CHILDHOOD TRAUMA IN INDIVIDUALS WHO EXPERIENCE THE CRIMINAL JUSTICE SYSTEM: AN EXPLORATION OF THE ROLE OF EARLY MALADAPTIVE SCHEMAS AND THE BENEFITS OF PSYCHOLOGICAL INTERVENTIONS

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Abstract

The association between childhood trauma and offending behaviour is well established and the identification of factors that may explain this relationship is vital to elucidate causal links and ultimately, inform clinical practice. This thesis is concerned with psychological factors that may account for the relationship between early trauma and harmful behaviour, with a focus on the benefits of psychological and organizational interventions for traumatised forensic populations. A range of methods were used to explore this. An empirical study investigates the role of Early Maladaptive Schemas (EMSs) in mediating the relationship between childhood trauma and violent behaviour. A systematic review investigates the benefits of Schema Therapy (ST) informed interventions with forensic populations. A second study implements and evaluates an organizational intervention, based on Trauma Informed Care principles, for staff working with adults with histories of trauma and offending, in community settings. Finally, a critical evaluation of the Adverse Childhood Experiences questionnaire (ACE) explores its psychometric properties and discusses its use in research and clinical practice. Results of the first study found that elevated EMSs scores mediated the relationship between childhood trauma and violent convictions. Moreover, when schema domains were examined, it was found that disconnection/rejection was the only domain that mediated this relationship. In addition, there were strong positive correlations between most schema domains and violent behaviour. The systematic review provided a degree of support for the benefits ST interventions. However, the evidence mainly concerns correlates of offending and is limited to male samples within secure settings, thus restricting the generalisation of findings. Results of the second study found positive intervention effects for incidents

involving sexual harassment, hate speech, and verbal abuse towards staff. The evaluation of the ACE indicated that it holds acceptable psychometric properties; nevertheless, further evidence is needed. Additionally, the ACE is better suited for epidemiological studies, and it is not recommended for use in clinical practice. The thesis concludes that more research is needed to better understand the mediating role of EMS and how different interventions may be of benefit to traumatised forensic populations.

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CHAPTER I

General introduction to thesis

Childhood Trauma: Definition and long- term consequences

Childhood trauma is considered an "endemic problem" that continues to occur despite increased attention, research, and prevention strategies (Dugal, et al., 2016). The language around the concept of psychological trauma is complex and often overlapping. The present thesis does not use the definition set by the 5th Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) but rather adopts a broader view. "Trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being" (Substance Abuse and Mental Health Services Administration, Trauma and Justice Strategic Initiative, 2012, p. 2). Therefore, early traumatic experiences are conceptualised as negative events, situations, or environments occurring during childhood that provoke extreme distress and overwhelms the child's ability to cope, often leading to adverse consequences. This can include experiences such as sexual, physical, and emotional abuse, neglect, chaotic households (e.g. caregiver with mental health and drug problems), community violence, loss, and disruption of attachment relationships.

The repercussions of early trauma vary in nature and intensity, and remain a topic that attracts considerable empirical attention. Childhood trauma is thought to have a wide range of long-term consequences, including health, social, and psychological difficulties (Dugal et al., 2016). Compared to single event trauma exposure, it is recognised that cumulative trauma can lead to the development of

more severe negative outcomes (Putnam et al., 2013). Thus far, early adversity has been linked to the aetiology and maintenance of a wide range of psychopathologies, including distress disorders (Kessler et al., 2005), psychotic disorders (Bebbington et al., 2011), personality disorder (Battle et al., 2004), as well as behavioural problems (Felitti et al., 1998; Helgeland et al., 2005). Furthermore, trauma specific psychopathologies also occur, including Post Traumatic Stress Disorder (PTSD), complex – PTSD, and dissociative disorders (Cloitre et al., 2009; Sar, 2014; Stein et al., 2013). However, not all people will go on to develop severe psychopathologies or difficulties that meet a particular diagnostic criterion. Nevertheless, implications may be equally devastating for the individual's life and the wider society. Within this context, trauma may have emotional, cognitive, and behavioural implications. For example, studies have linked early trauma to interpersonal problems (Dugal et al., 2016), emotion dysregulation (Briere et al., 2010), and cognitive difficulties such as negative beliefs about the self and others (Young et al., 2003), or negative attributions (Steel et al., 2003). Moreover, it has been associated to behavioural problems and often leads individuals to employ unhelpful coping strategies (Reinert and Edwards, 2009).

Childhood Trauma and Offending Behaviour

It is thought that the negative outcomes associated with trauma may contribute to the development and maintenance of harmful behaviour in later life (Kerig and Becker, 2010). Consistently, a wealth of research found a strong relationship between early trauma and later offending behaviour (Ardino, 2011, 2012; Foy et a., 2012; Weeks & Widom, 1998). There is a high prevalence of childhood trauma among offenders in custodial settings, with young and adult offenders found to be more likely to have been exposed to significant levels of trauma when compared

to the general population (Messina et al., 2007). Furthermore, associations have been found between childhood trauma and general offending (e.g. Lantos et al., 2019), violent offending (e.g. Peltonen et al., 2020), sexual offending (e.g. Simons & Durham, 2008), and recidivism (e.g. Dalsklev et al., 2021), amongst forensic populations. Nevertheless, only a small number of people who experienced childhood trauma go on to engage in harmful behaviour. Consistently, the link between childhood trauma and offending is complex in nature, still not fully understood, and robust causal links are yet to be established. Within this context, research on this area has been historically underpinned by several issues, one of which being the lack of studies employing robust methodologies (i.e. prospective longitudinal mediation design) to test possible mechanisms linking early trauma to later offending. Furthermore, variation in the definition of trauma exist across studies with some employing the DSM-IV definition and others adopting broader conceptualisations, such as the notion of adverse childhood experiences. Nevertheless, over the past decade an increasing number of studies have started to explore potential mediating factors for the relationship between childhood trauma and harmful behaviour in later life. Thus far, a number of cognitive, affective, biological, and behavioural processes have been investigated as possible mediators for this relationship (Kerig & Becker, 2010). As a result, some theories, models and constructs have been put forward to better understand this link.

Early Maladaptive Schemas

Although to a limited extent, the concept of Early Maladaptive Schemas (EMSs) proposed by Young and colleagues (2003) has also gained some empirical attention in this particular area. Expanding on previous work on Schema Theory (Bartlett, 1932; Beck, 1972; Piaget, 1976; Rumelhart, 1984), Young et al. (2003)

proposed the concept of Early Maladaptive Schemas (EMSs). A "schema" includes a range of beliefs about ourselves, the world, and others. It is therefore a structure of knowledge based on past experiences which enables people to interpret the world, and guides behavioural responses. Similarly, EMSs can be defined as "a broad, pervasive theme or pattern, comprised of memories, emotions, cognitions, and bodily sensations, regarding oneself and one's relationship with others, developed during childhood or adolescence, elaborated throughout one's lifetime, and dysfunctional to a significant degree" (Young et al., 2003, p. 7). In line with the authors, EMSs develop when the child's core needs are not met, usually as a result of early harmful interpersonal relationships or contexts. The authors also proposed that EMSs may develop as a result of childhood maltreatment, such as abuse or neglect. Within this context, it is theorised that early experiences are internalised and influence how individuals make sense of and respond to external events as they develop into adults (Beck, 1976; Young et al., 2003; Bowlby, 1969). Young and colleagues proposed that in addition to guiding information processing, EMSs activation leads to high levels of negative emotions and result in problematic behaviour patterns.

Young et al. (2003) identified 18 distinct EMS, which can be grouped into 5 specific domains, including impaired autonomy and performance, disconnection and rejection, other-directedness, over-vigilance, and inhibition and impaired limits. Briefly, the disconnection/rejection domain is defined by feelings and beliefs that basic needs for safety, security, care, support and understanding will not be met by other people. In turn, this may result in problematic interpersonal relationships. The impaired limits domain is denoted by issues with impulse control, irresponsible behaviour, and poor cooperation with other people. Impaired autonomy is characterised by beliefs of being a failure and incapable of surviving

and functioning alone. In turn, these beliefs may lead one to be overly dependent on, and/ or enmeshed with other people. The over-vigilance/ inhibition domain relates to the suppression of feelings and impulses and holding oneself to high standards and "good" behaviour. Finally, the other-directedness domain is denoted by being overly focused on meeting other people's needs to gain approval, love, and emotional connection. Please see figure 1.1 for detailed description of schemas and domains.

Figure 1.1. *Description of Schemas and Schema Domains*

Disconnection/Rejection	
emotional deprivation	Belief that one's emotional needs will not adequately be met by others
abandonment/instability	Expectation of being abandoned by significant others
mistrust/ abuse	Expectation of being abused, mistreated, or cheated by others
defectiveness/shame	Belief of being different for other people, being isolated from the rest
social isolation	Belief of being defective or inferior in important aspects
Impaired Autonomy/Performance	
dependence/incompetence	Belief of being incompetent in handling daily responsibilities without help
vulnerability	Belief that emotional or medical catastrophe will be imminent
enmeshment	Belief that to survive, excessive emotional involvements are necessary
failure	Belief of being fundamentally inadequate and will inevitably fail
Impaired Limits	
entitlement/grandiosity	

	Entitlement Expectation that one is superior, and can act without regard for others
insufficient self-control	
	Pervasive difficulty to exercise self-control or frustration tolerance
Other-Directedness	
Subjugation	
	Belief that one must be excessive compliant to avoid anger or abandonment
self-sacrifice	
	Belief that one must meet the needs of others, at expense of their own needs
approval seeking/recognition	
	Belief that one must inhibit spontaneous action, feelings or communications
Over-vigilance/ Inhibition	
negativity/pessimism	
	A pervasive, lifelong focus on the negative aspects of life
emotional inhibition	
	The excessive inhibition of spontaneous action, feeling, or communication
unrelenting standards	
	Belief that one must meet very high standards of behavior and performance
punitiveness	
	Belief that people should be harshly punished for making mistakes

Adapted from Chakhssi et al. (2014, p. 359)

Early Maladaptive Schemas and Offending Behaviour

EMSs are thought to influence how people interpret external stimuli and may lead to dysfunctional behavioural responses, which may or may not fall within the boundaries of the law. Given childhood trauma is prevalent amongst forensic populations, it would be reasonable to argue that they may endorse higher levels of EMSs and that these beliefs may result in harmful behaviour. Young and colleagues (2003) themselves proposed that EMSs endorsement may be

associated with aggressive behaviour, arguing that it could be used as a tool to cope with negative affect elicited when schemas are triggered. This would be consistent with social-cognitive theories of aggression, which argue that cognitive schemas play a key role in influencing how aggression is expressed (Berkowitz, 1990; Bushman, 1996). In turn, it has been theorised that EMSs could play a role in facilitating and/or maintaining harmful behaviour and several studies have sought to test this hypothesis.

Thus far, empirical studies have found associations between EMSs endorsement and trait aggressiveness (Tremblay & Dozois, 2009), intimate partner psychological and physical aggression (Kachadourian et al., 2013), sexually aggressive behaviour (Sigre- Leiros et al., 2013), and psychological and physical dating violence perpetration (Shorey et al., 2017). These studies found that the domains of disconnection/rejection (Sigre- Leiros et al., 2013; Tremblay & Dozois, 2009), impaired limits (Shorey et al., 2017; Tremblay & Dozois, 2009), and impaired autonomy (Kachadourian et al. 2013; Shorey et al., 2017; Sigre- Leiros et al. 2013) appear to be particularly relevant to aggressive and violent behaviour. In addition, the role of EMSs has also been explored in the context of child sexual offending; for example, Chakhssi et al. (2013) found that compared to nonsexual violent offenders, child sex offenders endorsed EMSs associated with the domain of disconnection/rejection to a greater extent. However, they also endorsed higher levels of EMSs related to the domain of Other-Directedness.

Overall, despite some variation, empirical studies have demonstrated an association between some EMSs domains and various types of harmful behaviours. However, most studies focused on intimate partner relationships, thus limiting how findings may be generalised to other types of harmful behaviour. Generally, the findings indicate that a lack of sense of safety and trust in relational contexts

may be relevant to aggressive and violent behaviours. Consistently, it has been proposed that EMSs are associated with interpersonal difficulties (Bernstein, 2005; Young et al., 2003). Specifically, EMSs are thought to lead to interpersonal problems through maladaptive coping (Young et al., 2003). Thus, violence and aggression can be conceptualised as unhelpful behavioural strategies that may serve to fulfil unmet core emotional needs or avoid real or perceived emotional pain and harm (Young et al., 2003).

Given EMSs are thought to develop because of early trauma and that studies have linked EMSs endorsement to various types of harmful behaviour, some have started to investigate whether they may have a role in mediating the relationship between childhood trauma and offending behaviour. The evidence available will be discussed in Chapter II. Nevertheless, it is important to highlight that the base of evidence remains small and warrants further investigation. The present thesis therefore focuses on EMSs as a potential mediating factor for the relationship between childhood abuse and offending behaviour.

Psychological and Organizational Interventions

As already highlighted, not all people with experiences of trauma may develop symptoms consistent with trauma specific disorders. Instead, people can develop a wide range of psychological difficulties that may contribute to or maintain offending behaviour in later life. For example, people who are exposed to early trauma can develop emotion regulation difficulties (Briere et al., 2010) or distorted cognitions (Briere, 1996). At the same time, studies have linked poor emotion regulation to different types of aggression, including hostility, physical aggression, violent behaviour, and future violent behaviours (Roberton, et al., 2014; Scott, et al., 2015; Garofalo et al., 2018). Similarly, distorted cognitions have long been

investigated in the context of offending behaviour and, among other things, linked to violence (Chereji et al., 2012). Consequently, interventions that target these areas of need can improve psychological wellbeing and functioning, and reduce the risk of further harmful behaviour (e.g. Brazao et al., 2017; Day, 2009). Thus, some of the difficulties developed as a response to early trauma can be addressed with psychological interventions that do not involve specialist trauma focused work. Within this context, interventions that aim to address factors that mediate the relationship between childhood trauma and harmful behaviour may be of significant value. In turn, the identification of underlying psychological factors that mediate this relationship is vital to inform clinical practice in forensic settings. Linking the latter to the present thesis, targeting EMSs as part of interventions may lead to positive therapeutic outcomes, including a reduction in recidivism.

However, not all individuals can access interventions delivered by trained professionals such as psychologist or other practitioners. This is particularly evident within community settings, where forensic populations face significant challenges in accessing mental health services and more generally, psychological interventions (Brooker, et al., 2011; Brooker et al., 2015; Skeem & Louden, 2006). However, forensic populations in the community may access a variety of other public services (e.g. charities) to gain support for a wide range of health, social, and emotional needs. These public services work with some of the most vulnerable individuals in society and have great potential to make long term positive changes in the lives of services users.

Over the last decade, public services providing support to vulnerable populations in the community have started to embrace organizational interventions to improve outcomes for their users and staff. Organizational interventions can be defined as "planned, behavioural, theory-based actions to change the way work is organized,

designed and managed in order to improve the health and well-being of participants" (Nielsen, 2013, p.1030). Ultimately, organizational interventions aim to change cultures within relevant services to improve practices and outcomes.

Examples of organizational interventions relevant to services for individuals with a wide range of vulnerabilities include the Trauma Informed Care (TIC; Harris & Fallot, 2001) and the Psychologically Informed Environments (PIE; Johnson & Haigh, 2010) models. At the heart of interventions such as the TIC or PIE approach, is the importance placed on relationships between staff and service users as well as the reduction of practices that may lead to re-traumatisation. Additionally, these interventions fully recognise the challenges faced by staff who work with traumatised individuals who may have complex needs. Thus, significant focus is placed upon the professional development and wellbeing of staff members. Notably, these interventions do not require staff to be trained to a high degree, thus reducing costs for organizations. There is consensus in relation to the factors required to heal from traumatic experiences, including establishing a sense of safety, developing healthy relationships, and strengthening coping skills and self-modulation (van der Kolk, 2005). In turn, the TIC approach argues that "one does not need to be a therapist to help address these three crucial elements of healing: the development of safety, the promotion of healing relationships, and the teaching of self-management and coping skills" (Bath, 2008, p.18). Thus, organizational interventions can be a powerful tool to facilitate the recovery of service users, particularly, those who may not have the opportunity to access specialist services.

Although organizational interventions have become increasingly popular across public services, the body of evidence regarding their effectiveness remains small, particularly, with regards to traumatised forensic populations. Indeed, the

theoretical basis of such interventions make compelling arguments in support of their implementation. However, more rigorous research is needed to establish the value of such interventions for both staff and service users. In light of the challenges faced by forensic populations based in the community to access psychological input, generating more evidence to inform future practice across services and service delivery is vital.

The Present Thesis

The present thesis aims to inform the present literature concerning the mediating role of beliefs about the self, others, and the world (i.e. EMSs) for the relationship between childhood trauma and offending behaviour. It is argued that gaining a better understanding of the role of EMSs has the potential to inform future treatment. Accordingly, this thesis also aims to explore interventions that may be of benefit to forensic populations living in the community with experiences of trauma. Treatment that targets EMSs, such as Schema Therapy (Young et al., 2003), may be of particular value to traumatised forensic populations. However, provided some individuals may not have the opportunity to access targeted psychological treatment, in addition to exploring specialist psychological interventions, the present thesis also explores the benefit of organizational interventions with the aims of influencing clinical practice, and service planning and delivery.

Thesis Structure

The following Chapter II comprises of one research study which investigates Early Maladaptive Schemas (EMSs) as a possible mediator for the relationship between childhood trauma and violent convictions amongst people with present and past links to the Criminal Justice System. This study is exploratory in nature and contributes to the small body of existing evidence. It is a starting point for future research concerned with the relationship between EMSs endorsement and violent behaviour amongst forensic populations subjected to early trauma. Furthermore, it provides some evidence to support the notion that interventions focusing on schema change may be of benefit to forensic populations who experienced early trauma.

In Chapter III, a systematic review of the literature focusing on the benefits of Schema Therapy (ST) with forensic populations is presented. Although ST interventions are considered effective with non- forensic samples there are no reviews focusing on its benefits with forensic populations. Conducting this review was deemed particularly important as ST is gaining increased popularity within forensic settings; thus, establishing a base of evidence regarding its effectiveness is necessary for future clinical practice. This review highlights the potential benefits of delivering ST based interventions to forensic populations who present with a wide range of difficulties, which may or may not have been developed as a result of childhood trauma. Finally, implications for future research and practice are discussed.

