniti\* function, or cogniti\* impairments*". Searching began on 24<sup>th</sup> July 2021 and took one week. A confirmation search of the same databases with the same terms took place two weeks later. No difference in results was found. Database searches, results and number of results are included in Appendix (pg. 206).

## **Data collection and analysis**

### *Selection of studies*

All results were downloaded onto Mendeley Software, totalling 2967 documents. Duplicates were screened which resulted in 749 papers being removed; 1470 papers remained. An initial title screening was completed, and papers were included if they referenced search terms such as cognition, cognitive, domestic abuse, batterer, impairment, and intimate partner violence. If the word 'victim' was included, these papers were excluded as the review was concerned with perpetrators of domestic abuse. Once title screening was completed, 158 papers had been included. Abstracts were then screened, which were matched against the exclusion and inclusion criteria as much as possible. The remaining 54 papers were then accessed online and read in full. An inclusion form was used, created on Microsoft Excel, which used the PICO criteria and eligibility criteria. 16 papers were identified as meeting the inclusion criteria. These papers were then reviewed by a secondary reviewer (a Forensic Psychology Doctorate student, December 2021), with 90% agreement noted.

### *Data collection and management*

Data was collected by the author and reviewed by a secondary reviewer to ensure reliability. A data collection form modelled on the search PICO was created, to gather information regarding sample size, use of groups, aims of the study, the intervention or assessment used to measure cognitive functioning and the outcome of the study. As a broad research question had

been utilised, studies had different aims, designs and statistical analyses which made overall conclusions more complex. Therefore, during data extraction, studies were grouped into similar themes to allow intra and inter group comparisons. The groups were: neuropsychological functioning, implicit theories, and empathy or emotion decoding abilities.

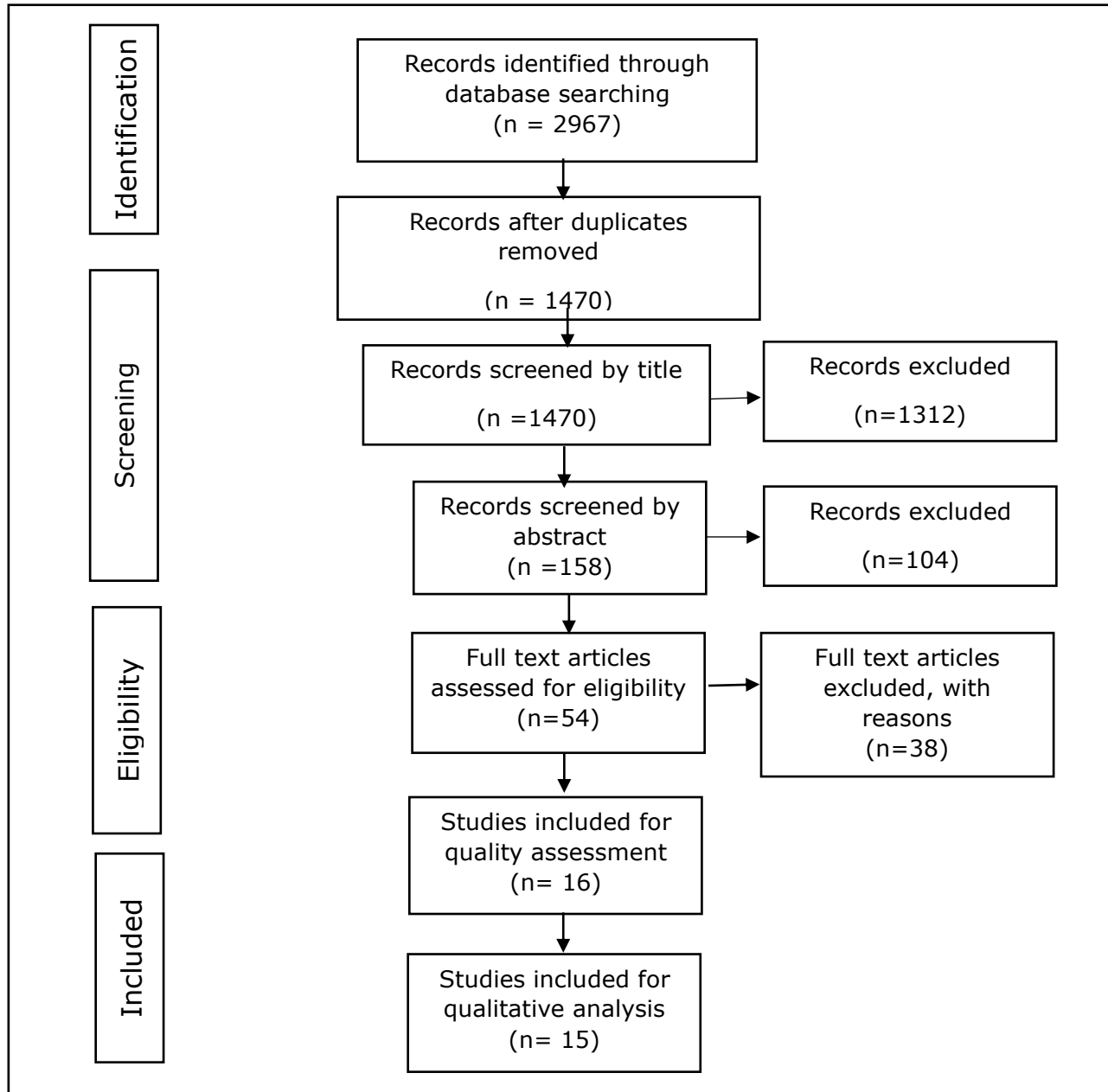
### *Assessment of quality*

To assess the quality of the data in the selected 16 papers a tool developed by the National Institute of Health (NIH, see Jarde et al., 2012) was used to compare the papers against selected criteria. This tool was chosen as there were variations of it to suit the mixed methodology of included papers. The questions varied to assess studies utilising control groups, single samples, and various designs. Papers were given an overall score (good, fair, fair-good, and poor; studies scoring 'poor' were excluded), using advice provided on the NIH website. Most papers scored 'good' (56%), 25% scored 'fair' and 12.5% scored fair-good. One paper was scored poor and therefore not included in the data analysis. A secondary reviewer (a Forensic Psychologist in Training, January 2022) provided an initial 80% inter-rater agreement with the quality assessment. Upon discussion of one item, one rating was amended, resulting in 100% agreement.

### *Data synthesis*

After the data collection and quality assessment process, 15 studies (see \* in reference list) were included in the final analysis, with a total of 1794 participants (1514 were domestically abusive participants and 280 were

controls). Due to included studies investigating a variety of cognitive functions related to domestic abuse and utilising a range of statistical measures to



**Figure 2.**

*PRISMA Strategy flow chart (Page et al., 2021)*

determine outcomes it was not possible nor appropriate to combine data in a statistical analysis. However, studies were grouped dependent on the cognitive function measured and a summary of their conclusions will be provided below. As a variety of cognitive measures were used throughout the studies, brief descriptions will be provided in the Appendix (page 208).

## **Results**

### *Neuropsychological functioning and domestic abuse*

Ten studies (66%) explored the relationship between domestic abuse (in all studies it was categorised as intimate partner violence [IPV] only) and neuropsychological functioning. Neuropsychological functioning included abilities such as attention, memory, executive functioning, cognitive flexibility, and ability to inhibit responses. Brief explanations of measures used in each study can be found in the Appendix (page 208).

Seven studies demonstrated that those perpetrating IPV were significantly impaired in their executive functioning abilities (measured by Wisconsin Card Sort Task [WCST, Grant & Berg, 1948], The Stroop Colour Word Test [Stroop, 1935] and Trail Making Test [TMT, Reitan & Wolfson, 1993]) compared to non-IPV controls (Berreca-Garcia, 2015; Cohen et al., 2003; Corvo et al., 2006; Fox et al., 2020; Romero-Martinez et al., 2019a, b; Teichner et al., 2001; Walling et al., 2012). Specifically, it was found that IPV perpetrators made more total and perseverative errors on the WCST (Romero-Martinez et al 2019a; Teichner et al., Walling et al., 2012; Cohen et al., 2003), had more difficulties planning and changing decisions, as well as making riskier decisions (Romero-Martinez et al., 2019b) than non IPV groups. When considering the

TMT, Berreca-Garcia (2015) demonstrated that incarcerated domestic abuse offenders performed the worst on Part B of the test (which measures cognitive flexibility and an ability to inhibit dominant incorrect responses, as well as processing speed, motor performance, sequence alternation and executive control in set-shifting abilities) compared to violent and non-violent offenders.

Two studies demonstrated IPV groups had higher trait impulsivity compared to controls (Godfrey et al., 2020; Romero-Martinez et al., 2019b;), as well as difficulties sustaining and switching attention (Cohen et al., 2003; Fox et al., 2020; Romero-Martinez et al., 2019; Teichner et al., 2001; Walling et al., 2012) and difficulties with their visual and working memory (Fox et al., 2020; Romero-Martinez et al., 2019; Teichner et al., 2001). Two studies suggested differences in cognitive flexibility between IPV and non-IPV groups (Berreca-Garcia, 2015; Romero-Martinez et al., 2019; Teichner et al., 2001), with IPV groups demonstrating less cognitive flexibility. Cohen et al., (2003) also explored verbal abilities of IPV groups using the WAIS-IV (Weschler, 2008) and identified difficulties with vocabulary and comprehension, which were significant correlates for later IPV when entered in a logistic regression model with impulsivity. Authors suggested such difficulties may make it more difficult for domestic abusers to use verbal de-escalation or verbal conflict reducing techniques and instead turn to physical aggression, which they use with less inhibitory control.

One study (Fox et al., 2020) found no significant differences between IPV and non-IPV groups on any neuropsychological measures. However, by using classification and regression tree (CART) analysis, IPV offenders could be

differentiated from non-IPV violent offenders by way of an extensive non-violent criminal history and moderate to severe expression of interpersonal traits indicative of psychopathy, without the presence of attentional difficulties. Another study also found no significant relationship between neuropsychological measures, psychological and physical IPV perpetration as measured by the Revised Conflict Tactics Scale (RCTS, Straus et al., 1996), although noted that poorer executive functioning was found to associate with greater anger expression and hostility (Persampiere et al., 2003).

Head injury was also found to be significantly related to IPV perpetration, with IPV perpetrators having higher incidence than non-IPV groups (Walling et al., 2012; Cohen et al., 2003).

#### *Socio-cognitive abilities and domestic abuse*

Four studies (26.7%) investigated the relationship between socio-cognitive abilities such as empathy and emotion decoding abilities, and perpetration of IPV. The tools used were the Interpersonal Reactivity Index (Davis, 1980) the Reading the Mind in the Eyes Test (RMET, Baron-Cohen et al., 2001) and the Nimstim dataset (Tottenham et al., 2009), which measure cognitive and affective empathy and higher-level order theory of mind abilities, respectively. One study measured personality traits using the MCMI-III (Millon et al., 1994) and demonstrated that borderline and antisocial personality traits in IPV perpetrators were associated with low cognitive empathy and emotion recognition and a high risk of recidivism (Romero-Martinez et al., 2016). Similarly, a second study found differences in emotion decoding abilities in IPV perpetrators, having lower total scores than controls (Romero-Martinez et al.,

2019). Romero-Martinez et al., (2019) also found that impulsivity predicted emotion decoding abilities in both control and IPV groups. Nyline (2016) supported these findings, demonstrating the IPV group were less accurate at identifying the emotions of others than controls, in particular the emotions of sadness and fear. Furthermore, the IPV group exhibited more personal distress in stressful situations, as measured by the Personal Distress subscale of the IRI. Empathy was shown to be a mediator for male aggression towards partners when investigating conflict between heterosexual couples (Godfrey et al., 2020). Godfrey and colleagues found that cognitive empathy was negatively associated with male aggression, in addition to affective empathy identified as a mediator in a different regression model and negatively associated with male aggression.

#### *Cognitions and domestic abuse*

Two studies (13.3%) explored the role of cognitions in the perpetration of domestic abuse and demonstrated that specific cognitions were associated with IPV perpetration. Marshall et al., (2020) also measured anger appraisal and emotional regulation and found trauma cognitions were directly related to IPV perpetration, mediated by anger appraisal and the level of emotional dysregulation. Maladaptive cognitions were found to be associated with both physical and psychological IPV perpetration (as measured by the Revised Conflict Tactics Scale, [RCTS], Straus et al., 1996) which was thought to be the result of the person experiencing interpersonal interactions as threatening, leading to aggression. Pornari et al., (2021) conducted a similar study, with an IPV and control group (determined by scores on the RCTS). The IPV group had



higher aggression scores and higher scores across all implicit theories measured (cognitions relating to entitlement, gender stereotypes, dominance, hostility towards women and attitudes towards domestic violence compared to the control group). Pornari and colleagues (2021) suggested that the implicit theories held by the IPV group may be facilitating aggressive behaviour, perhaps by a similar mechanism as noted by Marshall and colleagues (2020).

### *Summarising findings and assessing certainty of evidence*

Overall, the studies included in this systematic review suggested that cognitive functioning is significant to consider in those who perpetrate domestic abuse. Neuropsychological factors, particularly executive functioning and impulsivity may be exacerbated by difficulties with verbal comprehension and attention. Authors suggested that when combined, these difficulties may present as a person being more likely to resort to domestic abuse as they struggle to make decisions, inhibit their behaviour, consider the impact of their behaviour, and express their frustration verbally (or verbally de-escalate). Additionally, significant relationships were found between domestic abuse perpetrators and deficits in empathy and emotion decoding, supporting the hypothesis that there are deficits in socio-cognitive processing, which makes it more likely a person will perceive hostility in others and have less concern for their wellbeing. Finally, those committing domestic abuse were shown to hold pro-aggression beliefs and implicit theories supportive of maladaptive attitudes towards women, which were thought to facilitate aggressive behaviour against family or partners. Emotional dysregulation was also noted to be present and increased risk of perpetrating domestic abuse.

Please refer to Table 3 for more detailed summaries of results, including statistical outcomes.

## **Discussion**

This review aimed to explore the potential relationship between domestic abuse and cognitive functioning. Fifteen studies were included after a systematic process of applying eligibility criteria and assessing quality from a total of 1794 participants. Studies were grouped into three areas of research: neuropsychological abilities, socio-cognitive abilities, and implicit theories. Most studies (86.6%) found a significant relationship between the cognitive ability studied and perpetration of domestic abuse. Results will be discussed first in the distinct groups and then as a whole.

### *Neuropsychological studies*

Neuropsychological studies were the most identified in this systematic review and 90% demonstrated significant associations between perpetration of domestic abuse and impairments in attention, memory, impulsivity, cognitive flexibility, and executive functioning. Authors suggested that neuropsychological impairments may affect domestic abusers' ability to inhibit aggressive responses, make rational decisions and attend to socially important cues, as well as communicate effectively to reduce the likelihood of engaging in domestic abuse.

The studies also ranged in date from 2001 to 2020, indicating that such research has been deemed important for 20 years, with consistent results demonstrated. However, despite this there does not seem to be a recognition

of presenting cognitive difficulties, as shown by the focus and content of current domestic abuse interventions (HMPPS, 2021). Interventions offered by HMPPS do not contain neuropsychological screenings or psychoeducation about such difficulties, nor appear adaptable. Indeed, facilitators have commented that BBR has a high quantity of information to get through over the 30 sessions, which have been described as “complex and intellectually challenging” (pg. 137. Hughes, 2017). Those attending with cognitive difficulties are likely to find it even more challenging and this may affect engagement, comprehension, and motivation to complete. Providers may feel that it is more pertinent to understand risks to predict offending and focus on risk assessment and management rather than tailoring treatment or funding initial screening to ensure treatment can meet the individual needs of that person.

**Table 3.**

*Study Characteristics and Results from Included Studies*

| Author (Year, Country)                 | Aims   | Sample Groups and Characteristics  | Cognitive measures used   | Domestic abuse type and measure/collected   | Key findings  |
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| Marshall et al., (2011)<br>USA         | <ul style="list-style-type: none"> <li>To examine whether misappraisal of anger and dysregulated emotions would mediate the relation between maladaptive posttraumatic cognitions and perpetration of IPV</li> </ul> | <ul style="list-style-type: none"> <li>N = 185 (115 F)</li> <li>University students in relationships</li> <li>M age (SD) = 19 (1.26)</li> <li>91% Caucasian</li> <li>64% from rural communities</li> <li>Current relationship length M (SD) = 6.25 (3.33) months</li> </ul> <p>40.5% reported death of loved one as most distressing traumatic event</p> | <ul style="list-style-type: none"> <li>The Aprosodia Battery, Affective Comprehension Subsection (Ross, Thompson, &amp; Yenkosky, 1997)</li> <li>The Inventory of Altered Self Capacities, Affect Dysregulation Subscale (Briere &amp; Runtz, 2000)</li> </ul> <p>Also used Traumatic Life Experiences Survey (Kubany et al., 2000)</p> | <p>Intimate partner violence<br/>Psychological and physical aggression.</p> <ul style="list-style-type: none"> <li>Revised Conflict Tactics Scale (RCTS, Straus et al., 1996)</li> <li>On average there were at least 1 (range 0-25) act of IPV and nearly 14 (range 0-88) of psychological aggression in participants' current relationships.</li> </ul> | <ul style="list-style-type: none"> <li>Trauma cognitions were directly associated with IPV perpetration, and this was mediated by anger misappraisal and emotion dysregulation. N = 185; <math>r^2 = .18</math>, <math>b = 0.0136</math>, 95% CI = [0.0050, 0.0355]</li> <li>There was a mediating effect of anger misappraisal and emotion dysregulation on the relation between trauma cognitions and perpetration of psychological aggression. N = 185; <math>r^2 = .16</math>, <math>b = 0.1119</math>, CI = [0.0584, 0.1919].</li> </ul> |
| Romero-Martinez et al., 2019a<br>Spain | <ul style="list-style-type: none"> <li>The primary objective was to compare patterns of substance</li> </ul>   | <ul style="list-style-type: none"> <li>Intimate partner violence against women</li> </ul>  | <ul style="list-style-type: none"> <li>Memory: Letter-Number Sequencing test, spatial Span (a</li> </ul>  | <p>Intimate partner violence</p> <ul style="list-style-type: none"> <li>SARA assessed IPV</li> </ul>  | <p>Memory and Attention:</p> <ul style="list-style-type: none"> <li>Significant group differences were found on the letters and numbers</li> </ul>  |

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| <p>misuse and cognitive abilities in people committing domestic violence.</p> | <p>(IPVAW) N = 63</p> <ul style="list-style-type: none"> <li>• Control group (non-IPVAW) N = 39</li> <li>• IPVAW group age = 39.73 ± 10.72<br/>73% Spanish, 27% other<br/>59% employed</li> <li>• Non IPVAW group age = 41.72 ± 11.01</li> <li>• 82% Spanish, 18% other<br/>46% employed</li> </ul> | <p>subscale of the WMS-III</p> <ul style="list-style-type: none"> <li>• Attention: Rapid Visual Information Processing (RVP) test, Attention Switching Task (AST)</li> <li>• Executive Functioning: Key test, which is a subtest of the Behavioural Assessment of Dysexecutive Syndrome and Wisconsin Card Sort Task and Cambridge Gambling Task</li> </ul> | <p>and reoffending risk</p> <ul style="list-style-type: none"> <li>• Cronbach's alpha for study was 0.80</li> <li>• Authors designed an interview that included questions about the IPVAW perpetration, such as type of aggression, severity of injuries, and previous criminal history.</li> </ul> | <p>(Mann-Whitney U = -4.92, p &lt; 0.001), spatial location (Mann-Whitney U = -2.70, p = 0.007), AST % of correct responses (Mann-Whitney U = -2.40, p = 0.016) and RVP Mann-Whitney U = -3.06, p = 0.002). The IPVAW group scored worse than controls.</p> <p>Executive functioning:</p> <ul style="list-style-type: none"> <li>• IPV group used more trials to complete WCST categories (Mann-Whitney U = -5.00, p &lt; 0.001), made more errors (Mann-Whitney U = -5.00, p &lt; 0.001) and completed fewer categories (Mann-Whitney U = -5.03, p &lt; 0.001) compared to controls.</li> <li>• On the key test, the IPV group had lower scores than controls (Mann-Whitney U = -4.18, p &lt; 0.001) but no</li> </ul> |
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|                            |   |   |   |  |   | <ul style="list-style-type: none"> <li>difference in time to deliver and execute.</li> <li>Regarding decision making process subtests, the IPV group showed higher delay aversion (Mann-Whitney U = -1.92, p = 0.05), higher overall bets (Mann-Whitney U = -2.10, p = 0.035) and higher risk taking scores (Mann-Whitney U = -2.12, p = 0.033)</li> </ul> |
| Persampiere et al., (2014) | <ul style="list-style-type: none"> <li>To examine the extent to which differences in performance on a variety of neuropsychological measures can predict anger reactivity and cognitive distortions</li> <li>To examine whether the performance on such tasks is associated with anger and hostility</li> </ul> | <p>The study focused on differences among partner violent men with no comparison group.</p> <p>N = 80 males</p> <ul style="list-style-type: none"> <li>Mean age (SD) = 34.2 (10.48)</li> <li>Mean formal education level of 11.48 years (SD = 1.86),</li> <li>Average reading level was in 4th-5th grade as assessed by Wide Range Achievement</li> </ul> | <ul style="list-style-type: none"> <li>128 item version of Wisconsin Card Sort Task (WCST)</li> <li>4 tests from Automated Neuropsychological Assessment Metrics (ANAM; Tower Puzzle, Stroop Colour Word Test, Go/No Go Test and Continuous Performance Test – Traditional).</li> </ul> <p>Other measures:</p> <ul style="list-style-type: none"> <li>Assessment of anger and hostility: Articulated Thoughts During Simulate Situations</li> </ul> | <p>Intimate partner violence – physical and psychological aggression.</p> <ul style="list-style-type: none"> <li>RCTS (Straus et al., 1996)</li> <li>Current study had internal consistency for psychological aggression and physical assault .83 and .92</li> </ul> | <ul style="list-style-type: none"> <li>No significant associations were observed between levels of physical partner assault or psychological aggression on the CTS and the neuropsychological measures.</li> <li>Executive functioning accounted for only 1 % of the unique variance in the models predicting physical assault and psychological aggression.</li> <li>Impulsivity accounted for less</li> </ul> |  |

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|  | <ul style="list-style-type: none"> <li>in IPV offenders</li> <li>To examine whether performance on above measures is associated with self-report of physical and emotional abuse within a sample selected for relationship violence</li> </ul> | <ul style="list-style-type: none"> <li>Test (M = 4.85. SD= 2.31).</li> <li>Race, 75% (N=60) were African American or black (21.3%, N=17), white (1.3%, N=1) or Hispanic (1.3%, N= 1) and 1.3% N = 1 as other</li> </ul>  | <ul style="list-style-type: none"> <li>(ATSS) Davison et al 1983.</li> <li>State Anger expression and anger control scales from STAXI -2</li> <li>Cook-Medley Hostility Scale from MMPI-2</li> <li>Alcohol AUDIT</li> </ul>   |  | <ul style="list-style-type: none"> <li>than 4% of the variance in both the above models.</li> <li>Specifically, poorer executive functioning was associated with higher anger expression and greater hostility.</li> <li>The results indicate basic neurocognitive functioning is an important factor in the processing of relationship relevant social information for partner violent men.</li> </ul> |
| <p>Cohen et al., (2003)</p> <p>USA</p> | <ul style="list-style-type: none"> <li>To examine whether executive control problems involving impulsivity contribute to problems with behavioural control among batterers, and to further examine their deficits in</li> </ul>                | <ul style="list-style-type: none"> <li>Batterers (N=41)</li> <li>Non-batterers (N=20)</li> <li>Screened on CTS; those with score below 11 qualified as non-violent controls.</li> <li>Batterers M age (SD) = 32.9 (9.6) years Educational level (SD) = 12.2 (2.5)</li> </ul> | <ul style="list-style-type: none"> <li>Subtests from the WAIS (Vocabulary, Comprehension, Similarities, Digit Span, Picture Completion, Block Design, Digit Symbol).</li> <li>Impulsivity (used other measures' results [*] and examined response tendency and ability to inhibit responding)</li> <li>Executive function (EF) and Attention</li> </ul> | <p>Intimate partner violence</p> <ul style="list-style-type: none"> <li>Batterer and non-batterer groups showed a significant difference in their total CTS scores [batterers: 12.9 +/- 1.4 non-batterers: 3.5 +/- 1.3; t(59)</li> </ul> | <ul style="list-style-type: none"> <li>Batterers exhibited weaker neuropsychological performance than non-batterers.</li> <li>Batterers and non-batterers differed with respect to VIQ on WAIS-R, but not PIQ or FSIQ.</li> <li>Attention/EF = A significant between group difference was found with respect to overall performance on MANOVA [Wilks's</li> </ul>                                       |

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|                             | verbal functioning  | <p>SES (Hollingshead score) = 31.8 (17.5)</p> <ul style="list-style-type: none"> <li>• Non-batterers M age (SD) = 30.5 (10.7) years</li> </ul> <p>Educational level (SD) = 11.8 (3.3.)</p> <p>SES (Hollingshead score) = 46.5 (16.6)</p> | <p>(Adaptive Rate Continuous Performance Test (ARCPT*); Controlled Oral Word Association Test (COWAT*); Paced Auditory Serial Addition Test (PASAT), Porteus Mazes*; Stroop Interference Test (Stroop*); Trail Making Test (TMT*), and Go-No-Go)</p> | <p>= 16.6, <math>p &lt; .01</math>]</p>                            | <p>Lambda = .39, <math>F(6,54) = 6.31, p &lt; .01</math>] indicating that batterers and non-batterers differed with respect to their performance in this domain.</p> <ul style="list-style-type: none"> <li>• Impulsivity: A significant overall difference was found by MANOVA on the measures of impulsivity [Wilks's Lambda = .29, <math>F(5,55) = 19.45, p &lt; .01</math>].</li> <li>• A verbal measure (Vocabulary), along with two impulsivity measures Porteus Mazes-Breaks and Time Estimation (IRI) were most strongly associated with batterer status, though history of prior head injury was also retained as a significant correlate.</li> </ul> |
| Ponari et al., (2021)<br>UK | <ul style="list-style-type: none"> <li>• To provide insight into the implicit theories of male</li> </ul> | <ul style="list-style-type: none"> <li>• IPV N = 19</li> <li>• Non IPV student sample N = 20</li> </ul>  | <p>Implicit Measures:</p> <ul style="list-style-type: none"> <li>• Computer based Implicit Association Tests (IAT); The first IAT examined</li> </ul>  | <p>Physical aggression towards partner. Attitudes and coercive</p> | <ul style="list-style-type: none"> <li>• The IPV group had a mean physical aggression score of 17.21 (SD = 4.12;</li> </ul>  |



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| <p>committing physical IPV by exploring the number of offense supportive cognitions using both implicit and explicit measures</p> | <ul style="list-style-type: none"> <li>• IPV M age (SD) = 38.17 (8.19)<br/>73.7% White</li> <li>• Non IPV M age (SD) = 37.05 (7.57)<br/>70% White</li> <li>• All British nationality and heterosexual</li> </ul> | <p>the association between gender and the concepts of Career-Domestic (CD-IAT), and the second IAT examined the association between gender and the concepts of Dominance-Submission (DS-IAT).</p> <ul style="list-style-type: none"> <li>• A computer based Go/No Go association tasks collected data on implicit positivity towards violence</li> <li>• Sentence Judgement Tasks (SJT) that related to implicit theories ( opposite sex is dangerous, general entitlement, relationship entitlement, and normalization of relationship violence)</li> </ul> <p>Explicit measures:</p> <ul style="list-style-type: none"> <li>• Attitudes Toward Women Scale (AWS; Spence, Helmreich, &amp; Stapp, 1973)</li> </ul> | <p>behaviour towards partner.</p> <ul style="list-style-type: none"> <li>• 12 physical aggression items of the Revised CTS</li> <li>• 24-item Revised Controlling Behaviours Scale (CBS-R; Graham Kevan &amp; Archer, 2005), 32-item Dominance Scale</li> <li>• Explicit approval of IPV was assessed with the Inventory of Beliefs About Wife Beating (Hamby, 1996)</li> </ul> | <p>minimum = 0, maximum = 48).</p> <ul style="list-style-type: none"> <li>• Significant group differences in all variables: psychological entitlement, <math>F(1, 35) = 6.44, p = .016, \eta^2 = .16</math>; gender-roles attitudes, <math>F(1, 35) = 11.05, p = .002, \eta^2 = .24</math>; dominance, <math>F(1, 35) = 6.68, p = .014, \eta^2 = .16</math>; controlling behaviours, <math>F(1, 35) = 9.58, p = .004, \eta^2 = .22</math>; hostility toward women, <math>F(1, 35) = 10.81, p = .002, \eta^2 = .24</math>; and attitudes toward physical IPV, <math>F(1, 35) = 10.42, p = .003, \eta^2 = .23</math>.</li> </ul> |
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|   |   |   | <ul style="list-style-type: none"> <li>Aggression subscale of the Revised Expagg Scale (A. Campbell, Muncer, McManus, &amp; Woodhouse, 1999).</li> <li>31-item Hostility Toward Women subscale of the Gender Hostility Scales (Yodanis &amp; Straus, 1996)</li> <li>Psychological Entitlement Scale (PES; W. K. Campbell, Bonacci, Shelton, Exline, &amp; Bushman, 2004)</li> </ul>  |   |   |
| Romero-Martinez et al., (2021)<br><br>Spain | <ul style="list-style-type: none"> <li>To examine whether there are neuropsychological differences between the typologies of IPVAW</li> <li>To examine whether there are differences in treatment engagement and compliance and recidivism</li> </ul> | 424 IPVAW perpetrators with no cognitive/mental or physical problems, or substance misuse disorders. The authors split IPVAW into four typology groups based on Holtwitz-Munroe et al., (2001) antisocial, borderline, and FO) by running a hierarchical cluster analysis. These groups were then assessed with the | <ul style="list-style-type: none"> <li>WCST to assess cognitive flexibility</li> <li>The Eyes Test (RMET; Baron-Cohen et al., 2001) to assess emotion decoding</li> <li>Plutchik Impulsivity Scale (Plutchik, &amp; Van Praag, 1989)</li> </ul> <p>Other measures:</p> <ul style="list-style-type: none"> <li>Personality was assessed by four subscales of MCMI-III (Millon, 1994)</li> <li>State-Trait Anger Expression Inventory-2</li> </ul> | Intimate partner violence towards women | <ul style="list-style-type: none"> <li>Cognitive flexibility (WCST) varied significantly between groups on the correct trials [F(2, 423) = 2.25, p = .050, ηp2 = .01], total errors [F(2, 423) = 3.47, p = .032, ηp2 = .02], perseverative errors [F(2, 423) = 3.78, p = .024, ηp2 = .02], and completed categories [F(2, 423) = 11.66, p &lt; .001, ηp2 = .06].</li> </ul> |

based on the two above variables

MCMI-II and the SARA to create groups of:

- Generally Violent/antisocial (GVO) N =108
- Dysphoric/Borderline (BD) N =154
- Family Only (FO) N =162

(STAXI-2; Spielberger, 1999).

- Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993

- Post hoc analysis revealed that FO had more correct trials than GVA ( $t(268) = 3.64, p < .001, d = .42$ ). FO had fewer total errors ( $t(268) = -2.73, p = .007, d = .35$ , and  $t(304.98) = -2.63, p = .009, d = .30$ , respectively) and perseverative errors ( $t(244.74) = -3.45, p = .001, d = .42$ , and  $t = -2.67, p = .009, d = .31$ , respectively) and more completed categories ( $t(303.94) = 4.88, p < .001, d = .71$  and  $t(274.47) = 2.08, p = .038, d = .26$ , respectively) than GVA and BD. After including covariates, differences between groups still reached significance.
- Regarding emotion decoding (RMET), a significant group effect was found [ $F(2, 423) = 11.84,$

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|                                |   |   |   |  | <p><math>p &lt; .001</math>, <math>\eta p^2 = .05</math>], with FO performing better on detecting correct responses than GVA and BD (<math>t(136.55) = 3.74</math>, <math>p &lt; .001</math>, <math>d = .49</math>, and <math>t(258.05) = 4.72</math>, <math>p &lt; .001</math>, <math>d = .54</math>, respectively) group than in the FO group</p> <p><i>Recidivism</i></p> <ul style="list-style-type: none"> <li>A significant interaction between IPVAW typologies and neuropsychological performance was also found on intervention dose <math>F(2, 423) = 6.57</math>, <math>p &lt; .001</math>, <math>\eta p^2 = .06</math>] and the risk of recidivism [<math>F(5, 423) = 21.22</math>, <math>p &lt; .001</math>, <math>\eta p^2 = .18</math>]</li> </ul> |
| Becerra-Garcia (2015)<br>Spain | To conduct a preliminary comparative study of performance shown by domestic violence offenders in a | 78 men divided into four offender groups including a control group.<br><br>Potential participants were excluded who had | Executive functioning was measured using the Trail Making Test (TMT). | Domestic abuse (no detail provided regarding type)<br>Sexual offenders (adult victims) | <ul style="list-style-type: none"> <li>Post-hoc tests found DVO and SO offenders exhibited poorest performance on the TMT part B showing significant differences with the control group</li> <li>Conviction reports</li> </ul>  |

classic test of executive functioning in relation to different groups of offenders (i.e. sexual, violent and non-violent) and to a control group of non-offenders

a history of psychiatric or neurological pathologies (i.e. visuals and/or motors deficits, psychosis, drug dependency requiring treatment, history of traumatic brain injury etc.)

- 10 adult prisoners convicted of domestic violence (DVO)  
DVO M age = 42 (SD = 8.48), M education = 9.3 (SD = 3.16)
- 20 participants convicted of sexual contact offences against victims over 18 years of age (SO)  
SO M age = 37.55. (9.27), M edu = 8.6 (1.23).
- 9 participants convicted of violent crimes (VO).

( $F_{(4,77)} = 6.40$ ;  $p < 0.001$ ;  $n^2 = 0.26$ ) (post-hoc  $p < 0.001$  for DVO and SO groups, after including the Bonferroni correction).