Chapter IV comprises of a second piece of research which investigates the effects of a brief psychological intervention informed by the Trauma Informed Care (Elliott et al., 2005) framework for professionals working with traumatised individuals

who have had contact, or are at risk of further experiencing the CJS, in community settings. The study highlights the need for psychological theories to be integrated within policies and practices of community services providing support to traumatised individuals who experience the CJS to improve outcomes for staff and their users. It also highlights challenges involved in implementing organizational interventions and makes recommendations for future research and practice.

Chapter V comprises of a critique of the Adverse Childhood Experience questionnaire (Felitti et al., 1998; Dube at al., 2004), which was used in the study 1 to measure trauma experiences. This critique evaluates the psychometric properties of the ACE and discusses its use in both clinical and research settings. Additionally, it provides some recommendations with regards to its use in both contexts.

Finally, Chapter VI provides a conclusion to the present thesis by evaluating and discussing its findings and associated clinical implications. Future recommendations for clinical practice and research are also outlined.

CHAPTER II

Childhood Trauma and Violent Convictions amongst People with Histories of Contact with the Criminal Justice System: An Exploration of the Role of Early Maladaptive Schemas

Abstract

The relationship between childhood trauma and offending behaviour is well established within the literature. However, only a minority people who have experienced early adversities will offend in later life. Therefore, studies have started to focus on the underlying psychological processes that may account for this relationship. The objective of the present study was to explore the role of Early Maladaptive Schemas (EMSs) in mediating the relationship between childhood trauma and violent convictions. A total of 32 adults with present or past links to the Criminal Justice System took part in the study. Hayes and Preacher's (2005) multiple mediation analysis with bootstrapping was conducted to the test the main hypotheses. Accounting for relevant covariates, the first model indicated that overall EMSs scores fully mediated the relationship between childhood trauma and violent behaviour. This suggested that elevated EMSs endorsement was predictive of violent convictions. The second model found that disconnection/rejection was the only domain that fully mediated this relationship. Thus, schemas pertaining to this domain appear to be particularly predictive of violent convictions amongst those who experienced early trauma. Overall, findings provided preliminary evidence supporting the notion that beliefs of the self, others, and the world may account for the complex relationship between childhood trauma and violent behaviour. However, the present study had several limitations,

including a small sample size, reliance on self-reporting, and the extent to which findings may be generalised to the wider forensic population.

Introduction

The relationship between childhood trauma and offending behaviour is well established within the literature (Ardino, 2011, 2012; Foy et al., 2012; Weeks & Widom, 1998). However, a minority of people who have experienced early adversities will go on to engage in harmful behaviour. Therefore, exploring the underlying psychological mechanisms that may account for this relationship is necessary to further our understanding about causal links between early trauma and offending behaviour, and to inform forensic clinical practice. Consequently, studies have started to focus on the factors that may explain this relationship, including biological, emotional, cognitive and interpersonal processes (Kerig & Becker, 2010). The present study focuses on Early Maladaptive Schemas (EMSs) as a potential mediating factor for the relationship between childhood trauma and violent behaviour.

Early Maladaptive Schemas

EMSs are defined as "a broad, pervasive theme or pattern, comprised of memories, emotions, cognitions, and bodily sensations, regarding oneself and one's relationship with others, developed during childhood or adolescence, elaborated throughout one's lifetime, and dysfunctional to a significant degree" (Young et al., 2003, p. 7). Young et al. (2003) identified 18 distinct EMSs, which can be grouped into 5 specific domains, including impaired autonomy and performance, disconnection/rejection, other-directedness, over-vigilance, and inhibition and impaired limits. Please refer to Figure 1 for description of schemas.

As discussed in Chapter I, the notion of EMSs is grounded on Schema Theory (Bartlett, 1932; Piaget, 1955; Beck, 1972). A schema can be understood as a structure of knowledge comprising of beliefs about the self, others, and the world that guides information processing and behavioural responses. Cognitive theories have posited that schemas are developed early in life and result from various factors, including temperament, parenting style, and exposure to events of significance (Beck, 1972; Piaget, 1976). Within this context, it is thought that early experiences of care givers and the environment are internalised and become part of knowledge structures (i.e. schemas) concerning the self, others, and the world (Beck, 1972). Therefore, the quality of such experiences are likely to influence the nature of one's beliefs. This notion is closely related to Bowlby's Attachment Theory whereby the development of children's beliefs and behaviour is contingent upon the quality of the relationship with their primary care givers. More specifically, Bowlby (1969, 1973, and 1979) proposed that the early relationships with caregivers provide the foundations for the child's "internal working models", which serve to organize perceptions and expectations of the self and the world. Consequently, harmful relationships with primary care givers may negatively affect the child's internal working models, thus leading to the development of insecure attachment (Bowlby, 1969). Similarly, Young et al., (2003) suggested that EMS emerge from early harmful experiences during which the child's core needs (e.g. nurture, safety, and security) are not met. Additionally, the child's family dynamics and later experiences of peers, school, and the wider community may also lead to the development of and reinforcement of EMS. Nevertheless, EMS developed later in life are not considered to be as pervasive or strong (Young et al., 2003).

Consistent with cognitive and developmental theories (Beck, 1976; Bowlby, 1969; 1973; 1979; Piaget, 1976), Young et al., (2003) emphasised that childhood trauma (e.g. abuse or neglect) may lead to the development of negative schemas. Within this context, the authors proposed a theoretical rationale linking early traumatic events, particularly of interpersonal nature, to the development of EMSs. Young et al., (2003) argued that child abuse is particularly associated with schemas relating to Mistrust/ Abuse, Defectiveness/Shame, and Vulnerability to Harm. For example, within the context of childhood sexual and physical abuse, they proposed that such experiences may lead to the development of schemas relating to themes of danger, including a sense of vulnerability or mistrust (Mistrust/Abuse; Vulnerability to Danger). Similarly, those who experience parental neglect may develop schemas relating to themes of loss and worthlessness such as social isolation and defectiveness.

In line with Young and colleagues' conceptualization on the aetiology of EMSs, studies have found associations with childhood trauma (e.g. May et al., 2022; Pikington et al., 2020). For example, Karatzias et al., (2016) demonstrated that women who experienced interpersonal trauma generally endorsed higher levels of EMS compared to those who had not experienced trauma. In addition, a recent review and meta-analysis (Pikington et al., 2020) focusing on 33 studies found small to large correlations between EMSs and emotional neglect, emotional abuse, physical neglect, and physical and sexual abuse, thus supporting the link between childhood trauma and the development of various EMSs in later life. Overall, the existing literature supports the link between early trauma and EMSs development. However, due to the lack of longitudinal designs within the literature, it is difficult to establish an unambiguous temporal order for these variables and fully understand underlying causal processes.

Early Maladaptive Schemas and Offending Behaviour

The existing literature evidences the association between EMSs endorsement and harmful behaviour. EMSs are thought to influence how people interpret external stimuli and may lead to dysfunctional behavioural responses, which may or may not fall within the boundaries of the law. Given childhood trauma is prevalent amongst forensic populations, it would be reasonable to argue that they may endorse higher levels of EMSs and that these beliefs may result in harmful behaviour. Thus far, various studies have linked EMSs endorsement to trait aggressiveness (Tremblay & Dozois, 2009), intimate partner psychological and physical aggression (Kachadourian et al., 2013), sexually aggressive behaviour (Sigre- Leiros et al., 2013), psychological and physical dating violence perpetration (Shorey et al., 2017), and child sex offending (Chakhssi et al., 2013).

Although variation in specific domains was found, these studies highlighted that disconnection/rejection, impaired limits, and impaired autonomy, appear to be particularly relevant to aggressive and violent behaviour. EMSs are thought to lead to interpersonal problems through maladaptive coping (Young et al., 2003); thus, these findings suggest that a lack of relational safety may lead individuals to engage in violent or aggressive behaviours. Therefore, violence and aggression can be conceptualised as unhelpful behavioural strategies that may serve to fulfil unmet core emotional needs or avoid real or perceived emotional pain and harm (Young et al., 2003). For example, acts of violence or aggression may serve to avoid or cope with rejection, shame, worthlessness, and isolation associated with schemas related to the disconnection/rejection domain (Young et al., 2003). Likewise, given the impaired autonomy domain includes EMSs relating to the dependence of and enmeshment on others; Kachadourian et al., (2013) suggested that these individuals used physical and psychological aggression to ensure

dependency on their partners was continued. On the other hand, EMSs related to impaired limits are concerned with insufficient self-control and relate to low tolerance for frustration and more generally, difficulties with modulation of one's impulses and emotions, and how these are expressed. In turn, people high on this domain may be more vulnerable to display harmful behaviours.

In addition, the existing literature provides evidence supporting the potential mediating role of EMSs. Gay et al (2013) found that endorsement of EMSs relating to the domain of disconnection/rejection mediated the relationship between childhood emotional abuse and interpersonal partner violence perpetration (IPV-P) amongst female psychology college students. Moreover, La Motte et al (2016) focused on couples and found that the mistrust/ abuse schemas, which relate to the disconnection/rejection domain, mediated the relationships between lifetime exposure to trauma intimate partner psychological and physical aggression. Nevertheless, gender effects were found as results were only significant for males. One study (Hassija et al., 2018) found that in addition to schemas relating to disconnection/rejection, the impaired limits domain also significantly mediated the relationship between self-reported dysfunctional parenting during childhood and IPV perpetration amongst a sample of women college students.

More recently, Celsi et al (2021) investigated EMSs associated with the disconnection/rejection domain, including emotion deprivation and abandonment, as possible mediators for childhood trauma and Cyber-Dating Abuse (CDA) amongst a sample of young adults. CDA was divided into two categories, including pressure-aggression (e.g. aggression, threats, pressure for sexual behaviours or for sharing sexual images) and control-monitoring (e.g. control, privacy intrusion). This study found that EMSs relating to emotional deprivation mediated the association between adverse childhood experiences and cyber dating abuse.

However, this was not observed for EMSs relating to abandonment. As highlighted by the authors, this was unexpected, as people who hold the belief that their partners are unpredictable and potentially ready to leave, may be more likely to exert control upon them (Young et al., 2007). Within this context, the authors propose that participants who scored high on abandonment may adopt coping methods associated with surrender or avoidance; thus, limiting the risk of being abandoned, or the negative feelings associated with it, respectively. Differently, Estevez et al., (2016) investigated EMSs endorsement as a potential mediator for the relationship between childhood sexual abuse (CSA) and displaced aggression among a sample of female and male adults accessing services that provided support to victims of abuse. Results demonstrated a significant mediation effect of the disconnection/rejection domain on the relationship between CSA and displaced aggression. These findings are relevant to harmful behaviour as triggered displaced aggression has been found to lead to acts of violence, particularly, in the context of intimate relationships (Slotter et al., 2020).

Generally, the existing literature suggests that EMSs may have a role in accounting for the relationship between childhood trauma and harmful behaviour in later life. Nevertheless, research in this area has mostly provided evidence in support for the disconnection/rejection domain in the context of intimate relationships. Consistently, studies have found high correlations between the disconnection/rejection domain and problematic interpersonal behaviour patterns (Mojallal et al., 2015). Furthermore, the findings available further support Young et al. (2004) theory that early trauma is likely to lead to the development of schemas relating to this particular domain, as well as the notion that lack of sense of safety and trust within relationships may contribute to externalising behaviours such as aggression, violence, and coercion. Nevertheless, the extent to which

findings on this research area may be generalised to other types of harmful behaviour and forensic populations is limited.

The present study

Thus far, no studies have investigated the potential mediating role of EMSs for the relationship between childhood trauma and violent behaviour. Therefore, the present study aims to add to the current literature and is exploratory. The main objective is to establish whether EMSs can account for the relationship between early trauma and violent behaviour.

For this study, violent offending is defined as set out by the Crown Persecution Service (CPS; https://www.cps.gov.uk/crime-info/violent-crime). Violent offending therefore ranges from behaviours involving the use of physical violence against another person, to the use of weapons such as knives, firearms, and corrosive substances to harm or threaten another person. Although the mere possession of weapons in public spaces is included in the CPS definition, the present study focuses on actual behaviours as opposed to the intent. Therefore, convictions for possession of offensive weapons will not be included. Moreover, offending of sexual nature such as rape or sexual assault will not be included as deemed to be a different category. Finally, intimate partner violence will not be included either as the focus of the study is on general violence.

EMS are internalized models representing expectations and behavioural responses concerning the self, others, and the world (Baldwin, 1992). Thus, the influence of EMS goes beyond behaviours observed within romantic relationships and more research is needed to explore their role within other interpersonal contexts. Young et al (2003) argued that EMSs related triggers are likely to be more available within intimate relationships. However, a recent meta-analysis found that the

correlation between interpersonal problems and EMSs were stronger for general relationships when compared to intimate relationships (Janovski et al., 2020). Although this study focused on interpersonal problems more generally as opposed to aggression and violence, its findings can be used to argue that EMSs activation may lead to harmful behavioural responses beyond the sphere of intimate relationships. Unless directed towards objects or the self, violent behaviour is interpersonal in nature as perpetrated towards others. Therefore, it is likely that EMS may play a role in predicting externalising behaviours involving violence.

Finally, it is widely accepted that violence is a complex phenomenon resulting from a wide range of factors (Davies & Beech, 2012). Thus far, several psychological, social, and biological theories of violence have been put forward to understand the causes of violence and what factors may contribute towards it (e.g. Bandura et al., 1961; Freud, 1930; Novaco, 1977; Huessmann, 1988; Simpson & Kenrick, 1997; Tolan & Guerra, 1994). Whilst it is recognised that many factors are likely to contribute to violent convictions, the present study focuses on early traumatic events and cognitive processes.

Hypotheses

First, it is hypothesised (1) that EMSs endorsement will be positively correlated with both (1a) childhood trauma and (1b) behaviour of violent nature. It is also hypothesised (2) that higher endorsement of EMSs will mediate the relationship between childhood trauma and violent behaviour. Finally, it is hypothesised (3) that the disconnection/rejection domain is likely to be the most predictive mediator between childhood trauma and violent behaviour.

Methodology

Ethics

Ethical approval was obtained by the University of Nottingham, Faculty of Medicine & Health Sciences Research Ethics Committee. See Appendix A.

Design

The present study employed a non-experimental, correlational design.

Participants

A power calculation using G*Power (Faul et al., 2007) was conducted and indicated that 29 participants would be required to achieve 80% power, with a medium effect size and an alpha of 0.05. Of note, the present study utilises a resampling technique to test the main hypothesis (i.e. bootstrapping, Preacher & Hayes, 2004). This method has been found suitable for samples ranging from 20 to 80 participants (Shrout & Bolger, 2002).

The sample comprised of adult participants over the age of 18 who have had or were in direct contact with the CJS at the time of the study (i.e. "on probation"). Participants were recruited in the community, either within a Community Rehabilitation Company (CRC) or supported housing (SH) settings. Anyone over the age of 18, with previous or present links with the CJS, and able to provide informed consent met the criteria to take part in the study.

In total, there were 32 participants; 13 were females and 19 were males. The average age of participants was 40.72 years (SD= 13). The offences for which participants were convicted varied in nature. 81.2% (26) of participants were convicted of more than 1 offence. A total of 18 (56%) participants identified as White, 1 (3%) as Asian, 6 (19%) as Black, 1 (3%) as Latino or South American, and 6 (19%) identified as having a mixed ethnic background. See table 2.1 and 2.2 for participants' characteristics and offence type.

Given recruitment took place across two different services, a comparison of participants' characteristics was conducted between those recruited within probation and those recruited in supported housing settings. This was done to ensure that that the overall study sample is homogenous and representative of the target population. Participants were compared on the following variables; gender, age, ethnic background, violent convictions and health characteristics. The Mental Ill Health category includes wide range of disorders, including anxiety, depression, psychotic disorders, and bipolar disorder. The Chi-square tests showed that the distribution of variance for ethnic background, mental ill health, substance use, personality disorder, trauma disorder, and neurodevelopmental condition variables was similar between the two groups. Thus, no significant differences were found. (See Table 2.1)

Table 2.1. *Participants' Characteristics and Comparisons between Groups*

Characteristics	**Total (N=32)**	**CRC (N=17)**	**SH (N=15)**	**X^2**	**df**	**P Value**
	N (%)	*N (%)*	*N (%)*			
Ethnicity				.16	1	.70
White	18 (56%)	9 (53%)	9 (60%)			
Non-white	14 (44%)	8 (47%)	6 (40%)			
Sex				5	1	.04*
Males	19 (60%)	7(41%)	12 (80%)			
Females	13 (40%)	10 (59%)	3 (20%)			
Health						
Mental Illness	21(66%)	13 (76%)	8 (53%)	1.9	1	.17
Substance Use Problems	19 (59%)	10 (59%)	9 (60%)	.01	1	.95
Personality Disorder	8 (25%)	6 (35%)	2 (6%)	2.1	1	.15
Trauma Disorder	14 (44%)	10 (59%)	4 (27%)	3.4	1	.07
Neurodevelopmental Condition	3 (9.4%)	2 (12%)	1 (7%)	1	1	.55
Convictions						
Participants with violent convictions	22 (69%)	13 (77%)	9 (60%)	1.1	1	.32

**p< .05*

However, the Chi Square test showed a significant difference in gender. Specifically, most females were recruited within probation (CRC). Nevertheless, this is to be expected as males are more likely to experience homelessness and therefore be placed in supported housing (Office for National Statistics, 2019). Finally, a T-test was conducted to explore age differences. The mean age for participants recruited within CRC was 37 (SD= 12) and for SH was 45 (SD=13). The T-Test found no significant age differences between the two groups, t (30) =-1.81, p= .08.

Table 2.2*. Nature and Number of Convictions*

Convictions	N (%)
Violence Against the Person	21 (66%)
Serious Violence	18 (56%)
Domestic Violence	6 (19%)
Murder and Manslaughter	3 (9%)
Sexual Offence (Adult)	5 (16%)
Drug Offence	12 (37%)
Theft	11 (34%)
Anti-Social Behaviour	12 (37%)
Robbery	7 (22%)
Possession of weapon	12 (37%)
Driving offence	2 (6%)
Threats/Harassment	5 (16%)
Breach of a court order	3 (9%)
Other type of offence (nonviolent)	14 (42%)

N=32

Materials

Background Information Sheet

A set of questions were developed to gather information about the participants' demographic backgrounds, housing circumstances, and health. Questions relating to the participants' health (i.e. substance and alcohol use and mental health

difficulties) were measured dichotomously (i.e. Yes/No). Participants who answered "Yes" were subsequently asked to provide additional information about the nature of their difficulties. See appendix B for the Background Information Sheet.