- In the B-A (TMT) derived index there were also significant differences between SO and controls and DVO and controls ( $F_{(4,77)} = 5.31$ ;  $p = 0.001$ ;  $n^2 = 0.23$ )
- Regarding the mean errors on the TMT, there were significant differences between groups on Part B of the test ( $F_{(4,77)} = 3.93$ ;  $p = 0.006$ ;  $n^2 = 0.18$ ) but not Part A.
- The Bonferroni's post-hoc comparison found only violent offenders differed in errors from TMT-B with the control group ( $p = 0.01$ ; after this correction)

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|                              |  | <p>VO M age = 30.22 (7.17) M edu = 9 (1.5).</p> <ul style="list-style-type: none"> <li>• 8 non-violent offenders (NVO), without history of violent crimes as defined by Harris et al., NVO M age = 40.88 (10.48). M edu = 8.38 (1.06).</li> <li>• The control group (CG) of non-convicted men comprised 31 participants recruited from the general population.</li> <li>• CG M age = 38.45 (12.58), M edu = 9.45 (1.52).</li> </ul> |  |   |  |
| Romero-Martinez et al (2019) | To extend prior research results and examine the involvement of high impulsivity, attention switching deficits, and interrelationships between these cognitive | <ul style="list-style-type: none"> <li>• 128 participants</li> <li>• Control group N = 39</li> <li>• DV group N = 89</li> <li>• Control group: inclusion criteria were having similar socio-demographic</li> </ul>  | <ul style="list-style-type: none"> <li>• Attention Switching Task (AST) (a computerized test)</li> <li>• Reading the Mind in the Eyes" (Eyes Test)</li> <li>• WCST for executive functioning and cognitive flexibility</li> <li>• Spanish version (Páez, Jiménez, López, Raull,</li> </ul> | Domestic abuse (victim group not specified) | <ul style="list-style-type: none"> <li>• IPV group had higher impulsivity than controls , <math>t(126) = 9.64, p &lt; .001, d = 1.72</math></li> <li>• IPV group had lower Eyes Test total scores, ( e, <math>t(126) = -4.16, p &lt; .001, d = .74</math>)</li> <li>• In the WCST IPV group used more</li> </ul> |

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| <p>processes in facial emotion decoding and cognitive flexibility impairments in IPV perpetrators</p> | <p>characteristics to the experimental group and a criminal record certificate attesting to the fact that that they had no history of violence</p> <ul style="list-style-type: none"> <li>• Control group reported lower CTS-2 scores on psychological (4.11 ± 5.11), physical assault (0.69 ± 1.99), and sexual abuse (3.83 ± 3.32)</li> <li>• DV group: scores equal to or greater than 11 on the conflict tactics scale-2 (CTS-2) are indicators of IPV, despite never having been convicted (Cohen et al., 2003).</li> </ul> | <p>Ortega, &amp; Nicolini, 1996) of the Plutchik Impulsivity Scale (Plutchik &amp; van Praag, 1989)</p> | <p>trials (<math>t(126) = 6.47, p &lt; .001, d = 1.15</math>) made more total and perseverative errors (<math>t(126) = 5.75, p &lt; .001, d = 1.02</math>, and <math>t(126) = 4.43, p &lt; .001, d = .79</math>) and completed fewer categories than controls (<math>t(126) = -5.02, p &lt; .001, d = 0.89</math>).</p> <ul style="list-style-type: none"> <li>• Impulsivity predicted emotion decoding skills in both groups, but it only predicted AST scores in IPV group.</li> <li>• AST scores predicted WCST scores in both groups, but the slope predicting emotional recognition from deficits in attention switching only became steeper with increasing trait impulsivity in IPV perpetrators.</li> <li>• Findings suggest that impulsivity and attention switching deficits are more characteristic of IPV</li> </ul> |
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|                        |   |  |  |   | perpetrators than a non-violent sample  |
| Fox et al., (2020) USA | To identify a set of demographic, developmental, psychiatric, neurologic, substance use, criminological, and cognitive ability variables unique to IPV perpetrators, whilst addressing the methodological limitations of prior research | <ul style="list-style-type: none"> <li>• IPV group, N = 57</li> <li>• Non-IPV group, N = 42</li> <li>• All participants were inmates at county jail in a Midwestern city</li> <li>• Inclusion criteria were the following: (a) no history of stroke, brain tumour, or epilepsy; (b) no active psychiatric symptoms; and (c) English as first and primary language</li> <li>• IPV group M age = 34.3 (8.1). M education = 11.3 (1.8). Any history of domestic abuse, not just index offence</li> <li>• Non-IPV group M age = 29.8 (7.8). M</li> </ul> | <ul style="list-style-type: none"> <li>• A life history from interview, completed parental SES rating, PCL-R and psychiatric hx and alcohol use.</li> <li>• Also identified number of TBI</li> <li>• Cognitive battery over 5 domains: intellectual functioning; attention, working memory and processing; reasoning and executive functioning; anterograde memory; language.</li> </ul> | <p>Intimate partner violence<br/>General domestic abuse</p> <ul style="list-style-type: none"> <li>• Classified as IPV offenders if they were ever charged with or convicted of an intimate partner violence offense per criminal records or if they self-reported a physical incident involving a current spouse, current nonmarital partner, former marital partner, or former nonmarital partner during the life history interview.</li> </ul> | <ul style="list-style-type: none"> <li>• No significant differences in cognitive performance between IPV perpetrators and non-IPV violent offenders across measures in any cognitive domain.</li> <li>• For offenders who do not have an extensive history of nonviolent crime, IPV perpetration was likely when an offender presented with a combination of medium to high levels of interpersonal traits of psychopathy low average or higher scores on the attention, working memory, and processing speed domain (scores greater than <math>z = -0.86</math>).</li> <li>• The most important factors in differentiating between the two groups were interpersonal traits</li> </ul> |



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|                         |   | education = 11.1 (2.3). History of only non-IPV violent crimes.   |   | <ul style="list-style-type: none"> <li>This definition of IPV is empirically validated and used in criminology research and by the Federal Bureau of Investigation (FBI; Saltzman et al., 1999; United States Department of Justice [DOJ], 2017).</li> </ul> | <ul style="list-style-type: none"> <li>of psychopathy and the extent of an individual's nonviolent history.</li> <li>Diagnosis of neurodevelopmental disorder and scores on performance-based measures of attention, working memory, and processing speed also contributed toward this differentiation. IPV perpetrators exhibited low average cognitive performance across cognitive domains relative to test norms and did not significantly differ from non-IPV violent offenders</li> </ul> |
| Teichner et al 2001 USA | To investigate the cognitive functioning of men who batter by means of objective neuropsychological evaluation. | <ul style="list-style-type: none"> <li>Three groups</li> <li>Cognitively impaired IPV, N = 24</li> <li>Non-impaired IPV, N = 26</li> <li>Control group, N = 23</li> <li>Impaired IPV M age =36.6 (11.8). M</li> </ul> | <ul style="list-style-type: none"> <li>The Stroop Color and Word Test (Golden, 1978).</li> <li>The Figural Memory Test (Luria-Nebraska Neuropsychological Battery II; Golden et al., 1985).</li> <li>Delayed Figural Memory Test</li> </ul> | IPV – cognitive impairments compared between two groups.   | <ul style="list-style-type: none"> <li>Significant group differences between cognitively impaired batterers and both the cognitively intact batterers and nonpatient controls for each individual test. (4.3%), <math>\chi^2 = 67.81, p &lt; .0001</math>.</li> </ul>   |

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|                                    |  | <ul style="list-style-type: none"> <li>education = 11 (1.4)</li> <li>• Non-impaired IPV<br/>M age = 32.6 (7.6). M education = 11.1 (1.4).<br/>M age = 23.4 (9.2), M education = 12.6 (1.7)</li> <li>• Screening Test for the Luria-Nebraska Neuropsychological Battery (ST-LNNB; Golden, 1987) was used to determine impairment. Cut off score of 8. Participants were classified as having neuropsychological impairment if scores on two or more of the measures were in the impaired range</li> </ul> | <ul style="list-style-type: none"> <li>(Luria-Nebraska Neuropsychological Battery ZI; Golden et al., 1985).</li> <li>• The Trail Making Test-Forms A &amp; B (Trails; Davies, 1968; Reitan, 1955)</li> </ul> |  | <ul style="list-style-type: none"> <li>• No differences found between non impaired IPV and controls on any measures.</li> <li>• Specific functional skills deficits were identified within the male batterer sample, including deficits of immediate and delayed visual memory, cognitive flexibility, inability to inhibit verbal responses, psychomotor speed, and focused attention</li> </ul> |
| Romero-Martínez et al (2016) Spain | <ul style="list-style-type: none"> <li>• To examine the relationship between specific IPV</li> </ul> | <ul style="list-style-type: none"> <li>• 1 group of 144 IPV perpetrators</li> <li>• M age = 40.57 (11.33). 16%</li> </ul>  | <ul style="list-style-type: none"> <li>• Reading the Mind in the Eyes (Eyes Test)</li> </ul>   | Domestic abuse <ul style="list-style-type: none"> <li>• SARA to assess recidivism</li> </ul> | <ul style="list-style-type: none"> <li>• Personality traits in IPV perpetrators were associated with low cognitive empathy and</li> </ul>   |

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| <p>personality traits (borderline, antisocial, and narcissistic) and the risk of IPV recidivism.</p> <ul style="list-style-type: none"> <li>To test the potential moderating effect of cognitive empathy and emotional decoding processes on the relationship of antisocial and borderline personality traits with the risk of recidivism</li> </ul> | <p>illiterate, 61%<br/>basic education, 21%<br/>graduate, 2%<br/>college</p> | <ul style="list-style-type: none"> <li>Interpersonal Reactivity Index (IRI)</li> <li>battery of questionnaires for evaluating personality traits ((MCMI-III; Millon, Davis, &amp; Millon, 2007)</li> </ul> | <ul style="list-style-type: none"> <li>Referral and engagement with Domestic Abuse intervention</li> </ul> | <p>emotion recognition, characteristics which moderated the relationship between high antisocial and borderline personality traits and high risk of recidivism.</p> <ul style="list-style-type: none"> <li>The slope predicting risk of recidivism from borderline traits became more positive as IRI perspective taking scores (emotion decoding skills) decreased (b = 2.228, p , .001)</li> <li>High antisocial and borderline personality traits in IPV perpetrators were found to be associated with a high risk of recidivism, these relationships being moderated by low empathy skills</li> <li>Antisocial traits predicted 16.8% of the SARA (b = .417, p , .001), 19.8% of the IRI perspective taking</li> </ul> |
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|                                       |   |  |   |   |   | <p>(b = 2.451, p , .001), and 11.6% of the Eyes Test (b = 2.351, p , .001) scores. Second, the borderline traits predicted 18.6% of the SARA (b = 2.432, p , .001), 12% of the IRI perspective taking (b = 2.355, p , .001), and 13.5% of the Eyes Test (b = 2.376, p , .001) scores.</p> <ul style="list-style-type: none"> <li>• The role of the emotional system (especially the emotional decoding process and perspective taking) as a key factor that should be considered to build IPV categories.</li> </ul> |
| <p>Godfrey et al., (2020)<br/>USA</p> | <ul style="list-style-type: none"> <li>• To examine the effects of concussion history on working memory, empathy, partner reported violence, and observed aggression</li> </ul> | <ul style="list-style-type: none"> <li>• 49 heterosexual couples who were experiencing conflict in their relationship</li> <li>• Two groups Inclusion criteria: (a) married or living together for at least 6</li> </ul> | <ul style="list-style-type: none"> <li>• Corsi Block Tapping (males)</li> <li>• Coded observed aggression</li> <li>• Interpersonal Reactivity Index (males)</li> <li>• Men reported frequency of head injury</li> </ul> | <p>Intimate partner violence</p> <ul style="list-style-type: none"> <li>• RCTS (Straus et al., 1996)</li> </ul> | <ul style="list-style-type: none"> <li>• The multiple regression of working memory and cognitive empathy explained a significant amount of the variance in male aggression observed during the conflict (R<sup>2</sup> = 0.23, F (2,46) = 6.79, p &lt; 0.01), as working</li> </ul> |  |

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| <p>during a conflict discussion with an intimate partner</p> <ul style="list-style-type: none"> <li>To examine empathy as a mediating factor in the relation between visual-spatial working memory and IPV</li> </ul> | <p>months, (b) at least 18 years of age, and (c) verbal and written English proficiency.</p> <ul style="list-style-type: none"> <li>To be classified as IPV, female partners had to report at least two instances of male-to-female IPV within the last year</li> <li>Non-violent, females had to report that the couples had had zero severe male-to-female violent acts ever and zero minor male-to-female violent acts within the last 5 years.</li> <li>Couples between the ages of 18 and 60 years old (<math>M = 32.33</math>, <math>SD = 9.56</math>, <math>M = 29.57</math>, <math>SD = 8.79</math>, respectively).</li> <li>Male and female</li> </ul> | <p>memory was not a significant predictor of male aggression (<math>t = -0.85</math>, <math>\beta = -0.12</math>, <math>p = 0.40</math>), but cognitive empathy was negatively related to male aggression (<math>t = -2.84</math>, <math>\beta = -0.41</math>, <math>p = 0.01</math>)</p> <ul style="list-style-type: none"> <li>Testing the direct effects of working memory on male aggression, working memory was significantly negatively related to male observed aggression (<math>R^2 = 0.09</math>, <math>F(1,47) = 4.80</math>, <math>\beta = -0.30</math>, <math>p = 0.03</math>).</li> <li>Multiple regression of working memory and affective empathy explained a significant amount of the variance in male aggression during the conflict (<math>R^2 = 0.23</math>, <math>F(2,46) = 6.79</math>, <math>p &lt; 0.01</math>). However, affective empathy was negatively related to aggression</li> </ul> |
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participants reported individual income ranged between \$0 and \$70,000 (M= \$22,795, SD = \$18,788, M= \$21,284, SD = \$13,117, respectively).

- Relationship length ranged from six months to thirty years with an average of 4.59 years (SD = 5.15).
- Within the sample, the majority of men had perpetrated physical IPV (64%) and psychological IPV (88%) within the last year.
- Men's physical assault frequency ranged from 0–40 acts in the past year,

( $t = -2.84$ ,  $\beta = -0.40$ ,  $p < 0.01$ )

|                            |  | as reported by their female partners.   |   |   |  |
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| Nyline (2016) USA          | To explore the relationship between perceived empathic ability and ability to recognize facial affect in others by domestic violence offenders | <p>IPV group (N = 35) and non-IPV control group (N= 35)</p> <ul style="list-style-type: none"> <li>• IPV M age (SD) = 35.29 (9.73)</li> <li>• Non IPV M age (SD) = 37.7 (15.7)</li> </ul> | <ul style="list-style-type: none"> <li>• Nimstim dataset to measure emotion decoding abilities</li> <li>• General Ability Measure for Adults (is a nonverbal assessment of general cognitive ability (Naglieri &amp; Bardos, 1997))</li> <li>• Interpersonal Reactivity Index</li> <li>• Life Events checklist</li> </ul> | <p>Domestic abuse against partners (male to female)</p> <ul style="list-style-type: none"> <li>• Referral and engagement with US Government accredited Domestic Abuse intervention</li> </ul> | <ul style="list-style-type: none"> <li>• IPV group was less accurate than controls at identifying fear and sadness</li> <li>• No significant differences in identifying disgust and surprise between groups</li> <li>• IPV group was less accurate at identifying emotions at lower level intensities (40-60%) but there was no difference when emotions were at 70% intensity</li> <li>• On the personal distress subscale of IRI, IPV group demonstrated a higher level of personal distress when in stressful situations</li> </ul> |
| Walling et al., (2012) USA | <ul style="list-style-type: none"> <li>• To test a hypothesis that head injury and neuropsychological impairments would</li> </ul>             | <ul style="list-style-type: none"> <li>• Two groups: IPV (N = 102) and control (N= 62)</li> <li>• The IPV groups were further split into groups based</li> </ul>                          | <ul style="list-style-type: none"> <li>• WCST (Heaten 1981).</li> <li>• The Trail Making Test Part B (Lezak et al., 2004) is used to assess mental flexibility, inhibitory control,</li> </ul>  | <p>IPV in heterosexual couples.</p> <ul style="list-style-type: none"> <li>• CTS (physical aggression and psychological</li> </ul>  | <ul style="list-style-type: none"> <li>• Errors on the WCST, lower scores on Shipley subscales and head injury were all significantly related to physical IPV</li> </ul>   |

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|                                 | <p>associate with physical and psychological IPV</p> <ul style="list-style-type: none"> <li>To consider if such factors were better predictors of IPV than demographic variables</li> </ul> | <p>on scores from the CTS, the Generality of Violence Questionnaire (Holtzworth-Munroe et al., 2000) and MCMI-III (Millon, 1983).</p> <ul style="list-style-type: none"> <li>IPV</li> <li>Non-aggressive controls</li> <li>All men included were also in heterosexual couples</li> </ul> | <p>visual attention, and motor sequencing.</p> <ul style="list-style-type: none"> <li>The Symbol Digit Modalities Test (SDMT; Smith, 1991) is a visual attention task that assesses executive functioning and overall functional integration which is like the WAIS.</li> <li>The Shipley Institute of Living Scale (Shipley, 1946; Zachary, 1986) is an abbreviated intelligence test with two subtests for verbal ability and abstraction.</li> <li>The Head Injury Questionnaire (Rosenbaum &amp; Hoge, 1989)</li> </ul> | <p>aggression subscales)</p> <ul style="list-style-type: none"> <li>Generality of Violence Questionnaire Holtzworth-Munroe et al., (2000)</li> <li>MCMI-III</li> </ul> | <p>perpetrated in the last year.</p> <ul style="list-style-type: none"> <li>Verbal intelligence was significantly related to psychological IPV in the last year and was the only significant predictor.</li> <li>Neuropsychological variables accounted for 15% of variance in IPV beyond demographic variables.</li> <li>Men in the most severe IPV group (borderline-dysphoric/generally violent antisocial) had the highest frequency of impaired performance on neuropsychological measures.</li> <li>63% of men in the severe IPV group had possible history of head injury.</li> </ul> |
| <p>Corvo et al., (2006) USA</p> | <ul style="list-style-type: none"> <li>To explore associations between frontal lobe deficits, misuse of alcohol and</li> </ul>  | <ul style="list-style-type: none"> <li>Used data from previous study (Westby &amp; Ferraro, 1999) which had a control group (N =38) and a</li> </ul>   | <ul style="list-style-type: none"> <li>WCST</li> <li>The Stroop Colour-Word Test</li> <li>The Trail Making Test, Part a and B</li> <li>Short Michigan Alcoholism</li> </ul>   | <p>IPV</p> <p>Battery Index</p> <p>Arrests, number of violent acts</p>   | <ul style="list-style-type: none"> <li>Correlational analysis indicated a strong association between all neuropsychological tests and the 'high'</li> </ul>  |



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| <p>domestic abuse.</p> | <p>IPV group (N = 38).</p> <ul style="list-style-type: none"> <li>• This study only used the IPV group but divided them into low and high.</li> <li>• IPV group and control group, ages were not provided</li> <li>• IPV group provided details of abuse M (SD): <ul style="list-style-type: none"> <li>- Arrests for domestic violence M = 1.23 (1.36)</li> <li>- # times victim sought medical attention 0.31 (0.77)</li> <li>- # Times threatened harm to female partner 5.29 (7.92)</li> <li>- # Times used violence against female</li> </ul> </li> </ul> | <p>Screening Test (SMAST, Selzer, Vinokur, &amp; Van Rooijen, 1975)</p> | <p>battery index group (r = .746, p &lt; .01).</p> <ul style="list-style-type: none"> <li>• There was no significant correlation found between combined neuropsychological measures and the 'low' index group (r = 0.304, n.s.).</li> <li>• There was no significant correlation found between combined neuropsychological scores and the SMAST scores for both high and low groups (high batterers: r = .454, p = .22; low batterers: r = 0.048, n.s.)</li> <li>• T-tests comparing SMAST M scores on the 'low' or 'high' battery index groups found a significant difference</li> <li>• SMAST scores correlated with the battery index (r = .736, p &lt; .001)</li> <li>• Multiple regression analysis found a significant main effect for SMAST</li> </ul> |
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partner  
4.76 (8.77)  
- # Times  
charged  
with  
violating  
protection  
orders 0.39  
(0.79)

- Based on these scores, the authors divided the IPV group into 'high' or 'low' on a Battery Index
- The index was determined by:  
number of violent acts +  
number of arrests for assault (other than battery) +  
number of times violated protection order + number of times partner sought medical treatment (after battery) + number of times arrested for domestic violence + number of

scores ( $r = .736$ ) but frontal lobe deficits nor interaction term were found to be significant.

times  
threatened  
violence against  
partner.

- 16 (the mean)  
was determined  
as cut off for  
'low' or 'high'.

Neuropsychological impairments have also been demonstrated in generally violent individuals (Burgess, 2020; Cruz et al., 2020), suggesting that the deficit is not specific to domestic abuse but something to consider when engaging people in interventions, as it appears more common than previously thought. Associations between other difficulties linked to neuropsychological impairments, which may also affect engagement and impact of interventions, should not be neglected either. For example, alcohol and/or substance abuse (particularly linked to memory and executive functioning deficits: Bates et al., 2002; Bruijen et al., 2019) and head injury (Nolan et al., 2018; Williams et al., 2018). These variables have been demonstrated to associate with domestic abuse both in this review and in other studies (Horne et al., 2020; Kadiani et al., 2020) and therefore interventions would likely benefit from considering how these factors interplay and affect risk levels and management.

Both factors are also linked to childhood adversities such as abuse (Kadiani et al., 2020; Schofield et al., 2019) and therefore interventions may wish to consider including more trauma informed practices, such as psychoeducation and collaborative formulation to improve understanding of where such behavioural problems may develop.

#### *Emotion decoding studies*

The studies exploring emotion decoding and empathy suggested that IPV perpetrators were less able to identify emotions (particularly fear and sadness) and had lower levels of both cognitive and affective empathy than controls. These deficits in identifying emotions in others and empathising may suggest IPV offenders misread social cues and facial expressions, potentially attributing more hostility in neutral faces, leading to aggression

and lacking empathy to consider the impact of their behaviour on others. A small-medium positive effect of hostile attribution bias on aggression was found in a large systematic review (Tuente et al., 2019), although not in generally violent offenders (Chapman et al., 2018). Chapman et al. (2018) did suggest violent offenders had a generally impaired ability to process facial expressions but did not find a hostile attribution bias. Exposure to threatening environments (over time, such as from childhood) has been demonstrated to lead to prioritisation of threat-salient information and more likely to attribute a threat to neutral stimuli, which can lead to aggressive reactions (McLaughlin & Lambert 2017). Similarly, due to difficulties with socio-cognitive abilities, it can be harder to identify positive cues in others (Heleniak & McLaughlin, 2020).

The deficits in empathy seen in domestic abusers may also mean there are less barriers for that person to commit a domestic abuse offence. They may be less concerned with the short- or long-term impact of their behaviour on partners and may not experience the same personal emotional difficulties after their behaviour which in other people, act as a deterrent for future use of domestic abuse. In a different group, sexual offenders, comparable deficits have been found, although thought to be most evident regarding the victim of the offence (Beckett & Fisher, 1994; Bumby, 2000; Fernandez & Marshall, 2003; Marshall et al., 2019). Such deficits have been further explored by way of focusing on one specific skill linked to empathy and socio-cognition; theory of mind (Elsegood & Duff, 2010). Similarly, studies of general violence have found evidence of lower levels of empathy (Domes et al., 2013; Narvey et al., 2021), although not consistently (Palix et al., 2021). Socio-cognitive processing is therefore a potential key component

to understand more about the perpetration of domestic abuse, as it is associated with empathy, emotion decoding, emotion regulation, decision making, cognitive abilities and will be affected by implicit theories held by a person. As IPV perpetrators were also shown to be more distressed by personal stress (Nyline, 2016) one could argue that this could indicate a low tolerance for negative emotions, which are then unable to be inhibited due to low empathy levels and an inability to consider consequences of their behaviour on another person.

Therefore, further research may be helpful to extrapolate the link between socio-cognitive deficits and types of violence, considering the role of other mediating variables such as neuropsychological abilities and the presence of certain implicit theories. Socio-cognitive processing abilities can be more difficult to translate into an intervention. However, one such way may be including additional modules such as empathy training or mentalisation treatment to improve perpetrators' ability to think of the feelings of others and the impact of their behaviour. A systematic review (Nally et al., 2021) suggested that including victim empathy modules in offender treatment can be effective, increase positive risk-taking understanding and can be well received by offenders, although is poorly explored.

### *Implicit theories*

Those committing domestic abuse offences were found to hold more offence supportive implicit theories and have maladaptive cognitions relating to women and violence. It was suggested by authors that this may make it more likely they use violence when dealing with conflict (Marshall et al., 2020; Pornari et al., 2021). Authors suggested implicit theories interacted with emotions and perception, making it more likely they may feel

threatened or entitled to use aggression, rather than alternative methods. It is unknown whether those perpetrators with implicit theories also experienced neuropsychological functioning difficulties or socio-cognitive difficulties, but one can argue that aetiology of these problems appear to have similar foundations. Childhood experiences and the social environment can have a significant role in the development of implicit theories relating to offending, socio-cognitive difficulties (i.e., low empathy, theory of mind deficits) and neuropsychological dysfunction, as well as psychopathology more generally (McLaughlin et al., 2017; McLaughlin et al., 2020).

### *Implications*

When considering evidence from all studies it appears as though those who are domestically abusive may have difficulties inhibiting their aggressive behaviour, may struggle to consider other options apart from aggression and resort to violence over verbal de-escalation. These difficulties are exacerbated by the perpetrators being more likely to perceive hostility and threat from others, have less concern for the emotional impact on other people and have beliefs which support their use of violence, as well as have difficulty regulating strong emotions.

One also needs to consider that many of these cognitive functions investigated are developed in childhood and there is evidence to suggest that those committing domestic abuse have experienced adverse childhood experiences (Capaldi et al., 2012; Jung et al., 2019; Li et al., 2020). Therefore, it appears as though there are overlapping factors which should be taken into consideration when designing and delivering interventions for domestic abuse offenders, such as a trauma informed approach and

cognitive adaptations which could be identified during a screening procedure.

The need for assessments, screening, and interventions to be more individualised appears clear from the results of this systematic review. Studies spanning 20 years have indicated that cognitive functions (from neuropsychological functioning to implicit theories and socio-cognitive processing) are significantly associated with domestic abuse. However, in practice there have been minimal changes to how we approach and work with those committing such offences. Most interventions follow a cognitive-behavioural model, however if there are cognitive difficulties present then the engagement and understanding of attendees may be more limited than previously thought.

A functional assessment of the offence (which could be done prior to the intervention) and a detailed life history (which is usually available when a person is involved with the CJS) would provide enough information to act as a screen for the presence of cognitive impairments, socio-cognitive difficulties and risk enhancing implicit theories. A secondary screen (i.e., a specific test for executive functioning) could be completed to confirm which difficulties were present, if necessary, to make suitable adaptations. Such adaptations may lead to less attrition and more effective interventions, also including a trauma focused approach to account for the deficits in cognitive functioning stemming from adverse childhood experiences.

### *Limitations*

This review has several limitations; firstly, the outcome measures and statistics reported across studies were varied which meant that meta-



analysis could not be utilised. This meant it was more difficult to draw firm conclusions regarding the impact of cognitive functioning on the likelihood someone would be domestically abusive. The results are more predictive and correlational, i.e., suggesting a relationship between the two variables rather than causal. Furthermore, confounding variables which may also affect cognitive functioning (e.g., substance misuse or head injury) were not measured in all the studies, meaning one cannot be certain as to the relationship between variables, as well as aetiology. The quality of studies also varied, with only 56% scored as 'good', which could suggest results may not be as valid or reliable as they appear.

Another limitation to note here is that intellectual ability was not included in the search terms, nor was it widely discussed or acknowledged in papers included in the systematic review. Intellectual ability includes problem solving, ability to meet cognitive demands and reasoning, and dysfunctions in intellectual ability may affect a person's abilities in memory, language, literacy, mathematics, and knowledge, as well as interpersonal skills (APA, 2013).

People with intellectual disabilities or dysfunctions are more likely to have lower scores in cognitive assessment measures (Institute of Medicine, 2015; Shandera et al., 2010), such as those included in the systematic review and as such, without all the included papers directly measuring or controlling for intellectual ability, one cannot draw firm conclusions from the results. It is recommended that in future systematic reviews exploring cognitive functioning, intellectual ability be included as a search term and considered when including studies, to control for this potential confounding variable.

In addition, very few studies collected data regarding childhood experiences and therefore the hypothesis that implicit theories and socio-cognitive impairments could stem from adverse childhood experiences requires further investigation.

Another limitation was that only English-language studies from western countries were included, due to lack of access to a translator. Therefore, the results are more difficult to generalise to non-western populations. Future research could focus on including a wider range of studies, to consider if there are differences between implicit theories, neuropsychological abilities, and socio-cognitive abilities both between populations more generally and in the relationship to domestic abuse. Similarly, only male participants were included in eligible studies which means information is still significantly lacking on female domestic abuse perpetrators and their cognitive functioning. Future research should consider prioritising female domestic abusers as study participants.

## **Conclusion**

This systematic review identified 15 papers to explore the potential association between domestic abuse and cognitive functioning. Results indicated a relationship between neuropsychological functioning and domestic abuse, which appeared to overlap with the presence of socio-cognitive difficulties and offence supportive implicit theories. It may be hypothesised that these variables interact to exacerbate one another and make it more likely that a person will resort to domestic abuse. However, the mechanism is not yet clear, and it is not certain whether domestic abusers hold all these variables. The role of childhood experiences should not be neglected, as neuropsychological functioning, socio-cognitive

functioning and implicit theories are developed throughout childhood and affected by specific experiences e.g., abuse and neglect. However, as such data was not explicitly identified to be collected in this review it may be pertinent to explore all these variables concurrently in further research to consider the role they may play individually and collectively on the likelihood of someone being domestically abusive. If childhood experiences can be determined to elevate risk in changes to cognitive functioning and therefore risk of domestic abuse, then the role of early intervention may be pivotal to break a cycle of abuse.

This systematic review indicates cognitive functioning may be an area which is associated with domestic abuse perpetration, but research is lacking in community samples and even more so in considering the role of socio-cognitive factors and the relationship between other related factors such as childhood experiences.

Therefore, the next chapter will involve a study undertaken in the community to explore the levels of frequency of domestic abuse perpetration as well as consider other factors identified in the systematic review, namely socio-cognitive functioning. This will aim to provide greater insight into prevalence and frequency of domestic abuse and consider if other factors may be relevant to include in screening, assessment, and intervention of domestic abuse offenders (both in the community and custodial), as well as contribute to theoretical models.

## **Chapter Four - Exploring Theory of Mind, abusive behaviour in relationships and childhood experiences**

### **Abstract**

This chapter presents results from a study exploring the relationship between a socio-cognitive skill, Theory of Mind, childhood experiences and abusive behaviour within relationships. A community sample (N=74) of males completed three measures: the Reading the Mind in the Eyes test (RMET), The Adverse Childhood Experiences Questionnaire (ACE-Q) and a modified version of the Revised Conflict Tactics Scale in an online questionnaire. Results demonstrated a negative correlation between RMET scores and frequency of domestically abusive behaviours and a positive correlation between ACE-Q scores and frequency of domestically abusive behaviours. Further analyses indicated a predictive relationship between RMET scores and frequency of domestically abusive behaviours, of which the most reported was psychological aggression. Findings in relation to social information processing models and their contribution to understanding perpetration and management of domestic abuse are discussed.

*Word count: 8286*

## **Introduction**

### *Domestic abuse*

Domestic abuse (DA) is complex and difficult to define, described as incidents of abusive, controlling, or coercive behaviour occurring within intimate partner relationships (intimate partner violence; IPV), or families (Langlards, Ward & Gilchrist 2009; Pence & Paymar, 1993; WHO, 2021). The Domestic Abuse Act (UK Government, 2021) has also included assault, threats, intimidation, humiliation, manipulation, and various forms of coercion in its definition of DA, emphasising it can take many forms. DA is a pervasive and common problem, experienced by over 2.4 million adults in the UK (Office of National Statistics, 2022) with repeat offending common (Flatley et al., 2010; Morgan, Boxall, & Brown, 2018; Office of National Statistics, 2022; Sherman, 2007). Despite these high numbers of adults affected each year, DA is under-reported, with the Crime Survey for England and Wales finding that only 18% of women experiencing DA reported it to police (CSEW, 2018). During the COVID-19 pandemic the problem appeared to worsen as people were trapped in their homes; women's helplines and emergency services noted a 60% increase in calls during this period (Mahase, 2020). Therefore, the need to understand why this offending behaviour takes place and how we can identify, reduce, and even prevent it, remains of paramount importance.

### *Theoretical models*

Several models attempt to understand why a person (here, a male) commits DA to translate these into effective assessments, management, and interventions. This chapter will focus on social and cognitive theories as these are related to the hypotheses and measures utilised in this study.

### *Social cognitive theories*

Script theory considers how childhood exposure to a violent and abusive environment, can lead to development of distorted relationship scripts, serving to reinforce violence supporting attitudes and normalise abuse within relationships (Cunningham et al., 1998; Gilchrist, 2009; Senkans, McEwan, & Ogloff, 2020). Similarly, Social Learning Theory posits that children in violent households can learn to model violent behaviour they witness their parents acting out, i.e., domestic abuse, particularly if they perceive rewards associated with the behaviour, as described in Chapter One (Bandura, 1977; 1973; Heleniak & McLaughlin, 2020). Exposure to violence in childhood is associated with increased risk of perpetration of DA (Capaldi et al., 2012; Eriksson & Mazerolle, 2015; Jung et al., 2019; Navarro et al., 2022; Song et al., 2022; Spencer et al., 2019) as well as a variety of other negative health and behavioural outcomes in adulthood (Anda et al., 2010; Felitti & Anda, 2010). Moreover, DA perpetrators were found more likely to present with trauma symptoms than controls (Corvo and Johnson, 2013) and have insecure or disrupted attachment (Cameranesi, 2016; Costa et al., 2015; Corvo, 2019).

As outlined in Chapter One, Social Information Processing Theory (Crick & Dodge, 1994; McFall, 1982) identifies stages which a person must move through to generate successful social interactions: encoding, interpretation, goal clarification, response access and construction, response decision and enactment. Aggressive behaviour is suggested to occur after a person interprets hostile intentions from another person, accesses positive memories attributed to aggression and expects a positive outcome

associated with aggression. Adverse experiences in childhood such as abuse and neglect can affect the development of social information processing skills and ability to move through the stages above, which can result in misinterpretation of social cues and deficits in attributing social behaviour (Crick & Dodge, 1994; Dodge & Crick, 1990; Heleniak & McLaughlin, 2020; Weiss et al., 1992). Children exposed to abusive behaviours are more likely to develop a hostile attribution bias (McLaughlin & Lambert, 2017) and have less opportunity to develop typical responses to non-threatening and emotional cues (Heleniak & McLaughlin, 2020). These biases and deficits in social information processing have been associated with later perpetration of aggression (Dodge et al., 1995, Dodge & Crick, 1990; Heleniak & McLaughlin, 2020; McLaughlin et al., 2019).