The Adverse Childhood Experiences Questionnaire

The ACE-Q (Felitti et al. 1998; Dube et al. 2004) is a brief self-report tool used to measure adverse events experienced in childhood (before the age of 18). The ACE-Q assesses 10 types of childhood trauma, including events personally experienced or experienced by a family member. These include physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, a parent with alcohol issues, domestic violence, family member incarceration, family member with mental ill-health, and parental divorce or separation. Respondents are asked to provide a "Yes" or "No" answer to each question. The ACE is scored by adding up the number of "Yes" responses up to a maximum of 10.

The ACE-Q holds acceptable levels of reliability (Mersky et al.,2017; Dube et al. 2004) and validity (Dobson et al.,2021; Schmidt et al., 2020) and has been applied across several populations (Wingenfield et al., 2001; Folayan, et al. 2020; Ford et al., 2014). See appendix C for questionnaire.

Young's Early Maladaptive Schemas Questionnaire – Short Version (YSQ-S3)

The YSQ-S3 (Young, 2005) is a 90 item self-report measure that assesses the extent to which 18 Early Maladaptive Schemas are endorsed on a Likert scale ranging from 1 (completely untrue) to 6 (describes me perfectly).

The YSQ-S3 is the latest short version measure of EMSs. Nevertheless, it has been validated across several countries with both clinical and non-clinical samples and

found to be a valid and reliable measure of EMSs (Bach et al., 2017; Bouvard et al., 2018; Malogiannis et al., 2018; Sakulsriprasert et al., 2016; Slepecky et al., 2019). See Appendix D for questionnaire.

Offending History Information Sheet

Participants in supported housing were asked to complete a sheet enquiring about their offending history (See Appendix E). To avoid any ethical issues relating to the potential disclosure of serious offences they were not arrested/prosecuted for, participants were asked to only report offences for which they were convicted. The offending history sheet listed a wide range of offence types; participants were asked to tick the boxes relating to offences they were convicted or cautioned for, and how many times. To obtain accurate information, self-reported offending histories were subsequently checked against the information recorded within the organization's systems.

Procedure

Participants were initially recruited across supported housing services that housed adults with forensic histories or presently linked to the CJS. Posters were placed across services promoting the study (see appendix F for poster). Participants who wished to take part contacted the researcher, who subsequently attended the service for data collection in person. Confidentiality was discussed and consent to participate in the study and to access personal data was taken (See appendices G and H for relevant forms). Meeting rooms were made available to the researcher to collect data confidentially and privately. The researcher remained at hand to provide support in the event participants did not understand the questions. Following completion of the questionnaires, the researcher debriefed participants

and ensured that did not feel distressed. Relevant information about support services available was also provided (see appendix I for debrief sheet).

Due to recruitment issues, participants also had to be recruited within another setting, namely, a Community Rehabilitation Company (CRC). Assistant Psychologists (APs) working within the service informed potential participants about the study and provided them with the link to the online survey. Prior to this, the researcher met with the APs to discuss consent and confidentiality to ensure that potential participants did not feel pressured to take part in the study. The same principles and procedures about consent to take part in the study and to access personal records described above applied to participants recruited within the CRC. The only difference is that consent was given through the online survey platform.

The information relating to the forensic history of participants recruited in supported housing was retrieved by a staff member who assisted with the piece of research. This information was subsequently checked against the self-reported offending history by the researcher. Self-reports and officially recorded information matched for all participants.

For participants recruited within the CRC, the information about offending history was retrieved from their internal system (Delius) by the researcher. Once this information was retrieved, any data that may lead to the identification of participants was safely discarded.

Results

Initial correlation analyses were carried out with Spearman's non-parametric correlation test, using SPPS. There were positive correlation between ACEs and frequencies of overall convictions (r_s =.518, p = .002) and total EMSs scores (r_s

=.552, p = .002). In addition, ACEs were strongly correlated with violent convictions (r_s =.735, p < .001). Except for impaired limits, ACEs were positively correlated with all schema domains. Moreover, frequencies of violent convictions were associated with all schema domains as well as total EMSs scores. For correlation values between all variables see Table 2.3.

Hayes and Preacher's (2005) multiple-mediation analysis with bootstrapping was conducted to test the main hypothesis. The bootstrapping analysis uses a resampling technique to test indirect effect estimates within a model (Preacher & Hayes, 2004). The analysis was performed using SPSS PROCESS macro (Hayes & Preacher, 2005), utilizing the Model 4 option.

The first mediation model included ACEs as the independent variable, overall EMSs scores as the mediator, frequencies of violent convictions as the dependent variable, mental ill-health as the first covariate, and substance misuse as the second covariate. Covariates were of dichotomous nature (i.e. Yes/No). A confidence level of 95% was used to determine the mediation effect and significance of the indirect effect. See figure 2.2 for mediation model.

Step 1 yielded a significant overall model F (3, 28) = 11.3, p= <.001, R^2= .55. A positive and significant predictive relationship between ACEs and violent offending (b= .41, t (28) = 5.7, p< .001) was also found. Neither covariate were found to have a statistically significant predictive relationship with violent offending. Step 2 of the analysis showed a positive and significant predictive relationship between ACEs and EMSs scores (b= .25, t (28) =3.6, p = .012). Again, both covariates were found to have a non-statistically significant predictive relationship with EMSs.

Step 3 showed that, EMSs and ACEs taken together significantly predicted offending of violent nature F (4, 27) = 15.4, p=.001, R^2= .69. The path from EMS to violent offending was positive and significant (b= .60, t (27) = 3.6, p= .001), indicating that people who endorsed higher levels of EMSs carried out more offences of violent nature. In addition, ACEs scores were still a significant predictor of violent convictions (b = .26, t (23) = 3.61, p =.001). Although the latter may be indicative of a partial mediation, consideration must be given to any differences in significance and coefficients between the C (Step 1) and C' (Step 3) paths. Within this context, it was noted that the significance and coefficients were lessened by the presence of the mediators, thus indicating changes in this relationship. To confirm whether changes between C and C' were significant, a Sobel test was carried out (see step 4). Neither covariate were found to affect the model.

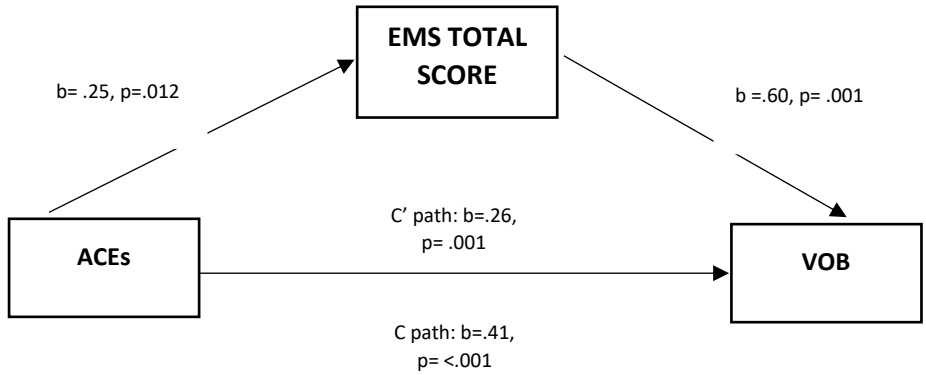
Finally, step 4 of the mediation analysis showed that the indirect effect was statistically significant as the Confidence Interval did not include zero: IE= .15, SE= .07, 95% CI = (.04, .33). Thus, EMSs mediated the relationship between ACEs and violent offending. A Sobel test was also conducted and showed a significant mediation model (z = 2.5, p = .01), thus excluding the possibility of a partial mediation and confirming a full mediation effect.

Table 2.3. *Descriptive Statistics and Spearman's Correlations*

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. ACEs	4.09	2.54										
2. Abuse	2.25	1.76	.885**									
3. Household Dysfunction	1.84	1.37	.698**	0.317								
4. Total Convictions	4.09	2.8	.518**	.400*	.478**							
5. Violent Convictions	1.63	1.41	.735**	.598**	.578**	.796**						
6. Total EMSs	2.74	1.16	.552**	.480**	.370*	.457**	.732**					
7. Disconnection/ Rejection	3.48	1.6	.588**	.492**	.416*	.622**	.801**	.874**				
8. Impaired Autonomy	2.16	1.1	.501**	.406*	0.334	0.327	.578**	.836**	.633**			
9. Other/ Directedness	2.54	1.13	.573**	.553**	.360*	.367*	.627**	.858**	.621**	.752**		
10. Impaired Limits	2.37	1.06	0.263	0.31	0.172	0.183	.374*	.683**	.519**	.449**	.640**	
11. Over-Vigilance/ Inhibition	2.65	1.41	.439*	.440*	0.228	0.318	.629**	.920**	.729**	.739**	.845**	.704**

**p< 0.01 (2-tailed); p< 0.05 level (2-tailed); N= 32

***Figure 2.2**. Mediation Model 1*



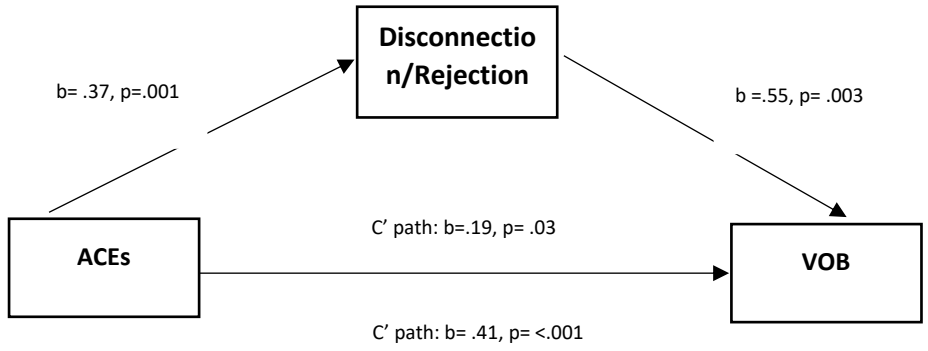
A second mediation model was tested with ACEs as the independent variable, EMSs dimensions as the mediators, frequencies of violent convictions as the dependent variable, mental ill-health as the first covariate, and substance misuse as the second covariate. A confidence level of 95% was used to determine the mediation effect and significance of the indirect effect. See Figure 2.3 for the mediation model.

Step 1 one of the analysis showed a positive and significant predictive relationship between ACEs and violent convictions (b= .40, t (28) = 5.7, p= <.001), thus indicating that the people with higher scores on the ACEs questionnaire carried out more offences of violent nature. Neither covariate were found to have a statistically significant predictive relationship with violent offending, thus indicating that they did not have any effect on the model. Step 2 of the mediation analysis showed a positive and significant predictive relationship between ACEs and the domains of disconnection/ rejection (b= .37, t (28) = 3.9, p= .001), other-directedness (b= .22, t (28) = 3.5, p= .002), impaired autonomy (b= .19, t (28) = 2.61, p= .01), and over-inhibition (b= .23, t (28) = 2.5, p= .02). However, the predictive relationship between ACEs and the domain of impaired limits was non-

significant (b= .12, t (28) = 1.68, p> .05). Again, both covariates had no effect on the model.

Step 3 of the process included all domains, along with ACEs and the covariates. The overall model was significant, F (8, 23) = 9.24, p <.001, R^2= .76. However, the only domain that predicted violent convictions was disconnection/rejection (b= .55, t (23) = 3.3, p= .003); thus, indicating that people who experienced high levels of trauma and endorsed higher levels of disconnection/ rejection schemas were convicted of more violent offences. In addition, the analysis revealed that, after controlling for the mediators, ACEs scores were still a significant predictor of violent convictions (b = .19, t(23) = 2.33, p =.03). However, the significance and coefficients were lessened by the presence of the mediators, thus indicating changes in this relationship. A Sobel test was also carried out to confirm whether these changes were significant, and it is reported below.

Figure 2.3*. Mediation Model 2*



Finally, step 4 of the analysis showed that, except for disconnection/ rejection, EMSs domains did not mediate the relationship between ACEs and violent convictions. The indirect effect of the disconnection/ rejection domain was statistically significant as the confidence interval did not include zero: IE= .20,

SE= .09, 95% CI = (.03, .38). Thus, the disconnection/ rejection domain fully mediated the relationship between ACEs and violent convictions. A Sobel test was also conducted and showed a significant mediation model (z = 2.5, p = .01), thus excluding the possibility of partial mediation.

Discussion

The present study aimed to explore EMSs as a potential mediating factor for the relationship between childhood trauma and violent behaviour amongst adults with previous or present links to the CJS.

In line with the literature, results demonstrated that most participants experienced either one or more ACEs (M= 4.09; SD= 2.55), thus confirming that childhood trauma is prevalent amongst forensic populations and likely to be cumulative in nature (Reavis et al., 2013; Fazel & Danesh, 2002). In addition, findings offered further support for the link between childhood trauma and general offending. Also consistent with the existing literature, results indicated strong associations between ACEs and EMSs endorsement; thus, supporting the notion that adverse experiences in childhood influence how people see themselves, the world, and others (Young et al., 2003).

Young et al., (2003), proposed that childhood abuse is usually associated with EMSs relating to mistrust/abuse, defectiveness/shame, and vulnerability to harm. However, except for impaired limits, findings indicated that items of the ACE relating to abuse were correlated with the total EMS scores and other schema domains. These results are consistent with Karatzias et al (2016) study, which indicated that women who experienced interpersonal trauma had elevated EMS scores overall as opposed to endorsing a unique set of EMSs. Similarly, results are in line with the meta-analysis by Pikington et al., (2020), which found correlations

between childhood abuse and a broader range of EMSs. Finally, analyses demonstrated that overall EMSs scores and individual domains were associated with violent behaviour. As previously mentioned, previous research has yielded varied results concerning which domains are associated to harmful behaviour, although impaired limits, disconnection/rejection, and impaired autonomy were identified as particularly relevant. The present findings suggested that all domains were associated with violent behaviour and thus mostly consistent with the existing literature. Interestingly, results indicated that the total number of convictions was associated with a higher endorsement of EMSs as well as the disconnection/ rejection and other-directedness domains. In turn, this may be indicative that high EMSs endorsement may also play a role in general offending, thus warranting further investigation to better understand the association between specific schemas and different offence types.

In line with the main hypotheses, the present findings indicated that elevated EMS scores accounted for the relationship between childhood trauma and violent convictions. In addition, when specific domains were explored, disconnection/ rejection was found to be the only mediator for this relationship. Findings are consistent with the notion that individuals with elevated EMSs scores may be more likely to engage in problematic patterns of behaviour and that that disconnection/ rejection domain is particularly problematic for people and associated with histories of abuse and interpersonal difficulties (Young et al., 2003). In addition, results are in line with previous studies focusing on the potential mediating role of EMSs (Gay et al., 2013; La Motte et al., 2016; Hassija et al., 2018; Estevez et al., 2016; Celsi et al., 2021).

To date, no studies have explored the potential mediating role of EMSs for the relationship between early adversity and violent behaviour amongst individuals

involved in the CJS. Indeed, violence is a multi-faceted issue and many factors may lead to or contribute to violent behaviour (Fazel et al., 2018).However, findings generally support social cognitive theories of aggression (Berkowitz, 1990; Bushman, 1996), which suggest that pre-existing beliefs are likely to influence how situations are perceived and the response that subsequently follows. Similarly, results are in line with Young et al (2003) notion that EMSs endorsement may lead to aggressive responses. Within this context, Young et al. (2003) argued that EMSs related triggers are likely to be more available within intimate relationships. Consistently, various studies have found associations between EMS endorsement and intimate partner violence (e.g. Kachadourian et al., 2013). However, as already mentioned, violence is interpersonal in nature as usually perpetrated against another person. Furthermore, Janovski et al. (2020) findings suggested that correlation between interpersonal problems and EMSs were stronger for general relationships when compared to intimate relationships. In turn, the present study showed that violent responses associated with EMSs activation indeed occur outside the sphere of intimate relationships.

Early trauma, especially of interpersonal nature, can contribute to the development of internalised models that influence the manner by which people think and behave (Young et al., 2003). In addition to guiding information processing, schema activation is characterized by high levels of negative affect and result in problematic behaviour patterns and unhelpful compensatory/coping strategies to reduce negative affect, meet underlying emotional needs, and avoid further emotional pain (Young et al., 2003). In turn, when a particular schema is activated (along with intense negative feelings), it can give rise to biased inferences and judgments that lead individuals to engage in harmful behaviour, which may or may not fall outside the boundaries of the law. Thus, elevated EMSs

endorsement may give rise to biased inferences more frequently which may result in violent behaviour. In addition, schemas associated with emotional deprivation, abandonment/instability, mistrust/ abuse, defectiveness/shame, and social isolation appear to be particularly predictive of violent behaviour amongst individuals who experienced childhood trauma. For example, the mistrust/abuse schemas are associated with the assumptions that others have malicious intentions and may harm us, thus creating a sense of threat and vulnerability. In turn, this may lead to hostility towards others which could lead individuals to carry out violence as a result.

The present findings have implications for clinical practice with forensic populations. A large body of literature has explored the role of underlying cognitive structures and processes in facilitating and maintaining offending behaviour such as "cognitive distortions" or "thinking errors" (Beck, 1999; Ellis, 1994; Kerig & Becker, 2010; Novaco, 2007). In turn, these have been the focus of interventions with forensic populations. However, some have argued for the need to target the "deeper" cognitive structures such as Schemas, as these are thought to guide social information processing and ultimately, give rise to biased judgments and attributions (i.e. cognitive distortions) which influence behavioural responses.

Schema Therapy (Young et al., 2003) is grounded on schema theory and aims to address underlying negative beliefs and associated behavioural responses and coping strategies. Although it was initially developed for individuals with complex psychopathologies and Personality Disorder, its application has now been widened to individuals experiencing a wide range of difficulties. In turn, over the past decade, traditional Schema Therapy (ST; Young et al., 2003) and ST informed interventions have gained popularity in forensic settings. Although its effectiveness with this population remains under-investigated, some have

highlighted its potential benefits (Bernstein et al, 2007). Within this context, it is argued that targeting distorted beliefs such as EMSs with ST or ST interventions (as opposed to more "superficial" cognitions) may help reduce recidivism and harmful behaviour and may lead to longer-lasting changes in cognitive functioning. Additionally, the benefits of ST or ST informed interventions may go beyond the reduction of recidivism. Following childhood trauma, not all individuals develop significant psychopathologies such as PTSD, thus not requiring trauma-focused work. However, many people go on to experience interpersonal difficulties (Briere et al., 2010), general distress disorders (Kessler et al., 2005; Mandelli et al., 2015), and behavioural problems (Felitti et al., 1998), which may be mediated, exacerbated, or maintained by distorted beliefs about the self and others (Aafjes-van Doorn et al., 2021; Estevez et al., 2016; Mcginn et al., 2005; Kaya & Aydin, 2021; Brotchie et al., 2004; Shorey et al., 2013; Beck, 1964). Given the prevalence of childhood trauma amongst this population and their vulnerability to develop negative beliefs, addressing EMSs as a treatment target may also improve levels of distress, quality of life and general functioning. In turn, it is argued that the present study further supports the potential value of ST informed interventions with forensic populations subjected to traumatic events to both reduce recidivism and improve psychological wellbeing.

An additional point to consider is that there is now general consensus that violence is a multi-faceted issue, with multiple social, psychological, and biological factors thought to contribute to its occurrence. Within the field of psychology, several theories have been proposed to make sense of violence (e.g. Davies & Beech, 2012). The present research was concerned with the role of early trauma and cognitive processes; thus, the exploration of the multitude of factors potentially contributing to violence goes beyond the scope of this study. Nevertheless, it is

acknowledged that early trauma and EMS endorsement are unlikely to be the only factors contributing to violent convictions.

A range of causal and risk factors for violence have been investigated within the literature. Of note, the relationships between these factors and violence are often complex, widely debated, and still not fully understood. Studies have suggested that traumatic brain injury is a risk factor for early and violent offending (Williams et al., 2018). Furthermore, other studies have found associations between violence and the use of illicit drugs and alcohol (e.g. Bennett et al., 2008; Devries et al., 2014; Duke et al., 2017). In addition, associations have been found between mental ill health and violence; with some arguing that mental ill health may constitute a marker for violent offending (Chang et al., 2015; Douglas, Hart, Webster, & Belfrage, 2013).Moreover, it has been found that the interaction between substance use and mental ill health can increase the risk of violence (e.g. Duke et al., 2017; Fazel et al., 2018; Grann & Fazel, 2004).

An area that has attracted considerable attention in forensic settings is the contribution of personality disorder (PD) and personality traits more generally, to violent behaviour. Research has demonstrated that there is a high prevalence of PD amongst forensic populations (Rotter et al., 2002; Fazel & Danesh, 2002). In addition, personality disordered offenders are thought to carry out more serious offences (Blackburn et al., 2003) and display higher recidivism rates when compared to non- personality disordered offenders (Hart, et al., 1993). The link between personality disorder and violent behaviour has been widely established within the literature (e.g. Buchanan & Leese, 2001). Associations have been particularly strong between Borderline and Dissocial PDs and violence (e.g. Howard et al., 2009; 2014); consistently, studies have also found that some of the characteristics associated with Cluster B PD have been linked to offending

behaviour, including impulsivity, callousness, aggression, and hostility (Duggan & Howard, 2009). In addition, research has also showed that the co-occurrence of antisocial and borderline personality disorders and psychopathic characteristics is commonly observed in forensic populations (Howard et al., 2009; 2014). In turn, this comorbidity has been linked to a variety of negative behavioural outcomes, as well as the severity of violent offending and recidivism (Howard et al., 2014; Parmar & Kaloiya, 2018). Notably, it has also been highlighted that the use of substances may interact with personality pathology and increase the risk of violence (Fossati et al., 2000).

The findings concerned with this area of research are particularly relevant to the present study. First, studies have demonstrated a link between childhood trauma and the development of PD particularly, Emotionally Unstable PD/ Borderline (Ball & Links, 2009; Grover et al., 2007). Secondly, and most importantly, individuals with PD are thought to show elevated EMS scores (Young et al., 2003). Therefore, it is possible that traits linked to PD and associated with violence and aggression may interact with EMS to produce violent behaviour. In other words, the strength of the mediation effect may be influenced by the presence of personality difficulties. Therefore, future studies focusing on the mediating role of EMS for the relationship between trauma and violent behaviour, may wish to explore PD as a covariate. Within this context, it is recognised that the lack of exploration of PD as a potential covariate is a limitation of the present study.

The present study had several other limitations, including a small sample size and reliance on self-report measures. Which may have resulted in the lack of association between alcohol and MI in this context. In addition, the use of the ACE-Q is likely to have failed to account for equally relevant traumatic events, such as abuse outside one's household, or neighbourhood violence. The small

nature of the sample directly affects the power of the study, thus making it difficult to draw any conclusive inferences about the role of EMSs in mediating the relationship between ACEs and violent behaviour. Nevertheless, it is worth highlighting that the analysis employed is appropriate for small samples (Shrout & Bolger, 2002). Therefore, the present findings may be considered preliminary in nature and inform future research concerned with this topic.

An additional limitation relates to the design of the study. Specifically, due to the retrospective nature of the study, it is not possible to truly know whether EMSs developed before, in conjunction with ACEs or as a consequence. In turn, although it is suggested that EMSs develop as a response to early traumatic experiences (Young et al., 2003), this can only be established by employing a longitudinal design. Lastly, it is important to highlight that the sample mostly included middle-aged, Caucasian, individuals. Therefore, the generalizability of these findings could be limited.

Moreover, the present study did not explore gender differences and this is considered to be an additional limitation. Gender differences have been investigated and identified in the contexts of both childhood trauma and offending behaviour. For example, research has found that females tend to experience more childhood adverse experiences compared to males (Baglivio et al., 2014; Dube et al., 2006; Felitti et al., 1998). In addition, studies have found that females are significantly more likely than males to experience sexual abuse (e.g. Cavanaugh et al., 2015). Furthermore, there is evidence to suggest that males are more likely to engage in offending behaviour compared to females and the severity of offending is thought to be greater (e.g. Steffensmeier & Allan, 2003). Nevertheless, the evidence concerning gender differences in EMS development is

limited and has yielded mixed results. Notably, research in this area has mostly focused on males and females.

Of particular relevance, it has been well established within the literature that females and males experience different socialisation practices which are often consistent with prescribed gender roles (Bem, 1983; Martin & Halverson, 1981). For instance, females are more likely to be taught to be less assertive and more sensitive to others' needs while sacrificing their own. On the other hand, males are more likely to be taught to be assertive, self-sufficient, and to minimise expression of emotions (Freeman, 1999). Therefore, it has been suggested that socialisation practices may influence the formation and internalisation of beliefs about the self, others, and the world (Bem, 1983; Martin & Halverson, 1981). In turn, it is possible that there may be differences in the schemas developed and endorsed by different genders. However, the evidence supporting this notion is mixed and often inconsistent. Reeves & Taylor (2007) found that males scored higher than females on emotional inhibition, isolation/alienation, emotional deprivation, and defectiveness/shame schemas. On the other hand, Brotchie et al., (2004) found they scored higher on emotional inhibition whereas Muris (2006) suggested they scored higher on isolation/alienation. Another study, found that males scored higher on emotional deprivation and mistrust/abuse (Stallard, 2007). In terms of females, Reeves & Taylor (2007) found that they scored higher than males on self-sacrifice. However, Freeman (1998) found that in addition to the latter schema, females scored higher on abandonment/instability, subjugation, social isolation/alienation, and unrelenting standards. On the other hand, Welburn et al., (2002) found they scored higher on self-sacrifice, abandonment/instability, enmeshment/undeveloped, and defectiveness/shame. Finally, other studies found that females scored higher on

dependence/incompetence, compared to males (Brotchie et al., 2004; Dench et al., 2005). Although mixed, the evidence suggests that, compared to males, females may tend to develop schemas relating to the domains of impaired autonomy/ performance, and other/directedness. Consistent with existing theories (Bem, 1983; Martin & Halverson, 1981), these schema domains are characterised by beliefs of being a failure and incapable of surviving and functioning alone, and being overly focused on meeting other people's needs to gain approval and love, respectively.

In addition, Shorey et al (2012) investigated gender differences in a sample of alcohol dependent adults. They found that females scored higher than males on 14 out of 18 maladaptive schemas, although males also endorsed high rates of EMSs. Thus, whilst both males and females endorsed high levels of EMSs, females did so to a greater degree. The authors suggested that this could be explained by higher rates of adversity experienced by females. Nevertheless, it is important to note that Shorey et al., (2012) findings have not been replicated with other populations.

Whilst it is not possible to draw any meaningful conclusions from the evidence available, it can be inferred with a degree of confidence that gender differences are likely to have a role in EMS development. In turn, such differences have the potential to influence the nature and strength of the relationships between childhood trauma, EMS, and violent convictions. Therefore, it is recognised that investigating gender differences may have offered a more accurate picture about the mediating role of EMS, thus, adding further value to the present study. It is therefore recommended that future research focusing on the mediating role of EMS investigates potential gender differences.

Finally, future research may focus on examining the relevance of EMSs with different forensic samples, such as people in custodial or secure settings. In addition, different types of harmful behaviours may be explored to examine whether EMSs are relevant to behaviours that occur outside interpersonal contexts, either in the presence or absence of childhood trauma. Finally, future research should strive to adopt longitudinal designs to shed light on the temporal position of both EMSs development and engagement in harmful behaviour following childhood trauma.

Conclusion

The present study put forward some evidence supporting the idea that the complex relationship between childhood trauma and violent behaviour may be partially accounted for by the presence of elevated EMSs endorsement as well as schemas relating to emotional deprivation, abandonment/instability, mistrust/ abuse, defectiveness/shame, and social isolation. Although results demonstrated that the disconnection/rejection domain mediated this relationship, the small sample size means it is difficult to draw definitive conclusions. Nevertheless, the present study supports previous findings and provides useful preliminary evidence about the relevance of EMSs endorsement as an underlying psychological factor for the relationship between early trauma and violent offences. In addition, this study adds value to the existing literature, which has predominantly focused on non-forensic populations and intimate partner violence. Finally, findings further support the potential benefits of Schema Therapy with forensic populations subjected to childhood adversity.

Please see appendix W for research poster for this study.

CHAPTER III

Systematic Review of the Body of Evidence for Schema Therapy in Forensic Settings

Abstract

Schema Therapy (ST) has gained significant empirical support, particularly, in treating people with personality disorder and other complex presentations. In recent years it has gained popularity within forensic settings. A systematic review was conducted of studies evaluating the application and benefits of both traditional and interventions informed by ST, with forensic populations. A search was carried out in August 2020 on Medline, Embase, PsychINFO, CINHAL, ASSIA, and Web of Science. A total of 5 studies including 3 RCTs and 2 controlled trials were identified. Studies focused on diverse populations with a range of emotional, mental health, and social difficulties. Various outcomes were assessed, mostly relating to correlates of offending behaviour. Generally, positive results were found, particularly, for emotion regulation and endorsement of EMSs. The studies identified ranged from acceptable to high quality; thus, forming a fair preliminary base of evidence in relation to the benefits of ST interventions with forensic populations, delivered both individually and in groups. However, the strength of the evidence is limited to male samples within secure settings (i.e. prison or hospital). Overall, the research into the benefits of ST in forensic settings remains limited. More research is needed, particularly, with female and community samples. Future studies may also include trauma-specific and recidivism measures.

Introduction

Schema Therapy Background

Schema Therapy (ST; Young et al., 2003) is an integrative psychotherapy model that combines psychodynamic, cognitive, behavioural and humanistic approaches (Vreeswijk et al., 2012). ST was initially developed to treat people with personality disorder (PD), who have been historically considered "hard to treat", often achieving poor therapeutic outcomes and therefore considered "treatment failures" (Young et al., 2003). However, over the years ST has evolved and adapted to treat other enduring and complex psychological difficulties (Vreeswijk et al., 2012). The theoretical model of ST is based on four concepts, namely, Early Maladaptive Schemas (EMSs), Coping Strategies, Schema Domains, and Schema Modes (Young et al., 2003). Briefly, EMSs can be defined as "stable and enduring dysfunctional beliefs about oneself in relation to the environment, originating in patterns of early family interaction and serving to guide later information processing and behavioural patterns" (Backer & Beech, 2004, p 1125). Young et al. (2003) proposed that the development of EMSs is contingent upon the quality of interactions between the child and the relevant primary caregiver. Consistently, evidence has demonstrated a link between EMSs endorsement and childhood trauma (Harding et al., 2012; Karatzias et al., 2016). Coping styles denote how children adapt to their conditions and experiences. Whilst these coping strategies enable children to survive difficult circumstances, later in time, they may no longer be helpful, thus ceasing to serve their adaptive function. Finally, the concept of Schema Mode is multi-faceted and relates to the cognitive and emotional states and coping responses that are active in a given moment for an individual.

ST strives to give individuals the tools to fulfil their core emotional needs adaptively. More specifically, ST aims to address deep maladaptive core beliefs and associated unhelpful patterns of thinking, feeling, and behaving (Vreeswijk et al., 2012).

Clinical Effectiveness

The effectiveness of ST has gained significant empirical support in treating people with Emotionally Unstable personality disorder (Farrell et al., 2009) and Cluster C PDs (Bamelis, et al., 2014). In addition, studies have demonstrated that ST is also effective in treating chronic depression (Carter et al., 2013; Malogiannis et al., 2014) and may benefit people with both PD and substance misuse difficulties (Ball, 2007; Ball et al., 2005).

It has also been argued that ST can be applied to the treatment of individuals with long-lasting or complex forms of PTSD (Boterhoven de Haan et al., 2019); although limited, there is also some evidence supporting the use of ST for PTSD (Cockram et al., 2010).

Schema Therapy in Forensic Contexts

The use of ST and its underlying theoretical underpinnings have been extended to both forensic research and practice.

Offending Behaviour Research

A high number of studies have explored the role of underlying cognitive structures and processes in facilitating and maintaining offending behaviour (Kerig & Becker, 2010). Similarly, although to a lesser extent, the theoretical underpinnings of ST have gained empirical attention within the context of offending behaviour research, with studies finding associations between several EMSs domains and

various types of harmful behaviours and aggression (Tremblay & Dozois, 2009; Kachadourian et al., 2013; Sigre- Leiros et al., 2013; Shorey et al., 2017). In addition, EMSs endorsement has also been explored as a potential mediator for the relationship between various types of childhood trauma and offending behaviour. Most research has focused on intimate partner violence and aggression. Findings demonstrated that schemas pertaining the disconnection/ rejection domain mediated the relationship between childhood trauma and violent behaviour in romantic relationship contexts (Gay et al., 2013; La Motte et al., 2016; Celsi et al., 2021). One study also found that the impaired Limits domain mediated this relationship (Hassija et al., 2018).

Although limited, these findings provide evidence supporting the link between EMSs and various types of offending behaviour. Beyond this, it may be argued that the core theoretical underpinnings of this treatment modality are highly appropriate for a population that is thought to be particularly traumatised. Therefore, the cited findings highlight the potential clinical relevance of ST with forensic populations.

Application of Schema Therapy with Forensic Populations

Over the last decade, the application of ST has been extended to forensic settings (Bernstein et al., 2007). Particularly, for the treatment of people with PD, who are highly prevalent amongst forensic populations (Fazel & Danesh, 2002) and likely to have experienced significant levels of childhood trauma (Graham et al., 2012; Erwin et al., 2002). People with PD are thought to carry out more serious offences (Blackburn et al., 2003) and display higher recidivism rates when compared to those who do not have a PD (Hart et al., 1993). Similar to their non-offending counterparts, individuals with PD who experience the Criminal Justice System

(CJS) have historically been considered "difficult to treat" (Harris, et al., 1991). Given ST has been developed to treat individuals with PD and has gained significant empirical support (Farrell et al., 2009; Bamelis, et al., 2014), it is not surprising that its application has been attracting considerable attention in forensic settings. In addition to being delivered as a "stand-alone" therapy model, ST theory and techniques are also used to inform clinical practice and treatment programmes with forensic populations (Bernstein et al., 2007; 2012).

Aims & Objectives

ST and its theoretical components have gained attention within the context of forensic research and practice. Nevertheless, the benefits of its application with forensic populations remains under-investigated. The objective of the present review is to identify, bring together, and appraise the empirical evidence currently available relating to the application of ST in forensic settings. To the researcher's knowledge, a systematic review of the literature focusing on the evidence base of schema therapy among forensic populations is yet to be conducted. As such, this review could potentially inform the current literature focusing on this topic and future clinical practice.

Methodology

Inclusion Criteria

The following inclusion criteria were used:

a. Population: Forensic populations in the community, prison, and secure hospital settings, and over the age of 18 both male and female.

b. Intervention: Traditional ST (Young et al., 2003) and ST informed interventions delivered either individually or within group settings. ST informed

interventions predominantly grounded on Young and colleagues' (2003) theory and do not significantly deviate from usual practice. Studies focusing on ST informed interventions that outline a clear link between the theoretical basis of the intervention delivered, and ST theory and practice as proposed by Young and colleagues (2003). Interventions delivered by a suitably qualified mental health professional (e.g. psychologist, psychotherapist) who received appropriate training on ST.

c. Comparator: any comparator group or no control group.

d. Outcomes: Any outcomes, such as recidivism or risk of recidivism (e.g. rates of reoffending, scores of relevant structured risk assessments), psychopathology (e.g. general distress, symptomatology, and emotional and interpersonal difficulties), behavioural outcomes (e.g. aggression, violence, self-harm, social functioning), and ST focused outcomes (e.g. Young's Schema Questionnaire)

e. Studies that involved the use of a true experimental design (i.e. Randomised Control Trial), quasi-experimental design, or observational design.