Considering the theoretical models above and those in Chapter One, there is evidence that adversity and particularly violence exposure in childhood can lead to social information processing deficits, associated with later domestically abusive behaviour, mediated by various other stressors such as emotion regulation ability, impulsivity, stress tolerance, attachment and personality styles and social information processing skills (Kimber et al., 2018; Narayan et al., 2017).

Other variables involved in the perpetration of and inability to prevent, domestic abuse have been identified as: negative urgency and impulsivity, attachment difficulties, cognitive processing, pro-offending implicit theories, negative affect and relationship quality, cognitive training, self-control, and emotion regulation (Blake et al., 2018; Grom et al., 2021).

### *Theory of Mind*

Theory of Mind (ToM) has been defined as the ability to attribute mental states to oneself and others and imagine how others might represent the world (Frith & Frith, 2005; Quesque, & Rossetti, 2020; Premack & Woodruff, 1978). It is a socio-cognitive skill, developed during childhood which allows inference about the mental states, beliefs, thoughts of others and the understanding that we each have separate minds and experience the world differently (Premack & Woodruff, 1978). ToM can also be considered a meta-cognitive ability which allows a person to engage in social interactions (Fortier et al., 2018). ToM has a cognitive component allowing understanding of others' thoughts and beliefs and an affective component allowing processing of other's feelings (Gabriel et al., 2021; O'Brien et al., 2011; Shamay-Tsoory et al., 2007). ToM deficits present as a reduced ability to understand others as psychological beings, perspective take and therefore one may make judgement errors in others' thoughts and beliefs and feelings, leading to social dysfunction (Hasson- Ohayon et al., 2017; Perner & Wimmer, 1985; Weimer et al., 2017). Other research has indicated deficits in ToM abilities are associated with lesser ability to deceive, accurately perceive situations, and have effective social interactions (Baron-Cohen, 1992; Blotner et al., 2021; Ho et al., 2022).

Whilst ToM is a much-researched area, particularly in cognitive disciplines, there are differences in opinion related to its conceptualisation, associated with the overlap with other constructs (discussed in Chapter Five and Six) and the different disciplines that undertake research in ToM, leading to a variety of terms and definitions (Quesque & Rosetti, 2019). Furthermore,



ToM can be oversimplified and not include or refer to commonly occurring everyday experiences such as arguments, disagreements and discriminatory or harmful beliefs which may indicate struggles with ToM (Plastow, 2012). Moreover, other contextual factors such as personal relationships, personal beliefs and motives are often not considered when research discusses ToM (Plastow et al., 2012), which this thesis aims to overcome by considering relationships and implicit theories when discussing domestic abuse and ToM. In addition, there are individual differences within ToM, and it is argued it should not be thought of as a unidimensional construct, as it consists of multiple socio-cognitive processes (Apperly, 2012), which are discussed in this thesis and postulated to be related, explored in a diagram presented in Chapter Six.

Other difficulties arise from the tests used to assess ToM as they can be heterogeneous and measure different components of ToM (Quesquite & Rosetti, 2019). Therefore, it is important that the area of ToM is specifically defined prior to choosing a test and the researcher understand the limitations of such tests and their applications.

Within the DA literature, ToM is one of the most under-researched areas. Cognitive deficits, leading to impaired moral decision making, such as lower empathy *and* dysfunctional theory of mind abilities have been associated with aggressive behaviour in general (Heleniak & McLaughlin, 2020; McLaughlin & Lambert, 2017; Weimer et al., 2017; Weimer et al., 2021; Zucchelli & Ugazio, 2019), although a review found mixed evidence for ToM deficits in offenders compared to controls (Karoglu et al., 2022). Similar deficits have been found in those committing DA (Covell, Huss, & Langhinrichsen-Rohling, 2007; Ruddle et al., 2017). Moreover, domestically

abusive perpetrators were found to have lower ToM scores (using the Reading the Mind in the Eyes Test, Baron-Cohen et al., 2001) than controls, associated with impulsivity and deficits in attention switching (Romero-Martinez et al., 2019).

#### *Adverse childhood experiences*

Adverse childhood experiences (ACEs) were originally defined by Felitti and colleagues (1998) as “childhood abuse and household dysfunction” but also include peer victimisation, poverty, community dysfunction, witnessing violence, social isolation, and discrimination (Finkelhor et al., 2013, 2015; Giovanelli et al., 2016; Karatekin & Hill, 2019). Other definitions are broader and involve any stressful or traumatic event in childhood which was chronic and caused harm and distress (Austin & Herrick, 2014, Kalamakis & Chandler, 2013). ACEs have been associated with later psychopathology, aggression, substance misuse, social information processing deficits and domestic abuse (Felitti et al., 1998; Hammett et al., 2020; Hughes et al., 2017; Heleniak & McLaughlin, 2020; Heleniak et al., 2018; Wheeler et al., 2022).

#### *Rationale*

Whilst there is a sparsity of literature regarding DA and ToM, deficits in ToM abilities *have* been found in another group of offenders, namely those who offend sexually against women and children (Castellino et al., 2011; Elsegood & Duff 2010; Keenan & Ward, 2000). Elsegood & Duff (2010) suggested that these ToM deficits might lead those who offend sexually to misunderstand the intentions or beliefs of women and children, leading to

offending behaviour. A similar mechanism could be driving domestically abusive behaviour, if their family or partners' intentions are misinterpreted, emotions or beliefs misread or misunderstood, and situations attributed incorrectly. ToM deficits could also suggest that those committing DA have difficulty taking their partner's or family members' perspective of how their abusive, coercive, or threatening behaviour can be damaging or distressing. Affective ToM (understanding feelings of others) may be more focused on threat salient information and less on the thoughts and feelings of others and lead to the development of hostile attribution biases (Heleniak & Laughlin, 2020), pervasive into adulthood and interact with ToM deficits, which may result in elevated risk of violence against one's partner.

Moreover, research has suggested that those who experienced abuse in childhood were more likely to present with ToM deficits (Germine et al., 2015; Pang et al., 2021; Seitz et al., 2022; Zucchelli & Ugazio, 2019) and as outlined above, there is support for the hypothesis that DA can develop from exposure to abuse in childhood (Capaldi et al., 2012; Kropp & Cook, 2014; Narayan et al., 2017; Navarro et al., 2022; Ruddle et al., 2017; Song et al., 2022; Wagers et al., 2021). If ToM deficits are present in those committing DA then this could suggest that interventions could be missing a potentially important area and could act to enhance our understanding of why a person commits acts of abuse against partners and family.

Research into the frequency and severity of domestically abusive behaviour in community samples is sparse. There is also little research exploring predictors of DA (within intimate relationships) from a social information

processing perspective. Whilst both men and women commit DA (Office of National Statistics, 2020), for the purpose of this study, domestically abusive behaviour committed by a *male* towards a partner will be explored. Scores from a ToM test and adverse experiences in childhood will also be collected from the sample to consider potential interactions and predictive relationships between these variables and consider how this may affect our understanding of development of abusive behaviour within relationships, improve assessment and later interventions.

#### *Research questions*

Based on previous research findings it was hypothesised that a correlation would be found between ACEs and domestic abuse but due to a lack of previous research surrounding ToM and domestic abuse, it was chosen to be explored in more detail by completing correlational analyses on all three variables to determine if further analyses were warranted. In addition, the frequencies of domestic abuse perpetration were predicted to be widely varied as a community sample was utilised, instead of people convicted for offending behaviour, where one might see more comparable levels of domestic abuse. However domestic abuse offenders are also known to be heterogenous (Dixon & Browne, 2003; Lishak et al., 2021; Robinson & Clancy, 2021).

1. What relationships exist between adverse childhood experiences, ToM and abusive behaviour within relationships?

*Hypothesis: Based on previous research, it is hypothesised that there will be a correlation between childhood adversity and ToM abilities and between childhood adversity and domestically abusive*

*behaviour. It is also hypothesised there may be a correlation between domestically abusive behaviour and ToM abilities, which this study is most interested in. Further predictive relationships will also be explored between the three variables.*

## **Methods**

### *Participants*

A community sample was utilised to learn more about frequencies and types of domestic abuse in non-convicted populations, to understand the scale of the problem in less-reported populations.

Inclusion criteria were that the participant was male and over 18 years old. Data regarding age and ASD diagnosis were collected, as ToM deficits are already known to exist within ASD populations and could confound the data if not controlled for.

### *Recruitment*

Participants were identified and invited using a variety of methods due to difficulties with recruitment. The link to the online survey was posted on a variety of online forums on "reddit" such as research forums. The link was also shared with male friends, family members and others on the University of Nottingham Forensic Psychology Course with a snowballing sample technique utilised whereby people were asked to share the link with other males when completed. A flyer with a QR code linking to the online survey was also shared with male members of the public in train stations throughout London. In addition, attempts were made to share the research with community providers of domestic abuse interventions, parliamentary groups for domestic abuse and various MPs relevant to domestic abuse with

limited, if any, responsivity. For the full details of all contacted, please see Appendix (pg. 249).

### *Power Analysis*

An a priori power analysis was conducted using G\*Power to determine the minimum sample size to test the hypothesis based on regression analysis. Resulted indicated a sample size to achieve 80% power for a medium effect at significance level of .05 was  $N = 40$ . However as stated above, as a community sample was utilised, it was not known how many participants would have perpetrated domestic abuse (or be willing to disclose it) and due to self-recruiting community samples being sparse in this area of research, a larger sample would provide greater generalisation and more information into the scale of domestic abuse perpetration. Therefore, a larger sample was aimed for.

The study collected data from 17<sup>th</sup> August 2021 to 30<sup>th</sup> June 2022 and the final sample size was  $N = 77$ . After data collection, three participants reported they had never been in a relationship and therefore scored 0 for all questions relating to abusive behaviour in relationships. These three cases were therefore irrelevant to the research hypotheses and were excluded from exploratory and statistical analyses, resulting in  $N = 74$ .

The questionnaire was created using 'Jisc Surveys', designed by Bristol University to ensure security and confidentiality. Instructions to participants were included in an initial section of the online questionnaire and included information regarding the researchers and ethical approval. On the first page of each measure, an outline and explanation of upcoming questions was provided.

### *Design and materials*

Three measures collected data on the variables explored in the study: abusive behaviour in relationships, childhood adverse experiences and theory of mind abilities. Abusive behaviour in relationships was operationalised and defined by the behaviours listed in the questionnaire, focusing on psychological, physical, and sexually abusive behaviours.

The Reading the Mind in the Eyes Test (RMET) is described as an advanced ToM test and has been shown to measure ToM abilities accurately and reliably in offender and community groups, (Baron-Cohen, et al., 2001; Castellino et al., 2011; Elsegood & Duff, 2010; Morrison et al., 2019; Vellante et al., 2013). The test asks participants to choose the correct emotional state from four options in 36 black and white photographs of male and female eyes and is the most widely used test to investigate adult ToM (Greenberg et al., 2022; Kynast et al., 2021; Stonewall et al., 2022). This test was utilised here to identify potential variation in ToM ability and was converted from a pencil and paper test to an online version by downloading the document, then uploading each photograph to the online survey and inputting the four responses manually as multiple-choice answers. A glossary of each emotion was included for participants in a separate downloadable document.

The ACE-Q (Felitti et al., 1998) was used to identify prevalence of childhood adverse experiences. The ACE-Q has been utilised for 20 years and has demonstrated to have a significant predictive relationship whereby greater ACE-Q scores lead to poorer adult health outcomes (Felitti et al., 1998; Hughes et al., 2017; Zarse et al., 2019). The ACE-Q has 10 items relating

to a variety of negative and adverse childhood experiences which are scored for presence. This measure was manually inputted into the online survey.

The measure to capture abuse within relationships was designed using the Revised Conflict Tactics Scale (RCTS; Straus et al., 1996), which is a primary measure of domestic abuse in research, capturing multiple forms and frequencies of domestically abusive behaviours (Capaldi et al., 2012; Chapman et al., 2019; Thompson et al., 2016). The RCTS contains four domestic abuse subscales: physical aggression, psychological aggression, sexual coercion, injury, and a further subscale measuring negotiation. The RCTS has been tested with a large community sample and its reliability, validity and factor structure have been robustly demonstrated (Straus et al., 1996; Straus, 2017).

Modified versions of the measure can be used with items removed or added and their results are consistent with the RCTS (e.g., Gilbar et al., 2020; Godbout et al., 2009; McKenna et al., 2016; Straus et al., 1989; Straus, 2017). In this study, only questions pertaining to perpetration of violence were utilised, as participant victimisation was not relevant to the study aims. Additionally, several items were excluded from some subscales (items which included a gun and more extreme violence). The alpha coefficient for the modified version (28 items) was .747.

Two additional qualitative answers were included in the questionnaire to gather information relating to coercive and controlling behaviours within relationships, which are included in the recent definition of domestic abuse by the UK Government (2021). This measure was manually inputted to the



online survey with multiple choice options for frequency of abuse and two free text boxes for the qualitative questions.

### *Ethical considerations*

The measures chosen in this study were selected based on their psychometric properties (previously noted) but there were also ethical considerations. The survey was online, meaning consideration had to be taken regarding the potential impact on respondents from the content of the measure itself. There was no opportunity for the author to observe how the content of the measures may have affected the wellbeing of the respondents (due to content relating to childhood adversities and domestic abuse). The ACE-Q was selected as it included a variety of adversities, rather than focusing exclusively on trauma and abuse. Similarly, some modifications were made to the RCTS to remove explicit and potentially re-traumatising items, whilst still retaining items which would provide valuable data about domestic abuse.

Please see Appendix (pg. 230) for a copy of the online questionnaire and materials.

The University of Nottingham Faculty of Medicine and Health Sciences Research Ethics Committee reviewed the study and returned a favourable opinion (Ethics Reference No: FMHS 222-0321) on 16<sup>th</sup> April 2021.

## **Results**

### *Demographics*

The sample included a variety of age groups: 18–25-year-olds (16.2%), 25–30-year-olds (31.1%), 30–40-year-olds and 40–50-year-olds were both

9.5% of the sample and 50 and above year olds comprised 32.4%. Three participants reported an Autism Spectrum Disorder (ASD) diagnosis, 4.1% of the sample. Table 4 includes total participants per age group and excluded cases.

**Table 4.**

*Age groups of participants (Total N = 74)*

| Age group | Total N | N ASD diagnosis |
|-----------|---------|-----------------|
| 18-25     | 12*     | 1               |
| 25-30     | 23**    | 1               |
| 30-40     | 7       | 1               |
| 40-50     | 7       | 0               |
| 50+       | 24      | 0               |

*\*Note.* 1 case excluded in statistical analyses due to never having been in an intimate relationship. \*\* 2 cases excluded

*Coding of data*

RMET scores were coded as 0 for an incorrect answer and 1 for a correct answer (as in Baron-Cohen et al., 2001) and therefore produced a continuous score of correct answers, indicative of ToM ability (according to Baron-Cohen et al., 2001). ACE-Q scores were coded for presence of adverse experiences (0 = no, 1 = yes) to produce a continuous score for number of ACEs experienced. The modified RCTS was coded as advised in Straus et al., (1996), which is documented in Table 5. Each domestic abuse (DA) behaviour could be marked as present with a frequency which was then converted to a score for analysis.

**Table 5.**

*RCTS Frequency of DA Conversions, as Advised in Straus et al., (1996)*

| Frequency of domestic abuse acts from RCTS | Midpoint conversion | Conversion for analyses |
|--|---------------------|-------------------------|
| 0  | 0                   | 0                       |
| 1  | 1                   | 1                       |
| 2  | 2                   | 2                       |
| 3-5  | 4                   | 4                       |
| 6-10                                       | 8                   | 8                       |
| 11-20                                      | 15                  | 15                      |
| More than 20                               | 25                  | 25                      |
| Not in the last year but did happen before | 7                   | 1*                      |

\*Note. This was scored as 1 for analyses to include prevalence of DA which occurred over a year ago.

Any act that did not occur in the last year but had happened before was coded 7 but scored as 1 when adding frequencies to include prevalence (as advised in Straus et al., 1996). Therefore, the scores for 'total frequency of DA' included abusive behaviours perpetrated at any point.

For additional items relating to controlling behaviours, qualitative data can be found in the Appendix (pg. 251).

#### *Behaviour within relationships*

Table 6 displays mean frequencies of domestically abusive behaviours across age groups and the percentage of participants with that behaviour

present. Frequencies were also considered from the subscales: physical aggression, psychological aggression, sexual coercion, injury, and negotiation, see Table 7. Psychological aggression was the most frequently reported behaviour within intimate relationships and resulting injury, the least frequently reported, see Table 7. It is also important to note that the 'total frequency of DA' variable included a wide range of behaviours ranging from severe to mild (e.g., mild: I insulted or swore at my partner, severe: I punched or hit my partner with something that could hurt) and therefore high overall scores for total frequency do not necessarily indicate high levels of severe behaviour.

Additional qualitative questions asking about financial control and acting on thoughts of infidelity (e.g., looking through partner's phone, facebook) were considered. 83.8% of the sample reported they had never had financial control over their partner. 71.6% of the sample reported they had never acted on thoughts of infidelity. Those who had, reported looking through partners' phones, Facebook, and having jealousy issues.

### *Theory of Mind*

Participants scores on the RMET measure were wide in range, suggesting a variety of ToM abilities in the sample, see Table 8. 36.5% of the sample scored below 22, indicating likely difficulties with ToM abilities and 10.8% of the sample had scores of 30 or over, suggesting strengths in ToM abilities (Baron-Cohen et al., 2001).

**Table 6.***RCTS Total Frequencies and Presence Per Age Group*

N = 74

| Group                 | Total % of participants with presence of DA behaviours in the last year | Total % of participants with presence of DA behaviours not in the last year | Total % of participants with presence of DA behaviours | M frequency of DA behaviours (SD) |
|-----------------------|---|---|--|-----------------------------------|
| Whole group<br>N = 74 | 68.9  | 14.9  | 83.8   | 13.1<br>(22.1)                    |
| Age 18 – 25<br>N = 12 | 75  | 8.3   | 83.3   | 7.2<br>(10.1)                     |
| Age 25 – 30<br>N = 23 | 60.9  | 17.4  | 78.3   | 14.5<br>(19.7)                    |
| Age 30 – 40<br>N = 7  | 57.1  | 28.6  | 85.7   | 19.9*<br>(45.1)                   |
| Age 40 – 50<br>N = 7  | 85.7  | 14.3  | 100  | 22<br>(30.3)                      |
| Age 50 +<br>N = 24    | 66.7  | 25  | 91.7   | 9.8<br>(14.4)                     |

\**Note.* This mean score was affected by one significantly high frequency from one participant of 122 acts. Exclusion of that case would have resulted in M = 2.8

**Table 7.***RCTS Subscale Scores*

N = 74

| Scale                    | Total N of cases with act present | Total frequency of acts | M frequency of acts (SD) |
|--------------------------|-----------------------------------|-------------------------|--------------------------|
| Physical aggression      | 12                                | 72                      | 1<br>(3.6)               |
| Psychological aggression | 60                                | 802                     | 10.8<br>(17.6)           |
| Sexual coercion          | 15                                | 52                      | 0.7<br>(3)               |
| Injury                   | 11                                | 48                      | 0.6<br>(3)               |
| Negotiation*             | 69                                | 3095                    | 41.8<br>(31.5)           |

\*Note. This was not included in the RCTS total frequencies in Table 6 as it is not defined as a DA behaviour but rather a positive example of social interactions in relationships.

*Adverse experiences in childhood*

ACE-Q scores indicated that 89.2% of the sample had experienced one or more adverse experiences in childhood. A wide range of scores across the sample was observed, although mean scores were more comparable, see Table 9. The most frequently experienced ACE was "Did a parent or other

adult in the household ever: Swear at you, insult you, put you down, or humiliate you? Or Act in a way that made you afraid that you might be physically hurt?" which was experienced by 66.7% of the sample.

**Table 8.**

*Reading the Mind in the Eyes Test Mean Total Scores and Across Age Groups.*

| Group                      | Total M<br>RMET score<br>(SD) | Range of total<br>RMET scores |
|----------------------------|-------------------------------|-------------------------------|
| Whole<br>group (N =<br>74) | 22.3 (5.2)                    | 10-32                         |
| 18-25                      | 22.8 (5.3)                    | 12-32                         |
| 25-30                      | 20.2 (5.2)                    | 10-32                         |
| 30-40                      | 22.4 (6.2)                    | 12-30                         |
| 40-50                      | 19.6 (3.7)                    | 16-26                         |
| 50+                        | 23.7 (4.8)                    | 15-32                         |

The second most frequently experienced ACE was "Did a parent or other adult in the household: Push, grab, slap, or throw something at you? Or Ever hit you so hard that you had marks or were injured?", experienced by 56% of the sample. These ACE items arguably denote exposure to psychological and physical aggression in childhood.

**Table 9.***ACE-Q Scores*

| Group       | Total M ACE-Q score<br>(SD) | Range of ACE-<br>Q scores |
|-------------|-----------------------------|---------------------------|
| Total group | 3.4 (2.5)                   | 0-9                       |
| 18-25       | 3.1 (2.5)                   | 0-9                       |
| 25-30       | 4 (2.4)                     | 0-9                       |
| 30-40       | 4.4 (2.3)                   | 2-8                       |
| 40-50       | 3.3 (3.6)                   | 0-9                       |
| 50+         | 2.1 (1.4)                   | 0-6                       |

*Descriptive tests*

Descriptive tests performed suggested a variation in distribution throughout the three measures. RMET scores were normally distributed; skewness was found to be  $-.14$  and kurtosis was  $-.34$ . ACE-Q scores were found to be slightly right skewed in their distribution, with a skewness of  $.64$  but a kurtosis score close to zero ( $-.24$ ). Scores from the modified RCTS indicating total frequency of DA were found to be skewed ( $2.92$ ) and had a large kurtosis ( $9.7$ ), indicating the data was skewed to the right and more heavy-tailed compared to normal distribution. Therefore, non-parametric tests were utilised.

*Statistical Analyses**Correlations*

Correlations were explored using Spearman's Rho. Correlations indicated a moderate negative relationship between total RMET scores and total frequency of domestically abusive behaviours from the RCTS,  $r(73) = -$



.379,  $p = > 0.001$ . A positive correlation was found between total frequency of domestically abusive behaviours and ACE-Q scores,  $r (73) = .307$ ,  $p = .008$ . A non-significant correlation was found between ACE-Q scores and total RMET scores, see Table 10.

**Table 10.**

*Spearman's Rho Correlations Between Variables*

|                        | 1.      | 2.     | 3. |
|------------------------|---------|--------|----|
| 1. Total score<br>RMET | -       |        |    |
| 2. Frequency of<br>DA  | -.379** | -      |    |
| 3. ACE-Q score         | 1.93    | .307** | -  |

\*\*Correlation is significant at the 0.01 level (2-tailed)

### *Regression*

A linear regression with block-wise entry was utilised to consider if both ACE scores and RMET scores were significant predictors for frequency of domestic abuse. Based on the correlational analysis (see Table 10) and other evidence suggesting that exposure to ACEs can lead to development of domestic abuse (e.g., Capaldi et al., 2012; Narayan et al., 2017) ACE scores were entered in the first block of the regression to measure the prediction of domestic abuse frequency, then the RMET scores were added in a second block as a mediator of this predictive relationship.

As the assumption of normal distribution was violated by the frequency of abuse scores, transformations were applied; however, the skewness then shifted from negative to positive and they were not successful. Residuals were identified in two cases (both with significantly higher total frequencies of domestic abuse) therefore the regression was repeated with residuals excluded and included. Data remained non- normally distributed and other residuals were then created. As it was expected that there would be a small number of cases where high levels of domestic abuse were reported compared to the whole community sample, and this study aimed to gather data from a population where information relating to frequency and type of domestic abuse is lacking, it was felt important to include these residuals to reflect the community sample.

Bootstrapping was utilised to allow for the problem of non-normal distribution.

A bootstrapping sample (5000 repetitions) was utilised (to improve replicability; Fornell, 1982; Rousselet et al., 2021) and bias corrected and accelerated chosen to correct for bias and skewness (Chen & Fritz, 2021; Efron & Tibshirani, 1994).

Overall, the results showed that the first model was significant,  $R^2 = .237$ ,  $F(1,73)=22.374$ ,  $p < .001$ , with ACE scores demonstrated to significantly predict frequency of domestic abuse,  $B = 4.354$ ,  $p = .018$ . However, the model with both ACE scores and RMET scores entered explained more variance and also significantly predicted frequency of domestic abuse,  $R^2 = .308$ ,  $F(2, 73) = 15.777$ ,  $p < .001$ . Both ACE scores and RMET scores were

significant predictors ( $B = 3.799$ ,  $p = .019$  and  $B = -1.147$ ,  $p = .018$ , respectively), see Table 11.

ASD cases made up only 4% of the sample and therefore were not felt to confound the results. A regression was run to confirm this, with the confounding variable model found to be non-significant ( $p = .165$ ).

**Table 11.**

*Bootstrapped Linear Regression with Two Block Entry*

| Outcome variable: Frequency of DA |            |          |       |         |        |       |
|-----------------------------------|------------|----------|-------|---------|--------|-------|
| Model                             | Parameter  | Estimate | SE    | 95% CI  |        | $p$   |
|                                   |            |          |       | LL      | UL     |       |
| 1                                 | Constant   | -1.687   | 3.899 | -10.550 | 6.502  | .675  |
|                                   | ACE score  | 4.354    | 1.544 | 1.572   | 7.183  | .018* |
| 2                                 | Constant   | 25.727   | 9.688 | 8.475   | 43.644 | .013  |
|                                   | ACE score  | 3.799    | 1.334 | 1.313   | 6.291  | .019* |
|                                   | RMET score | -1.147   | .446  | -2.167  | -.254  | .018* |

\* $p < 0.05$ .

Note.  $N = 74$

*Discussion*

This study explored the interaction between abusive behaviour in relationships, adverse childhood experiences and the socio-cognitive ability, Theory of Mind. Previous research suggested adverse experiences in childhood can affect development of socio-cognitive abilities (Germine et al., 2015; Pang et al., 2021; Seitz et al., 2022; Zucchelli & Ugazio, 2019)

and deficits in such abilities, in combination with ACEs are associated with greater propensity for violence in adulthood, including DA (Capaldi et al., 2012; Covell et al., 2007; Eriksson and Mazerolle, 2015; Heleniak & McLaughlin, 2020; Jung et al., 2019; McLaughlin, 2019; Navarro et al., 2022; Romero-Martinez et al., 2019; Ruddle et al., 2017; Song et al., 2022; Spencer et al., 2019; Weimer et al., 2021).

This study therefore investigated whether scores on the RMET (a common ToM measure) and ACE scores were associated and indeed predictive of, frequencies of abusive behaviour in relationships (perpetrated by males) and whether there was an association between RMET scores, adverse childhood experiences and abusive behaviour in relationships. Results indicated a negative correlation between RMET scores and DA frequency and a positive correlation between ACE-Q scores and DA frequency. RMET scores and ACE scores were predictive of frequency of domestically abusive behaviours. Other results are discussed below.

In this study, psychological aggression was the most frequently perpetrated abusive behaviour within relationships (60%), followed by sexual coercion (15%) and physical abuse (12%) although positively, high levels of negotiation behaviours were also reported. Other research supports these findings with psychological abuse (i.e., emotional abuse, verbal abuse) found to be the most experienced by women (Heise et al., 2019; McPhee et al., 2022; Women's Aid, 2023). It may be that psychological aggression was felt more acceptable to disclose in this study than physical and sexual aggression, perhaps deemed as less serious or damaging by both perpetrators and victims. However, research suggests psychological

aggression can have a lasting negative impact on victims (Sanz-Barbero et al., 2019; Stubbs & Szoeki, 2022).

A wide variation in frequencies of domestically abusive behaviour was seen within the sample, with four participants reporting predominantly higher frequencies for both total frequency of DA and across the subscales. These scores included total frequencies of domestically abusive behaviour of 122, 87, 71 and 65; whereas the mean frequency of the sample was 13.1 acts. As can be seen from Table 7, there were low numbers of participants with physical aggression, sexual coercion, and injury present (ranging from 11-15 participants) and the mean frequency of acts in these subscales was also low (1, 0.7, 0.6, respectively). This indicates that most of the males in the sample (ranging from 59-63 participants) were not engaging in any physical aggression, sexual coercion, or injury and even those who did, were doing so less frequently, as indicated by the low mean scores. However, there were a small number of males (N=4) who engaged in more frequent and varied abusive behaviour, across all subscales. This is supported by previous identification of typologies of domestic abuse offenders who differ in terms of severity and frequency of behaviours, risk factors and psychopathology (Ali et al., 2016; Holtzworth-Munroe & Stuart, 1994; Holtzworth-Munroe & Meehan, 2004) or occur on a continuum (Carlson & Dayle Jones, 2010; Huss & Rolston, 2008). Additionally, reviews of police records have indicated that domestic abuse was committed in a disproportionate manner whereby the highest levels of harm resulted from a small number of perpetrators (Bland, 2020; Robinson & Clancy, 2021).

Adverse experiences in childhood were reported by 89.2% of the sample (at least one act,  $M = 3.4$  acts). This appears somewhat higher than other community samples, where a range of 66-79% of participants reporting ACEs was found (Roth et al., 2022; Thomson & Jacque, 2017) and mean scores of 2.37 and 2.77 acts (Mongan et al., 2019; Tranter et al., 2021, respectively). In this study, over half the participants disclosed psychological or physical aggression exposure in the family home (66.7% and 56%, respectively) which again appears high. This could be explained by the anonymity provided by the online format, increasing participants' willingness to disclose, compared to lab-based studies. It could also be that those in the sample had other characteristics which are also associated with higher ACEs, such as low SES, low educational achievements, being multiracial or being unemployed (Giano et al., 2020; Haughland et al., 2021).

Scores from the RMET were in the lower range, with 10.8% achieving scores over 30 ( $M = 22.3$ ), although other research has shown similar results ( $M = 22 - 26$ ; Kynast et al., 2021;  $M = 24$ , Preti et al., 2017). One must consider the potential impact of completing the questionnaire outside of a laboratory environment with more likelihood of external distractions and less motivation, as well as participants possibly completing the test on mobile phones which may have made it more difficult to identify expressions. However, this study was initially designed and implemented during the COVID-19 lockdown and therefore an online format was the most effective method of recruitment.

### *Correlational relationships*

The hypothesis that an association would be found between study variables was met as a negative association was found between RMET scores and frequencies of abusive behaviour and a positive association between ACE-Q scores and frequencies of abusive behaviour. The negative correlation is supported by previous research which found perpetrators of domestic abuse (compared to non-violent individuals) were more likely to display deficits in social information processing abilities measured by RMET (Romero-Martinez et al., 2013, 2019). Similarly other evidence has demonstrated that childhood adversity was associated with domestically abusive behaviour (Capaldi et al., 2012; Navarro et al., 2022; Song et al., 2022).

#### *Predictive relationships*

The hypothesis that a predictive relationship would be found between variables was met, as a regression model to measure prediction of domestic abuse frequency was significant when ACE scores were entered in the first block. RMET scores were then entered in the second block and this model explained more variance than the first, with both variables (ACE scores and RMET scores) remaining as significant predictors.

As ToM abilities, measured by the RMET, were found to predict domestically abusive behaviours, it may be that those with difficulties in this socio-cognitive skill have differences in understanding the mental states of others which therefore affect their ability to process social information and respond accordingly. If people have history of violence exposure in childhood, research has suggested that they may be more likely to perceive threat or hostility in neutral situations as their information processing may prioritise apparent threat cues over other relevant information, leading to a higher

likelihood of utilising behaviour such as psychological or physical aggression (Heleniak & McLaughlin, 2020; McLaughlin & Lambert, 2017; Romero-Martinez et al., 2013; Romero-Martinez et al., 2019). The current study did find high levels of ACEs in the sample, and ACE scores were also found to be a significant predictor for frequency of domestic abuse, (even when RMET scores were included), suggesting that childhood adversity may play a role in later perpetration of violence, by its impact on socio-cognitive and information processes. Therefore, ToM deficits could result in misinterpretation of neutral social cues and interactions which *could* result in a perception of threat, but there are also other explanations to consider. It may be that the ToM deficit results in misidentification of their partner's mental state, resulting in an unexpected response or reaction to a situation. For example, domestic abuse offenders were more likely to misidentify fear as happy in female faces than controls (Seinfeld et al., 2018) which could lead to poor perspective taking of their partner's thoughts and feelings and continuing to act in a way which caused fear. ToM deficits could also create confused and frustrated interactions in a relationship whereby the partner feels misunderstood leading to more arguments and conflict and affecting the quality of the relationship. Over time, these continued misperceptions and unexpected reactions may exacerbate and make psychological aggression and physical aggression more likely to be utilised to resolve the conflict.

As psychological aggression was the most frequently occurring abuse it is hypothesised that this behaviour was most affected by differences in RMET scores and may be responsible for the predictive relationship. Psychological aggression arguably involves more social interaction than physical or sexual



aggression and therefore may rely more on social information processing skills, thereby more affected by deficits in skills, such as ToM. When considering the subscale scores from the modified RCTS from Table 7, and RMET scores from Table 8, one can observe that 60 participants reported perpetrating psychological aggression. The RMET mean score for these 60 participants was 21.8. Comparing to those participants with no perpetrated psychological aggression (N = 14), their mean RMET score was 25.5, which is higher than both the mean score for participants perpetrating psychological aggression and the overall sample's mean RMET score (M = 22.3). In addition, the cases with no psychological aggression present, also had no other domestically abusive behaviours present, except for one case, with 2 acts of sexual coercion present. Therefore, higher RMET scores were present in those with no psychological aggression, providing preliminary support for the relationship between psychological aggression and lower RMET scores. Further exploration within this study was above the scope of this paper but appears worthy of further research.

One caveat of these findings regards difficulty defining what "one unit" of domestically abusive behaviour would consist of, as behaviour is not typically measured in units and the DA variable here, included all acts. DA is difficult to define as a whole concept due to its variety and complexity as well as different opinions and definitions as to what constitutes DA, IPV, family only violence and so on. Therefore, opinions will likely differ as to what a "unit" constitutes; for example, would this include all types of abusive behaviour, would a unit be for one type of behaviour only or include more than one type of act? Further research would be advisable to better operationalise a unit of DA and perhaps future studies should focus on one

type of aggression in domestic abuse (e.g., psychological aggression) to identify more accurately what the unit in the predictive relationship constitutes.