Exclusion Criteria

a) Studies that evaluated the effectiveness of Schema Therapy in addition to another psychological treatment modality

b) Studies not reported in English, Italian, or Portuguese

Sources of Literature & Search Strategy

The search for this review took place on the 30th of August 2020. The review included peer-reviewed published studies, grey literature, and unpublished work. Various databases were searched, including Medline, Embase, PsychINFO,

CINHAL, ASSIA, and Web of Science. For theses and dissertations searches, the Open Gray and EThOs databases were used. The following terms were used to search all databases, Schema Therapy OR Schema Focused Therapy OR Schema Based Therapy OR Schema Informed Therapy, AND, Offender OR Criminal OR Perpetrator OR Inmate OR Prison OR Secure Settings OR Forensic Psychiatry OR Correctional Facility. The searches comprised both subject headings (where possible) and keywords (See Appendix J). A manual search of reference lists of relevant studies and an internet search was also conducted and some experts in the area were contacted to enquire about unpublished research.

Screening & Selection

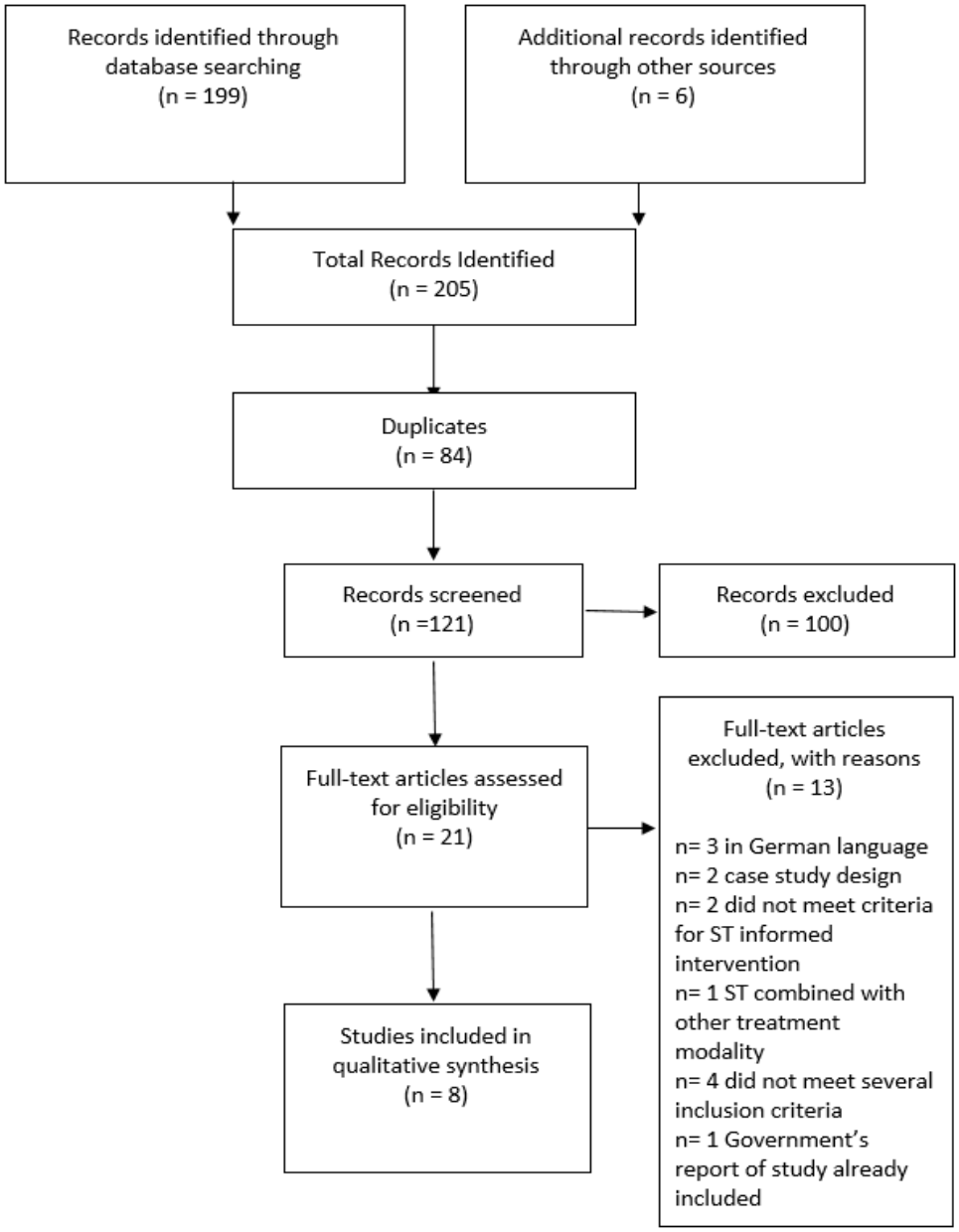
The titles and abstracts of studies were initially screened to establish whether they would meet the inclusion criteria. Where the latter was difficult to ascertain, a full review of the paper was conducted. Studies that did not meet the inclusion criteria were excluded. Studies that utilized the same participant sample although reported on different outcomes were included. Following this, a full review of the selected papers was conducted (see appendix L for data extraction sheet). The results of the search were managed and presented using EndNote. Figure 3.1 displays the PRISMA flow diagram, which illustrates the selection process.

Quality Assessment & Risk of Bias

Quasi-experimental and experimental studies were evaluated for risk of bias using an adapted version of the e Scottish Intercollegiate Guidelines Network (SIGN) checklists (see appendix M). The SIGN tool provides a framework to appraise the methodological quality and risk of bias of studies. Adaptations to the checklist were warranted by the nature of the area of focus, namely the evaluation of a psychotherapeutic intervention. In the context of risk of bias and quality appraisal,

special consideration has to be given to aspects associated to the implementation of the intervention itself (Munder & Barth, 2018). As such, a section focusing on treatment adherence and quality was added to the checklist.

***Figure 3.1**: PRISMA Flow Diagram*



The importance of recoding and reporting on adverse effects of psychological interventions in studies evaluating their effectiveness has been consistently

emphasised within the literature (Jonsson et al., 2014). Thus, a section focusing on the measurement and reporting of potential adverse effects of psychotherapy was also added. For the purpose of this review, "adverse treatment effects are all unwanted events which are caused by the treatment itself" (Linden & Schermuly-Haupt, 2014, p.306).

Finally, psychotherapeutic studies may not allow for the researchers to implement certain practices which are usually recommended to avoid bias (e.g. blinding of participants and personnel). The latter was considered when evaluating each study for risk of bias and quality appraisal. Therefore, a less stringent approach to quality/ risk of bias assessment was applied where appropriate. Informed by the grading system proposed by the SIGN50 framework, the ratings for the methodological quality of each study were categorised as follow:

High quality (++)

Awarded to high quality or well-conducted Experimental Designs (i.e. RCT) with low or very low risk of bias and quasi-experimental designs (controlled studies) with very low risk of bias. All or most criteria from the checklist are fulfilled; where criteria are not fulfilled, the conclusions of the study or review are thought very unlikely or unlikely to alter results.

Acceptable (+)

Awarded to well-conducted quasi-experimental designs with a low risk of bias. Some of the criteria from the checklist are fulfilled; where criteria are not fulfilled or are not adequately described, the conclusions of the study or review are thought unlikely to alter results.

Low quality (-)

Awarded to uncontrolled studies and RCTs or controlled studies with few or no criteria from the checklist are fulfilled; where criteria are not fulfilled or are not adequately described, the conclusions of the study or review are thought likely or very likely to alter. Studies allocated to the D category are therefore considered to have a high risk of bias.

Finally, a second independent researcher appraised 20% of the identified studies. Any disagreements were resolved through direct discussion.

Results

Overall Results

The studies included in this review were carried out in several countries, including the UK, Netherlands, Portugal, and Iran. Table 3.1 summarises the findings of the search carried out as part of this literature review.

A total of 8 articles met the inclusion criteria for this review; 3 were RCTs (Doyle et al., 2016; Bernstein et al., 2017; Brazao et al., 2017), 2 were controlled studies that employed some form of randomization (Jalali et al., 2017; Jalali et al., 2019), 2 articles (Brazao et al., 2018a; 2018b) reported secondary data analyses of outcomes measured in Brazao and colleagues' (2017) RCT, and 1 article (Bernstein et al., 2012) reported the preliminary results of the RCT carried out by Bernstein et al., (2017).

A total of three studies were rated as *High Quality* (Doyle et al., 2016; Bernstein et al., 2017; Brazao et al., 2017) and the remaining two were rated as *Acceptable* (Jalali et al., 2017; Jalali et al., 2019). Methodological quality and risk of bias appraisal ratings for the studies are presented in Table 3.2.

Interventions across studies varied in contents, modality, and duration. All interventions lasted for a minimum of 10 sessions and were facilitated by suitably qualified practitioners. The outcomes evaluated across studies also varied in nature and measurement, thus limiting the extent to which findings may be compared. Only two comparable outcomes were identified, including emotion/ anger specific modulation (Doyle et al., 2016; Brazao et al., 2017, 2018b) and EMSs endorsement (Jalali et al., 2017; Brazao et al., 2018a). The populations across studies also varied in nature, although all the studies included focused on male offenders in secure settings.

Summary of Traditional Schema Therapy

Two studies compared the effectiveness of individual traditional ST (Young et al., 2003) to treatment as usual (TAU) with high-risk personality disordered individuals in secure hospital settings (Doyle et al., 2016; Bernstein et al., 2012, 2017). Bernstein and colleagues' sample comprised of individuals with antisocial, borderline, narcissistic, or paranoid personality disorder traits. In addition, approximately 50% of participants achieved a score of 25 or higher on the Psychopathy Checklist-Revised (PCL-R; Hare, 1991) and approximately 30% scored 30 or above. Similarly, Doyle and colleagues (2016) recruited participants with borderline and antisocial PD and 61.9% of the sample scored 25 or above on the PCL-R.

Doyle and colleagues (2016) exploratory trial recruited a total of 63 participants and was carried out over 36 months. ST was delivered weekly for a minimum of 18 months. The outcomes measured included impulsiveness, anger regulation, interpersonal style, and EMS. Results showed some improvements in measures of impulsiveness and anger regulation, however, findings failed to reach statistical significance. Treatment retention was reported as satisfactory.

Bernstein and colleagues (2017) conducted a three-year-long multi-site RCT comparing ST and TAU amongst 103 individuals convicted for violent offences. ST was initially delivered twice weekly, then once weekly. Whilst preliminary findings were published in 2012, this study is yet to be published and the paper was directly obtained from one of the authors. Although not statistically significant, the direction of preliminary findings (Bernstein et al, 2012) supported the results highlighted in their final paper. The trial measured a variety of outcomes (See Table 3.1). Results from the 2017 paper indicated that the experimental condition produced faster improvements for several outcomes compared to the control group. The ST condition achieved both supervised and unsupervised leave more quickly compared to the TAU group. The ST condition also showed steeper improvements from baseline to 3 years in PD symptomatology and temperament (SNAP-FV). Whilst medium effects were observed for the ST group, only small effects were observed for the TAU group.

There were no significant differences between conditions for institutional violence and the risk of violent recidivism (HCR-20) was just above statistical significance (p=.06). Faster improvements were also observed in the measures of schema modes (SMI), and strengths and vulnerabilities scores (START). Nevertheless, after three years differences in scores between conditions were no longer statistically significant. Thus, suggesting that the improvements showed by the TAU group was eventually comparable to the ST condition. Lastly, results also indicated a stronger reduction in EMSs endorsement in the ST group. Treatment retention was high in both conditions although ST was superior (see Table 3.2).

Summary of Schema Therapy Informed Interventions

A total of three studies focused on the effectiveness of ST informed interventions in prison settings. Two controlled studies focused on prison populations with either drug addiction (Jalali et al., 2017) or living with HIV and depression (Jalali et al. 2019). One RCT focused on general prison populations (Brazao et al., 2017; 2018a; 2018b). Whilst the former two used a waiting list as control groups, the latter compared ST informed interventions with TAU in prison. The interventions evaluated in both studies were grounded on traditional CBT (Beck, 1995) although heavily informed by the theoretical underpinnings of ST (Young et al., 2003). Both were facilitated in group settings by suitably qualified practitioners.

Jalali et al., (2017) tested the effectiveness of a group-based ST informed intervention for drug-addicted prisoners under a methadone maintenance treatment in Iran. Whilst this study was not an RCT, the authors used some form of randomization, thus minimising bias. The primary outcomes included self-esteem and emotion regulation, which, to some extent, are both found to be linked to substance misuse outcomes (Blanchard et al., 2019; Cooper, 1995; Weiss et al., 2015; Alavi 2011). Notably, this study did not include EMS as an outcome. Results found that, compared to controls, participants in the experimental condition showed a significant increase in self-esteem and positive emotion regulation strategies and a decrease in negative emotion regulation strategies. In addition, the authors highlighted a reduction in methadone intake and drug-related cravings; however, it is unknown whether this reduction carried statistical significance. The study did not include a follow-up. Jalali et al., (2019) evaluated the effectiveness of a group-based ST informed intervention (adapted from Jalali et al., 2017) for treating depression amongst prisoners living with HIV in Iran.

Table 3.1. *Summary of Findings*

Doyle et al., (2016)	To evaluate the effectiveness of ST for personality disordered offenders in secure settings.	N= 63	RCT ST vs TAU 36 months long	Individual ST delivered once weekly for 90 minutes.	Impulsiveness (BIS), anger regulation (NAS), interpersonal style (CIRCLE), and EMS (YSQ-SV)	Some improvements in measures were found. No significant treatment effects across all outcomes except for one (i.e. increase in Defectiveness schema), although may be due to chance.	Results not significant
Bernstein et al., (2012) *Preliminary Results*	To evaluate the effectiveness of ST for personality disordered offenders in secure settings	N=30	RCT ST vs TAU 36 months long	Individual ST delivered twice weekly over three years.	Risk of recidivism (HCR-20, SVR-20, START), resocialization (supervised & unsupervised leave), institutional violence rates, personality pathology (SNAP), general psychopathology (SCL-90), EMS (YSQ-SV), Schema Mode Inventory (SMI)	Although not statistically significant, participants who received supervised leave in the treatment group needed an average of 137 fewer days compared to TAU. This was also the case for unsupervised leave (138 fewer days).HCR-20 scores decreased more rapidly in the treatment group compared to the control, however, this is not significant.	Results are not significant and preliminary.

Bernstein et al., (2017)	To evaluate the effectiveness of ST for personality disordered offenders in secure settings	N= 103	RCT ST vs TAU	Individual ST delivered twice weekly over three years.	Risk of recidivism (HCR-20), short term risk of violence to self and others and treatment responsivity Resocialization (supervised & unsupervised leave), Personality pathology (SNAP), EMS (YSQ-SV), Schema Mode Inventory (SMI), Institutional violence (incident records). Vulnerabilities and Strength scores (START) Did not include SVR-20 and SCL-90 as reported in 2012.	ST showed a significantly faster improvement in resocialization outcomes compared to TAU. HCR-20 score differences were barely significant (.57) and no significant differences in institutional violence were found. START and SMI scores significantly differed across conditions, however, differences were no longer significant after 3 years. Significant and faster EMS reduction in the ST group.	*SNAP-FV (PD):* *Within treatment* 1.5 year: d=.56 (TAU), d=.78 (ST); *differential* d=.22 *SNAP-FV* (temperament): *Within treatment* 1.5 year: d=.38 (TAU), d=.63 (ST); *differential* d=.20 *START:* *Within treatment* 1.5 year: d=.37 (TAU), d=.56 (ST); *differential* d=.18. YSQ-SV: *Within treatment* *d*=.33 (TAU), *d*=.61 (ST); *Differential* d=.28. *SMI* (healthy modes): *Within Treatment* 1.5 year: *d*=.50 (ST), *d*=.15 (TAU); differential d=.35. *SMI* (maladaptive modes): *Within treatment* 1.5 years d=.64 (ST), *d*=.28. (TAU); *differential* *d= .36*
Jalali et al., (2017)	To evaluate the effectiveness of an ST informed intervention for adult male prisoners with addition and	N= 52	Controlled trial (subjected to randomization) ST based intervention vs waiting list	Group based ST informed intervention delivered once per week for 90min. 11 sessions in total.	Coopersmith Self-Esteem Inventory (CSEI) Cognitive Emotion Regulation	Found a significant increase in self-esteem in the experimental group compared to the control. Also found,	General self-esteem (partial η2= .83), familial self-esteem (partial η2 = .76), social self-esteem

	receiving methadone treatment				Questionnaire (CERQ)	a significant increase in positive emotion regulation and a decrease in negative emotion regulation in the experimental group compared to the control.	(partial η2 =.67), school self-esteem (partial η2 = 0.5) Positive emotion regulation partial (η2=.91), negative emotion regulation partial (η2 =.92)
Jalali et al., (2019)	To evaluate the effectiveness of an ST informed intervention for adult male prisoners with depression and living with HIV	N= 42	Controlled trial (subjected to randomization) ST based intervention vs waiting list	Group based ST informed intervention delivered once per week for 90min. 11 sessions in total.	Beck Depression Inventory (BDI) EMS (YSQ-SF)	Significant reduction of depression symptomatology and EMS endorsement in the experimental group compared to the control group.	The main effect of therapy on depression was significant. Partial η2 = .58
Brazao et al., (2017)	To assess the effectiveness of an ST informed intervention in changing cognitive distortions and EMS amongst male adult prisoners.	N= 254	RCT ST based intervention vs TAU	Manualized group based ST informed intervention delivered once weekly for 90min comprising of 40 sessions in total.	Angry Cognition Scale (ACS) EMS (YSQ-S3)	Treatment condition was a significant predictor of change over time across all outcome measures. In terms of the ACS, the treatment group showed an increase in adaptive cognitive processes and the control group showed a decrease over time. Compared with the control, the treatment group showed a greater and significant decrease in maladaptive cognitive processes.	For the experimental group, effect sizes for the rate of change were found to be large for maladaptive cognitive processes (d= 1.10) and medium for adaptive cognitive processes (d=.64). In terms of EMS total scores, the effect size for the rate of change observed was large (d= 1.4). Effect sizes for individual EMS scores varied between medium to large

						A significant decrease of EMSs over time in the treatment group, when compared with the control group, was also found	
Brazao et al., (2018a)	Secondary data analysis of the above RCT. The study aimed to investigate the efficacy of an ST informed intervention in reducing anger, shame and paranoia	N/A	RCT ST based intervention vs Prison TAU	Manualized group based ST informed intervention ("Growing Pro-Social)" delivered once per week for 90min and comprised of 40 sessions in total.	State-Trait Anger Expression Inventory (STAXI) Other as Shame Scale (OAS) Paranoia Scale (PS).	Results showed that the condition was a significant predictor of change over time observed in all outcome measures. The treatment group presented a significant reduction in anger, shame, and paranoia when compared with the control group.	Anger-control increased over time, the remaining variables decreased over time. Except for anger-state, effect sizes for all outcome measures were medium or large.
Brazao et al., (2018b)	Secondary data analysis of the above RCT. The study aimed to assess the efficacy of an ST based intervention in improving emotion regulation.	N.A	RCT ST based intervention vs Prison TAU	Manualized group based ST informed intervention delivered once weekly for 90min comprising of 40 sessions in total.	Emotion Regulation Questionnaire (ERQ Disciplinary Infraction Grid including the number of days spent in punishment.	Treatment condition was a significant predictor of change over time across all measures. Results showed an increase in adaptive emotion regulation strategies in the treatment group and a decrease in the control group. A decrease in maladaptive strategies was found in the treatment group and the control group	For the treatment group, observed effect sizes were small for changes in adaptive emotion regulation strategies (d= .32) and large for maladaptive strategies (d= 1.21). Effect sizes for the number of disciplinary actions was medium (d=.75)), and for days spent in punishment large (d=1.42).

						showed no change. A reduction in disciplinary infractions was found in the treatment group. The Control group showed no change but the number of days in punishment increased over time. Improvements were maintained over time (12 months after completion)

Table 3.2. *Quality & Risk of Bias Appraisal*

Study	Clarity of question?	Randomization?	Concealment?	Blinding of assessors?	Similar control group?	Similarity of groups at the start?	Treatment integrity measured?	Outcomes measured appropriately?	Retention	Follow up?	Intention to treat analysis?	Adverse effects measured?	Overall quality
Doyle et al., (2016)	Well addressed	Yes	Yes	Partially	Yes	Yes	Yes Issues identified	Yes	77% Well covered	Yes	Yes	Not measured/reported	+ +
Bernstein et al., (2012)	Well addressed	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A	Yes	N/A	Not measured/reported	N/A
Bernstein et al., (2017)	Well addressed	Yes	Yes	No	Yes	Yes	Yes	Yes	ST=75% TAU= 68%	Yes	Yes	Not measured/reported	+ +
Jalali et al., (2017)	Addressed	Yes Does not meet RCT standards	No	No	Yes	Yes	No	Yes	Not covered	No	No	Not measured/reported	+
Jalali et al., (2019)	Addressed	Yes Does not meet RCT standards	No	No	Yes	Yes	No	Yes	Not covered	No	No	Not measured/reported	+
Brazao et al., (2017)	Well addressed	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	84% completed treatment	Yes	Yes	Not measured/reported	+ +
Brazao et al., (2018a)	Well addressed	Yes	As above	As above	As above	As above	As above	Yes	As above	As above	As above	As above	As above
Brazao et al., (2018b)	Well addressed	Yes	As above	As above	As above	As above	As above	Yes	As above	As above	Yes	As Above	As above

Results indicated a significant reduction of depression symptoms in the experimental group compared to the control group. As for the above study, Jalali et al., (2019) did not include a follow-up.

Brazao et al., (2017) conducted an RCT to evaluate the effectiveness of a group-based ST informed intervention called the Growing Pro-social Programme (GPS) with general prison populations. The study took place across 9 Portuguese prisons; inmates were convicted for a variety of offences, including offences against people, property, and the state, and drug-related offences. Prisoners serving sentences for sex offences were excluded as considered to have specific treatment needs. The outcomes investigated in this study included EMS and anger related distorted cognitions. Nevertheless, this RCT also generated further data analyses which focused on additional outcomes, including emotion regulation and behavioural infractions (Brazao et al., 2018a), and shame, paranoia, and anger regulation (Brazao et al., 2018b).

Brazao et al., (2017) findings demonstrated that, compared to the control condition, the treatment group showed a greater increase of anger related adaptive cognitive processes and a greater decrease in anger related maladaptive cognitive processes. In terms of EMSs endorsement, whilst the control condition did not show any change over time, the experimental group showed a significant decrease. In turn, results suggested that the GPS programme was effective in addressing underlying anger related cognitive distortions and EMSs.

Brazao et al., (2018a) also yielded positive findings. Compared to the control group, the results found that the experimental condition showed a greater increase in adaptive emotion regulation strategies (i.e. cognitive reappraisal) and a decrease in maladaptive strategies (i.e. expressive suppression). Adding value

to their findings, this study looked at official incident records to evaluate behavioural outcomes. The experimental group showed a greater reduction in disciplinary infractions and number of days in punishment, compared to controls.

Finally, Brazao and colleagues' (2018b) focused on shame, paranoia, and anger modulation, and found that the condition significantly predicted change over time across all outcome measures. Although the authors focused on measuring anger as a wider construct, they also captured anger expression and anger modulation. Compared to controls, the experimental group showed a greater increase in anger control and a greater decrease in shame and paranoia. The improvements observed were sustained for at least 12 months following the intervention.

The findings also provided insight in relation to the relevance of treatment dosage as results suggested that the number of sessions attended was a strong predictor of positive change across all outcomes, with lower treatment dosage associated with poorer treatment outcomes.

Summary of Comparable Outcomes

Two studies focused on general emotion regulation (Brazao et al., (2018a); Jalali et al., 2017) and three looked at anger-specific modulation (Doyle et al., 2016; Brazao et al., 2017, 2018b). Both Jalali et al., (2017) and Brazao et al., (2018a) found a significant increase in adaptive emotion regulation and a decrease in maladaptive emotion regulation in the experimental group, compared to controls. In terms of anger modulation, results yielded by Doyle and colleagues were promising although not significant. However, the remaining studies produced significant results. Brazao et al., (2017) found a significant increase in adaptive anger coping strategies and a decrease in maladaptive anger coping strategies, with effect sizes varying from medium to large. Similarly, Brazao et al., (2018b)

found a significant increase in anger control in the experimental group, with effect sizes also varying from medium to large. In addition, Brazao et al., (2018b) demonstrated that the intervention was useful in reducing feelings of anger (i.e. anger trait) amongst participants, with the experimental group showing less proneness to experience anger compared to controls.

A total of 4 out of 5 studies evaluated the effectiveness of ST and ST informed interventions in changing underlying EMSs (Doyle et al., 2016; Bernstein et al., 2017; Jalali et al., 2019; Brazao et al., 2017). Doyle et al., (2016) results for overall EMSs scores were non-significant. However, when individual schemas were examined, they found a significant increase in the defectiveness/shame schema in the experimental group. This is inconsistent with the results found by Brazao et al., (2018b) indicating a reduction in levels of shame following their ST informed intervention. Within this context, Doyle and colleagues argued that these results are likely due to chance. The remaining three studies (Bernstein et al., 2017; Jalali et al., 2019; Brazao et al., 2017) found a statistically greater reduction in overall EMS endorsement for participants allocated to experimental conditions compared to controls.

Only one study measured additional ST specific outcomes; Bernstein et al., (2017) measured changes in Schema Modes and found no significant differences between the experimental and control group after three years. Nevertheless, the authors found that scores from the experimental group improved significantly more quickly over the first year.

Discussion

The objective of the present review was to identify, bring together, and appraise the empirical evidence currently available relating to the application of ST in

forensic settings. ST and ST informed interventions in forensic settings have been the focus of at least 5 empirical studies totalling a sample size of 514. Studies were carried out in various countries, thus indicating that ST has gained significant popularity in clinical practice across the world. In addition, despite its success in treating adults with complex difficulties (e.g. Farrell et al., 2009; Nadort et al., 2009) this review highlighted that the body of evidence relating to ST informed interventions is larger compared to traditional ST. This may be due to the resources needed to train practitioners in ST. The studies identified were either RCTs of good quality, or employed some form of randomization and rated as acceptable. Thus, forming a fair preliminary base of evidence for the effectiveness of ST and ST informed interventions with forensic populations, delivered both individually and in groups. A wide range of outcomes were investigated and significant results were reported for many of them. None of the interventions measured trauma symptoms; however, emotion regulation difficulties, EMSs endorsement, and shame and paranoia are particularly common amongst traumatised individuals (Dvir et al., 2014; Gracie et al., 2007; Wilson et al., 2006). Thus indicating that ST interventions may benefit individuals who experience the CJS and have histories of trauma. Whilst Bernstein et al (2017) looked at the risk, none of the studies identified measured recidivism itself but rather focused on correlates of offending behaviour. In terms of comparable outcomes, the body of evidence provides support for the benefits of ST interventions in improving various dimensions of emotion regulation, anger specific modulation, and EMSs. Overall, ST interventions were found to benefit individuals with a range of needs and presentations, including complex personality pathologies, drug use, distress disorders, and emotion regulation difficulties.

In terms of traditional ST interventions, the body of evidence concerning its benefits remains small. Whilst Doyle et al., (2016) did not provide concrete evidence in support of its application, it is important to consider that some of the methodological issues associated with this RCT may have contributed to their non-significant findings. However, this trial was exploratory and therefore aimed to provide insight into the feasibility of carrying out RCTs focusing on psychological intervention in secure settings. Therefore, Doyle et al., (2016) succeeded in doing so. Bernstein's et al., (2017) RCT provided the strongest empirical support for the clinical application of traditional ST with this particular population in hospital settings. Their well-conducted RCT suggested that ST led to faster improvements as opposed to superior outcomes when compared to the TAU group. However, ST and TAU were both effective in producing moderate to large improvements in outcomes. In turn, as highlighted by the authors, the strongest evidence yielded by this study supported the effectiveness of long term intensive psychotherapy more generally, as opposed to traditional ST. Thus, challenging the long-standing conception that forensic populations with PD are "hard to treat". Although Bernstein's findings offered some degree of support for ST, it is important to consider that this study is yet to be published and still undergoing peer review. Therefore, caution should be exercised when interpreting its findings.

In terms of ST informed interventions, this review identified a larger body of evidence supporting its effectiveness. Jalali and colleagues' studies yielded favourable results, including a reduction of symptoms of depression and EMSs endorsement (2019), and improved self-esteem and cognitive emotion regulation (2017). However, these studies focused on two samples with very specific needs, including people with HIV and individuals with addition receiving methadone, respectively. Thus, their findings can be generalised to a limited extent. In

addition, Jalali (2017) did not report on any ST specific measures, thus neglecting to measure therapeutically relevant constructs. Therefore, it is not possible to establish whether improvements are linked to a change in EMSs or any other underlying psychological mechanisms. In addition, both studies employed the waiting list as a control group, which may have led to overestimating the effects of the intervention (Hart et al., 2008). Therefore, the strongest evidence supporting the benefits of ST based interventions with prison populations is provided by the well-conducted RCT by Brazao and colleagues and subsequent data analyses (2017, 2018a, 2018b). The high number of outcomes measured in this RCT provided significant insight into the benefits of ST informed interventions in addressing correlates of offending behaviour, including emotion regulation, anger modulation, EMSs endorsement, shame, and paranoia. In addition, Brazao (2018b) examined behavioural outcomes and found a reduction in disciplinary incidents amongst the control group. Of relevance, the study demonstrated that improvements were sustained over time.

Limitations

Despite the positive findings highlighted by this review, the strength of this body of evidence is limited to specific populations and settings, with all studies focusing on males and only taking place in secure settings (i.e. prisons and hospitals). Thus, undermining the external validity of this particular ST based interventions. Furthermore, only two studies (Brazao et al., 2017, Bernstein et al., 2017) included a follow-up period; therefore, it is not possible to know whether improvements were consistently sustained over time either whilst in prison, or the community.

Most studies showed consideration for treatment adherence and employed measures to mitigate diversion from the desired treatment modality. However,

some of the studies did not (Jalali et al., 2017; 2019) or were unable to (Brazao et al., 2017) monitor and/ or measure treatment adherence. Moreover, several issues were noted with Doyle's study, including insufficient frequency of ST, a lack of focus on schema modes during the intervention, and assessors' disagreements over the competence of therapists. In addition, for studies evaluating ST based interventions, there was a lack of clarity about whether traditional CBT (Beck, 1995) constructs dominated treatment as well as the extent to which ST's theory and practices (e.g. re-parenting, experiential exercises, etc.) were integrated into the interventions. In turn, it is difficult to establish whether improvements were strictly associated with ST constructs and practices.

Finally, the present review did not employ the use of statistical methods for data synthesis (i.e. meta-analysis); thus, it is not possible to make inferences about the strength of the effects observed across studies. Whilst it is acknowledged that this may be considered a limitation, it must be highlighted that conducting a meta-analysis is not always appropriate as it may lead to unreliable results (Deeks et al., 2022).

According to the Cochrane collaboration, meta-analyses may be conducted if studies are sufficiently homogeneous in terms of participants, interventions and outcomes measured (Deeks et al., 2022). This was not the case for the present review, as significant clinical variation was observed across studies (e.g. nature and intensity of social, psychological, and health difficulties, cultural background, and content and delivery of intervention, etc.). In addition, from a clinical practice point of view, combining data from studies with such significant clinical variation is unlikely to produce meaningful findings. Particularly, in the context of developing a solid base of evidence supporting the effectiveness of psychological interventions. This is because some of the clinical differences observed (e.g.

nature and intensity of psychopathology, content and delivery methodology of interventions, etc.) have the potential to affect the true effect of the intervention (Bachelor et al., 2007; Hoglend, 1999). Indeed, a subgroup meta-analysis may address this issue. However, it was not deemed appropriate due to the low number of studies available (Deeks e al., 2022), which was further compounded by the variation in content and delivery of the interventions, and outcomes measured. Furthermore, two out of five studies were rated as "Acceptable" in terms of quality and risk of bias, thus raising further questions about the appropriateness of subgroup analysis (Harrison, 2011). In sum, it is argued that it is unlikely that a meta-analysis would have added any meaningful value to the present review. Nevertheless, if appropriate, it is recommended that future reviews utilise quantitative methods of synthesis in order to strengthen the evidence on this subject.

Implications for Future Research & Practice

Generally, more research is needed to investigate the benefits of ST interventions with forensic populations. Particularly, with female and community samples. It is also recommended that future research carries out follow-ups to gain more clarity about how well treatment outcomes are sustained over time. In addition, future research may wish to focus on both trauma symptomatology and recidivism.

In terms of implications for practice, this review highlighted that ST interventions can be effective in addressing a range of correlates of offending behaviour. This includes emotion dysregulation, which has been linked to different types of aggression and found to predict future violent behaviours (Roberton et al., 2014; Garofalo et al., 2018). Furthermore, EMSs endorsement has been linked to offending behaviour (e.g. Sigre- Leiros et al., 2013; Shorey et al., 2017) and found

to mediate trauma and intimate partner violence (e.g. Gay et al., 2013). Therefore, addressing cognitive structures involved in social information processing (i.e. EMSs) as well as emotion dysregulation may be helpful to reduce recidivism. In addition, contrary to common beliefs, Bernstein's study highlighted that good therapeutic outcomes can be achieved with individuals with PD who engaged in serious offences. Thus, providing hope to clinicians working with this particular client group.

Finally, it is also important to emphasise that none of the studies included measured potential adverse effects of therapy. Similarly to psychopharmacological interventions, studies have suggested that psychotherapy can produce adverse effects and this can have significant implications for practice (Lilienfeld, 2007). There are ethical and clinical reasons for measuring and reporting adverse effects. First, practitioners are required to avoid harming their clients and employing practices that place them at unnecessary risk. Although well-intentioned, a lack of awareness about possible adverse effects may lead practitioners to unintentionally harm their clients. In addition, the investigation of adverse effects can provide insight into what factors may contribute to either client progress or deterioration, and inform decisions as to what treatment modality should be avoided or delivered with caution. It is therefore recommended that future studies focusing on the benefits of ST with forensic populations employ some form of measure of adverse effects and report these if present.

Conclusions

ST was initially developed to treat individuals with PD. Nevertheless, this review highlighted that its use has been extended to diverse populations presenting with a range of emotional, mental health, and social difficulties. In addition, the studies included in this review were carried out internationally, thus evidencing that ST is

gaining significant popularity in forensic clinical practice. Interestingly, the evidence relating to ST informed interventions was found to be larger than traditional ST.

The body of evidence available indicate that traditional ST and ST informed interventions may be of benefit to forensic populations across a wide range of outcomes, particularly, emotion regulation, anger specific modulation, and EMSs endorsement. Within this context, this review highlighted that most studies were concerned with correlates of offending behaviour or health outcomes, as opposed to risk or recidivism.

Despite the positive results, the body of evidence with forensic populations remains small. In addition, it is limited to male samples in secure settings (i.e. prisons and hospitals), which undermines the external validity of the evidence. Therefore, more research is needed in this area to gain a better picture concerning the benefits of ST interventions with forensic populations.

CHAPTER IV

An Evaluation of a Brief Training Intervention on Trauma Informed Care for Professionals working with people in contact with the Criminal Justice System

Abstract

The present study aimed to evaluate a brief training based organizational intervention informed by both the Trauma Informed Care (TIC) and Psychologically Informed Environments (PIE) models with staff working within supported housing settings for adults with histories of trauma and at risk of reoffending. The intervention strived to raise psychological awareness about trauma and promote a working culture that seeks to increase wellbeing and avoid re-traumatisation for residents and staff. It was hypothesised that the intervention would increase positive outcomes for the service, its residents, and the staff. The study took place over the course of one year and employed a pre and post-intervention design. A variety of outcomes were evaluated, including staff wellbeing, rates of internal incidents, and residents related outcomes, such as the number of evictions, exclusions, and positive move on. The study yielded mixed findings. In terms of staff outcomes, the mean score for work burnout increased whilst vicarious trauma remained the same. Nevertheless, this difference was not statistically tested due to the small sample size. An interrupted time-series analysis found positive intervention effects for incidents involving sexual harassment, hate speech, and verbal abuse. However, no intervention effects were found for residents related outcomes. The results of this study should be carefully interpreted as likely to have been affected by the Covid-19 pandemic.

A few recommendations are put forward in relation to future research and how organizations record internal incidents.