In addition, there are those who suggest that RMET is assessing emotion decoding abilities rather than theory of mind (e.g., Oakley et al., 2016) although RMET remains one of the predominant measures in theory of mind research (Halleback et al., 2009; Pinkham et al., 2016; Stonewall et al., 2022) and is reported to be sensitive to social cognitive impairments (Baron-Cohen et al., 2001). Nonetheless, emotion decoding is a vital part of socio-cognitive abilities (Fortier et al., 2018; Germine et al., 2015) and there is evidence for their role in perpetration of domestic violence (Romero-Martinez et al., 2013, 2019, 2019a).

Further research would be helpful to understand whether emotion decoding *and* theory of mind both play a role in perpetration and prediction of domestic violence, by utilising additional measures of both ToM, emotion decoding and completing further regression analyses. Regardless, an associative and predictive relationship was found here between RMET scores (from which we inferred theory of mind ability), and frequency of DA behaviours.

Moreover, to the authors knowledge this is the first study to examine these variables in their relation to domestic abuse within relationships in a community sample and consider predictive relationships. Therefore, findings are important to add to current understanding of prevalence of domestic abuse in the community, and how factors such as theory of mind

abilities and adverse childhood experiences may interact to affect perpetration of domestic abuse in relationships.

*Theoretical applications*

Results in this study link to models of social information processing as deficits in socio-cognitive abilities, as measured here by the RMET (and inferred as ToM ability) were predictive of abusive behaviours in relationships. What is less clear is what is driving and contributing to this relationship; whether domestic abuse was due to a partner's misperceived emotional expression (due to ToM deficits) or whether it resulted from the perpetrator's inability to make sense of their partner's emotion in a social interaction and have issues with constructing and deciding on their response. In other words, it is not clear at what stage of information processing the ToM deficit may result in domestic abuse. It is also uncertain how ToM may interact or indeed affect other known risk factors of domestic abuse in relationships such as alcohol misuse, violence supportive attitudes or emotion dysregulation (Birkley & Eckhardt, 2019; Capaldi et al., 2012; Kropp & Cook, 2014).

Previous research has supported the role that social information processing deficits have in domestic violence (Marshall & Holtzworth-Munroe, 2010; Taft et al., 2021; Romero-Martinez et al., 2013, 2019, 2019a, 2022) however, most of this research has focused on emotion decoding abilities of perpetrators. As above, this study suggests there is a need to further understand the separate contributions of ToM and emotion decoding and consider whether they both significantly predict frequency of domestic abuse perpetration within relationships, with a focus on psychological aggression, which was most frequently perpetrated in this study. Models

currently focus on either the impact of childhood experiences on likelihood of domestic abusive perpetration or how socio-cognitive deficits are associated with domestic abuse; few combine both variables.

There was also an association between RMET scores, adverse childhood experiences and abusive behaviour within relationships, and both were found to be significant predictors for frequency of domestic abuse, adding further to the trajectory that adverse childhood experiences can lead to socio-cognitive deficits and later domestically abusive behaviour. It may be that the deficits in socio-cognitive processing affect a person's ability to decode emotions, interpret situations and consider mental states of others, affected by their childhood experiences, and therefore increase the likelihood of a person misperceiving threat, and utilising violence rather than other strategies.

### *Limitations*

Results from this study need to be considered in light of some limitations. Firstly, a larger sample size may have reduced the issues with distribution of data and allowed for more analyses to have been undertaken with the subscales. However, it was difficult to recruit a community sample, which may have related to the topic of the research which could be distressing, or concerns regarding confidentiality or sharing of data. Moreover, people who voluntarily participate in studies are not necessarily going to be the same people who may engage in abusive behaviour and indeed the variation was a useful indication of the heterogeneity of the group.

As mentioned in Chapter Three, the potential impact of intellectual abilities on the measures used in this study has not been considered and may have

affected scores on the RMET. Literacy deficits, processing speed, attention deficits and other difficulties may have also affected participants comprehension with the other two measures, as both involve reading items and self-report. As such, it may have been a confounding variable that was not controlled for.

There are some limitations with the measures utilised in this study in that the ACE-Q is typically used for screening of childhood experiences. However, due to choosing a community sample it was felt the least intrusive and explicit (with no ability to provide a proper debrief) whilst still gathering relevant information pertaining to childhood adversities.

The RCTS has gathered criticism due to a lack of focus on context of abuse in relationships and not including coercive and controlling type behaviours (see response from Straus, 2017) although is the only tool that captures the variety of behaviours involved in abuse in relationships (Chapman & Gillespie, 2019; Thompson et al., 2006). Here, the questionnaire was modified to focus on specific acts and utilised to identify frequency and prevalence of acts in a community sample rather than compare both partners' experiences. However, the modification may have resulted in the measure being less valid or reliable and may have benefitted from a pilot test being run.

Whilst the RMET is one of the most common measures for ToM, other studies utilise it to measure emotion decoding ability (e.g., Marshall & Holtzworth-Munroe, 2010; Romero-Martinez et al., 2013, 2019) and therefore it cannot be certain whether the predictive relationship between RMET scores and domestically abusive behaviour results from ToM or emotion decoding

abilities. However, arguably emotion decoding involves mental state inference, which is part of ToM and therefore future research will be necessary to identify what specific component of ToM is important to consider in domestic abuse. As domestic abuse is a complex and highly heterogeneous behaviour (Ali et al., 2016; Bland, 2020) it may be that both ToM and emotion decoding affect domestic abuse, associated with other factors such as adverse childhood experiences, and other known predictors such as trait anger, attitudes, alcohol, and substance misuse (Capaldi et al., 2012; Godfrey et al., 2021; Romero-Martinez et al., 2022).

Using a self-report measure may have also led to issues with self-report bias whereby people do not feel comfortable disclosing actual acts and may have led to under reporting. However, there were still high frequencies and severe acts reported in the questionnaire.

#### *Future directions*

Future research would benefit from exploring specific types of abuse, particularly psychological aggression, which was the most frequently occurring in this sample, but often underrepresented in research (Stubbs & Szoeké, 2022). Due to its nature (i.e., often more serious consequences are associated with physical and/or sexual abuse) psychological aggression may also be less focused on by police and targeted in interventions. In addition, as the RMET is not designed for specific populations, such as those committing domestic abuse, future research may benefit from development of a similar tool but with a focus on emotions which may be more prevalent in intimate relationship conflict situations.

Further research utilising additional, more specific socio-cognitive measures, and involving qualitative data may be useful to gain more information about the context and perception of domestically abusive behaviours and add further richness to the data about the nature of social interactions in intimate relationships and the potential role of social information processing.

From these findings, as well as previous research into social information processing, including ToM, there may be a need to further evaluate the potential utility of including socio-cognitive variables in screening, assessment, and intervention for domestic abuse offenders to ensure this identified variable is properly understood and targeted to mitigate risk.

### **Conclusion**

Domestic abuse within relationships is a highly complex set of behaviours and therefore will likely have a highly complex set of predictors and risk factors. From these preliminary results, theory of mind appears to be one variable that is worthy of further exploration, as a predictive relationship was found between RMET scores and frequency of domestic abuse and adds further support that ACEs are related to domestic abuse.

Further research may involve more comprehensive tests and further collection of associated variables such as other socio-cognitive skills (e.g., emotion decoding) as well as a greater focus on psychological aggression within relationships, which is often underrepresented in domestic abuse research. Understanding more about the history of a person as well as their socio-cognitive abilities will help to provide more insight into the risk of a

person committing domestic abuse, as well as assisting with assessments and designing suitable interventions.

This study built upon results from Chapter Three which suggested that cognitive functioning, particularly socio-cognitive functioning appears associated with domestic abuse perpetration. Results here confirmed this, whereby ToM scores from a measure (RMET) were predictive of the frequency of domestically abusive behaviour in a community sample. In addition, domestic abuse was associated with adverse experiences in childhood and ACE scores were also a significant predictor for domestic abuse frequency. Therefore, the next chapter will explore how these results may support assessment, formulation, and intervention with a service user, who presented with complex needs relating to EUPD, childhood adversity and current issues relating to violence of various forms, including a history of domestic abuse. It will aim to build upon results from Chapter Four and explore how by understanding more about socio-cognitive functioning and thereby adapting intervention accordingly may improve ways of working with complex individuals with adverse childhood experiences and histories of violence, including domestic abuse.



**Chapter Five - Psychological assessment, formulation, and intervention with a service user with a history of aggression, trauma, and socio-cognitive difficulties – what helps?**

**Abstract**

This paper describes the assessment, formulation and intervention designed for a client (pseudonym Harry) who resided in a low secure forensic rehabilitation unit at the time of writing. Harry provided informed consent for his participation in this study. Harry had a significant history of violence and presented with deficits in his socio-cognitive abilities, for example theory of mind and mentalisation. The aim was to explore such abilities relation to aggression and emotion dysregulation. The case study considers if improving emotion regulation and discussing theory of mind and mentalisation can have a positive impact on the frequency and severity of different types of aggression. The development of theory of mind and mentalisation abilities are also considered, in the context of specific presenting problems often seen in forensic populations and methods to overcome barriers to engagement are identified. Outcome measures suggested emotion regulation was important to target alongside theory of mind and mentalisation skills in an intervention with Harry, as it improved his ability to reflect, reduced all types of aggressive behaviour and increased his understanding of consequences of his behaviour.

*Word count: 7626*

**Introduction to case**

Harry was a 48-year-old male, with approximately 16 previous psychiatric admissions and a diagnosis of schizoaffective disorder, behavioural and mental disorder by substance misuse and emotionally unstable personality disorder (EUPD). He engaged in multiple acts of aggressive behaviour whilst in the community, supported accommodation and as an inpatient, the majority of which were triggered by a deterioration in his mental health due to substance misuse. At the time of writing, Harry resided on a low secure forensic rehabilitation ward where he had been for 13 months, but his total length of admission in other hospitals was four years. He was becoming increasingly frustrated by his detention and struggling to comprehend the reasons for community and ward teams preventing his discharge pathway initiation. However, incidents of bullying, aggression, verbal threats, property damage, head banging, sexually inappropriate behaviour towards female staff and physical assault did not reduce over the 13 months and therefore it was not felt appropriate to move to discharge. It appeared from discussions with Harry and staff that he struggled to think about the impact of his behaviour on himself and others, manage impulsivity and his strong negative emotions (e.g., anger, distress).

*Rationale for intervention with Harry*

Harry was struggling to tolerate his long stay on a secure ward, having only experienced admissions on Psychiatric Intensive Units (PICUs) for short periods prior to 2019. He reported frustration and agitation being on the ward, which affected his relationships with ward staff. His psychotic symptoms were managed by compliance with medication and therefore his barriers to discharge and frequent difficulties involved sexually inappropriate behaviour, aggression, boundary pushing and socio-cognitive

difficulties including struggling to perspective take and consider consequences of his actions. Discussions with the ward multidisciplinary team (MDT) suggested Harry might benefit from psychological engagement to understand more about his history, identify perpetuating factors, teach skills to regulate his emotions and improve his confidence to cope.

A professionals meeting with Harry's care coordinator, the local borough housing manager and other stakeholders identified significant concerns relating to previous behaviour and presentation when in supported accommodation. The community teams required such risks to be reduced before they would accept his case going to panel for funding and offering accommodation. Therefore, this case study will discuss how Harry was engaged with an assessment, formulation, and intervention to reduce his aggression, improve emotion regulation and ability to consider the impact of his behaviour on others and himself. The intervention aimed to demonstrate that Harry would be able to cope with high emotional arousal, impulsive behaviour and manage aggression to gain a place in supported accommodation.

## **Assessment**

### *Procedure*

To understand more about Harry's life, he was engaged in three sessions to complete a timeline, whereby he was encouraged to mark significant events in his life on a line. A copy of this timeline is included in the Appendix (pg. 255). Collateral information from previous risk assessments and Care Programme Approach (CPA) reports were also considered to corroborate information such as specific dates of events, hospital admissions and presentation. Any discrepancies were discussed in session with Harry (if felt

necessary) and information updated in the timeline and formulation where appropriate.

### *Childhood*

Harry stated he was born addicted to opioids and struggled at birth, being placed in an incubator for two months; he had no maternal contact for the first 8 weeks of his life. Harry never had contact with his biological father. Harry was expelled from school aged three due to disruptive and aggressive behaviour and thereafter attended a "special school" where he continued to act aggressively towards peers and teachers. He described witnessing substance misuse from his mother and step-father and feeling neglected and rejected, both at home and at school (either directly by way of expulsion or suspension or indirectly by feeling different to his peers and unable to socialise). Harry reported that perhaps he behaved aggressively at school because he was experiencing difficulties at home, not having his needs met. His mother left (when Harry was aged six), leaving his stepfather to raise him and rejected any attempts of Harry to contact her, even into his adulthood.

### *Adolescence*

Harry reported feeling unsure of where he fit in society and stated that using cannabis at age 14 allowed him to identify with other substance users, gaining a sense of connection and acceptance. Substance use was reported as the initiating factor for Harry to gain a sense of confidence and identity, which was increased by him beginning to attend large music events at age 16 and using other substances such as ecstasy, LSD, and amphetamines. Harry reported he was expelled around this time and gained employment,

whereby his supervision at home decreased even further, resulting in him feeling there were no rules.

Harry stated his substance misuse increased throughout his adolescence and at age 22 he experienced a 'breakdown' precipitated by multiple stressors including employment difficulties, intimate relationship difficulties and financial difficulties. Harry had his first intimate relationship at age 22 which involved domestic violence and substance use. Due to his domestic violence and aggressive behaviour, his partner ended the relationship.

### *Adulthood*

At age 23 Harry stated he was "not happy" and experienced "18 months of chaos" whereby he misused substances and alcohol, experienced mental health difficulties and engaged in violent behaviour and property damage. Harry described breaking doors in his flat and throwing a fridge over his balcony. He was placed on a Section 3 order (Mental Health Act, 2007) and was thereafter regularly admitted into PICUs, drank heavily upon discharge, and was readmitted shortly after. At age 27 Harry was in a volatile relationship, characterised by substance misuse and domestic violence and which resulted in his partner stabbing him in the lung, nearly killing him. Harry reported he began smoking crack cocaine, which exacerbated his mental health difficulties, increased his paranoia and aggression, as well as self-harming behaviours (head banging). Harry identified he entered a cycle whereby he would be admitted under a Section 136 or Section 2 and would smuggle substances onto the ward, selling them to patients to make money. Upon discharge he would continue to misuse substances and alcohol, damage property in his supported accommodation and engage in antisocial

behaviour, leading to multiple placement breakdowns and readmissions to hospital. Harry stated his peer group were all antisocial and he was stuck in a cycle of recurring risky and self-destructive behaviour, which at the time he felt was normal but during assessment reflected was associated with low mood and difficulties coping. Harry attempted suicide on multiple occasions and engaged in extreme self-harm, e.g., putting his head through a window and punching himself unconscious. He identified that substance misuse often exacerbated his distress and led him to engage in highly risky behaviour.

Harry reported he saw his mother in the street when he was approximately 30 years old and she "snubbed him", ignoring him. Harry stated this had a significant negative impact on his mental health and he struggled to cope, increasing his substance misuse, and resulting in a Section 136 admission.

Throughout initial assessment, Harry reported little motivation to change and an inability to see what was right, having become desensitised to a turbulent life fuelled by addiction, violence, and mental health instability. Harry reported being in hospital gave him a sense of security.

Harry identified a major period of stability (10 years) in his life when he was in a relationship and felt nurtured, safe, and happy. His substance misuse decreased (but continued) and he had no hospital admissions. However, this partner died due to substance misuse and Harry reported he has struggled since her death. Harry also stated he was blamed for his partner's death by her family and friends as they misused substances together and he felt abandoned by people around him.

*Cognitive assessment*

A Weschler Adult Intelligence Scale (4<sup>th</sup> Edition) assessment (WAIS-IV, Weschler, 2008) was completed with Harry in June 2022 after the ward team raised concerns he had a learning disability, due to difficulties inhibiting behaviour, sexually inappropriate behaviour, emotional dysregulation, and difficulty adhering to rules. Results of the assessment indicated Harry's cognitive functioning was in the Borderline to Low Average range and he therefore did not have a learning disability. However, his overall ability remained at the level of less than 7% of the general population. Harry's main difficulties regarded his processing speed, which was markedly lower than his verbal comprehension, perceptual reasoning and working memory. Harry's difficulties with processing speed were supported by observations of his behaviour on the ward whereby he was impulsive, did not consider alternatives or consequences of his behaviour and struggled to process information at times, leading to unfavourable outcomes, such as aggressive behaviour, offensive and inappropriate comments, and lack of learning.

Whilst Harry's presentation may have been previously interpreted as learning difficulties it appears more explicable when one considers the impact of complex trauma throughout his childhood, which likely resulted in an insecure attachment style such as preoccupied attachment. Such an attachment style likely contributed to Harry's mental health and personality difficulties, including emotional dysregulation, difficulties forming interpersonal relationships, maintaining boundaries, and managing impulsivity and aggressive behaviour. In addition, one must consider the likely impact of long-term substance misuse and headbanging on his cognitive functioning.

The results from the WAIS-IV were considered when designing the intervention, to ensure that Harry could engage meaningfully, and in creating the formulation. See Table 12 for an overview of scores.

**Table 12.**

*Sum of Scaled Scores to Composite Score Conversions.*

| <b>Scale</b>         | <b>Sum of Scaled Scores</b> | <b>Composite Score</b> | <b>Percentile Rank</b> | <b>Confidence Interval (95%)</b> |
|----------------------|-----------------------------|------------------------|------------------------|----------------------------------|
| Verbal Comprehension | 23                          | 87                     | 19                     | 82-93                            |
| Perceptual Reasoning | 21                          | 82                     | 12                     | 77-89                            |
| Working Memory       | 15                          | 86                     | 18                     | 80-94                            |
| Processing Speed     | 9                           | 71                     | 3                      | 66-82                            |
| Full Scale IQ        | 68                          | 78                     | 7                      | 74-82                            |

**Formulation**

*Development and application*

The purpose of the formulation was to understand Harry’s emotion dysregulation, instability and impulsivity, difficulties with interpersonal



relationships and understanding the impact of his behaviour on others and identify perpetuating factors to target in intervention.

Due to difficulties identified in the assessment regarding attachment, interpersonal relationships, and childhood trauma a psychodynamic style, focusing on attachment and key conflicts (using structure and format suggestions from: Perry et al., 2006; Summers & Martindale, 2013) was selected as it was felt most appropriate to explore Harry's difficulties. The formulation was shared with Harry over several sessions to increase his understanding of the functions of certain behaviours, such as seeking closeness linked to defences against anxiety, inappropriate comments, dysregulated emotions, and interpersonal difficulties. The ward team was also provided with an overview of the formulation to ensure that Harry was consistently responded to and supported to model appropriate interactions and responses, which he often struggled with and resulted in negative responses from both peers and staff.

### *Formulation*

Harry, a 48-year-old single man currently residing in low secure forensic services, has been detained for 4 years due to aggressive behaviour, substance misuse and a deterioration in his mental state. Harry has been diagnosed with EUPD and schizoaffective disorder, exacerbated over the last 28 years by significant alcohol and substance misuse, interpersonal conflict, and self-neglect. Harry's mother had substance misuse difficulties throughout his childhood and left the family home when he was a young child, after several years of turbulent relationships with his stepfather. Harry felt rejected by his mother even into adulthood as she declined contact with

him. He maintained a relationship with his stepfather, although this was marred by Harry's frequent drug use, hospital admissions and violence.

Harry was born prematurely, addicted to opioids and therefore spent the first two months of his life separated from his mother in an incubator, with minimal human contact. He was then subsequently neglected at home as both his mother and stepfather continued to misuse substances and have regular parties, giving him little affection and attention. Harry exhibited aggressive and antisocial behaviour from three years old, perhaps to gain notice and seek care from adults, which then resulted in his expulsion from primary school and attendance at a 'special school' until age 16, where he was often separated from other children due to his aggressive behaviour. Harry began to use substances at age 14, reporting this was the first time in his life he felt connected and accepted by others.

Harry has several key conflicts which are likely to have developed due to his turbulent and often confusing relationships with his caregivers as a child. Harry had trauma present from birth whereby he was separated from his mother, never getting the closeness and skin to skin contact an infant needs (World Health Organisation, 2017). Harry may continue to experience that craving for closeness and intimacy which he never achieved as a baby, seeking out a maternal holding. Harry often attempts to initiate closeness with people who are not appropriate, such as staff on the ward and seems unable to adapt his behaviour even when given negative feedback.

Harry's early relationships involved neglect, feelings of abandonment and rejection from family, adults at school and peers, likely resulting in a preoccupied attachment which continues to affect his adult relationships,

by way of fear of abandonment and anxiety about relationships. One can observe Harry's need for closeness and acceptance by others which when is not achieved is often followed by dysregulated behaviour and aggression. This may reflect a defence or protection against rejection from others, whereby if he feels he will be rejected, acts out aggressively or inappropriately to push a person away before they reject him. Harry can be prone to push boundaries and be inappropriate with staff to build relationships which may be a repeated pattern from his childhood and later adult life whereby he wanted to fit in but felt different to others due to his mental health, strong negative emotions, and substance misuse. Preoccupied attachment is also associated with low self-esteem and as above, a strong need to fit in, which often feels unachievable (and can be seen from statements made by Harry on Pg. 148). Please see Figure 1 and 2 in the Appendix (pg. 249). for further details about these repeating patterns of behaviour, considering Malan's triangles (Malan, 1979; Malan & Coughlin Della Selva, 2006).

Harry learnt from a young age that strong emotions and aggression got him noticed by others and held in mind and therefore even a negative response was still preferable to neglect. However, such attempts inadvertently push people away and thus fulfil his expectations and anxieties of rejection, leading to yet more anger, frustration, and likely sadness. Harry therefore uses defences of powerful emotional outbursts, which often appear uncontrollable, and can be seen as his way of getting a response, any response being better than no response. It is also likely that Harry failed to learn to regulate his emotions or solve conflict without aggression due to poor role modelling from his parents and lack of appropriate exposure to

positive problem solving. This pattern may therefore be repeated in adulthood as Harry struggles to manage his strong emotional arousal, feels overwhelmed and reacts aggressively or in a highly aroused manner, thus reinforcing his anxiety of being rejected by those around him.

Harry may find it difficult to build and maintain appropriate and meaningful relationships with staff due to the difficulties with a desire for connection, intimacy and being held in mind. He may make attempts to be overly close, both physically and verbally to get his attachment needs met, which are then rejected by staff. Once he experiences this rejection, Harry is likely to resort to his other method of gaining closeness or a response from another person: aggression or an emotional outburst. Such displays of aggression or emotion are likely to provide that attention and even closeness (by way of restraint or verbal de-escalation) which Harry was attempting to gain, therefore reinforcing the behaviour, and re-enacting his childhood trauma. It will be important for Harry to identify other ways of finding comfort and reducing anxiety which are more appropriate and therefore prevent reinforcing of challenging behaviour patterns.

Such repeated patterns of behaviour to gain closeness, connection and acceptance with others but resulting in rejection appear to have formed beliefs including "I am a waste of space", " I am unable to cope with my emotions", "I am not as good as others" and "I can't do what others do because I am a waste of space" which were identified by Harry during a session. Low motivation to change and feelings of helplessness and hopelessness were postulated (and then confirmed via discussion) to be precipitated and perpetuated by such beliefs as they contributed to Harry's belief that he would be unable to change his behaviour as he is a *waste of*

*space and not as good as others.* In a ward round, Harry reported “*I have been like this since I was three years old, I will always be like this*”. Harry stated that he had not been provided any evidence to the contrary of such beliefs as a child and the neglect and rejection from his parents, other adults and peers increased this low self-worth.

### **Theoretical literature**

After the assessment and formulation with Harry, the following theoretical literature was felt relevant to include to provide further information and context to both his current difficulties and areas that will be further explored and worked upon in the intervention.

#### *Emotionally Unstable Personality Disorder (EUPD)*

EUPD is characterised by emotional instability, impulsivity, risk related behaviours, interpersonal difficulties, and intense reactions to social stimuli, including high levels of distress (APA, 2013; Bora, 2021; Linehan, 1993). Studies have also demonstrated that people with this diagnosis have difficulties identifying and incorporating their emotions with other people (Harari et al., 2010; Vegni et al., 2021) and abnormalities in their social cognitive information processing which is a core mechanism in the development of EUPD (Bateman & Fonagy, 2003; Fonagy 1983). In addition, those with EUPD can present with other cognitive difficulties which can lead to deficits in neuropsychological skills such as attention, processing speed, memory, and executive functioning (Ruocco, 2005; Unoka & Richman, 2016; Vai et al., 2021).

Frequency of EUPD in forensic settings has been demonstrated to be between 25 and 55% (Ellison et al., 2018) as risk related behaviour, impulsivity and emotion dysregulation can lead to contact with the criminal

justice system (Moore et al., 2017). Those with EUPD can be at more risk remaining in psychiatric hospital for prolonged periods (Hyland et al., 2021; Qin et al., 2005; Nawaz et al., 2021), with better prognosis seen in the community with longitudinal interventions (Comtois et al., 2007; Flynn et al., 2021; Stiglmayr et al., 2014).

Childhood trauma is an important aetiological factor for EUPD, and symptoms may be better understood in the context of reactions to the adverse situations a person has experienced, whereby they have not learnt how to regulate and cope with their emotions and may have difficulties forming attachment during development (Linehan, 1993; Sharp & Fonagy, 2008; Shaw & Procter, 2005; Stewart et al., 2019). Fonagy and colleagues have also proposed a mentalisation theory of EUPD which suggests people have difficulties associated with understanding social cues and mental states of others (Sharp and Fonagy, 2008) and have difficulties in social cognition (Anupama et al., 2018; Bora, 2021; Roepke et al., 2013). Moreover, patients with personality disorders are known to have difficulties identifying mental states in themselves and others and struggle to cope with distress and problematic situations (Moroni et al., 2016; Semarari et al., 2014).

Social information processing and socio-cognitive abilities are developed through childhood (De Rosnay & Hughes, 2006; through attachment, Fonagy, 2011) and research has postulated that certain experiences (e.g., abuse, neglect) may lead to deficits in mentalisation skills, empathy and Theory of Mind abilities (Cicchetti et al., 2003; Heleniak & McLaughlin, 2020; Fonagy et al., 2016) which may then affect ability to reflect, perspective take, adapt and utilise alternative strategies to regulate emotion and

behaviour (Grun & Compas, 2020; Heleniak & McLaughlin, 2020; Velotti et al., 2019).

*Mentalisation, Theory of Mind and Empathy*

These constructs will be discussed as from Harry's assessment (including cognitive assessment), formulation and EUPD literature, it was hypothesized that he may have difficulties with mentalisation, theory of mind and empathy which could then be targeted via intervention.

Mentalisation abilities have been suggested to overlap with Theory of Mind (ToM) abilities whereby mentalisation allows one to make sense of subjective mental states of self and others and involves cognitive and affective processing (Velotti et al., 2019). Some consider ToM a separate construct whereas others view it as a broader ability which includes metacognition, ToM and more complex skills to allow mentalisation (Vegni et al., 2021).

ToM is a socio-cognitive ability developed during childhood which allows perspective taking to understand another's beliefs, thoughts, and emotions and that these are different to one's own (referred to as cognitive ToM; Derksen et al., 2018, Premack & Woodruff, 1978). Another construct, affective ToM, is the ability to understand how another person may feel and can be viewed as similar to empathy (Gabriel et al., 2021). The developmental environment, maternal relationship and attachment can affect development of this ability (Derksen et al., 2018; Heleniak & McLaughlin, 2020).

Empathy is defined by Davis (1994) as "a set of constructs having to do with the responses of one individual to the experiences of another" (p. 12),

with these constructs referring to a person's ability to perspective take, consider the thoughts and feelings of another person and recognising that the experience of another person is different to their own, which can result in distress (Johnson et al., 2021). Empathy involves cognitive and affective components (Baron-Cohen, 2004; Davis, 2018); cognitive empathy involves perspective taking, mentalisation abilities and recognition of emotions (Chrysikou & Thompson, 2016). In this way, there appears some overlap with the definition of ToM and whilst both are discrete concepts, there are significant similarities which must be considered when researching.

In this paper, ToM will be considered but operationalised as cognitive empathy due to outcome measures Harry agreed to complete. Perspective taking and emotion recognition in others will be focused on, as these were later utilised in intervention and debriefing sessions.

#### *Dialectal Behaviour Therapy (DBT)*

DBT is considered here as information from Harry's assessment and formulation suggested that such an approach may be appropriate to improve his emotion regulation and impulsivity. It could also provide validation for his difficulties and allow him to feel supported, whilst exploring incidents to encourage understanding about functions of his behaviour.

DBT was designed by Linehan (1993) as a therapy to build upon CBT concepts such as skills practices for emotion regulation but also includes more dialectal philosophical (e.g., two opposing statements can be true) and Buddhist ideals as a treatment for EUPD. Typically, DBT is delivered via individual and group treatment, where service users are taught four core



modules of skills which include mindfulness, emotion regulation, distress tolerance and interpersonal effectiveness (Linehan, 1993), as well as exploring any incidents via behavioural chain analyses (Swales et al., 2000). DBT has gained support as an effective treatment for a variety of emotional and behavioural difficulties, linked with increased risk of aggressive behaviour, as the treatment aims to improve emotion regulation, impulsivity, and behavioural control (Ciesinski et al., 2022). DBT is effective in community settings (i.e., with domestic violence) and inpatient settings and can reduce anger, aggression, emotion dysregulation and improve impulsive behaviours, quality of life and overall functioning (Birt et al., 2022; Ciesinski et al., 2022; Frazier & Vela, 2014; McCann et al., 2000; University of Washington, 2022).

DBT can also be modified. A systematic review demonstrated that even when modified, DBT remained effective in reducing emotions such as anger and aggressive behaviour (Frazier & Vela, 2014) and a condensed, modular programme focusing on skills reported positive effects in reducing impulse control scores on the 'Difficulties with Emotion Regulation Scale' (Gratz & Roemer, 2004), which was associated with improved emotion regulation (Birt et al., 2022).

### **Aims of the intervention**

Aims were chosen based on the rationale for the intervention (i.e., to engage Harry in meaningful psychological work to improve emotion regulation and to gain and sustain a place in supported accommodation). Whilst ToM was originally the variable to target and measure with psychometrics, it was not possible to do so (see pg.161) and therefore outcome measures focused on perspective taking abilities and empathy.

1. To identify effective techniques to engage and maintain Harry (or a person with similar difficulties) in an intervention.
2. To explore if targeting theory of mind abilities (by way of mentalisation work and debriefs) and improving emotion regulation can affect the frequency of incidents and aggressive behaviour.

### **Outcome measures**

As this study aimed to explore ToM's relationship to aggression, it was planned to complete the Reading the Mind in the Eyes Test, a frequently utilised test for adult ToM (Baron-Cohen et al., 2001). However, Harry was unable to tolerate it, became stressed, frustrated, and refused to complete it. When considering his difficulties with processing speed and attention this was understandable as the test is long and requires focus; it also suggested he may struggle with long individual sessions. Similarly, research has demonstrated that those with EUPD can present with neuropsychological deficits such as attention, executive functioning, and processing speed (Unoka & Richman, 2016; Vai et al., 2021). Therefore, after reading relevant literature it was decided that the Interpersonal Reactivity Index (Davis, 1980, 1994) was a suitable alternative as this measured empathy and related constructs: perspective taking, impact of behaviour on self and others, and emotional concern.

#### *Interpersonal Reactivity Index (IRI, Davis, 1980;1994)*

This 28-item scale is designed to measure empathy as a group of constructs and is frequently used by clinicians. It has four subscales: perspective taking, fantasy, empathic concern, and personal distress. Internal consistency was reported as acceptable; .70 to .78 (Davis, 1994). Research

has suggested different scores across forensic samples and control groups: Mayer et al. (2018) found violent offenders scored lower on emotional concern than controls.

*Difficulties with Emotion Regulation Scale (DERS, Gratz & Roemer, 2004); DERS-16 (Bjureberg et al., 2016)*

The DERS-16 was chosen due to Harry's difficulties with completing longer psychometrics and has been demonstrated to hold high internal consistency, test-retest reliability, and discriminant validity (Bjureberg et al., 2016). The DERS measures trait level emotion regulation ability (originally defined by Gratz & Roemer, 2004) whereby higher scores indicate greater dysregulation. The measure is regularly used within EUPD populations (Gratz et al., 2006).

*Overt Aggression Scale (OAS, Silver & Yudofsky, 1991) and St Andrews Sexual Behaviour Assessment (SASBA, Knight et al., 2008)*

These two scales were designed as an objective way to measure defined types of aggressive behaviour and sexual behaviour in an inpatient setting, over a period. It is a consistent method to record observed behaviour and information regarding antecedents and interventions. It is internally consistent (Coccarro, 2020; Sorgi et al., 1991) and can consider patterns of behaviour over time. Clinical notes were reviewed weekly, and Harry's behaviour was recorded on templates accordingly.

### **Intervention**

The intervention was designed using information from the outcome measures, assessment, formulation and discussions with both Harry and staff, see Table 13. Skills from DBT (Linehan 1993, 2015) were selected, to

meet Harry’s needs and risks and be suitable for his motivation and cognitive abilities. As Harry struggled with engagement initially, it was agreed within the MDT that more intensive therapy would not be suitable for him at this time but could be considered when discharged. Examples of sessions and their clinical notes are included in the Appendix (pg. 259) for further detail of their content and structure, as well as Harry’s engagement.

**Table 13.**

*Overview of sessions, aims and duration featured in the intervention.*

| <b>Session topic</b>  | <b>Aim</b>  | <b>No. of sessions</b> |
|---|---|------------------------|
| Psychoeducation of emotions, stress response, EUPD, common difficulties | To improve understanding of own difficulties and make links between past and present. To introduce formulation. | <b>4</b>               |
| Introduction to DBT and relevant skills (see pg. 22)                    | To build motivation to engage with skill practice and feel more confident to manage strong emotions.            | <b>4</b>               |
| Creating positive behaviour support plan using skills                   | Application of skills to feel confident to manage and improve relationships with staff.                         | <b>5</b>               |
| Skill practice in session and in real-time incidents                    | Improve confidence and demonstrate contrary evidence to negative beliefs identified through formulation.        | <b>10 (+)</b>          |

|   |  |                  |
|---|--|------------------|
| Behavioural chain analyses to debrief after any incident  | To increase awareness of triggers, warning signs and alternatives.   | <b>As needed</b> |
| Improving ability to mentalise using reflective and Socratic questioning and perspective taking scenarios | To consider the impact of behaviour on self, others and future. To improve ability to consider other people's emotions, beliefs. | <b>As needed</b> |

*Presentation*

Harry initially struggled to attend sessions, appearing to avoid by sleeping or declining the invite. However, as rapport was built, and Harry was provided with feedback from panel meetings with community teams (increasing his awareness that he needed to evidence improvement in regulation) he attended sessions weekly. Once the formulation had been discussed and understood, Harry appeared to engage more meaningfully as he was more open, reflective, and asked questions to enhance understanding. Harry also provided feedback reporting "that was a good session", "I found that session really helpful, thank you". On occasions where Harry made inappropriate comments to the therapist, firm boundaries were maintained and Harry was invited to perspective take how the therapist might feel, how he might feel after knowing this and the impact this might have on sessions and the therapeutic relationship. Harry responded well to this, commenting about the importance of respect and his difficulties within interpersonal relationships.

### *DBT Skills taught throughout intervention*

- Mindfulness – wise mind, breathing exercises.
- Distress tolerance – wise mind ACCEPTS, self-soothe, paced breathing, IMPROVE, RESISST.
- Emotion regulation – ABC PLEASE, identifying and describing emotions.

### *Positive Behaviour Support Plan (PBS)*

A PBS plan was created to improve Harry's ability to consider his needs, early warning signs and mentalise about staff attitudes and how others respond to him. PBS plans aim to reduce restrictive strategies in response to aggression or challenging behaviours by creating person-centred, individualised coping and crisis plans and are recommended in NICE guidelines for those exhibiting challenging behaviour (NICE, 2015). Harry was encouraged to utilise mentalisation wherever possible using reflective questions, e.g., "How would you feel if a person did that? How might they feel? Why?" The PBS was used in direct response to incidents, including taught skills which could then be practiced with Harry and shared with staff.

### *Debriefing*

Behavioural chain analysis (BCA, Lindenboim et al., 2007) was utilised after Harry engaged in aggressive or sexually inappropriate behaviour, as part of the intervention and to improve his ability to mentalise about his own emotions and the impact on others. It also encouraged Harry to improve his problem-solving skills, identified as a difficulty by the WAIS-IV. Antecedents to Harry's behaviours were often poorly understood by the team and BCA could also support consistent management from nursing staff and MDT. Harry engaged well with these sessions and improved his ability to consider the impact of his behaviour, as well as consider alternative

reactions. For example, in one debriefing session after an attempted physical assault, Harry identified the difference in his ability to think when in emotional versus wise mind and could consider specific antecedents such as stress, high emotional arousal, feeling trapped and how this may have affected his perception. He also reflected and identified alternative actions such as leaving the situation and speaking to trusted staff to assist him.

## **Results**

Behavioural data collected throughout the intervention period indicated a downward trend of abusive and aggressive behaviours, as seen in Table 14 and Figure 3. Verbal abuse decreased in frequency from eight incidents in the month prior to the intervention to two incidents in the month the intervention ended. The incidents in July were lower and appeared out of sync with the trend; however this month was extremely hot and Harry spent the majority of time off the ward, or asleep which potentially limited his interactions with staff/peers and therefore reduced potential for incidents. However, there was an increase seen in August, which coincided with Harry receiving news that his stepfather had become seriously ill and unfortunately died in October (where an increase in verbal abuse, aggression to objects and sexual comments was also seen). Sexual comments (which also included inappropriate comments) remained relatively stable throughout the intervention and continued to be a target for ongoing intervention for Harry. After any incident of abusive, aggressive, or sexualised behaviour Harry was invited to engage in a debriefing session and the behaviour was discussed within individual sessions. Taught skills were identified which could be utilised in future similar situations and the PBS plan was updated where relevant. Harry's formulation was also utilised

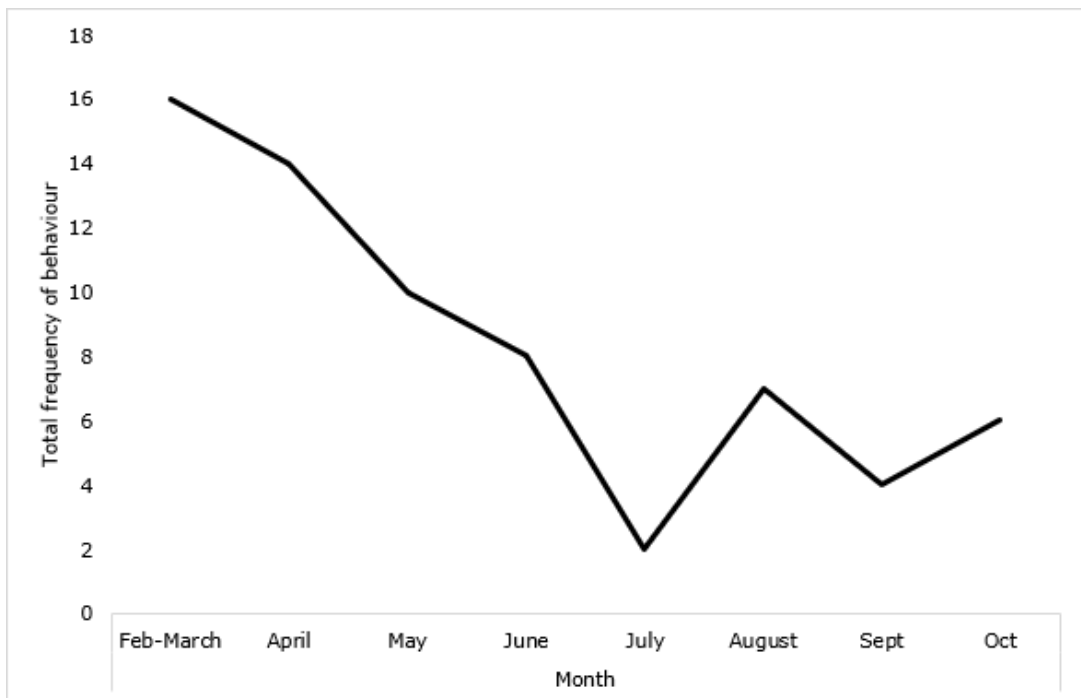
**Table 14.***Behavioural Data Throughout Intervention*

| <b>OAS &amp; SASBA categories</b> | <b>Pre frequency</b><br>Feb-March | <b>Post- frequency</b><br>April | May       | June     | July     | August   | Sept     | October  |
|-----------------------------------|-----------------------------------|---------------------------------|-----------|----------|----------|----------|----------|----------|
| Verbal abuse                      | 8                                 | 5                               | 7         | 4        | 2        | 4        | 2        | 2        |
| Aggression to object              | 4                                 | 3                               | 1         | 2        | 0        | 1        | 1        | 2        |
| Aggression to others              | 0                                 | 0                               | 0         | 1        | 0        | 1        | 0        | 0        |
| Aggression to self                | 0                                 | 0                               | 1         | 0        | 0        | 0        | 0        | 1        |
| Threat of violence                | 0                                 | 0                               | 0         | 0        | 0        | 0        | 0        | 0        |
| Sexual comment                    | 3                                 | 3                               | 1         | 1        | 2        | 1        | 1        | 2        |
| Non contact sexual                | 1                                 | 3                               | 0         | 0        | 0        | 0        | 0        | 0        |
| Contact sexual                    | 0                                 | 0                               | 0         | 0        | 0        | 0        | 0        | 0        |
| <b>Total</b>                      | <b>16</b>                         | <b>14</b>                       | <b>10</b> | <b>8</b> | <b>2</b> | <b>7</b> | <b>4</b> | <b>6</b> |



**Figure 3.**

*Total Frequencies of Behaviour Over the Intervention Period*



to encourage understanding of the function of certain behaviours, e.g., aggression when feeling not listened to, seek support or notice from staff to increase Harry's awareness of the origins of behaviours and reduce feelings of shame but increase autonomy over his ability to utilise alternative methods to reach his goals.

Harry's scores from the IRI and DERS can be found in Table 15 and 16. Harry's perspective taking abilities indicated the most improvement from pre and post measures, whereas empathic concern remained stable. His ability to regulate emotions appeared to have improved overall when comparing total scores on the DERS, with impulsivity and non-acceptance recording reductions.

**Table 15.**

*Comparing Pre and Post Scores in Perspective Taking and Empathic Concern Scales from IRI*

| IRI scale          | Pre Score | Post Score |
|--------------------|-----------|------------|
| Perspective Taking | 9         | 12         |
| Empathic Concern   | 16        | 15         |
| Total Score        | 25        | 27         |

**Table 16.**

*Comparing Pre and Post Scores on the DERS*

| DERS scale     | Pre Score | Post Score |
|----------------|-----------|------------|
| Clarity        | 3         | 3          |
| Goals          | 9         | 9          |
| Impulse        | 12        | 7          |
| Strategies     | 10        | 10         |
| Non Acceptance | 9         | 7          |
| Total Score    | 43        | 36         |

Harry was observed to gain an improved ability to reflect, mentalise and problem solve (considering consequences) particularly within individual sessions, but also in interactions with staff members. His continued difficulties with offensive comments were mainly to peers and often appeared to be related to gaining reaction and response from staff.

## **Discussion**

This case study documented the assessment, formulation and intervention for Harry who presented with a variety of complex needs including EUPD, aggressive behaviour, perspective taking difficulties (thought related to theory of mind deficits) and borderline cognitive functioning. Typically, interventions for EUPD involve DBT (Linehan, 1993) and are highly structured and intensive. Evidence has shown that modified versions of DBT can be effective to manage difficulties associated with EUPD (Birt et al., 2022; Frazier & Vela, 2014) and this study had two aims.

1. To identify effective techniques to engage and maintain Harry (or a person with similar difficulties) in an intervention.
2. To explore if targeting theory of mind abilities (by way of mentalisation work and debriefs) and improving emotion regulation can affect the frequency of incidents and aggressive behaviour.

Harry completed a WAIS-IV assessment and a timeline assessment which allowed creation of a formulation. An approximately 6-month intervention was designed, with a focus on emotion regulation and distress tolerance skills (from DBT), encouraging mentalisation and problem-solving using debriefing, and reflecting on the functions of his behaviour as previous research suggested those with Harry's difficulties can benefit from modified DBT and have issues with mentalisation (Ciensinki et al., 2022; Frazier & Vela, 2014; Sharp & Fonagy. 2008).

Results suggested Harry made a small improvement in perspective taking abilities, which are a component of social information processing abilities and involve ToM abilities (Hasson – Ohayon et al., 2017; Weimer et al.,

2017), an improvement in emotion regulation abilities, and a reduction in aggressive incidents.

Despite Harry experiencing a significant destabilising event whereby his stepfather (his primary support) became seriously ill and later passed away, he continued to engage with the intervention and his aggressive and abusive behaviour decreased. His progress and presentation improvements were sufficient for him to continue through his discharge pathway, and he moved to supported community accommodation in December 2022 (just after the author had left the service).

Effective psychological techniques included discussion and application of Harry's formulation both with him and the ward team to ensure consistent and trauma informed approaches were used. Specific DBT skills were taught in session and practised outside, as well as included in his PBS plan. Other research has demonstrated shorter, skills based DBT to be effective in improving emotion regulation and decreasing 'maladaptive coping' and aggression (Frazier & Vela, 2014; Heath et al., 2021; Wieczorek et al., 2021) and a systematic review (Ciesinski et al., 2022) found DBT reduced anger and aggressive behaviour, with longer treatment leading to greater reductions in anger.

Debriefing using both BCA and mentalisation type questions appeared to be another successful technique. Improving his mentalisation and discussing ToM in debriefs allowed a space for Harry to reflect on the impact of his thoughts, emotions and behaviour on himself and others, identify possible functions of his behaviour, and consider alternatives in a non-judgemental and empathic way. These discussions and development opportunities,

alongside emotion regulation skills were concurrent to a reduction in aggressive incidents over the 6-month period. Debriefing is utilised to analyse the incident and facilitate a discussion about thoughts, feelings, and reactions, create a narrative and ensure a safe and therapeutic environment is maintained (Caminiti et al., 2021). BCA is one way to structure a debrief with a service user and is an important component of understanding a service user's needs in DBT (Linehan, 1993a; Rizvi, 2019). Harry engaged well with debriefing sessions, drawing on DBT skills such as wise mind, identifying and understanding his emotions and reflecting on alternative actions.

The ward team sometimes responded to incidents of aggressive or inappropriate behaviour in a punitive manner (imitating strict parenting) or with not enough emphasis on the consequences for Harry, with limited positive role modelling. This made social learning more challenging, as there was not a consistent response, making it harder for Harry to learn and adapt his behaviour. Therefore, there may be a need for further staff training regarding validation and dialectal methods, learning and applying DBT skills and allowing more time for staff to reflect on their reactions to incidents.

In the later stages of the intervention, Harry's stepfather became seriously ill (August) and passed away (October), which understandably he found extremely distressing, likely affected his ability to think rationally about his future and regulate his emotions. This is reflected in the behavioural data where two increases in incidents occurred in August and just after his stepfather's funeral in October, which is understandable and indeed was expected to occur, as grief can and does affect any person's ability to be

rational and manage emotions and behaviour. It was also observed that at times, Harry struggled with the dynamic of the therapeutic relationship, often looking to the author to loosen boundaries, and feeling let down when rules were enforced (see Malan's triangles in Appendix, Figure 1 and 2, pg. 257), emphasising the importance of debriefs and mentalisation opportunities to consider the rationale for this.

A similar intervention utilising DBT skills and mentalisation was tested by Prunetti et al. (2022) and demonstrated improvements in distress, aggression, impulsivity, and interpersonal problems. This study also focused on the importance of maintaining the therapeutic relationship, in line with increasing patients' awareness of their own and others' mental states through curious mentalisation focused discussions. A similar technique was utilised in this case study in the debriefing sessions and questions asked of Harry to explore incidents, as well as when boundaries were pushed. It is postulated that these debriefing and mentalisation based discussions supported Harry to improve his ability to consider the implications of behaviours such as aggression and identify alternatives, which would more likely lead to a positive outcome.

This case study emphasises the importance of understanding a service user's needs through a variety of methods and consistent approaches, as well as consideration of their external and internal worlds, when working with complex needs and difficulties relating to childhood trauma. The intervention was based on DBT theoretical ideas but individualised to meet Harry's needs with processing speed, attention, and interpersonal skills; shorter sessions, off the ward and ad-hoc sessions to allow for debriefing,

reflection and mentalisation opportunities after incidents. BCA was used effectively here to structure the debriefing and may be of use for other service users and services to facilitate in-depth and psychologically informed discussions, encourage consideration of own and others' mental states and consequences and gain more understanding of behaviour function.

Considering applications to theoretical literature, perhaps more importance needs to be placed on understanding the socio-cognitive needs of similar service users as research has indicated that trauma in childhood can affect development of such skills and there is also a known association with socio-cognitive abilities (e.g., social information processing, ToM) and aggression in adulthood (Dodge et al., 1995; Dodge et al., 1990; Heleniak & McLaughlin, 2020; McLaughlin et al. 2019) as well as with those with EUPD (Bora, 2021; Sharp & Fonagy, 2008). Therefore, by improving understanding of socio-cognitive abilities this can assist with design, adaptation, and implementation of interventions to improve abilities such as ToM, perspective taking and mentalisation which also contribute to reductions in aggression.

### *Reflections*

Whilst working with Harry the author reflected on the importance of having adequate time to assess a service users' needs, including socio-cognitive needs, which may have less focus in most services but were relevant here to understand Harry's difficulties and behaviour function, as well as adapt his intervention. There appeared to be a complex interaction between childhood experiences, cognitive functioning, personality, and behaviour which was then explored using formulation and implemented in the

intervention. There was also a key role of indirect work, discussing the formulation and taught skills with staff to “skill up”, attempt to provide consistent care and remodel positive working relationships. A reflection was also made regarding how much socio-cognitive functioning may affect a person’s ability to engage with an intervention, maintain rapport, manage behaviour, and debrief, and how this component may be overlooked when working with complex service users. Validating Harry’s experiences and difficulties was also a key component of the intervention and was something that some ward staff found difficult, understandable when they were often exposed to aggression. The importance of protecting time for staff debriefs and reflective practice was therefore thought to be an area of ward development to improve therapeutic relationships on the ward.

#### *Limitations*

This case study has some limitations to discuss. Firstly, whilst the initial aim was to consider ToM abilities, the RMET test (Baron-Cohen et al., 2001) was declined by Harry due to its length, which meant an alternative, more succinct measure had to be utilised. The IRI did not directly measure ToM but associated concepts of perspective taking and empathy, skills necessary for social information processing. Therefore, conclusions could still be drawn regarding the role of social information processing abilities (of which ToM is a part) in management of aggression and considerations regarding adaptations for assessment and intervention. Another limitation to consider was that it was difficult to ascertain whether the intervention alone was responsible for reducing aggression or whether the motivation to be discharged from hospital (which would require a reduction in aggression) led to a reduction in challenging behaviour. However, one can argue that



without the intervention, motivation alone may have not been sufficient and indeed prior to the intervention Harry had been motivated to progress along his discharge pathway but had struggled with his emotion and behavioural regulation, leading to incidents, punitive responses from staff, and seclusion.

#### *Future directions*

Future directions may benefit from considering and evaluating the use of social cognitive psychometrics as standard in the battery of outcome measures for forensic inpatients, to ensure service users' needs are properly understood and adaptations can be made as needed. In this study, it appeared that by completing a comprehensive assessment into Harry's cognitive abilities (by the WAIS-IV) and his social information processing (by the outcome measures) his treatment could be better individualised and adapted to meet his needs, thereby reducing his aggression, and improving his engagement.

In addition, completing comprehensive de-briefings after an aggressive incident to allow reflection, opportunities for mentalisation and modelling could be studied further in hospital settings, with a larger sample to consider if this may be an additional important element to include in group or individual interventions. Further exploration in the role socio-cognitive difficulties may play in the aetiology of aggression within specific populations (e.g., inpatient, domestic abuse, relational aggression) may be beneficial to further individualise assessments and interventions and support management of aggression and associated behaviours.

**Conclusion**

This case study explored effective ways of working with a service user with complex emotional needs, childhood trauma and socio-cognitive difficulties. By understanding more about his socio-cognitive needs and life experiences the intervention could be individualised and adapted. The inclusion of specific DBT skills and debriefing using BCA encouraged Harry to engage in mentalisation and appeared to have a positive impact on his behaviour and emotional regulation. The utility of including more socio-cognitive assessments in forensic inpatient units may be of merit and the use of debriefing would benefit from further evaluation.

## **Chapter Six – Discussion of findings**

### **Overview of aims of the thesis**

This thesis aimed to contribute to current social cognitive and information processing theories of domestic abuse, understand more about domestic abuse perpetration in the community and consider if an additional factor, Theory of Mind, was important to include in theoretical explanations of domestic abuse.

The main research aims were:

- To explore cognitive and socio-cognitive factors in those perpetrating domestic abuse
- To consider if theory of mind is a relevant factor to be added to current theories of why some people commit domestic abuse
- To explore additional relationships between socio-cognitive factors and other relevant factors identified from literature and research findings in the thesis
- To evaluate how the UK Police assess risk of domestic violence and explore improvements which could be made
- To discuss findings in relation to current intervention and assessments and consider improvements

### **Findings from Chapter Two: Critique of the DASH tool**

The aim of Chapter two was to discuss available evidence regarding the psychometric properties and effectiveness of the tool used (at that time) by

frontline UK police to assess risk of domestic abuse – the DASH (Richards, 2008). Despite the tool having been in use since 2009, there was little empirical evidence to demonstrate its validity and reliability, adherence to recent advances in the literature nor it being subject to standardisation.

A variety of methods were found to be used by police when completing the DASH, with only 45.6% using it as advised (Robinson et al., 2016) in addition to them not receiving regular training in its use, which was raised as a concern by HMIC (Chalkley, 2015; HMIC, 2014; Robinson et al 2016; Thornton, 2011). Moreover, there were inconsistencies with the categorisation of risk of cases between police forces, which did not appear related to the “key risk factors” identified by Richards, suggesting that forces were ill equipped to use evidence, training, and professional judgement to accurately assess risk from the tool (HMIC, 2014).

Further problems with the tool surrounded its’ risk factors. Concerningly, despite coercion being a risk factor for severe violence (Brennan et al., 2019; Hardesty et al., 2015; Myhill & Hohl, 2016; Myhill & Holh, 2019), Chapter Two found that police were failing to consider coercion as a key risk factor and this was influenced by the attitude of the officer completing the form (Myhill et al., 2023).

Overall, the DASH was found to fail to account for the variety of domestically abusive behaviours, the context in which it occurs, and it was not possible to justify and evidence decisions made about items’ inclusion or apparent relevance. It had poor predictive validity with studies reporting: a 99% false positive rate (Thornton, 2011), only 50% of domestic deaths found to have

been categorised as high risk (Walklate & Mythen, 2011) and 94% of serious harm reoffending cases being categorised incorrectly (Turner et al., 2019).

### **Findings from Chapter Three: Systematic review**

The aim of the systematic review was to explore all types of cognitive functioning in relation to domestic abuse, as previous research appeared to focus on one element only (e.g., executive dysfunction, brain injury). Therefore, the review aimed to identify less researched topics, worthy of further exploration.

Fifteen studies were included in the review, with a total of 1794 participants, after eligibility criteria and quality assessments were completed. Included studies were grouped dependent on the cognitive function explored and a summary of the results and interpretation of them will be provided below.

Most studies (86.6%) found a significant relationship between the cognitive ability studied and perpetration of domestic abuse, indicating cognitive abilities are an important variable to consider in this research field.

#### *Neuropsychological functioning*

Ten studies in the review explored neuropsychological functioning and of those, seven indicated that domestic abuse perpetrators had deficits in their executive functioning (Berreca-Garcia, 2015; Cohen et al., 2003; Corvo et al., 2006; Fox et al., 2020; Romero-Martinez et al., 2019a, b; Teichner et al., 2001; Walling et al., 2012). Specifically, domestic abuse perpetrators had more difficulties planning and changing decisions, made riskier decisions (Romero-Martinez et al., 2019b), were more impulsive, (Romero-Martinez et al., 2019b; Godfrey et al., 2020), had difficulties sustaining and switching attention (Cohen et al., 2003; Fox et al., 2020; Romero-Martinez

et al., 2019; Teichner et al., 2001; Walling et al., 2012) and difficulties with their visual and working memory (Fox et al., 2020; Romero-Martinez et al., 2019; Teichner et al., 2001).

#### *Socio-cognitive abilities*

Four studies explored socio-cognitive abilities, which in this review included empathy, emotion decoding and theory of mind. Borderline and antisocial traits were found to be associated with low cognitive empathy, poor emotion recognition and recidivism in IPV perpetrators (Romero-Martinez et al., 2016) and IPV perpetrators were found to have lesser abilities to decode emotions compared to controls (Romero-Martinez et al., 2019). This was supported by additional evidence that IPV perpetrators were less able to identify emotions compared to controls, particularly sadness and fear (Nyline, 2016). Finally, empathy was shown to be a mediator for male aggression when investigating conflict in couples (Godfrey et al., 2020).

#### *Cognitions*

Two studies explored cognitions in relation to domestic abuse and identified specific cognitions associated with the behaviours. For example, Marshall et al. (2020) found trauma cognitions were directly related to domestic abuse perpetration, mediated by anger appraisal and emotion dysregulation. Maladaptive cognitions were associated with both physical and psychological domestic abuse, hypothesised to be the result of the perpetrator experiencing social interactions as threatening, resulting in aggression. Pornari et al., (2021) found higher aggression scores in the domestic abuse group compared to controls, as well as higher scores in all implicit theories related to domestic abuse.

### *Summarising results*

Cognitive functioning is important to consider in those who perpetrate domestic abuse. Specifically executive dysfunction and impulsivity may exacerbate difficulties with attention and verbal abilities, increasing the likelihood of a person resorting to aggression due to difficulties in communication, problem solving, consequential thinking and disinhibition. Moreover, deficits in socio-cognitive abilities suggest domestic abuse perpetrators may be more likely to perceive hostility and be less able to consider the emotional impact of their behaviour, perhaps exacerbated by them holding pro-aggressive beliefs and implicit theories which may facilitate domestically abusive behaviour (Heleniak & McLaughlin, 2020; Marshall, et al., 2020; McLaughlin & Lambert, 2017; Pornari et al., 2021).

### **Findings from Chapter Four: Empirical study**

This study aimed to gather data from a community sample of males to explore frequency of domestically abusive behaviour and consider potential relationships between its perpetration and theory of mind, as well as adverse childhood experiences. An online survey was utilised collecting data from three measures: a modified version of the Revised Conflict Tactics Scale (Straus et al., 1996), the Reading the Mind in the Eyes Test (Baron-Cohen et al., 2001) and the Adverse Childhood Experiences Questionnaire (Fellitti et al., 1998).

Seventy-four participants were included in the analyses and 83.8% of the sample reported to having perpetrated domestically abusive behaviour within a relationship (68.9% in the last year). Of these cases, psychological aggression was found to be the most frequently perpetrated (N= 60), with the average frequency of psychologically aggressive acts being 10.8.

Physical aggression was the second most perpetrated act (N=12), with an average frequency of one act. For further details refer to Table 6 in Chapter Four. A small number of cases (N=4) reported much higher frequencies of domestic abuse than rest of the sample, demonstrating the heterogeneity of these behaviours and suggesting they may occur on a continuum (Ali et al., 2016; Carlson & Dayle, 2010). Other research supports this finding and has indicated that the highest levels of harm came from a small number of offenders (Bland, 2020; Robinson & Clancy, 2021). Theory of mind abilities, as measured by the RMET scores were wide in range (10-32) with an average of 22.3. ACE-Q scores were also wide in range (0-9) with an average of 3.4.

#### *Correlations*

A negative relationship was found between total RMET scores and total frequency of domestically abusive behaviours and a positive correlation was found between total frequency of domestically abusive behaviours and ACE-Q scores. This is supported by research indicating that domestic abuse offenders had social information processing deficits (Romero-Martinez et al., 2013, 2019, 2019a, 2021) and that childhood adversity was associated with domestic abuse (Capaldi et al., 2012; Narayan et al., 2017; Navarro et al., 2022). A non-significant relationship was found between childhood adversity and RMET scores.

#### *Regression*

Total RMET scores and ACE scores were found to predict frequency of domestically abusive behaviours. As psychological aggression was the most frequently reported behaviour, it was postulated that this behaviour was most affected by differences in RMET scores. Upon exploration, differences were found between average RMET scores in psychologically aggressive and



non-psychologically aggressive participants, whereby the psychologically aggressive group had lower RMET scores, suggesting psychological aggression could be most affected by theory of mind abilities. However, this is worthy of further exploration, to confirm via statistical analysis.

### **Findings from Chapter Five: Research Case Study**

The research case study described clinical work with a client (Harry) who had a history of general violence and domestic violence. The aim was to consider if assessing and adapting for socio-cognitive difficulties would improve Harry's engagement, emotion and behaviour management and relationship with professionals.

Harry was assessed with a variety of measures including the WAIS-IV (Weschler, 2008), the IRI (Davis, 1980, 1994), the DERS-16 (Bjureberg et al., 2016; Gratz & Roemer, 2004), the OAS and SASBA (Knight et al., 2008; Silver & Yudofsky, 1991), as well as clinical assessment. Harry's cognitive assessment indicated difficulties with processing speed and his overall ability was at the level of less than 7% of the population. The intervention was designed using information from the outcome measures and formulation, relating to his difficulties with emotion regulation, perspective taking and problem solving. Teaching DBT skills, debriefing using chain analysis and reflection and creating a positive behaviour support plan were key components of the intervention.

Over the six-month intervention, Harry's aggressive incidents decreased, his ability to perspective take increased and his emotion regulation skills improved (as indicated by the outcome measures). The use of DBT skills in modified interventions has been supported by other research (Frazier & Vela, 2014; Heath et al., 2021; Prunetti et al., 2022; Wiczorek et al.,

2021), as well as emphasising the importance of debriefing and opportunities to develop mentalisation in clients struggling with awareness of own and others' mental states (thought related to aggressive behaviour).

### **Interpreting findings from the chapters**

A range of cognitive and socio-cognitive factors have been identified as related to domestically abusive behaviours (Chapters Three and Four). This thesis suggests ToM (interpreted here from RMET) and exposure to ACEs can be predictive of the frequency of domestically abusive behaviours in relationships and by identifying, understanding, and targeting such socio-cognitive areas of difficulty in service users there may be a positive effect on reducing aggression (including domestic abuse), improving rapport, and improving interpersonal relations. However, applying research findings appears slow moving and not reviewed frequently enough (Bates et al., 2017; Hughes et al., 2017; Renehan et al., 2021 and as in Chapter Two). It also is suggested that current interventions and assessments used in the criminal justice system are not adequately responding to research in this area, nor fully appreciating the role of adverse childhood experiences on risk of domestic abuse perpetration, and findings from Chapter Five, whereby socio-cognitive needs were assessed, and a more individualised treatment was provided, give a preliminary indication of the potential utility of such an approach.

It is difficult to assess domestic abuse risk due to heterogeneity, overlap with other types of violence and risk factors, a lack of national guidelines and differences between every police force (HMIC, 2014; 2019; Robinson & Clancy, 2021), as discussed in Chapter Two. Risk assessments should be completed gathering information from multiple sources and within an MDT

(Viljoen et al., 2018; Silva, 2020) to form a more balanced opinion and have awareness of all related information pertaining to a case prior to making a judgement (which the new tool, DARA, appears to recognise).

Findings from this thesis can contribute to social information processing theories, considering the role that theory of mind may play in such a process whereby deficits may affect an individual's ability to identify, decode, act and then adapt based on difficulties understanding mental states of others, interacting socially and utilising social feedback and cues, which may be related to adverse childhood experiences (Heleniak & McLaughlin, 2020; Murphy et al., 2013; Romero-Martinez et al., 2013; Romero-Martinez et al., 2019; Seinfeld et al., 2018). Findings from Chapter Four support the role of Theory of Mind deficits in perpetration of domestically abusive behaviour, particularly psychological aggression, perhaps due to the misperception of social interactions and inability to respond to feedback. Over time this may result in a higher likelihood of relationship conflict, and escalation of difficulties within relationships, with less opportunities to solve problems without aggression due to deficits in socio-cognitive and social information processing skills (Marshall & Holtzworth-Munroe, 2010; Taft et al., 2021).

### **Theoretical implications and evidence**

Reflecting on findings in this thesis, one is mindful of how important integration of research can be to improve understanding of complex behaviours. From findings presented in this thesis one can state that domestic abuse is highly complex, often varies significantly between individuals and relationships and is dependent on both internal and external characteristics. The utility of a psychosocial lens when attempting to understand and formulate evidence in a conceptual framework may have

been previously overlooked, although highlighted by previous authors (e.g., Murphy et al., 2013; Senkans et al., 2020) but seemingly not taken forward when applying evidence to interventions, assessments, screening and so on.

This thesis has suggested that deficits in ToM and adverse childhood experiences, were predictive of frequency of aggression within relationships as evidenced in Chapter Four and associated with other executive functioning (see Chapter Three and Khayyer et al., 2019; Moses et al., 2001; Ruffman et al., 2001) which may affect quality of relationships and social interactions.

ToM is pivotal in social interactions via its role in prediction of others' behaviour, awareness of own and others' mental states and interpretation of ambiguous social situations and emotions, in order to respond (Baron-Cohen, et al., 2001, Ho et al., 2022; Premack & Woodruff, 1978). If there are deficits in ToM, then this may lead to misinterpretations of social situations and incorrect attributions of others' intentions, including hostile attribution bias and the person producing an unexpected or inappropriate response (Baron-Cohen et al., 2001; Jeon et al., 2013; Koo et al., 2022) thereby affecting the social interaction. For example, when attempting to decode social information, domestically abusive men had more hostile attribution biases about their partner than non-domestically abusive men and this was more evident in men who were more abusive (Holtzworth-Muroe, 2000).

ToM has been positively associated with agreeableness, peacekeeping and reducing aggression in social situations (Graziano and Tobin, 2009; Khayyer

et al., 2019) and found to be a mediator between neurocognitive abilities, psychoticism, perspective taking, personality traits and hostile attribution bias (Koo et al., 2022).