Introduction

Background

The high prevalence of exposure to trauma amongst people accessing a variety of public settings, such as mental health, forensic, and homeless services is well documented (Magruder et al., 2017). Whilst a range of targeted psychological interventions are available to individuals who experienced trauma, many do not have the opportunity to or may not fit the criteria to access relevant therapies. This is particularly evident amongst forensic populations based in the community, such as those linked to the probation service (Brooker et al., 2011; 2015). Nevertheless, specialist interventions are not the only option available to traumatised individuals, including those who experience the CJS. In this respect, relevant organizational interventions have been developed to improve outcomes for individuals who use public services and their employees. Notably, these interventions do not require staff to be trained to a high degree, thus reducing costs for organizations.

Organizational interventions can be defined as "planned, behavioural, theory-based actions to change the way work is organized, designed and managed in order to improve the health and well-being of participants" (Nielsen, 2013, p.1030). These types of interventions are complex in nature and may involve a range of actions such as wellbeing activities, implementation of support strategies, delivery of specialist training, expert consultation, etc. (Nielsen, 2013). Examples of organizational interventions relevant to services for individuals with a wide range of vulnerabilities include the Trauma Informed Care (TIC; Harris & Fallot,

2001) and the Psychologically Informed Environments (PIE; Johnson and Haigh, 2010) models.

The present study is concerned with the implementation and evaluation of a training-based organizational intervention for staff members working with vulnerable adults. The intervention is informed by the TIC and PIE models.

Overview of TIC and PIE Models

The TIC approach first emerged in the US in the 1990s and has been further developed to encompass a range of core assumptions and principles (Becker-Blease, 2017; Bloom, 2013; Harris & Fallot, 2001). In recent years, this approach has gained significant interest across the world and within a range of sectors, including mental health (LeBel & Goldstein, 2005), homelessness (Hopper et al., 2010), forensic (Levenson & Willis, 2019), domestic violence (Sullivan et al., 2018) and substance use services (Morrisey et al., 2005). Whilst there is not a unanimous definition of what constitutes TIC, for this study, the model proposed by the Substance Abuse and Mental Health Services Administration (SAMHSA), which is grounded on both Harris and Fallot's (2008) and Bloom's work (2013), will be used. According to the framework proposed by SAMHSA (2014), TIC refers to "an organization structure and treatment framework that realizes the widespread impact of trauma and understands potential paths for recovery; recognizes the signs and symptoms of trauma in clients, families, staff, and others involved with the system; and responds by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively resist re-traumatization" (p.9). Generally, trauma informed services aim to create an environment that is conducive to recovery and emphasize physical, psychological and emotional safety for both people using services and its employees (Bloom,

2013; Harris & Fallot, 2001; 2008). TIC strives to enable survivors to rebuild a sense of control and empowerment and to create relationships grounded on shared objectives, collaboration, and trustworthiness (SAMHSA, 2014).

The PIE model was developed by Johnson and Haigh (2010) in the UK. This model emerged in response to greater recognition of the high rates of trauma found amongst the homeless population and the complexity of their needs (Johnson and Haigh, 2010; Maguire et al., 2009). The PIE model has gained attention across other settings; for example, it has been adapted for implementation across several prisons in England (i.e. Psychologically Informed Planned Environments) as part of the 'Offender Personality Disorder Strategy' (NOMS, 2013).

As for the TIC approach, there is no universal definition of PIE. Generally, this model strives to enable positive changes for clients by employing a working approach designed to account for the emotional and psychological needs of clients. The PIE model emphasises the need for psychological theories and frameworks to be integrated within the culture of organizations and the practice of frontline staff (Jonhson, 2014). There are 5 core elements underpinning the PIE model, including 1) identifying and integrating specific psychological frameworks to guide policies and practice, 2) creating safe and healthy physical environments for clients, 3) providing staff with specialist training and support, 4) managing relationships with service users in a psychologically minded manner, and 5) evaluating outcomes to measure the impact of its implementation. In addition, it argues for the use of reflective practice (RP) within services to promote personal and professional development, as well as to enable critical thinking, and problem-solving.

The TIC and PIE models share the same intent and desired outcomes and are grounded on similar principles. Neither approaches require staff to be trained

counsellors or therapists to successfully implement their principles. The main difference between these models is that the PIE approach does not subscribe to any specific psychological theory or framework to guide policies and practices, whereas the TIC approach explicitly adopts trauma theory and research.

Whilst consensus about the rationale for the need for both approaches exists, it is less clear how they should be operationalised in order to create desired changes (Purtle, 2020; Breedvelt, 2016). Despite this, both models emphasise the need for specialist training to be made available to staff. Within this context, it has been suggested that staff training is the first step services should take towards becoming trauma informed (Purtle, 2020; Branson and colleagues; 2017). In line with the SAMHSA guidelines, training should provide information about the prevalence and effects of trauma, as well as the principles of trauma-informed practice. Similarly, the PIE model advocates for the provision of training to staff, who are usually not clinically trained, in order to achieve psychologically informed practice (Jonhson, 2014).

It has been argued that a lack of understanding about the impact of trauma corresponds to denying the occurrence and significance of trauma in people's lives (Elliott et al., 2005), which may lead to practices that are inconsistent with the recovery process, thus potentially resulting in the creation of an invalidating environment and/or re-traumatization (Harris & Fallot, 2001). In the context of homeless services, the lack of psychological awareness has been linked to a high number of internal incidents (e.g. aggression, violence, self-harm), elevated rates of evictions, recidivism, mental health deterioration, poor staff retention, and increased staff sickness due to burnout and secondary trauma (Johnson and Haigh, 2010; Cockersell, 2018; Keats et al., 2012). Therefore, targeted training

is vital to increase staff knowledge, improve attitudes, and change practices and cultures within services.

Outcomes for Service Users and Staff Members

Both approaches attract some issues in terms of measuring outcomes, including the lack of universal definitions and understanding about how these models should be operationalised, the integration of psychotherapy as part of service delivery, and inconsistencies in evaluation designs (Purtle, 2020; Breedvelt, 2016). However, studies that have investigated the effects of both approaches on staff and clients' outcomes have yielded some positive findings.

In terms of clients' outcomes, the Pilots commissioned within the homeless sector across England to evaluate the benefits of the PIE model have shown some positive outcomes, including a reduction in serious incidents within services, lower eviction rates, higher rates of positive move-on, increased engagement with relevant community services, mental health improvement among residents, and reduced contact with the CJS and attendance to Accident and Emergency services (Cockersell, 2011; Cockersell, 2017; Keats et al., 2012). However, the evidence base mostly consists of case studies and the majority of findings have not been published in peer-reviewed journals.

In terms of TIC, a high amount of existing evidence is grey literature published by various US-based organizations (e.g. SAMSHA). Nevertheless, empirical studies available have suggested that TIC can be effective in reducing seclusion and restraints in psychiatric services (Hales et al., 2017), and increasing treatment retention across services providing care to individuals recovering from addiction and mental health problems, and at risk of, or experiencing homelessness (Hales

et al., 2018). Finally, preliminary findings have also found a reduction of violent incidents in residential facilities (Baetz et al., 2019).

In terms of staff outcomes, both the TIC and PIE approaches place emphasis on staff-self-care and the importance of creating a safe, trusting, and supportive environment underpinned by elements of safety, trustworthiness, collaboration, choice and empowerment. Furthermore, the PIE model advocates for the need for safe spaces (i.e. RP) for staff to discuss their feelings in relation to the work they do and to enable professional and personal development (Johnson and Haigh, 2010). In turn, the principles underlying both approaches are thought to improve wellbeing, avoid re-traumatisation, and reduce the likelihood of developing work-related stress, burnout and vicarious traumatisation amongst employees (Fallot & Harris, 2008; SAMHSA, 2014; Johnson & Haigh, 2010). In addition, these principles may increase the staff sense of commitment to the organization and improve their work experience and satisfaction (Babin & Boles, 1996; Griffin, et al., 2001).

A recent review concerned with the benefits of TIC interventions focusing solely on training found positive results, including a significant increase in knowledge about trauma informed practice, fewer staff grievances filed, and an increased sense of confidence (Purtle, 2018). In addition, a study reported that job satisfaction increased following the implementation of training focused TIC intervention amongst social workers (Hales et al., 2017). In terms of PIE, preliminary evaluations have found that staff wellbeing improved following its implementation (Cockersell, 2017).

Despite the sound rationale about the potential benefits of both the TIC and PIE approaches to staff wellbeing, the empirical evidence remains limited. Thus

highlighting a clear gap in knowledge about their benefits in preventing or reducing stress, burnout, and vicarious trauma amongst employees.

Aims of the present Study

The present study aims to evaluate a brief training intervention informed by both the TIC and PIE model with staff working within supported housing settings for adults with histories of trauma and at risk of reoffending. These approaches are integrated to complement each other. Specifically, according to the PIE model services must define a psychological framework to guide practices and policies. Within this context, the intervention employs trauma theory and TIC principles to be the main *psychological framework.*

The present intervention aims to raise the participants' psychological awareness, particularly about trauma, in order to change attitudes and to inform daily practices and local policies within the service. It also aims to raise awareness about the challenges and difficulties experienced by professionals who work with traumatised people and to promote a working culture that seeks to increase wellbeing and avoid re-traumatisation for both residents and staff.

It is argued that the intervention will provide participants with relevant tools to work with traumatised individuals in a psychologically minded manner; ultimately, increasing positive outcomes for the service, its residents, and the staff. Therefore, it is hypothesised that the intervention will have a positive impact on staff wellbeing, including a reduction of burnout and vicarious trauma. Secondly, it is hypothesised that the intervention will lead to a reduction of incidents, including verbal abuse, threatening behaviour, sexual harassment, and racial abuse against staff, damage to property, and self-harm. As a result, the number of police and ambulance callouts will also reduce. Lastly, it is hypothesised that

the intervention will lead to an increase in positive move on for service users and a reduction of evictions and exclusions from the service.

Methods

Ethics

Ethical approval was obtained by the University of Nottingham, Faculty of Medicine & Health Sciences Research Ethics Committee. See appendix M.

Service Overview

The present study was conducted within a London based 54-bed hostel that provided housing and support to homeless men aged 18 or above. The hostel is staffed 24/7 and supports residents with issues such as life skills, health, training, or employment, and finding positive move-on accommodation. This service was identified by the Operational Manager of the organization; therefore, the researcher had no involvement in the selection process.

The service housed individuals with a wide range of needs; 7.5% had mental health difficulties, 32.1% had substance use issues, and 39.6% had both. 20.8% of residents presented with either substance use or mental health difficulties, and physical ill-health. Qualitative accounts from staff members also indicated that most service users presented with histories of childhood and adulthood trauma. Many service users had previous contact with the CJS and 45% were actively linked to the National Probation Service when the study took place. Before being placed in the hostel, 34% of residents were sleeping rough, 22.60% were in prison, 1.9% were in hospital, and 41.5% were living in temporary accommodation.

Participants

The intervention was delivered to staff members working at the hostel, including 10 support workers, 1 team leader, and 1 contract manager. There were 6 males and 6 females. A total of 12 staff members participated in the intervention although only 6 attended all components of the intervention. Out of 12 staff members, 2 did not wish to complete the questionnaires, 1 completed the pre-implementation questionnaire although left the service shortly after the intervention, 2 did not complete the pre-intervention questionnaires as they joined mid-way through the study, and 1 gave no reason for not completing the post-implementation questionnaire. Thus, a total of 6 participants completed both the pre and post-intervention psychometrics and were included in the final analysis. In terms of Reflective Practice, excluding the facilitator, a total of 3 staff members attended the first session, 5 attended the second one, and 4 attended the third one.

Design

The current study employed a pre-test and post-test quasi-experimental design.

Materials

Service Outcomes

Weekly logs were completed by staff members to record the number of internal incidents, including verbal abuse towards staff, hate speech directed at staff, sexual harassment directed at staff, physical aggression towards staff or amongst residents, violence towards the property, threats of violence towards staff and property, self-harm, and calls to emergency services (i.e. police and ambulance. See appendix N.

Data relating to incidents recorded within the organization's systems were also requested. Of relevance, the nature of incidents recorded within the organization's system differed in severity and typology. The threshold of severity for reportable incidents was higher compared to the one set out for the purpose of this study.

Service Users' Outcomes

Data recorded by the organization concerning the number of service users' evictions, exclusions, and positive move-on was collected before and after the intervention.

Staff Wellbeing

A total of three questionnaires were utilised for this study.

The Secondary Traumatic Stress Scale *(STSS; Bride et al., 2004)* was used to measure the presence and frequency of the symptoms associated with indirect exposure (secondary) to trauma over the previous week. It comprises of 17, 5 - point Likert-scale items and is designed for professionals working with clients with histories of trauma. Consistent with the DSM-IV criteria for Post Traumatic Syndrome Disorder, the STSS measures symptoms of intrusion, avoidance, and arousal. The STSS has shown good psychometric properties, including good validity and reliability (Bride et al., 2004). It has been validated in several countries and study populations, including social workers (Bride et al., 2004), mental health workers (Creamer & Liddle, 2005), nurses (Duffy et al., 2015), and midwives (Beck et al., 2015). See Appendix O.

The Oldenburg Burnout Inventory (OLBI; Demerouti et al., 2003) was used to measure work-related burnout. This tool measures two core areas of burnout, including exhaustion and disengagement from work. The first subscale measures

the physical, emotional, and cognitive aspects of exhaustion. The disengagement subscale relates to distancing oneself from the work coupled with the experience of negative attitudes toward work objects, contents, and work more generally (Demerouti et al., 2003). The OLBI comprises of 16 items measured on a four-point Likert scale, ranging from 1 (strongly agree) to 4 (strongly disagree). Studies have demonstrated the OLBI to be a valid and reliable measure of burnout (Jonathon et al., 2005). It has been validated across several populations (Demerouti et al., 2003; Subburaj & Vijayadurai, 2016; Sinval et al., 2019) and applied to different professionals such as health care workers (Peterson et al., 2008) and police officers (Subburaj & Vijayadurai, 2016). See appendix P.

Training Evaluation Form

A training evaluation form was developed and administered at the beginning and end of the training (See Appendix Q). This form comprised of 6 questions measured on a 5-point Likert scale and aimed to assess the audience's levels of perceived understanding of psychological trauma across 5 areas and perceived confidence of skills and knowledge needed to work with traumatised people.

Procedure

The present study was carried out over 12 months. The researcher's influence in setting the schedule (i.e. calendar day) for the intervention was limited as contingent upon the participants' work patterns and the needs of the service.

First, the researcher met with the staff team to discuss the nature of the study and consent and confidentiality issues. Participants were made aware that they were under no obligation to attend the training sessions or reflecting practice, and even if they decided to attend, they did not have to complete the questionnaires (see appendices S and T for relevant forms).

Instructions on how to complete the incident log were also given. Participants were instructed to start logging incidents the day after the initial meeting (6 months before the intervention) and continued doing so until the end of the study (4 months post-intervention).

The intervention was formed by 3 components; including one-day training on the PIE model and its core components (1a), one-day training on psychological trauma and the TIC approach (1b), a ½ day workshop focusing on how to best translate theories and knowledge learned during the training sessions into practice (2), and the introduction of monthly reflective practice sessions within the service (3). See Appendix R for a detailed description of the intervention.

RP was facilitated by a trainee psychodynamic psychotherapist who also worked part-time as a support worker at the hostel. The facilitator had an academic background in psychology and relevant work experience. The intervention was delivered over 8 weeks, after which monthly RP sessions started taking place.

The OLBI and STSS were administered prior to the intervention and 4 months after delivery of the second component, which is when the study concluded. Written consent was obtained from all participants prior to the completion of the questionnaires.

Finally, the Covid-19 pandemic led to significant changes in practices and procedures relevant to the current study. See Appendices U and V for details of changes and impacts on the study.

Results

Training Evaluation

Due to the small sample size, inferential statistics were not applied to data relating to the evaluation of training. Please see Appendix R for descriptive statistics. Overall, the mean scores increased in both self-reported understanding (across all learning areas) and participants' confidence in learned skills and knowledge.

Staff Outcomes

Similar to the above, due to the small sample size, inferential statistics were not applied to staff related outcome data. Thus, only descriptive statistics were carried out using SPSS, which are presented in table 4.1.

Overall, the mean scores for both the OLBI and STSS were elevated across participants. Thus, indicating medium levels of burnout (Leclercq et al., 2021) and mild levels of secondary traumatic stress symptoms (Bride, 2007). The total mean score of the OLBI increased following the intervention. However, whilst the scores of the Exhaustion subscale increased, the scores of the Disengagement subscale decreased. Finally, the total mean score of the STSS slightly decreased. In terms of subscales of the STSS, they all decreased with the exception of Avoidance, which remained the same.

Service Outcomes

A total of 389 incidents were recorded over the course of the study; 47.8% (186) involved verbal abuse towards staff, 23.5% (91) involved sexual harassment towards staff, 13.6% (53) calls to emergency services (i.e. police and ambulance), 6.4% (25) physical violence towards staff and between residents, 3.3% (13) threats of violence towards staff, 2.8% (11) hate speech towards staff, 1.8% (7) physical violence towards the property, and 0.8% (3) self-harm amongst service users.

Table 4.1. *Descriptive Statistics for Burnout and Secondary Traumatic Stress*

Measures	Pre- Intervention		Post - Intervention	
	M	SD	M	SD
Work Burnout	37	4.8	40.2	4.1
Exhaustion	17.8	1.2	20	2
Disengagement	20.5	1.9	19	1.8
Secondary Traumatic Stress	38	12.5	36.3	10.8
Avoidance	15.8	5.3	15.8	5.7
Intrusion	13	2.1	11.3	2.3
Arousal	11.3	1.8	9.2	3.5

N= 6

An Interrupted Time Series Analysis (ITSA) was carried out to analyse data concerning service outcomes. The ITSA was carried out using the ARIMA method on SPSS. The model was run with the first intervention and second intervention as individual effects (dependent variables), followed by the introduction of Covid-19 restrictions as a covariate. See table 4.2 for results of the ARIMA models.

The ITSA analysis showed there was a significant intervention effect for verbal abuse following the second component of the intervention ($\beta = -3.45$, $t = -3.55$, $p = .001$). A significant intervention effect was also found for hate speech following the second component of the intervention ($\beta = -.40$, $t = -2.12$, $p = .04$).