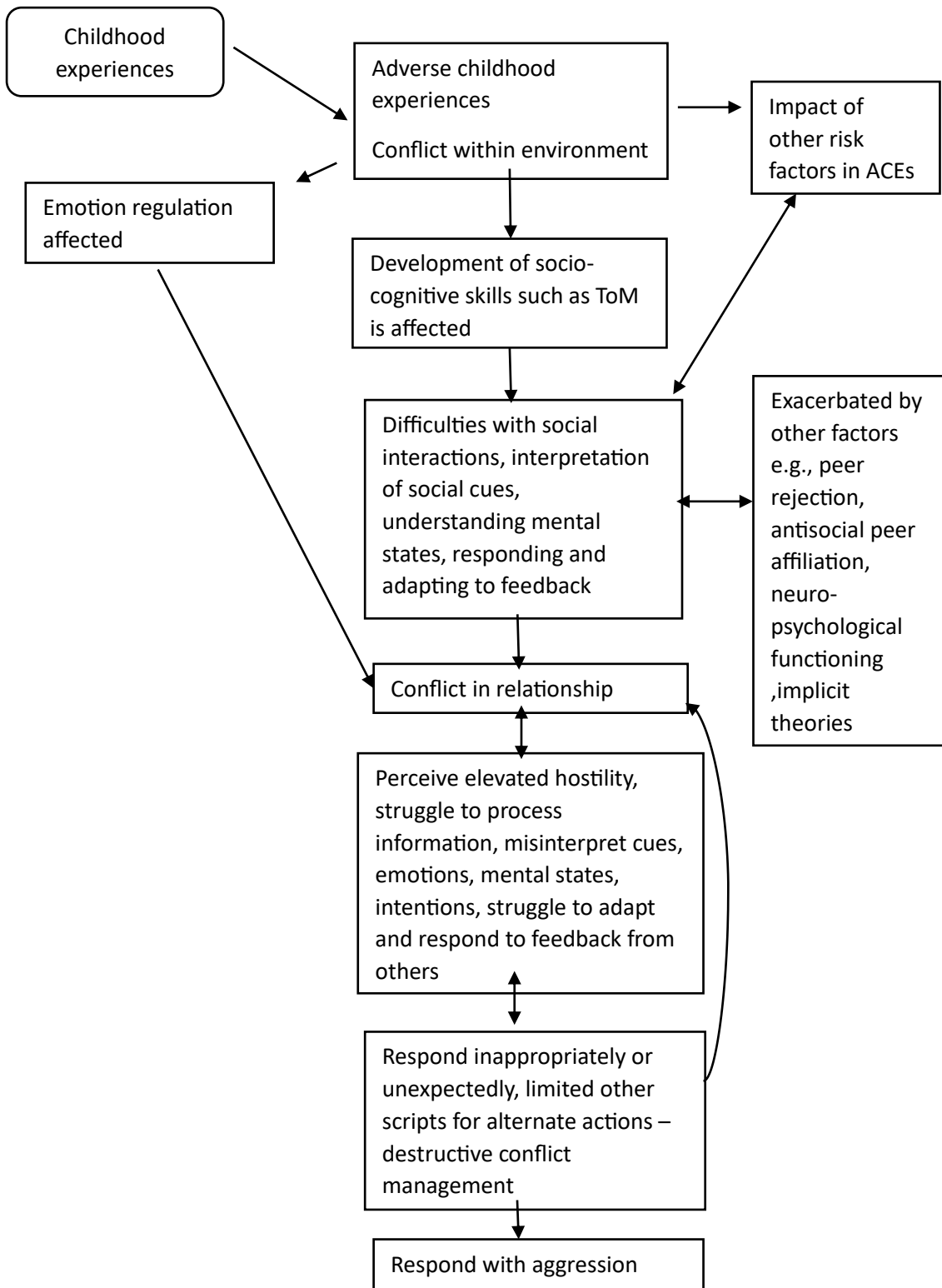
Therefore, it is postulated that ToM deficits may increase the risk of domestic abuse occurring, (in particular, as suggested in this thesis, psychological aggression) by way of its impact on social information processing and social interactions, which may also relate to a person's exposure to adverse childhood experiences (Heleniak & McLaughlin, 2020). Over time such deficits and the effects on social interactions within intimate relationships, as outlined above, may escalate due to feedback from the partner further exacerbating difficulties in social interactions and other deficits in executive functioning and emotion regulation, alongside presence of implicit theories, which are known to associate with domestic abuse and affect ToM (Koo et al., 2022, Romero-Martinez et al., 2016, 2019, 2019a; Weldon & Gilchrist, 2012).

The person is also less likely to possess the ability to consider alternate actions, may be less skilled in processing, understanding and responding to neutral cues (associated with adverse childhood experiences, see Heleniak & McLaughlin, 2020; McLaughlin et al., 2020), may hold offence supportive cognitions (Weldon & Gilchrist, 2012) and continue to misinterpret situations, expect or perceive more hostility from a partner, leading to destructive conflict management, which can escalate to DA (Fortin et al., 2022).

A preliminary framework of how this may happen, as described above, is presented in Figure 4.

**Figure 4.**

*Preliminary Trajectory of Development of Domestic Abuse via Socio-Cognitive Deficits*



Therefore, the inclusion of socio-cognitive factors, such as ToM, and greater consideration of ACEs allows the integration of multiple risk factors from developmental, cognitive, neurological, and social models of domestic abuse. In turn all these models have elements which affect development and implementation of a person's socio-cognitive abilities.

### **Limitations and suggested improvements**

The results from this thesis do need to be considered in light of some limitations, which have been previously discussed in each chapter individually. However, in this section, suggested improvements to methods and measures will be discussed, as well as the consideration of ethical implications.

The critique of the police risk assessment tool in Chapter Two was difficult to complete due to the lack of empirical evidence into its effectiveness. Moreover, the DASH is utilised to assess risk with the victim whereas this thesis focuses predominantly on perpetrators and their characteristics, with little focus on victims. However, as I wanted to explore domestic abuse in the community, I felt it was relevant to critique the tool used primarily in community settings, rather than tools that are used in healthcare or custodial settings (e.g., SARAv3; Kropp & Hart, 2015). Considering the shortcomings of the DASH that were highlighted in Chapter Two and the subsequent withdrawal of the DASH for frontline officers I believe my critique remains relevant and important to include in this thesis commenting on difficulties understanding and managing domestic abuse.

The systematic review in Chapter Three will have been completed approximately two years ago at the time of this thesis' completion and

therefore there may now be additional research on the topic, which is not included. However, recent, relevant literature has been reviewed and included in other chapters, throughout the writing of this thesis. Further systematic reviews within this topic could include studies with more similar data collected whereby a meta-analysis could be completed, to further support (or provide contrary evidence) to the hypothesis argued in this thesis. Indeed, perhaps a review on research pertaining to theory of mind and domestic abuse specifically would be useful, although at the inception of this thesis, there was limited research available and a systematic review would have been challenging to complete.

The empirical study in Chapter Four may have benefitted from a pilot study which could have explored the potential correlational relationships between variables, suggested by previous research (e.g., Elsegood & Duff, 2010; Navarro et al, 2022; Romero-Martinez et al., 2013, 2016; Ruddle et al., 2017) and indicated areas to explore specifically with regression analyses in the primary study, thereby reducing the potential impact of over analysis within the study. As psychological aggression was the most frequently perpetrated type of aggression the study may have benefited from further exploration of the relationship between this type of behaviour and the RMET scores and potential mediation from ACE-Q scores. Moreover, the sample could have been divided in low and high frequency aggression groups, and considered if there were differences between the RMET scores, further enhancing understanding of the behaviour. However, due to the sample being mainly of low abuse frequency participants this was not possible.

One must also note that various socio-demographic factors which are known to be associated with domestic abuse were not collected in the study,



namely socio-economic status, educational level, substance misuse and head injury (Capaldi et al., 2012; Kazemi et al., 2019; Romero-Martinez et al., 2019) which may affect socio-cognitive development, as well as propensity for a person to utilise domestic abuse. In addition, as mentioned in Chapter Three and Chapter Four, intellectual ability was not directly measured nor controlled for, which may have affected results on the measures utilised throughout this study. Therefore, there may have been other factors present in the sample which affected domestic abuse perpetration rather than ToM alone. Further research would benefit from inclusion of additional factors alongside ToM to control for potential confounders and identify the contribution of ToM to domestic abuse perpetration. In other studies (e.g., Romero-Martinez et al., 2019) which did include additional factors, the RMET scores were found to be related to domestic abuse, suggesting it does play a role.

There were considerable difficulties with recruitment of participants to this study as mentioned in Chapter Four, with the full list of those contacted available in the Appendix (pg. 242). As the government has recently announced new funding and intervention initiatives to manage the persistent problem of domestic abuse (see Home Office, 2022, 2023) one might have imagined members of parliament, safeguarding ministers and members of parliamentary groups would have been interested in participating or sharing this research topic. However, attempts to contact specific domestic abuse groups within parliament were either not responded to, or declined. In addition, when intervention providers in the community were contacted they declined to participate, stating their focus was primarily on victims or they were unable due to confidentiality issues,

despite the research being anonymous and having received ethical approval. Recruiting members of the public was also challenging, with the survey having received over 1000 'hits' of people viewing the first page online, but only 77 completing the entirety of the survey. Reasons for this were considered and may involve avoidance of discussing difficult topics, such as domestic abuse. People may also be fearful that if they disclose certain behaviours there may be consequences, despite the research being anonymous. Furthermore, people may not wish to admit that they have engaged in abusive behaviours due to shame or denial and therefore closed the survey once they understood what it would entail.

From a more practical perspective, the length and potential complexity of the survey may have led some to not complete, as there are multiple pages of information and consent, then 36 items for the first measure, 28 for the modified RCTS then another 10 items for the ACE-Q. Completion of all these items may have led to test fatigue, in addition to people becoming distracted or having other tasks to attend to.

The research case study aimed to complete the same measure utilised in Chapter Four to measure ToM abilities and provide additional support that such skills were involved in perpetration of domestic abuse and could benefit from intervention. However, this measure was declined by Harry due to its length and therefore the case study had to utilise an alternate measure, the IRI which measured one element of ToM, perspective taking and an overlapping construct of empathy (Chrysikou & Thompson, 2016; Velotti et al., 2019). Therefore, whilst the case study does evidence reduction of aggression via the intervention, which was designed to target socio-cognitive abilities such as ToM, mentalisation, and also improve

emotion regulation, one cannot draw conclusions that ToM specifically was a deficit for Harry as this was not measured individually but via more general methods (which arguably included ToM abilities, e.g., perspective taking).

*Considering the measures utilised throughout this thesis*

Like any self-report measure, there may be issues with social desirability and accuracy of recall, which may be a limitation with the RCTS. Participants are unlikely to recall every single act of domestically abusive behaviour over the last year, with research suggesting that more frequent acts are more likely to be underreported (Chapman & Gillespie, 2018; Junger-Tas & Marshall, 1999; Straus & Mickey, 2012). As such, it is difficult to ascertain the accuracy of reported acts.

As noted by previous research into the RCTS, it has little focus on coercive and controlling behaviour (Chapman & Gillespie, 2018; Sillito, 2012), also noted as a criticism of the DASH in Chapter Two, despite this being a prevalent and highly harmful type of domestically abusive behaviour (Barlow et al., 2020; Bishop & Bettinson, 2018; Robinson & Myhill, 2021), recently introduced as an offence in the Serious Crime Act (s.76, Serious Crime Act, 2015). Whilst efforts were made to include qualitative questions in the modified version of the RCTS utilised in Chapter Four pertaining to coercive control, perhaps this may have benefitted from more specific quantitative questions to collect numerical data to include in analyses. Responses from participants alluded to some coercive behaviours, mainly involving looking through partners' phones but the questions did not inquire as to more specific examples, such as intimidation, humiliation, control over social activities and entrapment in abusive cycles (Hamberger et al., 2018)

which may have been helpful to add to our understanding of coercive behaviour in community samples.

Additional questions could have also inquired as to whether other tactics were employed prior to utilising aggression and the response received and subsequent perception of them. This could assist with greater understanding of why a person might have utilised aggression in that relationship conflict rather than alternative solutions and to better understand context.

The modifications made to the RCTS, namely removing some of the more extreme examples of violence, may have affected its validity, although research has suggested it is robust to modification (Gilbar et al., 2020; Straus et al., 1989, 2017). However, items involving a gun and extreme violence were felt not as relevant to a UK community sample (evidenced by the more severe examples remaining in the modified RCTS having very low numbers of participants reporting them). The RCTS was chosen as a well-researched tool, with a large evidence base (see Chapman and Gillespie, 2018 and Straus, 2012) and with supported examples of common domestically abusive behaviours. Reflecting, now the thesis is at completion, the use of a pilot study may have helped indicate which subscales were most relevant and thereby the focus could have been on specific types of abuse only. For example, the negotiation scale was kept in full, but was not particularly relevant to the study aims. However, this data could be used for another analysis project, perhaps considering if negotiation abilities may be protective against domestic abuse.

The RMET is one of the most frequently used measures to study ToM (Greenberg et al., 2022; Stonewall et al., 2022), however is not designed per se to be utilised within domestic abuse research. It is also over 20 years old, and one could argue the pictures are dated. Moreover, as stated in Chapter Four, some critics (e.g., Oakley, 2015) argue that it measures emotion decoding rather than ToM and in some research it is utilised for this purpose (e.g., Martine-Fernandez et al., 2019; Romero-Martinez et al., 2019). Therefore, future research may benefit from utilising RMET alongside additional ToM measures (e.g., perspective taking tasks, the director task, movie for the assessment of social cognition; Samson et al., 2010; Wu & Keysar, 2007; Dziobek et al., 2006; Quesque & Rossetti, 2020) and additional emotion decoding measures to then identify effect sizes for their potential impact on frequency of domestically abusive behaviour.

#### *Ethical implications*

It is important to note that this thesis is not suggesting that those with socio-cognitive difficulties, here, ToM deficits, will go on to perpetrate domestic abuse. The research findings here are correlational and predictive, not causal, and therefore are presenting a factor (ToM) which appears to have a relationship with perpetration of domestic abuse, particularly psychological aggression. This thesis also hypothesises that it is the impact of ToM deficits affecting social information processing in social interactions within relationships that may, in some people, lead to a higher likelihood of domestic abuse occurring when other factors, such as adverse childhood experiences are also present, as well as considering the role of other individual factors such as jealousy, alcohol and mental health (Capaldi et al., 2012; Dokkedahl & Elklit 2019).

This thesis is also not attempting to reduce responsibility for those perpetrating domestic abuse by attributing their behaviour to ToM deficits or ACEs but attempting to understand how the behaviour may occur. ToM deficits and other difficulties with SIP can then be better targeted in interventions to ensure responsibility is taken by perpetrators but also improved understanding of their difficulties to improve effectiveness of interventions, which currently have a CBT focus, which may not be meeting their needs.

### **Considering the wider picture**

This thesis can contribute to current knowledge about rates and types of domestic abuse perpetration in the community. Findings from Chapter Four suggest that overall domestic abuse was perpetrated by the majority of the sample (83.9%) although the severity and frequencies of such behaviours varied throughout the sample. Psychological abuse was most frequently reported (81% of sample) which is supported by findings from Safe Lives (2019) who interviewed survivors and found 91% had experienced it in relationships, with 42% never having been physically assaulted. One must consider how well the police are equipped to assess and manage such violence as evidence from Chapter Two (and HMIC, 2019) suggested ongoing difficulties with assessment, underreporting and difficulties understanding psychological abuse. As psychological abuse was the most frequently reported there may be a need for additional police training to understand and accurately identify such abuse to adequately manage it.

As suggested above, psychological abuse may be associated with ToM, other social cognitive and information processing skills, which are not

known to be targeted in interventions currently offered and therefore may benefit from additional consideration prior to intervention. From three chapters in this thesis (two, four and five) it was indicated that those perpetrating domestic abuse may have difficulties in their cognitive functioning generally, their neuropsychological functioning and their socio-cognitive functioning more specifically. Therefore, one wonders how much positive impact a one-size fits all intervention may have on risk of further domestic abuse, without prior assessment or additional sessions included to specifically target potential perpetuating factors, i.e., socio-cognitive deficits.

A systematic review of the impact of socio-cognitive skills training indicated it can improve ToM abilities, perspective taking and emotion recognition (Roheger et al., 2022). Moreover, specific cognitive training for domestic abuse offenders has been piloted, with positive initial findings (Romero-Martinez et al., 2022). Therefore, there may be a need for development of additional cognitive training alongside current intervention approaches, as well as emphasising conflict management. Cognitive abilities are important in a variety of social behaviours, including abusive ones and understanding more about a person's unique needs and presentation including their cognitive and socio-cognitive abilities should be considered in HMPPS and community services.

Moreover, the high rates of ACEs reported in the sample and ACE scores found to be a significant predictor for frequency of domestic abuse in Chapter Four highlight the importance of trauma informed care in services responsible for providing assessment and intervention to domestic abuse

perpetrators. As highlighted throughout this thesis the relationship between childhood adversity and domestic abuse is well documented and therefore the need for services to ensure they are trauma informed and provide education about the role of trauma in perception, emotion and behaviour is important when ensuring an intervention is suitable and effective.

### **Overall conclusions**

There appears to be a role of cognitive dysfunction in the perpetration of domestic abuse as demonstrated by a systematic review and when explored in more detail, a role of socio-cognitive processes, in particular theory of mind (and potentially emotion decoding) and exposure to ACEs, as indicated by the research study in Chapter Four. However, questions still remain regarding why some people with adverse childhood experiences and ToM deficits present do not go on to perpetrate domestic abuse and what contextual factors may exacerbate or mitigate this risk. Evidence presented here is correlational and predictive, not causal and identifies further directions for research, outlined below.

Recent (until September 2022) methods of assessing domestic abuse risk by the police were inadequate and have since been replaced by a new tool, supporting the conclusions of Chapter Two in this thesis. Additional work is still thought to be required to continue evaluating effectiveness of this tool and perhaps including some of the findings from this thesis into screening measures prior to perpetrators participating in interventions to ensure they are targeting the correct risks and needs and are adaptable for any cognitive and/or socio-cognitive dysfunctions.



There remains a lack of clarity regarding the relationship between socio-cognitive functioning and domestic abuse perpetration, which appears to be most related to psychological aggression within relationships (as indicated by Chapter Four). However, considering available evidence into ToM's role in social interactions, its relationship with other known risk factors and involved components of social interaction and how these can escalate to aggression, a tentative framework has been outlined. This framework integrates social information processing models and other known risk factors for domestic abuse (identified in Chapter Three and other relevant literature) to consider how domestic abuse may come to be utilised within relationships, resulting from misinterpretation, misperception, inability to utilise other methods, feedback, and escalation over time. This framework would benefit from further exploration, by way of additional research studies to examine the contributions of separate components and potential mediating or predictive relationships.

Further research is suggested to be completed identifying the individual role of theory of mind by utilising further tests, gaining more information about demographics and other known risk factors, as well as the context of conflict, other tactics attempted, and the quality of the relationship.

Assessment of cognitive and socio-cognitive functioning prior to an intervention for a service user with a history of violence, including domestic abuse, as in Chapter Five, allowed adaptation and specific targeting of risks and needs surrounding socio-cognitive functioning. Evidence presented in Chapter Five indicated a reduction in aggressive behaviour, maintenance of

rapport and motivation and improved understanding by the ward of his individual needs.

Therefore, overall findings from this thesis suggest the role of cognitive functioning, specifically socio-cognitive skills are relevant and important to consider when attempting to understand and manage those perpetrating domestic abuse, as well as further consideration given to a person's childhood experiences. This thesis has predominantly focused on theory of mind and its role in social information processing as one explanation of how a person, here a male, may come to use domestic abuse within a relationship. However, further research would benefit from testing the preliminary trajectory identified in this thesis as one route to a person becoming domestically abusive and consider how it may be utilised in clinical work.

*Word count: 5811*

## Appendices for Research Thesis

Systematic Review

### Protocol for Systematic Review

**Title: Cognition and cognitive deficits in domestically abusive people: a systematic review to identify directions for future research.**

**Review aim:** To review evidence relating to cognition, cognitive function and cognitive deficits in people who have been domestically abusive to partners or family members (to determine if there are gaps in knowledge to be investigated further)

**PICO** will be used:

Population: any perpetrator of domestic abuse over 16 years of age.

Intervention: cognitive abilities or deficits (identified from scoping search) measured by psychometrics (or any valid measure)

Comparison: not applicable

Outcome: any domestic violence measure, including official conviction reports, self-reports and victim reports, follow up reports.

**Searches:** The following databases/sources will be searched: PsycINFO, Criminal Justice Abstracts, PubMed, the Cochrane Library, EthOs (Electronic Thesis Online System), Web of Science, Scopus, MEDLINE, reference lists of selected papers, grey literature.

**Types of study to be included:** Any studies which include people over age 16, those which use a reliable and valid measure to measure/capture the cognition/cognitive function or deficit. The study must use a sample size of over 20 to be included to have robust power. As research methodology and the legal definition of domestic abuse has changed significantly in recent decades, studies from before 1976 will not be included; this is due to the Domestic Violence Act (1976) being passed.

**Condition being studied:** Domestic abuse perpetrated by those over 16 years of age, as defined by The Domestic Abuse Act 2021. This includes physical, emotional, psychological, sexual, financial and coercive abusive behaviour directed towards a family member, intimate partner or someone who is personally connected, such as an ex-partner.

Cognition includes level of functioning, deficits, beliefs, attitudes, attribution styles and distortions. Cognitive abilities (or likely here deficits) include those identified from scoping searches and likely include: empathy, decision making, theory of mind, executive functioning, IQ, learning difficulties.

**Context:** Research has begun to develop understanding into cognitions such as attitudes, distortions and beliefs which may make a person more likely to use domestic violence (Gilchrist, 2009; Weldon & Gilchrist, 2012; Ruddle et al. 2017), but we do not understand interactions between cognitive deficits, which may exacerbate the risk. Sexual offenders have been demonstrated to have cognitive deficits in empathy, theory of mind and decision making skills (Castellino et al., 2011; Elsegood & Duff 2010; Keenan & Ward, 2000) and domestic offending can overlap with sexual offending. Therefore it is reasonable to assume that domestic abuse offenders may present with similar deficits which could be identified in

early screens and targeted in interventions more specifically. By completing a systematic review into all domestically violent people this could also provide more information about adolescent and female perpetrators, of which research is also lacking.

**Comparison group:** not applicable as this is a review of relevant factors for domestically abusive people only.

**Outcome measure:** to determine whether there is an association between specific types of cognition, cognitive deficit or functioning to the likelihood of a person being domestically abusive.

**Search terms:** these were developed using a search matrix and may be subject to slight changes after a more in depth scoping search, or thesaurus terms used by different databases.

- Domestic violence
- Domestic abuse
- Intimate partner violence
- Family violence
- Cognition
- Cognitive distortions
- Cognitive function
- Cognitive deficits
- Impaired cognitive function
- Cognitive difficulties
- Cogniti\*
- Batterers

A combination of the above search terms will be used.

**Data extraction and coding:** Duplicates will be excluded using the merge function of reference management software. Using the above search strategy, titles/abstracts will be retrieved by the main reviewer and will be screened to exclude any obviously irrelevant articles. The full text articles will then be retrieved and assessed for eligibility, using a data extraction form. A second reviewer will assess a random sample of the articles against the inclusion and exclusion criteria. The two reviewers will then discuss any discrepancies.

Data extraction will include:

1. Sample size
2. Demographics of participants (age, gender, offence history/details if provided, re-offence rates)
3. Country
4. Methodology of study (design, aims, statistics used)
5. Cognitive function/deficit/general cognition studied
6. Cognitive assessments used and how reliable/accurate these are
7. Outcomes (i.e. relationship between cognition and domestic abuse type, victims, frequency, severity) and how this is defined (i.e. is it an acceptable and inclusive definition)

Essentially: the characteristics or PICOs of studies, assessment of risk of bias or the quality of data and outcome measures.

A form will be used to collect the above data and there will be free text box to explain why the study will be excluded/included.

### **Data Synthesis**

***PICO for data synthesis (from TIDieR, Hoffman et al., 2014).***

**P** type of domestic abuse perpetrator (e.g. gender, age, nationality, engaged in groups/interventions, offence history)

**I** what type of cognitive ability, function or deficit was studied, how was it assessed/measured.

*Different group for each cognition, e.g. Study 1. Main intervention = empathy, other intervention measured = moral decision making*

- Consider the impact of mental illness or personality disorder on cognition as well, particularly as these are often seen in those committing DV. Will still include the population but maybe try to include in separate analysis to consider confounding effects?
- Describe the rationale/theory or goal of any elements that are essential to the cognitive ability/function/deficit being studied – e.g. was measurements taken twice, does there need to be a delay between tests, does IQ play a role
- Who completed the assessments? Professional or

### **C n/a**

**O** Was there a relationship (correlation, predictive, ratio etc) between the cognition assessed/measured and the domestic abuse? *Would include self-report as well, as this could be meaningful to consider gaps in knowledge.*

Different outcome domains would be subgroups e.g. one group would be recidivism, one increased number of arrest, one just presence of DV, attrition from interventions. Then the measure would be court report, intervention drop-out rates, victim reports etc.

A definition for each subset of PICO that needs to be answered is provided below. The comparisons will follow Intervention A compared to Intervention B format.

- Relationship between cognition and type of DV (did specific cognitive abilities or deficits correlate or predict DV overall?)
  - Were there different relationships between cognitions and types of DV in those that found a relationship? I.e. could some be used as predictors?
- Does gender, age or other demographics mediate the potential relationship between cognition and domestic violence?
- Difference or relationship between offence history and cognitive abilities (i.e. did some cognitions correlate or predict further DV, or link with previous rates of DV)
- Relationship between cognition and reoffending (overall was there a relationship between certain cognitions or deficits and likelihood of reoffending)

Cognition or cognitive ability that relates to domestic violence

- Abilities/deficits that increase risk of DV
- Abilities/deficits that decrease risk of DV
- Demographic variables that may mediate relationship
  - Age
  - Gender
  - Ethnicity
  - Education/SES
  - Country
  - Other variables to consider e.g. substance misuse
  - Involvement and completion of interventions

- Pathway to domestic violence
  - Abilities or deficits that were associated or predictive of history of DV offending
  - Or other types of offending, e.g. general criminality or specific
- Overall relationship
  - Can cognition, abilities or deficits be said to correlate/predict/have an effect on the likelihood of a person being domestically violent, the frequency, severity or reoffending?

*Outcome domains*

- Arrest
- Increase in offending
- Intervention drop out
- Type of offending

If data is good enough quality and there are sufficient statistics provided, then a meta analysis will be completed, otherwise a narrative analysis will be utilised. This has been chosen, as it is likely that studies will be focusing on different cognitions, using different methods and therefore make overall comparisons more difficult. Depending on data extracted, a meta-analysis may be chosen for only some of the above PICO subsets, or for all.

**Search Matrix**

| Combine with AND |          |   |   |                |  |
|------------------|----------|---|---|----------------|--|
| Combine with OR  | Concept  | P   | I   | C              | O  |
|                  | Concept  | People – men and women, young people                                  | Cognitive deficits  | Not applicable | Domestic violence  |
|                  | Keywords | Adults<br>Young adults<br>Women<br>Men<br>Male<br>Female<br>Batterers | Cognition<br>Cognitive distortions<br>Cognitive function<br>Cognitive deficits<br>Impaired cognitive function<br>Cognitive difficulties<br>Empathy, theory of mind, attributions, beliefs, moral decision making, IQ, dyslexia, |                | Domestic violence<br>Domestic abuse<br>Intimate partner violence<br>Family violence<br>Battery |

|  |            |  |  |  |  |
|--|------------|--|--|--|--|
|  |            |  | Learning difficulties, intellectual deficit disorder executive function, dementia, |  |  |
|  | Truncation |  | Cogniti*   |  |  |

### Database search terms

| Database and date searched | Search terms   | Number of results |
|----------------------------|--|-------------------|
| Ovid<br>24.07.21           | *cogniti*/ or *cognitive function/ or *cognitive deficit/ AND *domesti* violen*/ or *domestic abuse*/ or *domestic perpetrator/) not victim.mp.) or *intimate partner violence/ or *batterer/  | 11                |
| Scopus<br>24.07.21         | {cognition?} OR {cognitive deficit} OR {cognitive function} ) AND ( {domestic abuse perpetrator AND NOT victim} OR {domestic abuser AND NOT victim} OR {domestic violence?} OR {domestically violent} OR {batterer} OR {intimate partner violence} )   | 641               |
| PubMed<br>24.07.21         | ((("cognition"[All Fields]) OR ("cognitive function"[All Fields])) OR ("cognitive deficit"[All Fields]) and Search: (((("domestic violence"[All Fields]) OR ("domestic abuse"[All Fields])) ) OR ("intimate partner violence"[All Fields])) OR ("batterer"[All Fields])) OR (domestic abuse                            | 139               |
| PsychNET<br>31.07.21       | {Domestic Violence} OR {Intimate Partner Violence} OR {Marital Conflict} OR {Family Conflict} AND {Cognitive Impairment} OR {Attitudes} OR {Implicit Attitudes} OR {Rumination (Cognitive Process)} OR {Schema} OR {Cognitive Processes} OR {Executive Function} OR {Mild Cognitive Impairment} OR {Cognitive Ability} | 537               |

|                                |  |       |
|--------------------------------|--|-------|
| ProQuest<br>31.07.21           | (AB("domestic violence") AND ("domesti*<br>violen*") AND NOT ("victim")) AND<br>(MAINSUBJECT.EXACT("Executive function") OR<br>MAINSUBJECT.EXACT("Cognitive ability") OR<br>MAINSUBJECT.EXACT("Cognitive style") OR<br>("cogniti*"))   | 223   |
| Web<br>Science<br>24.07.21     | of (TS=(domesti* abuse OR domesti* violen* OR<br>domestic abuse perpetrator NOT victim OR<br>intimate partner violence OR batterer)) AND<br>ALL=("cogniti*" OR "cognitive deficit" OR<br>"cognitive function" OR "cognitive impairment")   | 1,274 |
| Grey<br>Literature<br>17.08.21 | "domesti* abuse" OR "domesti* violen*" OR<br>"domestic abuse perpetrator" or "batterer" or<br>"intimate partner violence" AND "cognition"<br><br>intimate partner violence- victims OR "domestic<br>violence- victims" OR "domestic abuse - victims"<br>NEAR/5 "cognition" OR "Cognitive deficit" OR<br>"cognitive function" | 142   |

### **Description of measures used for domestic abuse**

#### ***Revised Conflict Tactics Scale (Straus et al., 1996)***

This is a 39-item tool used to assess the severity and frequency of partner violence looking specifically at psychological, sexual and physical aggression. The tool also explores the level of reasoning or nonviolent tactics used to avoid conflicts. The questions can be asked both about the participant and their partner and rated in terms of how recently the behaviour occurred. The tool has demonstrated effectiveness with all the scales demonstrating good internal consistency (Cronbach's alpha ranging from 0.79 – 0.95, Straus et al., 1996).

#### ***Spousal Assault Risk Assessment Guide Version 3 (SARA) Kropp et al., 2015***

The SARA is a domestic violence risk assessment tool, used to predict the likelihood of domestic violence in those suspected or convicted of the same.



It has 20 items and screens for risk factors to determine the degree of threat an individual may pose to both intimate partners and other family members. The SARA was normed using 2,309 adult male offenders. Evaluations of SARA on IPV recidivism suggest moderate predictive accuracy (AUC = .63. Belfrage et al., 2011; AUC = .59 - .77. Helmus & Bourgon 2011; AUC = .68. Messing and Thaller, 2013).

### **Neuropsychological Measures Used in Studies**

#### ***WAIS-IV (Wechsler, 2008)***

The Weschler adult intelligence scale is an intelligence test designed for adults age 16-90. It has 10 core subtests and provides various different scores to inform about abilities in a variety of cognitive areas (perceptual reasoning, processing speed, verbal comprehension and working memory). It provides an overall profile of the test takers strengths and weaknesses and compares these to average scores. The WAIS-IV provides two overall summary scores of Full Scale IQ (FSQ) and General Ability Index.

#### ***Corsi Block Tapping Task (Corsi, 1972)***

The Corsi Block Tapping Task (CBTT) originally consisted of nine blocks arranged in a random pattern on a board. The blocks were tapped by the tester in a randomised sequence which increased in length. After each sequence the test taker is asked to reproduce the sequence, until they are no longer able to do so accurately. The test aims to measure spatial memory, visuospatial processing and attention.

#### ***Wisconsin Card Sort Task (Grant & Berg, 1948)***

Originally designed for assessing brain injury, this executive function task uses cards which need to be sorted into four categories, according to different rules with only minimal feedback provided (correct or incorrect).

The rule of classifying the cards changes every 10 cards and therefore tests how able a person is to adapt to rule changes. Total number of errors, perseveration errors and non-perseveration errors are measured.

***Interpersonal Reactivity Index (Davis, 1980)***

This tool measures empathy using 28-items on a 5-point scale ("Does not describe me well" to "Describes me very well"). There are four subscales, made of seven items: perspective taking, fantasy, personal distress and empathic concern. The internal consistencies for each subscale were moderate for males (Cronbach's alpha from 0.71-0.78) and females (0.70 - 0.78) [Davis, 1980].

**Socio-cognitive measures used**

***Reading the Mind in the Eyes Test (RMET, Baron-Cohen et al., 2001)***

RMET is a test used to study Theory of Mind abilities using photos of male and female eyes. Theory of Mind is a cognitive skill involving empathy and perspective taking and the test asks participants to identify what emotion the person is experiencing, based on just their eyes.

***NimStim (Tottenham et al., 2009)***

NimStim is an emotion recognition test which uses a variety of actors faces expressing a variety of emotions (e.g., anger, sadness, disgust, calm, happy, neutral). Cohen's kappa was 0.79 and reliability score was 0.84 (Tottenham et al., 2009). Nyline (2016) included the faces showing sadness, fear, disgust, anger, happiness and surprise and blended them with the same neutral face at varying levels of intensity (30%, 40%, 60%, 70% and 100%).

Research study

## **Ethics Application and copy of online questionnaire**

### **Application form**

Application for approval of all studies involving **Healthy Human Participants only conducted by Staff and Students of the University of Nottingham which don't involve an invasive procedure**

1 **Title of Project:** Exploring Theory of Mind and perceptions of Domestic Abuse in a community sample of males.

**Short title** for use in footers of documents (ie Dynamic study): Theory of Mind and Domestic Abuse.

2 **Names, Qualifications, Job Title, School/Divisional/Unit/Address, email of all Researchers:**

**Chief Academic/Supervisor:** Dr Simon Duff, Forensic Psychologist, Assistant Professor, School of Family and Forensic Psychology: [simon.duff@nottingham.ac.uk](mailto:simon.duff@nottingham.ac.uk)

Dr Elizabeth Paddock, Forensic Psychologist, Assistant Professor, School of Family and Forensic Psychology: [Elizabeth.paddock@nottingham.ac.uk](mailto:Elizabeth.paddock@nottingham.ac.uk)

Sophie Mann, Trainee Forensic Psychologist, [Sophie.mann@nottingham.ac.uk](mailto:Sophie.mann@nottingham.ac.uk)

**Other key researchers/collaborators:**

**Students name and course:** Sophie Mann, Doctorate in Forensic Psychology, [Sophie.mann@nottingham.ac.uk](mailto:Sophie.mann@nottingham.ac.uk)

**Have you completed the Research Integrity Training course? **Yes/No****

Finished

20

[Review](#)

Pass 😊

Submitted Monday, 4 January 2021,

8:01 AM

**Highest grade: 20 / 25.**

**Overall feedback**

Pass 😊

**Have you read the Code of Research Conduct and Research Ethics? YES**

<https://www.nottingham.ac.uk/research/resources/documents/code-of-research-conduct-and-research-ethics-v7.0-june-2020.pdf>

**3 Type of Project:** (Please select one or more from list below and delete as appropriate)

*Doctorate in Forensic Psychology*

Questionnaire-based study

Quantitative methodology

**4 Location of study:** This study will be completed via online questionnaires, due to current lockdown measures in place

Start date: March 2021

End date: Sept 2022

Length of study: 1.5 years

**5 Description and number of participants to be studied:** This study plans to recruit a community sample, of males over the age of 18. The study will use an online questionnaire. A power analysis has suggested a sample size of approximately 70 participants. Inclusion criteria will be that the participant is male and over age 18. The exclusion criteria will be if the male is under 18. As the study will be online, there will be no way to confirm age, but the criteria will be clearly stated and the flyer placed on sites where adults are likely to visit, rather than adolescents.

Data regarding if the participant has a diagnosis of Autism Spectrum Disorder will be collected, as this disorder has been reliably shown to affect Theory of Mind abilities, which is one of my independent variables.

**6 Summary of Experimental Protocol - Please give details below (no longer than this side of A4 ) under the following headings: - 1. Background. 2. Aims (to include hypothesis to be tested Primary and secondary endpoints), 3. Research protocol and methods, 4. Measurable end points/statistical power of the study. 5. Key references. This section must be completed. This is in addition to a more detailed project proposal/protocol which should be attached to this application. Please use 10pt typeface.**

1. Background. Whilst previous research into domestic abuse (DA) has identified a range of risk factors, including exposure to violence during childhood, previous violence, personality disorders and cognitive distortions, there has been a sparsity of research exploring Theory of Mind (ToM). ToM is defined as “the ability to attribute mental states to oneself and others” and has been shown to be more prevalent in those who experienced abuse in childhood. Research into a similar group, those who commit sexual offences, has identified the presence of deficits in ToM. Researchers suggest there could be a misunderstanding of the intentions or beliefs of women/children, leading to offending behaviour. Research exploring non-forensic DA, in those who have not necessarily been convicted of DA but engaged in it, is also lacking. This research hopes to explore the levels of DA and ToM ability in a community sample. If ToM deficits similar to those described above, are found in those who have engaged in domestically abusive behaviour, this could suggest that those committing DA have difficulty taking their partner’s or family members’ perspective of how their abusive behaviour can be damaging or distressing. Moreover, deficits in ToM in a DA group could act to enhance our understanding of why a person commits violence against partners and/or family. The study could increase knowledge of how frequently different types of DA (e.g. from violence to coercion) are being committed in the community and could suggest more education and prevention measures are needed.

2. Aims. The aims of this research are to explore ToM abilities in a community sample and identify how frequently DA may be occurring in those who have not been convicted. Levels of childhood trauma within a community sample will also be identified to support the previous finding of ToM deficits associating with abuse in childhood. The research aims to answer: Can ToM ability predict how a person behaves in a relationship? Is a greater ToM deficit associated with a greater likelihood to be domestically abusive? Is there a relationship between childhood trauma, ToM and behaviour within relationships? If there are, can this help to understand why a male commits DA against their partner or family and therefore increase effectiveness of screening tools and interventions?

3. Research protocol and methods. A community sample will be recruited via a flyer posted on various online platforms. The research will be advertised on forums (e.g. Reddit), social media (e.g. facebook, twitter, LinkedIn) and contact will be made to organisations who offer interventions to domestically abusive men to advertise the study. The aim will be to recruit a sample with a range of DA behaviour. The link to the study will be within the advert, and include a disclaimer that one of the questionnaires contains information relating to childhood trauma and behaviour in relationships. If a participant chooses to complete the study, the link will take them to an information sheet, then a consent form. The questionnaires used are: the Reading the Mind in the Eyes test (RMET), to measure ToM abilities, the Adverse Childhood Experiences Questionnaire, (ACE-Q), to collect information relating to childhood experiences and a questionnaire relating to abuse within relationships, based on the Conflict Tactics Scale. The questionnaire should take approximately 20-30 minutes to complete. Once completed, the participant will receive a debrief sheet, explaining the aims of the study and providing information of organisations to contact, if they were affected by the content in the study. The questionnaire will be created using Jisc software, which is recommended by University of Nottingham as a secure way to collect data. The data from the study will be sent to the lead researcher’s laptop, where it will be assigned a code and stored on a password protected

laptop. The data will be downloaded into a statistical program, explored, analyzed and written up as part of the doctorate thesis.

4. Measureable end points/statistical power. It is hypothesized that DA will be on a continuum, as will the ToM abilities and levels of childhood trauma. Therefore a predictive relationship between two or three of the variables (e.g. between DA and ToM or between DA and childhood trauma or between DA, ToM and childhood trauma) can be explored using multiple linear regression.

#### 5. Key references

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind". *Cognition*, 21(1), 37-46.

Dempsey, B., & Day, A. (2011). The identification of implicit theories in domestic violence perpetrators. *International Journal of Offender Therapy and Comparative Criminology*, 55(3), 416-429.

Elsegood, K. J., & Duff, S. C. (2010). Theory of mind in men who have sexually offended against children: A UK comparison study between child sex offenders and nonoffender controls. *Sexual Abuse*, 22(1), 112-131.

Germine, L., Dunn, E. C., McLaughlin, K. A., & Smoller, J. W. (2015). Childhood adversity is associated with adult theory of mind and social affiliation, but not face processing. *PloS one*, 10(6), e0129612.

McLaughlin, K. A., & Lambert, H. K. (2017). Child trauma exposure and psychopathology: mechanisms of risk and resilience. *Current opinion in psychology*, 14, 29-34.

Ruddle, A., Pina, A., & Vasquez, E. (2017). Domestic violence offending behaviors: A review of the literature examining childhood exposure, implicit theories, trait aggression and anger rumination as predictive factors. *Aggression and violent behavior*, 34, 154-165.

Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. B. (1996). The revised conflict tactics scales (CTS2) development and preliminary psychometric data. *Journal of family issues*, 17(3), 283-316.

Weldon, S., & Gilchrist, E. (2012). Implicit theories in intimate partner violence offenders. *Journal of Family Violence*, 27(8), 761-772.

Zucchelli, M. M., & Ugazio, G. (2019). Cognitive-emotional and inhibitory deficits as a window to moral decision-making difficulties related to exposure to violence. *Frontiers in psychology*, 10.

Do not go over the page

#### **7 Lay Summary of project (in lay words):(maximum 200 words) *Summaries which include***

***language which is too technical for lay members of the Committee will be rejected.***

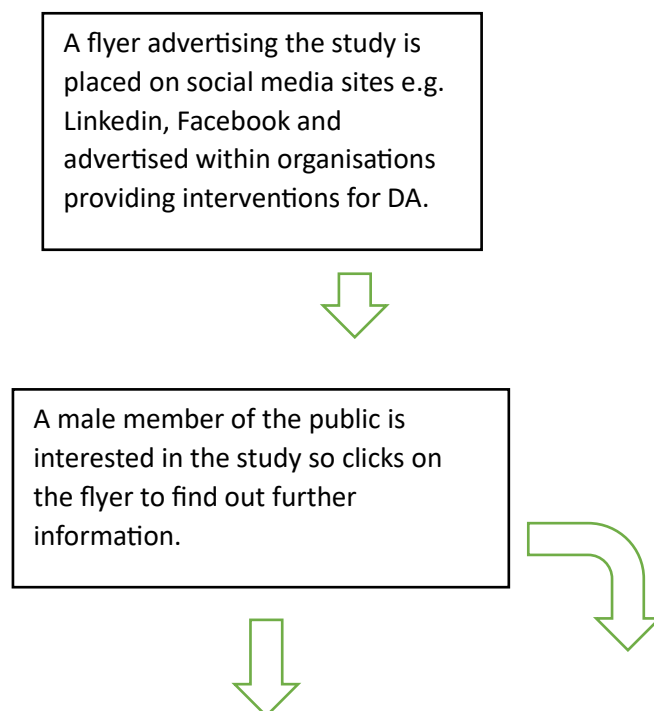
This study aims to explore a specific cognitive ability, theory of mind, in men who have engaged in varying levels of domestic abuse (DA), in the community. There is a lack of research regarding DA in non-forensic populations, but it is pertinent to

explore, as unreported and un-convicted DA is thought to be high. Theory of mind is a skill that we develop during childhood, which helps us understand that other people have different thoughts, emotions, and attitudes to our own and helps make predictions about the world. The community sample will be recruited via online platforms and will complete an online questionnaire, with three sections. First, will be the theory of mind test, which involves identifying emotions from pictures. Second will be a questionnaire regarding any childhood trauma experiences, to support the idea of the importance of trauma-informed interventions, and finally there will be questions relating to their behaviour, emotional experience and perception of their partner, within relationships. The research aims to explore if theory of mind abilities can predict frequency/severity of domestically abusive behaviour and if there is a relationship between childhood trauma, theory of mind and domestically abusive behaviour.

8 **Will written consent be obtained from all volunteers?**

**Yes/No**

### **RECRUITMENT FLOWCHART**



Male wishes to participate after reading the information sheet. They agree to the consent form, provide their email and move onto the next stage of the questionnaire.

After reading the information sheet, the male decides they don't wish to engage, so does not progress with the research.



After completing the questionnaire, the male will be emailed a debrief sheet when all data is collected.

9 **Will an inconvenience allowance be offered**  
Yes/**No**

No, as it is an online study only taking 20-30 minutes.

10 **FUNDING**

N/A

11 **Studies involving NHS Staff, organisations, Services**

Does the study involve any premises, services staff who hold a contract with a hospital, Primary Healthcare or Social Care Trust?



Yes/No

**12 How will the subjects be chosen?**

The subjects will choose to participate in the research and will not be approached by the research team. The inclusion criteria is that they are male and over 18.

If a potential participant is interested by a flyer placed on social media sites and interventions information pages, they can access further information sheets, the consent forms and then the questionnaires. The inclusion criteria will be clearly explained in the flyer.

*Please include a copy (as a separate attachment) of your proposed poster or advert, e-mail/letter of invitation text to be posted on social media sites.*

**13 Describe how possible participants will be approached.**

As above, a flyer or advert, briefly explaining the research opportunity and containing a link to the online study, will be posted onto Facebook, LinkedIn, Twitter. Community based intervention groups will be contacted to discuss the potential of advertising the research opportunity on their homepage. The data collected is anonymous and participation purely voluntary; this will be made clear in the advert.

**14 What sources of information will be included? i.e, pre-existing research database, student records, visits to other organisation, online resource**

No other sources of information will be included. Participation will be voluntary.

**15 Whose permission will be sought to access this information (eg GP, consultant Head of Organisation)?**

N/A

**16 For interview/focus groups:**

n/a

## **17 Data Storage and Data management**

The **research** data will be safely stored on a laptop, which is password protected. Data from each questionnaire will be given a unique code identifier, meaning that data will never be stored with any personal information; leaving it anonymised. The data is collected from the online questionnaire, using a program that has been designed by Bristol University (Jisc) to ensure it is secure and confidential. This data will then be securely downloaded and kept on a password protected laptop, in a locked property.

All data and files will be encrypted before any transfer or uploads occur. A data management plan is included in this application, which describes data management in more detail.

The only personal data collected will be an email. This email will be kept throughout the study, so that debrief sheets can be sent to participants as well as the results of the study, should they wish to receive them. Subsequent to the results being sent to participants their emails will be destroyed.

Please see the attached data management plan, which has received feedback from the Senior Research Librarian.

## **18 What ethical problems do you foresee in this project?**

One of the questionnaires (the Adverse Childhood Experiences Questionnaire: ACE-Q) asks about difficult experiences participants may have had in childhood. There are questions that ask directly about different types of abuse, which some people may find upsetting, as it is a sensitive topic. The ACE-Q has 10 questions and includes an explanation of how to use the measure.

In order to reduce any potential risks arising from questions in the ACE-Q, the research team will provide contact details, as well as organisations that can provide additional support at the end of the online questionnaire, so those who may have been affected by completing it can access additional support. The content of the ACE-Q is also explained in the information sheets that participants will be provided with, before consenting to take part in the study. The participant is also free to withdraw from the online study, without any consequences by closing the window they are running it on. If they have not pressed the submit button at the end of all the questions, their answers will not be saved.

Another ethical issue may arise from the questionnaire asking about their behaviour within relationships, as this includes descriptions of different types and severities of abusive behaviour. These questions have been designed using the definitions from the Domestic Abuse Bill 2020 and a previously tested psychometric measure called the Revised Conflict Tactics Scale (Straus et al, 1996). The participants will be foretold that the questionnaire contains such descriptions and can withdraw if they feel they no longer wish to continue. Contact details of organisations which provide interventions for domestically abusive people will be provided in the debrief sheet.

There is a chance that some people might feel pressure to participate, or misunderstand the nature of the study. Some may feel more vulnerable or targeted by the study. Therefore, the information sheet clearly explains that there are no negative consequences for not participating and that they can withdraw at any time before they complete the questionnaire, without any negative consequences. It will also clearly outline that the study is anonymous and answers provided will not be able to be linked with an email from the consent form.

**18. What are the possible limitations of the proposed design of this study?**

As it is an online self-report questionnaire, the main limitation could involve social desirability of those completing, e.g. participants may downplay levels of childhood trauma as they feel ashamed, or not feel comfortable to share previous abusive behaviours occurring within relationships. However, as it is anonymous and online, with no contact with the research team, it is hoped that participants will be truthful and accurate.

The Reading the Mind in the Eyes Test contains 36 items, so there could be test fatigue.

**DECLARATION:** I will inform the Medical School Ethics Committee as soon as I hear the outcome of any application for funding for the proposed project and/or if there are any significant changes to this proposal. I have read the notes to the investigators and clearly understand my obligations as to the rights, welfare and dignity of the subjects to be studied, particularly with regard to the giving of information and the obtaining of consent.

**Signature of Lead Investigator:**

*Duff*

**Date:** 4 March 2021

**\*\*Nb If you are student your supervisor must sign this form otherwise it will be rejected**

**Name and address for correspondence with applicant:**

Sophie Mann

37d Crystal Palace Park Road

London

SE26 6UR

[Sophie.mann@nottingham.ac.uk](mailto:Sophie.mann@nottingham.ac.uk)

Please submit your completed application to:

Administrative Support

Faculty of Medicine & Health Sciences Research Ethics Committee

c/o Faculty PVC Office

B Floor, Medical School (nr Bridge)

QMC Campus, Nottingham University Hospitals

Nottingham

NG7 2UH

e-mail: [louise.sabir@nottingham.ac.uk](mailto:louise.sabir@nottingham.ac.uk)

## **Research proposal**

### **Exploring Theory of Mind and perceptions of Domestic Abuse in a community sample of males.**

#### **Introduction**

##### *Domestic abuse*

Domestic abuse (DA) can be defined as incidents of abusive, controlling or coercive behaviour occurring within intimate partner relationships, or families (Pence & Paymar, 1993; Langlands, Ward & Gilchrist 2009; WHO, 2013). The Domestic Abuse Bill (2020) has also included assault, threats, intimidation, humiliation, manipulation and various forms of coercion in its definition of DA, emphasising it can take many forms. Whilst DA is committed by both men and women (Office of National Statistics, 2020), for the purpose of this study, I will only explore domestically abusive behaviour committed by a *male* towards a partner or family member. DA is a pervasive and prevalent problem, experienced by over 2.3 million adults in the UK, with 758,941 DA-related crimes recorded by police in England and Wales in 2020 and repeat offending common (Sherman, 2007; Flatley, Kershaw, Smith, Chaplin, & Moon, 2010; Morgan, Boxall, & Brown, 2018; Office of National Statistics, 2020). Despite these high prevalence rates, DA is likely under reported, with the Crime Survey for England and Wales finding that only 18% of women experiencing DA reported it to police (CSEW, 2018). Last year,

due to COVID-19 lockdown measures initiated, the problem appears to have worsened as people have been trapped in their homes; women's helplines and emergency services have noted a 60% increase in calls (Mahase, 2020). Therefore, the need to understand why this offending behaviour takes place and how we can identify, reduce and even prevent it, remains of paramount importance.

Research investigating DA, has explored similarities and differences within the group, using mainly convicted samples. Typologies or sub-groups of males committing DA have been identified (Holtzworth-Munroe and Stuart, 1994; Johnson et al., 2006), which include family only, antisocial/generally violent and borderline/dysphoric. These subgroups have been shown to present with differing styles (i.e. severity and type of violence), risk factors and different likelihoods of recidivism (Dixon & Browne, 2003; Johnson et al., 2006; Petersson & Strand, 2017). These typologies highlight how heterogeneous this group is and suggest that preventing recidivism will be difficult until we understand more about the development and maintenance of this violence. Therefore, it can be argued that various interventions might be required (Cantos et al, 2019). In the UK, the intervention offered is "one size fits all" (Akoensi, Koehler, Lösel, & Humphreys, 2013; Bates, Graham-Kevan, Bolam, & Thornton, 2017) and does not reflect heterogeneity of the group.

Several models have been put forward to understand why a person (here, a male) commits DA and attempt to translate these ideas into an effective intervention. An early model (The Duluth Model) was put forward by Pence and Paymar (1993), based on feminist principles and the idea of male privilege, power and control, leading to violence against women. Whilst this model is the foundation of most interventions still delivered in the USA and Canada, and does have some support from research exploring beliefs of domestically abusive men (Herman et al., 2014), it is not based on scientific principles. The model has been shown to have minimal positive effects, no better than arrest at reducing recidivism (Babcock et al., 2004; Stover et al., 2009). Moreover, it is a reductionist model (Kropp & Cook, 2014) and attempts to re-educate, not treat/change behaviour (Bohall et al., 2016), neglecting important factors which will be outlined below.

Other models consider how childhood exposure to a violent and abusive environment, can lead to development of distorted relationship scripts, serving to reinforce violence

supporting attitudes and normalise abuse within relationships (Cunningham et al., 1998; Senkans, McEwan, & Ogloff, 2020). Similarly, Social Learning Theory posits that children in violent households learn to model violent behaviour they witness their parents acting out, i.e. domestic abuse (Dutton et al., 2008).

Other models bring together a number of risk factors, such as substance misuse, previous violence/antisocial behaviour, personality disorders and minimisation of abusive behaviour (Kropp and Cook, 2014). Implicit theories (ITs), which, similarly to distorted scripts, normalise violence and/or poor attitudes to women, have been shown to increase the risk of developing a range of psychopathologies and cognitive deficits (Gilchrist, 2009; Weldon & Gilchrist, 2012; Ruddle et al. 2017). Implicit theories are stories/scripts that help a person make sense of the world, make predictions, attributions and rationalise their beliefs and behaviours, including offending behaviours (Gilchrist 2009; Weldon & Gilchrist, 2012; Ciardha & Gannon, 2012; Ruddle et al., 2017). Cognitive deficits, leading to impaired moral decision making, such as lower empathy *and* dysfunctional theory of mind abilities have been associated with aggressive behaviour in general (McLaughlin & Lambert, 2017; Zucchelli & Ugazio, 2019), as well as in those committing DA (Covell, Huss, & Langhinrichsen-Rohling, 2007; Ruddle et al., 2017). ITs have been demonstrated to develop after exposure to abuse in childhood, or being a victim of DA (Murrell, Christoff, & Henning, 2007; Asen & Fonagy, 2017; McLaughlin & Lambert, 2017).

### *Theory of Mind*

Within the DA literature, Theory of Mind (ToM) appears to be one of the most under-researched areas. ToM is defined as “the ability to attribute mental states to oneself and others” and “the ability to envisage how someone else might represent the world” (Quesque, & Rossetti, 2020; Frith & Frith, 2005; Premack and Woodruff, 1978). ToM deficits present as a reduced ability to understand others as psychological beings, perspective take and comprehend how another person might think or feel (Perner & Wimmer, 1985; Weimer, Dowds, Fabricius, Schwanenflugel, & Suh, 2017). Those with Autism Spectrum Disorder (ASD) have long been demonstrated to have deficits in their ToM abilities (Baron-Cohen, Leslie, & Frith, 1985; Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001; Peñuelas-Calvo, Sareen, Sevilla-Llewellyn-Jones, & Fernández-Berrocal, 2019) which contribute to the difficulties those with ASD can

experience reading/reacting to social cues, emotional expression and difficulty engaging in social communication (American Psychiatric Association, 2013).

**Rationale:** Whilst there is a sparsity of literature regarding DA and ToM, deficits in ToM abilities *have* been found in a similar group of offenders, namely those who offend sexually against women and children (Castellino et al., 2011; Elsegood & Duff 2010; Keenan & Ward, 2000). Elsegood & Duff (2010) suggested that these ToM deficits might lead those who offend sexually to misunderstand the intentions or beliefs of women and children, leading to offending behaviour. A similar mechanism could be driving domestically abusive behaviour, if their family or partners' intentions are misinterpreted, emotions or beliefs misread/misunderstood and situations attributed incorrectly. ToM deficits could also suggest that those committing DA have difficulty taking their partner's or family members' perspective of how their abusive, coercive or threatening behaviour can be damaging or distressing.

Moreover, research has suggested that those who experienced abuse in childhood were more likely to present with ToM deficits (Germine et al., 2015; Zucchelli & Ugazio, 2019) and as outlined above, there is support for the hypothesis that DA can develop from exposure to abuse in childhood (Kropp & Cook, 2014; Ruddle et al., 2017). If ToM deficits are present in those committing DA then this could suggest that interventions could be missing a potentially important area to target and could act to enhance our understanding of why a person commits acts of abuse against partners and family.

Research into the frequency and severity of domestically abusive behaviour in the community is sparse and hard to quantify or define. This study therefore aims to explore differing levels of abusive behaviour, how frequently they occur and how males in the community perceive behaviour and emotional expression within relationships.

#### **Research questions and hypotheses:**

- Can ToM ability predict how a male behaves in a relationship?

*Hypothesis: ToM abilities will be predictive of abusive behaviour in relationships, with greater deficits demonstrating greater frequency of abuse.*

- Is greater ToM deficit associated with a greater likelihood to be domestically abusive?

*Hypothesis: ToM deficits will be associated with a greater frequency of domestically abusive behaviour.*

- Is there a relationship between childhood abuse, ToM and behaviour within relationships?

*Hypothesis: there will be a relationship between childhood abuse, ToM abilities and frequency of abusive behaviour occurring within relationships.*

If predictive relationships are found, the research would hope to increase understanding of why a male commits DA against a partner or family member and therefore could increase effectiveness of interventions.

## **Method**

**Participants:** This study plans to recruit a community sample, of males over the age of 18. The study will use an online questionnaire. A power analysis has suggested a sample size of approximately 70 participants. Inclusion criteria will be that the participant is male, over age 18 and will also need to possess an average reading and writing ability, as they will complete the study independently. The exclusion criteria will be if the male is under 18. The aim will be to recruit a sample with a range of DA behaviour. Some may have never engaged in it, some may have done but not been aware, some may have been previously convicted. Data regarding demographics (e.g. age, ethnicity) and ASD diagnosis will be collected, as ToM deficits are already known to exist within this population and could confound the data if not collected.

**Design:** The study will be comprised of a questionnaire, delivered in an online format, to access a large sample. The hyperlink to the study will be posted within an advert or flyer and posted on various online platforms. The study plans to use forums (e.g. Reddit), social media (e.g. facebook, twitter, LinkedIn) and contact organisations who offer interventions to domestically abusive men to advertise the study.

If a participant chooses to complete the study, the link will take them to an information sheet, explaining the three questionnaires which make up the study and then they will complete a consent form. A copy of the consent form, which includes their email, will



be accessible to the research team. The questionnaire should take approximately 20-30 minutes to complete. Once the questionnaire is completed, they will be emailed a debrief page, explaining the aims of the study in more detail and providing further information of organisations to contact, if they were affected by any of the content in the study.

Three measures will make up the online questionnaire. The Reading the Mind in the Eyes Test (RMET) has been shown to accurately and reliably measure ToM abilities in different groups, i.e. ASD, Sex offenders (Baron-Cohen, Wheelwright, Raste & Plumb, 2001; Elsegood & Duff, 2010; Castellino et al., 2011). This test will aim to identify potential variation in ToM ability and explore whether this is related to how a male behaves or feels in a relationship, as well as if it is linked to childhood abuse.

Adverse Childhood Experiences Questionnaire (ACE-Q; Felitti, Anda, Nordenberg, Edwards, Koss & Marks, 1998) will compare levels of childhood trauma across groups. This measure aims to capture levels of abuse in childhood, lending support to the idea of trauma informed care being utilised in domestic abuse interventions, and lending further support for the development path of DA from childhood. The ACE-Q has been utilised for 20 years and has demonstrated to have a significant predictive relationship whereby greater ACE-Q scores lead to poorer adult health outcomes (Feletti et al., 1998; Hughes et al., 2017; Zarse et al., 2019).

The final measure will be a questionnaire capturing varying levels of abusive behaviour in relationships, including additional open questions, to explore coercion and financial abuse. This questionnaire was designed using the Revised Conflict Tactics Scale (RCTS; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), with some items excluded due to focusing on the partner or victim. The RCTS has been tested with a large community sample and its reliability, validity and factor structure has been robustly demonstrated (Straus et al, 1996).

**Type of data collected:** All data collected will be quantitative, with two open ended questions included in the RCTS to gather more detailed information.

- RMET is a performance based measure. Responses are coded as correct or incorrect with a possible total of 36.
- ACE-Q – this questionnaire provides a score out of 10, with 10 being the highest.

- The RCTS aims to identify the frequency and severity of domestically abusive behaviour. It is a multiple choice questionnaire, using a scale from 0-7, to capture frequency of behaviour occurring in the last year.

**Analysis plan:** As levels of ToM and frequency/severity of DA will both be on a continuum, the aim will be to use regression to explore if there is a predictive relationship between the two dependent variables. In terms of levels of childhood abuse, it will be again explored using a regression to see if levels of abuse predict ToM and behaviour in relationships.

### **Ethical considerations**

The main ethical considerations involve the ACE-Q, as it contains explicit descriptions of physical, sexual and emotional abuse/neglect. To manage this, a disclaimer will be included in the information sheets, and participants will be provided with contact information of organisations and the research team's contact details, for further support should they need it. A thorough debrief sheet, will also be provided once all data is collected.

The RCTS includes brief descriptions of abusive behaviour including physical, emotional and sexually coercive behaviour. This will be explained in the information sheet and contact details of organisations which provide interventions for domestically abusive people will be provided in the debrief sheet.

Another consideration is that participants could feel that they are being targeted for their relationship histories which may make them feel judged or stigmatised. Therefore, the information sheets will explain the aims of research and that overall it is to increase understanding why a person might think, feel or behave in a certain way in relationships, rather than judging or blaming.

### **Timeline**

- Ethics proposals sent to supervisors Feb 2021
- Ethics sent off – aiming for 8<sup>th</sup> March 2021
- Once approval is gained, I will begin recruitment (~May 2021)
- Link sent to participants May 2021
- Data collected for approximately a year, depending on recruitment efficacy
- Data analysed Jan 2022

## Information sheet and consent form

### **Information and Consent page for an Online Survey/Questionnaire**

**Study Title: Does how we think about others affect how we behave? Exploring Theory of Mind.**

**Research Team:** Sophie Mann, MSc., Trainee Forensic Psychologist, Dr Simon Duff, Associate Professor, Dr Elizabeth Paddock. Centre for Forensic and Family Psychology, School of Medicine, University of Nottingham.

### **Faculty of Medicine & Health Sciences Research Ethics Ref: FMHS 123-2003**

This research is looking at whether there are differences in people's abilities in "Theory of Mind" and if this can help to explain why some people might be more likely to behave in certain ways, which can be harmful to others. Theory of mind is a cognitive skill that we develop during childhood, which helps us to understand that other people have different thoughts, beliefs, emotions, and attitudes to our own and helps us to make predictions about the world.

This research project hopes to improve understanding of why some people are more likely to behave in harmful ways, even to people close to them like partners or family. The research aims to explore how our thinking, experiences we may have had in childhood and our emotions, like anger, can make us more or less likely to misunderstand other's intentions and perhaps behave aggressively, as we might feel threatened.

The results of the research hope to be used to add to current understanding of different types of violence and to increase the effectiveness of treatments available. The research also aims to add support to the idea those in prison, or on probation, with certain offence histories, may benefit from staff being more aware of their past difficulties e.g. with trauma or with misunderstanding others, which can sometimes lead to problems with behaviour.

You can ask any questions before deciding if you wish to take part, by contacting the researchers (details below). Taking part is entirely voluntary.

### **What will I be asked to do?**

The study is all online and involves four sections. You will be asked to confirm basic information during the consent form below to ensure you are eligible for the study. You will be asked to provide basic demographic information, such as age and ethnicity. No identifiable data, e.g. name, address, history will be collected.

The first section looks at your theory of mind abilities and will show you pictures of men and women's eyes. You have to determine what the person is feeling, by selecting one of the four options given in the picture. The second part is a questionnaire asking about difficult experiences you may have had in childhood. Some of these questions are explicit and descriptive and may be upsetting. Therefore, some information about how to access additional support, is provided below.

The final section will ask you about previous or current relationships and how you thought, felt and behaved.

Completing the study should take approximately 20 -30 minutes.

You can withdraw at any point during the questionnaire for any reason, before submitting your answers by clicking the Exit button/closing the browser. The data will only be uploaded on completion of the questionnaire by clicking the SUBMIT button on the final page. At this point it will not be possible to withdraw your answers. You will then be sent with a debrief page giving more information about the research topic and details of where you can seek support if you have been affected by the issues raised in the questionnaires.

### **What are the disadvantages of taking part?**

It is possible that you may find the descriptions of childhood adverse experiences in one of the questionnaires upsetting or make you feel uncomfortable. Please take time to think carefully about whether it might be an upsetting or sensitive topic for you at the moment.

### **What are the advantages of taking part?**

Your contribution together with others will help the researchers to understand more about why some people are more likely to behave in certain ways against family or partners and if this can be prevented or targeted in treatment.

### **Who will know I have taken part in the study?**

No one will know you have taken part in this study because we will not ask for your name or any other personal ID during this questionnaire. Your IP address will not be visible to or stored by the research team because an online survey platform is being used which receives and stores an IP address but enables this detail to be filtered out before it is transferred to the research team. As with any online related activity the risk of breach is possible but this risk is being minimized by using a platform that sits on an encrypted webpage. For further information about the online survey tool security please see <https://www.onlinesurveys.ac.uk/security/>

### **What will happen to your data?**

When you have clicked the submit button at the end of the questionnaire, it will be uploaded into a password protected database with a code number. The research team will not be able to see who it is from and for this reason it will not possible to withdraw the data at this point. Your data (research data) will be stored in a password-protected folder sitting on a restricted access server at the University under the terms of its data protection policy. Data is kept for a minimum of 7 years.

This questionnaire is for a Doctorate project and the answers received from all participants will be combined in a password protected database ready for analysis. The results will be written up as a thesis and will be used in academic publications and presentations. The overall anonymised data from this study may be shared for use in future research and teaching (with research ethics approval).

The only personal data we will receive is your e-mail, so we can send you the debrief information, or if you need contact us to ask further questions or need support. This will be received and handled separately from your completed questionnaire and it will not be possible to link the sets of data. Your e-mail address will only be kept as long as needed to resolve your query. It will then be destroyed. For further information about how the university processes personal data please see: <https://www.nottingham.ac.uk/utilities/privacy.aspx/>

### **Who will have access to your data?**

The University of Nottingham is the data controller (legally responsible for data security) and the Supervisor of this study (Sophie Mann) is the data custodian (manages access to the data) and as such will determine how your data is used in the study. Your research and personal data will be used for the purposes of the research only. Research is a task that we perform in the public interest.

Responsible members of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure it is being carried out correctly.

If you have any questions or concerns about this project, please contact:

Sophie Mann, MSc. E-mail: [Sophie.mann@nottingham.ac.uk](mailto:Sophie.mann@nottingham.ac.uk)

or if you have any concerns about any aspect of this study please contact the Research Supervisor: Dr Simon Duff or Dr Elizabeth Paddock Email [simon.duff@nottingham.ac.uk](mailto:simon.duff@nottingham.ac.uk)  
[Elizabeth.paddock@Nottingham.ac.uk](mailto:Elizabeth.paddock@Nottingham.ac.uk)

If you remain unhappy and wish to complain formally, you should then contact the FMHS Research Ethics Committee Administrator E-mail: [FMHS-ResearchEthics@nottingham.ac.uk](mailto:FMHS-ResearchEthics@nottingham.ac.uk)

I have read and understood the above information and consent form, I confirm that I am 18 years old or older and by clicking the NEXT button to begin the online questionnaire, I indicate my willingness to voluntarily take part in the study.

NEXT – I consent to take part                      EXIT - I do not give consent

-----

Thank you for participating!

Please provide your email address below, so a debrief sheet can be sent to you, as well as a summary of the research, once completed. Your email address will only be kept to send these details and then will be destroyed.

\_\_\_\_\_

Please, tick each box to continue:

- I confirm that I have read and understood the information on the previous page
- I am 18 years old and/or older
- I understand that my participation is voluntary and I can end the study at any time and withdraw my data by clicking the EXIT button .
- I understand that my answers are anonymous.
- I understand the overall anonymized data from this study may be used in the future for research (with research ethics approval) and teaching purposes.

NEXT – to be taken to the survey.

## **Questionnaires for online questionnaire**

### Questionnaire 1 – Reading the Mind in the Eyes test

Thank you for agreeing to take part in this research study looking at whether there are differences in people's abilities in Theory of Mind. Theory of mind is a cognitive skill that we develop during childhood, which helps us to understand that other people have different thoughts, beliefs, emotions, and attitudes to our own and helps us to make predictions about the world. The study also aims to explore if differences found can help to explain why some people might be more likely to behave in certain ways, which can be harmful to others they know, such as family.

Below you will be asked to provide basic information about your age and if you have ever received a diagnosis of an Autism Spectrum Disorder.

When you click next below, you will start the test. There is no time limit and no right and wrong answers. We are just interested to see what you think.

The first questionnaire will involve pictures of men and women's eyes and will ask you to look at the eyes and choose which emotion you think that person is feeling. You have been provided, via email, with a separate sheet containing definitions of each emotion used in the test, in case you need any help.

The second questionnaire will ask you about your experiences with/how you express anger.

The final questionnaire asks about difficult experiences you may have had in childhood. It does contain words/descriptions that some people may find upsetting, so please take your time when completing it and contact the lead researcher if you have any problems. There are also organisations and numbers provided on the last page of the questionnaire and on the information sheet, if you need further support.

Thank you once again for participating in this research.

1. What is your age?
2. What is your ethnicity?
3. Do you, or have you ever had, a diagnosis of Autism Spectrum Disorder (for example Autism, Aspergers etc.)

YES

NO

NOT SURE

NEXT...

## Adult Eyes Instructions

For each set of eyes, choose and circle which word best describes what the person in the picture is thinking or feeling. You may feel that more than one word is applicable but please choose just one word, the word which you consider to be most suitable. Before making your choice, make sure that you have read all 4 words. You should try to do the task as quickly as possible but you will not be timed. If you really don't know what a word means you can look it up in the definition handout.

## Practice

jealous

panicked



arrogant

hateful

playful

comforting



irritated

bored



terrified

upset



arrogant

annoyed

joking

flustered



desire

convinced

irritated

sarcastic



worried

friendly

amused

relaxed

aghast

fantasizing



impatient

alarmed

apologetic

friendly



uneasy

dispirited

despondent

relieved



shy

excited

annoyed

hostile



horrified

preoccupied

cautious

insisting



bored

aghast

terrified

amused

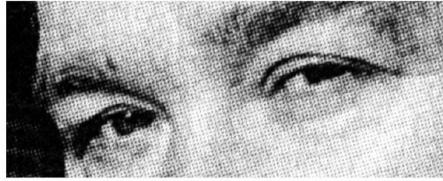


regretful

flirtatious

indifferent

embarrassed



sceptical

dispirited

decisive

anticipating



threatening

shy

irritated

disappointed



depressed

accusing

contemplative

flustered



encouraging

amused

doubtful

affectionate



playful

aghast

irritated

thoughtful

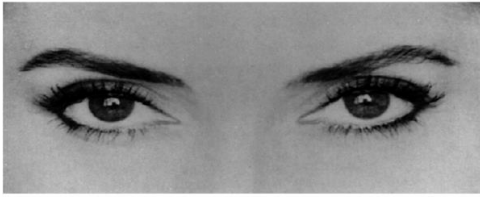


encouraging

sympathetic

decisive

amused



aghast

bored

arrogant

grateful



sarcastic

tentative

dominant

friendly



guilty

horrified

embarrassed

fantasizing



confused

panicked

preoccupied

grateful

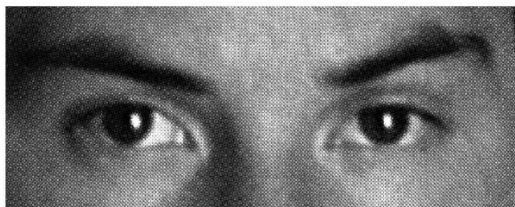


insisting

imploring

contented

apologetic



defiant

curious



pensive

irritated

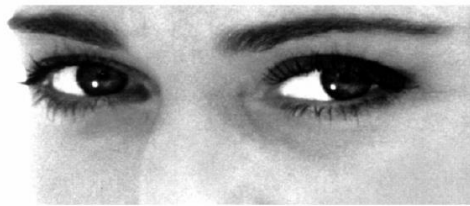


excited

hostile

panicked

incredulous



despondent

interested

alarmed

shy



hostile

anxious

joking

cautious



arrogant

reassuring

interested

joking



affectionate

contented

impatient

aghast



irritated

reflective

grateful

flirtatious



hostile

disappointed

ashamed

confident



joking

dispirited

serious

ashamed



bewildered

alarmed

embarrassed

guilty



fantasizing

concerned

aghast

baffled



distrustful

terrified

puzzled

nervous



insisting

contemplative

ashamed

nervous



suspicious

indecisive

## Questionnaire 2 – The Adverse Childhood Experiences Questionnaire

### **Adverse Childhood Experience (ACE) Questionnaire**

This Questionnaire will be asking you some questions about events that happened during your childhood; specifically the first 18 years of your life. The information you provide by answering these questions will allow us to better understand problems that may have occurred early in your life.

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often:

Swear at you, insult you, put you down, or humiliate you?

Or

Act in a way that made you afraid that you might be physically hurt?

Yes

No

2. Did a parent or other adult in the household often:

Push, grab, slap, or throw something at you?

Or

Ever hit you so hard that you had marks or were injured?

Yes

No

3. Did an adult or person at least 5 years older than you ever:

Touch or fondle you or have you touch their body in a sexual way?

Or

Attempt or actually have oral, anal, or vaginal intercourse with you?

Yes

No

4. Did you often feel that:

No one in your family loved you or thought you were important or special?

Or

Your family didn't look out for each other, feel close to each other or support one another?

Yes            No

5. Did you often feel that:

You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?

Or

Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Yes            No

6. Were your parents ever separated or divorced?

Yes            No

7. Were any of your parents or other adult caregivers:

Often pushed, grabbed, slapped, or had something thrown at them?

Or

Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?

Or

Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

Yes            No

8. Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?

Yes            No

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?

Yes            No

10. Did a household member go to prison?

Yes            No

Questionnaire 3 – Revised Conflict Tactics Scale with additional open questions

This section of the study will ask you about your previous relationships. As with the previous sections, the answers are anonymous, so please answer as honestly as you can. For each statement please answer how often the behaviour has occurred in the last year, using the key below.

**How often did this happen?**

1 = Once in the past year

2 = Twice in the past year

3 = 3-5 times in the past year

4 = 6-10 times in the past year

5 = 11-20 times in the past year

6 = More than 20 times in the past year

7 = Not in the past year, but it did happen before

0 = This has never happened

|     |   |                 |
|-----|---|-----------------|
| 1.  | I showed my partner I cared, even though we disagreed.                  | 1 2 3 4 5 6 7 0 |
| 2.  | I insulted or swore at my partner.                                      | 1 2 3 4 5 6 7 0 |
| 3.  | I threw something at my partner that could hurt.                        | 1 2 3 4 5 6 7 0 |
| 4.  | I twisted my partner's arm or hair.                                     | 1 2 3 4 5 6 7 0 |
| 5.  | I had a sprain, bruise or small cut because of a fight with my partner. | 1 2 3 4 5 6 7 0 |
| 6.  | I showed respect for my partner's feelings about an issue.              | 1 2 3 4 5 6 7 0 |
| 7.  | I made my partner have sex without a condom.                            | 1 2 3 4 5 6 7 0 |
| 8.  | I pushed or shoved my partner.  | 1 2 3 4 5 6 7 0 |
| 9.  | I used force to make my partner have sex.                               | 1 2 3 4 5 6 7 0 |
| 10. | I called my partner fat or ugly.  | 1 2 3 4 5 6 7 0 |
| 11. | I punched or hit my partner with something that could hurt.             | 1 2 3 4 5 6 7 0 |
| 12. | I destroyed something belonging to my partner.                          | 1 2 3 4 5 6 7 0 |
| 13. | My partner went to a doctor because of a fight with me.                 | 1 2 3 4 5 6 7 0 |
| 14. | I shouted or yelled at my partner.                                      | 1 2 3 4 5 6 7 0 |
| 15. | I slammed my partner against a wall.                                    | 1 2 3 4 5 6 7 0 |
| 16. | I said I was sure we could work out a problem.                          | 1 2 3 4 5 6 7 0 |
| 17. | I grabbed my partner.   | 1 2 3 4 5 6 7 0 |
| 18. | I stomped out of the room or house during a disagreement.               | 1 2 3 4 5 6 7 0 |

|     |   |                 |
|-----|---|-----------------|
| 19. | I slapped my partner.   | 1 2 3 4 5 6 7 0 |
| 19. | I used threats to make my partner have [oral or anal] sex.                  | 1 2 3 4 5 6 7 0 |
| 20. | I suggested a compromise to a disagreement.                                 | 1 2 3 4 5 6 7 0 |
| 21. | I insisted on sex when my partner did not want to, but did not use force.   | 1 2 3 4 5 6 7 0 |
| 22. | I accused my partner of being a bad person.                                 | 1 2 3 4 5 6 7 0 |
| 23. | I did something to spite my partner.  | 1 2 3 4 5 6 7 0 |
| 24. | I threatened to hit or throw something at my partner.                       | 1 2 3 4 5 6 7 0 |
| 25. | I still felt physical pain the next day because of a fight with my partner. | 1 2 3 4 5 6 7 0 |
| 26. | I kicked my partner.  | 1 2 3 4 5 6 7 0 |
| 27. | I used threats to make my partner have sex.                                 | 1 2 3 4 5 6 7 0 |
| 28. | I agreed to try a solution to a disagreement with partner suggested.        | 1 2 3 4 5 6 7 0 |

**OPEN QUESTIONS:**

- Have you ever had financial control over your partner or family? Please explain how.
- Have you ever acted on thoughts of infidelity about a partner if so, how? E.g. looked at their phone, followed them, 'Facebook stalking' etc.



## Debrief

Thank you for taking part in the online study.

The aim of this research was to explore a cognitive skill, called Theory of Mind and determine whether it is can make someone more likely to be abusive within relationships.

The study also collected data about trauma experienced in childhood, to explore if such experiences can affect Theory of Mind abilities as well as increase the chance of someone being abusive.

The study hopes to increase understanding of why a person may be domestically abusive and hopes to add to current models of domestic abuse.

**If you have been affected by any of the questions in the study, please see contact information of organisations below:**

National Association for People Abused in Childhood

0808 801 0331

[napac.org.uk](http://napac.org.uk)

A charity supporting adult survivors of any form of childhood abuse. Provides a support line and local support services.

The Survivors Trust

08088 010 818

[thesurvivorstrust.org](http://thesurvivorstrust.org)

Lists local specialist services for survivors of sexual violence, including advocates and Independent Sexual Violence Advisors (ISVAs).

Lifecentre

0808 802 0808 (freephone)

07717 989 022 (textline)

[lifecentre.uk.com](http://lifecentre.uk.com)

Support for survivors of sexual abuse and anyone supporting them, including a helpline, text support and email counselling.

Help for Adult Victims of Child Abuse (HAVOCA)

[havoca.org](http://havoca.org)

Information and support for adults affected by childhood abuse, including an online support forum.

List of organisations and contact attempts

| Contact                              | Number of attempts | Response  | Outcome   |
|--------------------------------------|--------------------|---|---|
| Respect                              | 2                  | Spoke with the CEO over MS Teams who informed me they were unable to assist with research as they were focusing on victims. | Provided advice and information. No response to other emails.   |
| Priti Patel (Home Office)            | 2                  | No response.  | None.   |
| APPG for Domestic Abuse              | 1                  | Advised my research could be circulated within Women's Aid. Advised to contact other APPG.                                  | Provided with another relevant APPG to contact. Potential for research to have been circulated, but did not hear back |
| APPG for Domestic Abuse Perpetrators | 2                  | First response advised "not appropriate to share your research". No response to follow-up email.                            | None.   |
| Liz Truss MP                         | 2                  | No response to either email.  | None.   |
| Ellie Reeves MP                      | 2                  | Stated she could help and asked for ideas. Emailed several different ways of publicising research – no response received.   | Unsure.   |
| Hampton Trust                        | 4                  | Spoke with Operations Manager over  | Facilitators did not respond back to me –   |

|  |     |   |   |
|--|-----|---|---|
|  |     | Teams, who was initially helpful and provided two emails of facilitators to circulate research in groups. | unsure if circulated.   |
| Domestic Violence Intervention Project   | 2   | Was informed they were unable to assist me.   | None.   |
| Change project   | 2   | Was informed they were unable to assist me.   | None.   |
| Jess Phillips MP   | 1   |   |   |
| Annelise Dodds MP  | 1   |   |   |
| Institute of Mental Health   | 1   | Was informed can share it on twitter, Facebook page and newsletter.                                       |   |
| School of Medicine at UoN  | 1   | Could not   |   |
| Reddit   | N/A | N/A   | Posted research summary and link to survey on forums: research forum, psychology forum, academic forum, domestic abuse supportive forum (although was taken down) |
| QR codes on flyers<br>Emailing and texting friends/family/colleagues/cohort of doctorate | N/A | N/A   | Emailed link to friends, family, cohort. Handed out flyers to male members of the public.   |

## Qualitative answers from modified RCTS

78. Have you ever had financial control over your partner or family? Please explain how.

no

No

I have been the main bread winner before, and am no longer

None

No

My partner is a house wife and raises our children and does an amazing job at it. I work full time and bring in the majority of our income, although she or our kids want for nothing and I regularly put money into her account she will ask for more if there is something she wants or the kids want. I never withhold money from her, the way I see it we both have a job and hers is far harder, so if she wants something and we can afford it she and the kids can have it.

Earn the most money

No

Im the only one bringing money into the house of myself partner and 3 boys

no

No

No

No

No

79. Have you ever acted on thoughts of infidelity about a partner if so, how? E.g. looked at their phone, followed them, 'Facebook stalking' etc.

Yes

No

I have fairly serious jealousy issues which we discuss and are open about Partner thought I was cheating and became physically abusive throughout our 5 year relationship. I only ever defended myself & my partner was arrested twice for domestic abuse but I kept taking her back as she made me feel guilty by saying she may have cancer. I never attacked or abused my partner & it's unfortunate this questionnaire doesn't include such options.

No

I used to check her phone and social media's quite regularly during our early years. I never check them now days

Yes, was other half was speaking to another person and resulted I m3 checking phone, messages, WhatsApp, paranoid for period of time

Looked at phone

Try not too I looked once when I suspected it and found her out twice and then confronted her with it

no

Looked at her Facebook

No

No

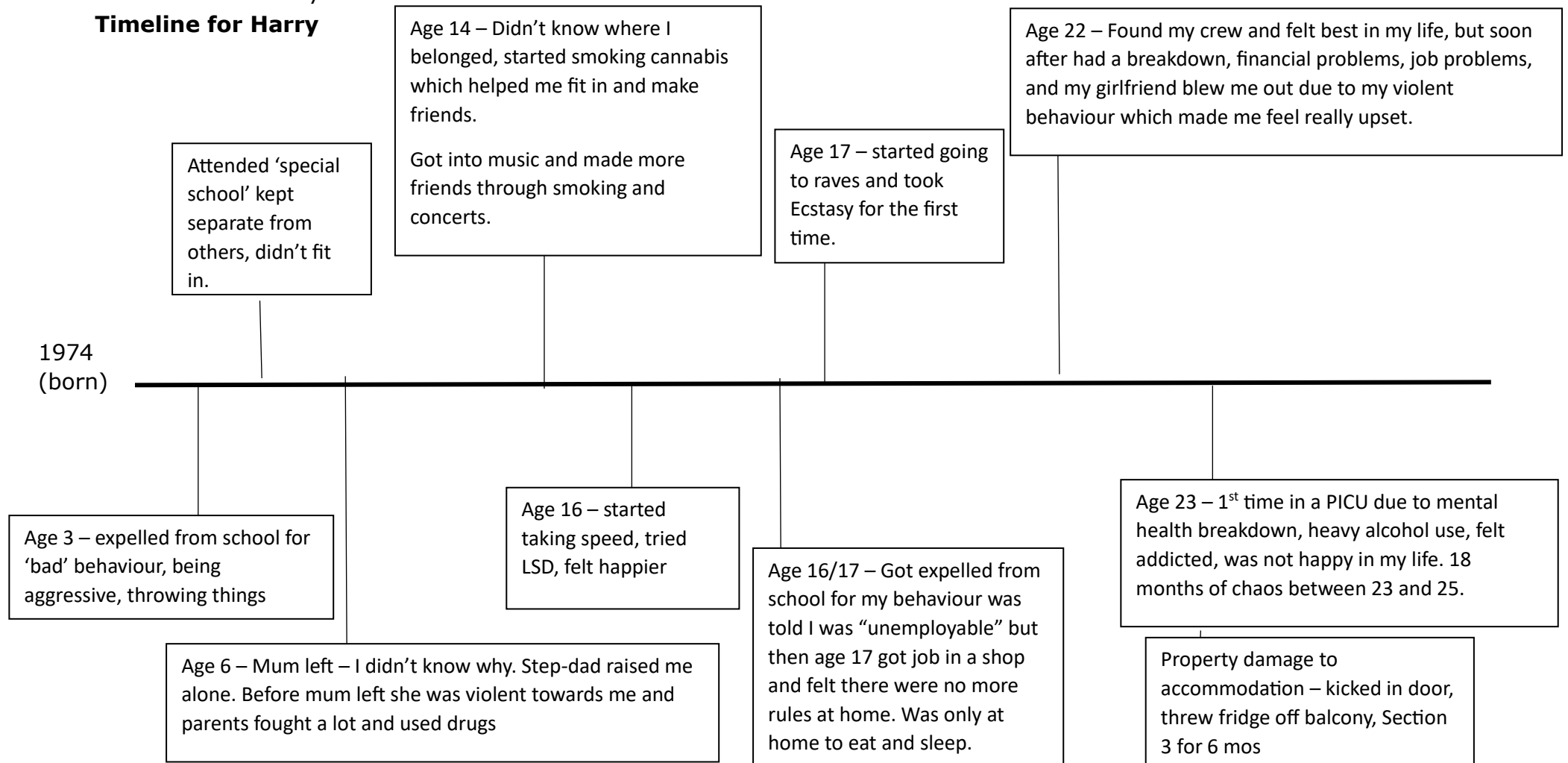
No

|   |  |
|---|--|
| I currently make more than them while they attend school so they don't have an income.  | No.  |
| No.   | No.  |
| Somewhat. Se lived with me for a while when she could not hold down a job. I was our only source of income for the most part. | I looked at phone once after she had cheated on me.  |
| No  | No   |
| No  | Once in the last year  |
| Never   | Never  |
| No  | No   |
| ni  | no   |
| No. Not in contact with family.   |  |
| Notnlived with partner so financial not reliant on each. Other  | Ex partner. Read texts. Told them afterwards   |
|   | Yes gone through their phone? Literally everything. Group chat messages, app download history  |
| No  | No   |
| No  | No   |
| No  | No   |
| N/A   | N/A  |
| No, since I never had a partner.  | No, since I never had a partner.   |
| No  | No   |
| No  | No   |
| No  | No   |
| Paid partners bills   | No   |
|   | Once - with first GF (read their diary) - never did it again, as better not to know.   |
| Never   | No   |
| No  | Yes, over 3 years ago  |
| No  | No   |
| No  | No   |
| no.   | no.  |
| No  | No   |
|   | yes, checking their phone (please note, I have not had a partner since 2019, therefore this has been filled out on the basis of that relationship) |
| no  | No   |
| No  | No   |
| No  | No   |
| No  | No   |
| no  | no   |
| no  | no   |
| No  | No   |
| No  | No   |
| No  | No   |
| No.   | Facebook stalking.   |
| No  | No   |

|  |   |
|--|---|
| I undertake most financial aspects of running the house.   | No.   |
| No   | No  |
| Supported my partner though her studies when we were both at University. She came from a less wealthy background and struggled with the costs of food etc. | Never I trust her completely  |
| No   | No  |
| No, we always discuss such matters   | No  |
| No - separate finances and both working  | No  |
| No   | No  |
| No   | No  |
| i am the earner so i have to have some control over money but i keep it loose.   | no  |
| Yes. Main earner   | No  |
| No, I haven't.   | No, I haven't.  |
| no   | no  |
| Shared bank account  | No  |
| I tend to manage our overall finances but not from a day to day week to week perspective   | Yes   |
| No   | No  |
| never  | Check her phone. Keep an eye on them  |
| No   | No  |
| never  | never   |
| No   | No  |
| no   | no  |
| N/A (have never had a partner or any income)   | N/A (have never had a partner)  |
|  | I have in the past, yes. I've never been so direct as to steal their phone or belongingsto look through them, but have used publicly available resources (social media profiles, etc) to detect 'Red Flags' that may hint towards infidelity. |
| I've never been in a relationship where I hold control over the financial aspect.  | No  |
| No   | No  |
| no   | no  |
| No, my fiance and i have split finances  | No  |

Red participants indicate those that were excluded from analysis due to having never been in a relationship.

Research Case Study  
**Timeline for Harry**





Age 27 – new girlfriend but lots of violence in relationship – she stabbed in the lung, she was paranoid, unwell, met in a PICU. Together 3 years. Smoked cannabis a lot.

Age 28/29 – hanging around with dodgy people, becoming more paranoid, almost attacking people but then got attacked, collecting weapons and worried about people in pubs

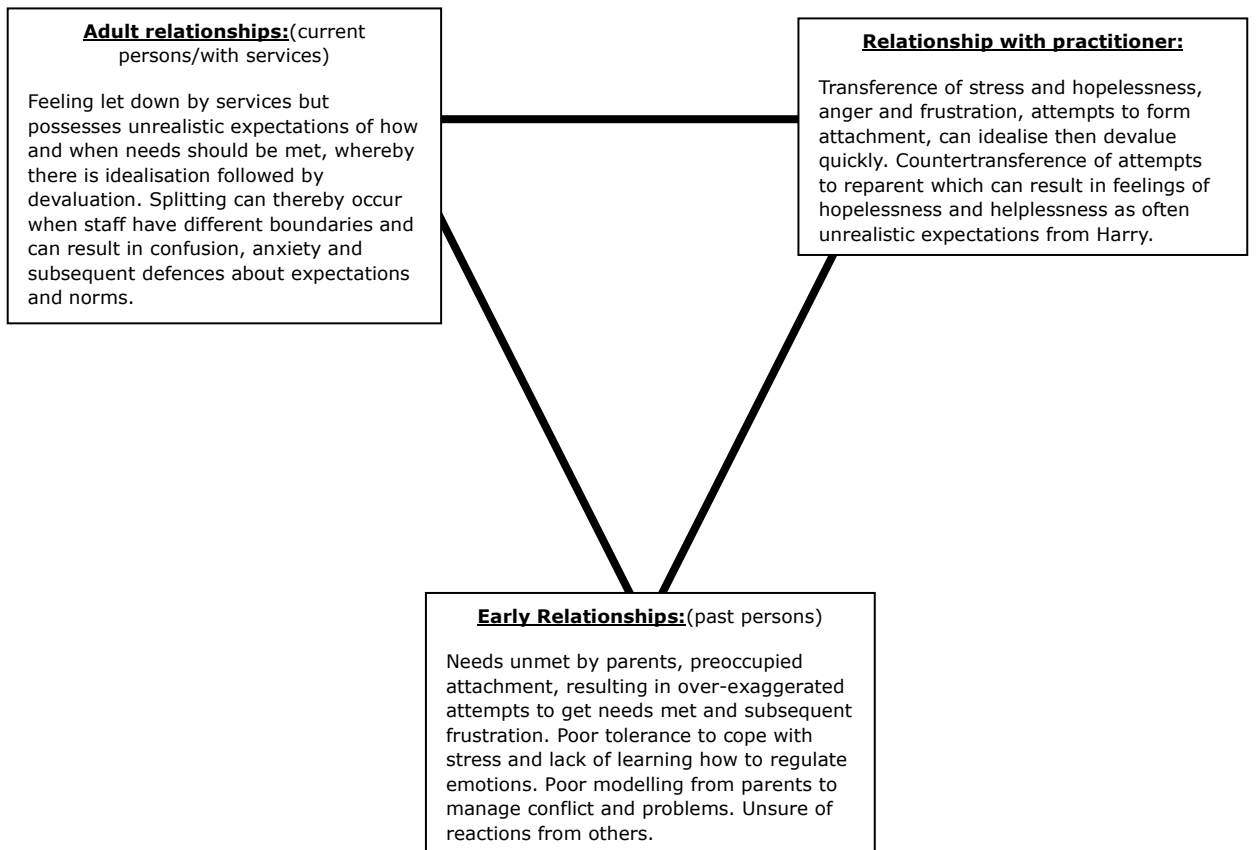
For the next 10 years or so, in and out of hospital for 2-3 months, then out for 6 months, cycle. Felt safe and sense of security when in hospital. Couldn't see what was right and had no motivation to change. Self-destructive maybe?  
  
Felt there was no balance it was either ALL the rules or NO rules.

Age 28 – 28<sup>th</sup> Birthday my friend got me “crack, sausage and chips”. Smoking a lot of crack, smoking all my benefits

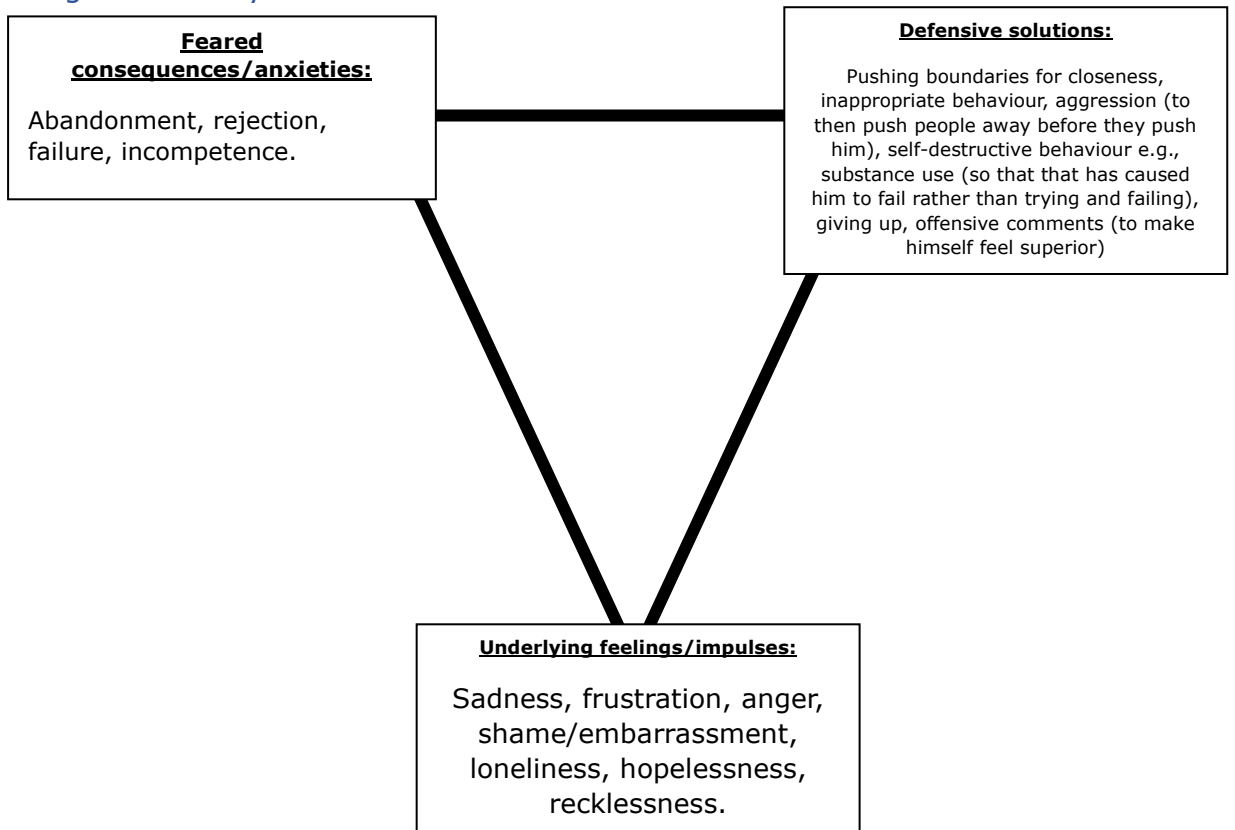
Age 29 – trying to give up drugs, went to NA, had an affair, but didn't last and started smoking again.

Age 32 – Ended up on acute ward for 6 mos, after having a street fight involving a crowbar. Bringing in lots of drugs and dealing on the wards

## Malan's triangles – Triangle of the person



## Triangle of anxiety



## **Session note examples**

### Psychology Session

Harry was invited to reflect on how he had found the last two weeks as I had not been able to meet with him at our usual appointments, due to him sleeping and my being on leave. Harry indicated he was OK but was missing his dad and finding things in the family a bit stressful. He explained that there were a lot of things going on and that he was finding it difficult to manage all of them at once, as well as his dad's death. Harry was given positive feedback in that he had managed strong emotions and situations with other service users and staff members positively, not needing any intervention from IC or similar. Harry could not identify specific methods/skills he had used, but I thought it might be helpful to demonstrate to him his improvement by going over some skills. We reviewed the document of emotion management techniques Harry had identified and he reacted positively, adding some skills from RESISST (e.g., reframing, distraction and taking a break). Harry also demonstrated his ability to use other skills such as STOP and mindfulness throughout this session and previous discussions. Harry commented that he enjoys nature and looking at little things such as squirrels to distract him and it appears these allow him to consider alternative perspectives. He also spoke about speaking with his friend in the community to gain guidance and talk things through.

Harry said he would like to learn more about mindfulness and meditation and it was agreed to discuss this next week. Harry was a little distracted today, but was open about finding the ward challenging at the moment. He noted that leave was very helpful for him and therefore was using decision making skills to behave in ways that would continue to allow him to utilise

his leave. He was reminded to use the other skills and techniques where possible. Harry also spoke about a worry of relapsing with drug use in the community and reflected how quickly things could go wrong and he could end up in Section 136 suite. Harry said he did not want this to happen and appeared motivated to think more about how to reduce the risk of this occurring over the next few sessions.

Plan:

- Continue to go through emotion regulation skills and build confidence in ability to cope
- Provide positive feedback when he has managed situations well

Debrief Example session

I informed Harry that today we would be discussing the incident which occurred last week. I showed Harry the template of a chain analysis and explained that it was going to go into detail about what happened during, before and after the incident. I asked why this might be helpful and Harry commented to understand more about it. Harry could describe the problem behaviour in good detail and he stated he smashed up the table tennis table, threw a jug, threw a cup of tea, broke the drinks machine and shouted racial abuse. He described it as "having lost control" and "going berserk". He also stated he wasn't thinking about his leave at the time and related this back to "emotional mind". When thinking about what might have been the prompting event we thought about things that might have made Harry be more likely to act like that. Harry stated that earlier on Friday he had gone on leave and had "got the hump" thinking about things; he

commented he hates it in hospital and is very fed up. He also spoke about feeling worried he would go and smoke crack upon release and the impact this would have on the relationship with his step-father. Harry worried that his step-father wouldn't want to see/speak to him if he relapsed with crack. Harry identified that all these things made him be less in control of his emotions and think less clearly. I also gave a hypothesis that Harry's ward round (the day before) might have made him feel more upset than he was aware at the time, as I remembered he had said "is this have a dig at Harry day" and he may have ruminated on this. Harry agreed he was prone to ruminating and this may have played a role as well. When considering what made Harry vulnerable to the prompting event and the problem behaviour Harry stated he had been more bored recently, evidencing that he had been unable to go to XX Farm for over a month. Harry stated that when he is bored, he is more likely to get into a "negative mindset" and explained he had also been feeling more fed up recently. Harry said that normally he can tolerate people watching him eat, but on that day he could not and it "really got me". I suggested that all these things together sounded like Harry had less tolerance to stress, so was more prone to losing control. Alternative actions were considered and Harry initially struggled, saying there wasn't much he could have done differently. However, by reviewing his skills he identified he could have used STOP, 5 things to focus on, spoken to staff and used the garden or gone to his bedroom and played music.

**Glossary of terms from DBT skills utilised (Linehan, 1993; Van Dijk, 2013)**

Mindfulness

'Wise mind' – this skill aims to teach clients about the difference in a person's ability to think, make decisions and act when they are experiencing strong emotions. Wise mind teaches a client how to have the balance of both emotional and rational mind – both listening to, accepting, and responding to emotions but also learning from experience, thinking of consequences and getting their needs met in a healthy and helpful way. The skill advises clients to practice 'listening' to their wise minds by first achieving a mindful state, becoming aware of their breathing and then identifying a problem to think through in wise mind. Once they have become confident utilising wise mind, the client is asked to practice attempting to reach wise mind in a more aroused emotional state.

Breathing exercises – there are several breathing exercises taught in DBT. Here the author focused on 'box breathing' where you inhale and exhale whilst imagining drawing a box in the air, to provide focus. Counting breaths was also taught whereby the client is invited to become aware of their mood, their environment and then count their breaths from 1-5 for around 5 minutes and be aware when their mind wanders, before gently returning it to focus on the exercise.

### *Distress Tolerance*

Wise mind ACCEPTS – This skill encourages clients to actively engage in other activities to reduce distress, rather than avoidance and therefore can return to the problem with a better mindset (e.g., in wise mind). The acronym provides examples of distracting skills

A – activities (co-create a list of activities with the client which can distract them from their current distressing situation)

C – contributing (e.g., volunteering, talk to a friend)

C – comparisons (think about where you were several years ago and identify any improvements – not always found to be helpful for everyone so it is important to emphasise that the client should only do what they find helpful)

E- emotions (reduce one emotion by creating or focusing on another – watch a funny film, listen to happy music, watch a scary film etc.)

P – pushing away (if the situation cannot be improved presently then try to leave it mentally for now, try to compartmentalise it then it can be returned to later when it feels more achievable).

T – thoughts (encourage the client to remember they can only focus on one thing at a time. Therefore encourage them to think mindfully by engaging in an exercise such as counting tiles, naming as many animals that begin with 'M' etc. then can return to the problem, if appropriate).

S - sensations (aims to distract from emotions via creating a sensation, e.g., put an ice cube on your neck or wrist, take a hot or very cold shower, listen to loud music).

Self-soothe – this skill involves utilising the client's five senses to ground them from distress. For example look at a beautiful picture or view, focus on the sounds of nature or music, find a smell that is pleasant and calming, eat your favourite food or drink, take a hot bath, feel a soft blanket.

Paced breathing – is a part of the TIPP skill which also includes changing temperature of the body, intense exercise and progressive muscle

relaxation. Paced breathing involves slowing down the breath by breathing in deeply through the nose then breathing out through the mouth slowly.

IMPROVE – this skill is about improving the moment the client is in by engaging in simple positive acts e.g., imagery, meaning in activities, prayer, relaxation, focusing on improving one thing in the moment, having a mental break and self-encouragement.

RESSIST – this uses reframing negative catastrophic thoughts, engaging in distraction activities, focusing attention on someone else, inducing intense sensations to distract (e.g., holding an ice cube), shutting things out (temporarily), thinking neutral thoughts through mindfulness activities, and taking a break.

### Emotion Regulation

Identifying and describing emotions – through improved emotional awareness; describing situations, identifying causation, identifying primary and secondary emotions, urges, decisions and actions and outcomes.

ABC PLEASE – this is about self-care and general wellbeing. E.g., Accumulate positive emotions by engaging in pleasant activities, Build mastery by engaging in meaningful activities that increase feelings of competency, cope ahead, treat physical illness, balanced eating, sleep hygiene, avoiding illicit substances and exercise.



## Consent form



The University of  
Nottingham

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THE UNIVERSITY OF NOTTINGHAM  
DOCTORATE IN FORENSIC PSYCHOLOGY (D.FORENS.PSY)  
CLIENT CONSENT TO COURSE WORK ASSIGNMENTS

I understand that Sophie Mann (hereafter referred to as "the trainee") would like my permission to use information about me to complete a course work assignment (oral presentation and/or written case report).

I understand that the work will not contain any information that would reveal my personal identity i.e., my name or address; rather I will be referred to by a pseudonym or a case number).


The work may be discussed in the trainee's supervision and personal development group or looked at by other trainees to help their learning.

I understand that the work will be checked by the trainee's supervisor and The University of Nottingham to ensure that my anonymity and confidential information has been safeguarded.

I understand that the coursework assignments (and material relating to these) are kept in securely locked premises and are not available for public access.

I understand that I do not have to have to allow information about me to be used in this way. I can change my mind and refuse consent at any stage and this will have no effect on the treatment offered to me.

Name of client: Maxim Dufour

Client's signature: 

Date: 21/3/22



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