Finally, there was also a significant intervention effect for sexual harassment ($\beta = -1.13$, $t = -2.16$, $p = .04$) following the second stage of the intervention, which resulted in a 26% reduction. Interventions effects for incidents involving Physical Violence, Threats, Violence towards property, Self-harm, and Emergency Service Callouts were not significant, although small reductions were observed. The Ljung box Q fit statistic was non-significant for all variables except for incidents involving physical violence. One spike in both the ACF and PACF for the Physical Violence model go past the 95% of confidence interval line thus suggesting some residual autocorrelation. The spikes were observed in the period time lag 7.

***Table 4.2**. ARIMA Models for Incidents*

Model Component	ARIMA Model	Stationary R	Estimate	T Value	P-Value
Verbal Ab.	(0,0,0)	0.3			
1st Intervention			2	2.39	.02*
2nd Intervention			-3.45	-3.55	.001*
Covid -19			-0.63	-0.67	.51
Hate Speech	(0,0,0)	0.1			
1st Intervention			0.32	1.97	.05
2nd Intervention			-0.4	-2.12	.04*
Covid -19			0.01	0.06	.95
Sex. Harass.	(0,0,0)	0.3			
1st Intervention			-0.023	-0.05	1
2nd Intervention			-1.13	-2.16	.04*
Covid -19			-0.33	-0.66	.05
Violence Pers.	(0,0,0)	0.1			
1st Intervention			0.31	1.23	.22
2nd Intervention			-0.4	-0.08	.94
Covid -19			0.01	0.22	.83
Violence Prop.	(0,0,0)	0.1			
1st Intervention			0.3	1.95	.06
2nd Intervention			-0.17	-0.96	.34
Covid -19			-0.2	-1.14	.26
Threats	(0,0,0)	0.2			
1st Intervention			-0.05	-0.19	.85
2nd Intervention			-0.15	-0.53	0.6
Covid -19			0.12	0.45	.66
Emergencies	(0,0,0)	0.5			
1st Intervention			-0.13	-0.22	.83
2nd Intervention			-0.52	-0.73	.47
Covid -19			-0.16	-0.22	.82
Self-Harm	(0,0,0)	0.2			
1st Intervention			-0.07	-0.6	.55
2nd Intervention			-.001	-.001	1
Covid -19			0.111	0.8	.44

* $p < 0.5$

Due to inconsistencies in data reporting, it was not possible to carry out an ITSA of the data relating to incidents recorded within the organization's systems, nor to analyse it in a meaningful way. The total of incidents formally recorded within the organization' system was 81 (excluding Health & Safety and incidents),

which is considerably lower compared to the incidents logged for the purpose of this study.

Clients' Outcomes

An Interrupted Time Series Analysis (ITSA) was also carried out to analyse data concerning service users' outcomes, including numbers of exclusions, evictions, and positive move on. The model was run with the first intervention and second intervention as individual effects (dependent variables), followed by the introduction of Covid-19 restrictions as a covariate. The ITSA analysis yielded no significant intervention effects across all models. See table 4.3 for results of ARIMA models. However, the introduction of Covid-19 related changes had a significant effect on the number of service users' exclusions (β = -1, t 67= -3.35, p= .01).

The Ljung box Q fit statistic was non-significant for all variables. No spikes in both the ACF and PACF were found to go past the 95% confidence interval line thus suggesting there was no residual autocorrelation.

Table 4.3*. ARIMA Models for Clients' Outcomes*

Model Component	ARIMA Model	Stationary R	Estimate	T Value	P-Value
Exclusions	(0,0,0)				
1st Intervention		0.6	.000011	.0000250	1
2nd Intervention			1	1.84	.09
Covid -19			-1.7	-3.35	.01*
Evictions	(0,0,0)	0.3			
1st Intervention			-.0000220	-.0000580	1
2nd Intervention			-0.5	-1.1	.37
Covid -19			-.0000250	-.0000580	1
Move-on	(0,0,0)	0.3			
1st Intervention			-0.17	-0.39	.71
2nd Intervention			-0.5	-0.95	.39
Covid -19			0.33	0.70	.51

*p<.05

Discussion

The present study aimed to investigate the effects of a brief training based organizational intervention informed by the TIC and PIE models with staff members working within supported housing settings for adults with complex needs, histories of trauma, and at risk of reoffending. The intervention strived to increase psychological awareness amongst participants about the prevalence and effects and trauma exposure, and the core elements of trauma-informed practice and PIE principles in order to change attitudes and practices. The study focused on various outcomes, including staff wellbeing, levels of incidents within the service, and service users' outcomes.

Staff Outcomes

It was hypothesised that the intervention would lead to a reduction in burnout and secondary trauma symptoms amongst participants. Nevertheless, it was not possible to address this hypothesis as the number of participants was not sufficient to conduct meaningful inferential statistics. Descriptive statistics can however provide a degree of insight about the direction of potential relationships between variables. First, consistent with previous authors (Cockersell, 2011; Cockersell, 2017; Keats et al., 2012), results indicated the presence of medium and mild levels of burnout and secondary trauma amongst staff members, respectively. Thus, further evidencing the need for staff wellbeing interventions within the social care sector. In addition, results suggested there was a small increase in overall burnout scores following the intervention. However, whilst scores for the exhaustion subscale of the OLBI increased, the scores for the work disengagement decreased. The direction of these results is consistent with previous research suggesting that the principles underpinning the TIC and PIE approach may serve

to create an environment that strives to foster collaboration, reduce power imbalances, and increase employee's sense of commitment to the organization (Babin & Boles, 1996; Griffin, Patterson, & West, 2001). In turn, the intervention may have led staff members to feel more engaged in their work. At the same time, the increase in exhaustion observed may be explained by the Covid-19 pandemic. More specifically, studies have highlighted that front line staff working in health and social care have been particularly affected, as under considerable amounts of pressure, uncertainty, and responsibility (Walton et al., 2020; Lima et al., 2020). Therefore, it is plausible that pre-existing levels of burnout may have been exacerbated by factors associated with the Covid-19 pandemic.

Service Outcomes

It was also hypothesised that changes in attitudes and practices resulting from the intervention would lead to a reduction of incidents that occurred within the service. In line with the theory underpinning both the TIC and PIE models, it is thought that the training provided staff members with the tools to better understand and respond to the clients' behavioural responses and to build stronger working relationships (Harris & Fallot, 2001; Johnson, 2014; Johnson and Haigh, 2010). In addition, increased understanding and changes in attitudes may have enabled staff to better manage potentially harmful behaviours and adopt less punitive actions in response to these.

Consistent with the second hypothesis and previous research (Johnson and Haigh, 2010; Baetz et al., 2019), results suggested there were significant intervention effects for verbal abuse, hate speech and sexual harassment. Of interest, the introduction of Covid-19 related changes within the service had no significant effects on measured outcomes, thus excluding the influence of this covariate.

Intervention effects were not observed across other outcomes. Nevertheless, although not significant, reductions were observed post-intervention. Whilst it is difficult to interpret such trends, it is possible the inconsistent attendance of training and reflective practice may have influenced findings. More specifically, not all participants may have benefited from the material learned, thus affecting their ability to effectively integrate knowledge into day to day practice. Another possibility is that significant improvements may have been observed if more time had passed, thus allowing staff to fully engage with and integrate relevant principles and practices within the service.

These findings have direct implications for service users. It is important to consider that some of the incidents occurring within supported housing settings may lead to further contact with the CJS. As such, it is very important that staff members have the knowledge and skills to respond to challenging behaviours effectively and work in collaboration with service users to model more pro-social and appropriate behavioural responses. In turn, it is argued that training based interventions informed by the TIC/PIE models have the potential to reduce further contact with the CJS.

Due to inconsistencies in the data, it was not possible to meaningfully analyse the number of incidents formally recorded within the organization's system. However, available data highlighted that there was a stark difference in the numbers of incidents recorded by staff daily, and the numbers of incidents recorded within the organization's systems. This difference can be explained by both the nature of incidents staff are required to record, and the threshold defined by the organization concerning what constitutes a reportable incident.

Whilst many of these incidents are not considered serious enough to be formally reported, the psychological wellbeing of staff members may still be negatively affected by them. However, organizations cannot respond effectively if unaware of the true extent of incidents experienced by staff. Perhaps, the most relevant example relates to incidents involving sexual harassment towards female staff, which accounted for 23.5% of total incidents within the service. Experiences of sexual harassment have been linked to increased risk of developing anxiety, depression, and post-traumatic stress disorder, as well as reduced self-esteem, and psychological well-being (Pryor & Fitzgerald 2003; Welsh 1999; Willness, et al., 2007). Within this context, the TIC model emphasises the need for organizations to challenge cultural stereotypes and biases, to offer gender-responsive services, and account for and address historical trauma for both staff and service users. However, incidents of this type are not formally recorded within the organization's systems. Consequently, the organization is unable to respond effectively to the potential distress and re-traumatization caused to staff.

Service Users Outcomes

In line with previous findings, the PIE model has shown promise in terms of improving outcomes for residents living in supported housing (Cockersell, 2011; Cockersell, 2017; Keats et al., 2012). However, this was not supported by the present findings. Results indicated that there were no significant intervention effects on numbers of evictions, exclusions, and positive move on. However, although not statistically significant, small reductions in evictions and positive move on were observed post-intervention. Furthermore, findings indicated that the covariate, namely COVID-19 related changes in practices within the service,

resulted in a statistically significant reduction of temporary exclusions from the service.

It is argued that a variety of factors associated with the pandemic and the introduction of the National lockdown affected the present findings. More specifically, soon after the first National lockdown started the Government issued guidance for supported living providers to mitigate the risk of infection and ensure service continuity. In addition, the government placed a ban on all evictions and made significant efforts to house most rough sleepers, who were mostly placed in temporary accommodation, including supported living services. Inevitably, this had implications for supported housing providers, which had to adapt their practices and procedures, including the service where the study took place. This would account for the observed significant reduction in temporary exclusions from the service following the introduction of Covid-19 related changes within the service. For example, staff may have been reluctant to exclude its residents for public health reasons and to safeguard their health. In addition, it is also possible that the non-significant reduction in evictions observed is associated with relevant bans imposed by the Government. Furthermore, it is important to highlight that the pandemic is thought to have exacerbated historical housing issues, such as a lack of affordable housing across London and a further increase in the number of people needing permanent accommodation. In turn, this limited housing options for homeless individuals and is likely to account for the observed reduction of move on rates where this study took place.

Limitations and Recommendations for Future Research

The present study had several limitations, including a lack of follow up and reliance on self-report measures (including incident reporting), and the impact of Covid-

19. Time constraints and the ongoing pandemic also meant that post-intervention outcomes were collected sooner than planned. Therefore, it is recommended that future research carries out follow-ups to ascertain whether change is sustained over time. Another limitation of this study is the lack of qualitative data exploring the staff and clients' experiences about the intervention and potential benefits for service users.

As highlighted within the literature, system change can only occur if both organizations and staff are fully committed to the cause. Within this context, it must be pointed out that the study aimed to create change within the service as opposed to the wider organization. In turn, it is possible that organizational demands and policies did not allow for all principles to be fully integrated within practices. Therefore, it is argued that change is more likely to occur from the top-down which is something to consider for future research and practice.

Although some measures to evaluate the impact of TIC and PIE models exist, these have not been empirically evaluated and/ or validated. Therefore, as per the current study, researchers have consistently adopted different methods to evaluate these models. Consequently, this continues to create difficulties in terms of developing a body of evidence that supports or rejects either approaches. Therefore, as already highlighted within the literature (e.g. Purtle, 2018; Breedvelt, 2016), there is a need for more rigorous evaluation designs and valid outcome measures. In this respect, the use of ITSA methodology can be helpful and it is recommended for future research.

Finally, it is argued that in order to respond effectively to the needs of employees and avoid re-traumatization, organizations should strive to capture the true extent of incidents experienced by staff members. To achieve this, it is recommended

that organizations re-evaluate the typology (e.g. sexual harassment, racial abuse, etc.) and seriousness of incidents they expect their employees to formally record.

Conclusion

The present study aimed to evaluate a brief training based organizational intervention informed by both the TIC and PIE model with staff working within supported housing settings for adults with histories of trauma and at risk of reoffending.

Overall, the findings yielded mixed results. The direction of findings associated to staff outcomes was promising although no meaningful conclusions can be drawn. In addition, outcomes associated with clients were non-significant; however, these should be carefully interpreted as the ongoing Covid- 19 pandemic is likely to have influenced the direction of findings. Nonetheless, results concerning levels of incidents within the service showed promise. Thus, providing some level of support for the potential benefits associated with the implementation of TIC and PIE models in services caring for people with complex needs and histories of trauma. Furthermore, this study highlighted the need for organizations to evaluate the manner by which internal incidents are recorded in order to create a truly safe environment, minimise distress amongst staff and implement effective support measures.

Finally, consistent with the literature, evaluating both organizational interventions are a tricky task due to the lack of prescribed measures and the wide range of variables that may influence results. Therefore, establishing any causality between the interventions and relevant outcomes remains difficult. In sum, the present study further highlighted that additional research in this area is therefore needed

to evaluate the benefits of organizational interventions for both staff and service users.

CHAPTER V

A Psychometric Critique of the Adverse Childhood Events Questionnaire

Abstract

The Adverse Childhood Experiences Questionnaire (ACE-Q) is a brief self-report tool used to measure adverse events experienced in childhood. The ACE-Q has been extensively used in research and clinical practice; nevertheless, no overall psychometric critique exists. Thus, the present paper aims to critically evaluate the psychometric properties of the ACE-Q to fill this gap in knowledge. In addition, this critique aims to evaluate its use within research and clinical practice. Overall, the studies outlined in this critique suggest that the ACE-Q holds acceptable validity and reliability across several populations. However, despite the high number of published studies using the ACE-Q, its psychometric properties remain under-investigated. Therefore, additional research is needed to strengthen the body of evidence concerning its psychometric properties. This review also identifies some of the benefits and challenges associated with the use of the ACE-Q use for research purposes. Consistent with its authors, it is concluded that the ACE-Q is better suited for epidemiological studies with the aim of awareness-raising and public funding allocation. Furthermore, this review highlights and discusses some of the concerns associated with the use of the ACE-Q and the conceptualization of ACEs more generally, in clinical practice. Ultimately, it is recommended that the ACE-Q is not used as an assessment/screening tool, or to predict clinical outcomes for traumatised individuals.

Introduction

There are several measures used to assess levels of childhood trauma including (but not limited to) the Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995), the Childhood Trauma Questionnaire (CTQ; Bernstein et al. 1997), the Parent-Child Conflict Tactics Scale (PCCTS; Straus, 1998), and the Adverse Childhood Experiences Questionnaire (ACE-Q; Felitti et al. 1998; Dube at al., 2004). The ACE-Q was selected for this review as it was utilised in study 1 of this thesis (see Chapter II) and because its application in clinical practice is relevant to trauma informed service provision.

Felitti et al., (1998) developed the ACE-Q as part of an epidemiological study that aimed to explore the relationship between early adverse experiences and medical and public health problems. The findings of the ACE study provided important epidemiological evidence about the association between ACEs and adult mental, physical, and social problems. In addition, the data has been used by other researchers ever since, ultimately producing a large body of evidence.

Their study was unique as it highlighted the effects of cumulative childhood trauma. In other words, their findings suggested that an "accumulation" of different childhood events led to poorer health outcomes, ranging from health, social, and behavioural problems. In turn, this study lead to greater consideration for the negative outcomes associated with the experience of cumulative trauma for research, practice, and public health (Anda, 1999; Dube, et al., 2003). Furthermore, the authors offered a biological explanation linking early adverse experiences to negative outcomes.

To date, the ACE-Q has been extensively used in research and clinical practice, including in trauma informed services (Leitch, 2017; Zarse et al., 2019). Despite

the latter, no overall psychometric critique exists; therefore, the present paper aims to fill this gap in the literature. In addition, the present critique aims to highlight the potential implications of using the ACE-Q and ACEs conceptualization more generally, in clinical practice. First, an overview of the scale will be provided, followed by a section outlining its psychometric properties. Finally, its applications in research and practice will be discussed.

Overview of the ACE

The ACE-Q is a brief self-report tool used to measure adverse events experienced in childhood (prior to the age of 18). It was constructed using previous measures and studies (Strauss et al. 1979; Wyatt, 1985). It is important to highlight that the very first version of the ACE-Q comprised 7 types of abuse, however, it was later expanded to include 10 categories (Dube et al. 2004a). The present review focuses on the expanded version.

The ACE-Q assesses 10 types of childhood trauma, including events personally experienced or experienced by a family member. These include physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, and parent with alcohol issues, domestic violence against the mother, family member incarceration, a family member with mental ill-health and parental divorce or separation. It comprises of 10 items, some of which are further divided into sub-questions. The tool quantifies the overall number of traumatic experiences; however, it does not measure the degree, duration, severity, and timing of each ACE.

The ACE-Q is easy to use and can be administered and scored by individuals without any clinical training. Respondents are asked to provide a "Yes" or "No" answer to each question. The ACE-Q is scored by adding up the number of "Yes"

responses. Items comprised of sub-questions are considered one category of trauma; therefore, any positive response within that category is counted as one "Yes". The maximum score is 10; the higher the score, the more traumatic events one has experienced prior to the age of 18.

Normative Data

The normative sample comprised of more than 17,337 patients in the US, of which 54% were females and 46% were males (CDC). The large majority were Caucasian (74.8%), the remaining 11.2% were Hispanic, 4.5% were Black, 7.2% were Asian/or from the Pacific Islands, and 2.3% identified as "other". In terms of age, 46.4% were aged 60 or above, 19.9% were aged 50-59, 18.6% were aged 40-49, and the remaining 15.1% were aged below 30.

In the context of forensic populations, studies have found significantly elevated rates of childhood trauma. For example, Reavis et al. (2013) found that ACEs are four times higher than in a normative male population.

Psychometrics Properties

Reliability

Reliability refers to the extent to which a measure is consistent in assessing the desired construct. It is usually assessed by measuring internal consistency and test-retest reliability.

Internal Consistency Reliability

Internal consistency denotes whether items on a test are measuring the same construct, thus producing consistent and stable results. Within this context, items should be correlated with each other. High internal consistency is considered be essential for high validity (Kline, 2013). A Cronbach's alpha coefficient greater

than 0.60 is considered to reflect an acceptable level of reliability, whereas a coefficient of 0.70 or above is considered to reflect a high level of reliability (Streiner, 2003). The items on the ACE-Q are interrelated; in turn, each ACE is associated with a higher probability of another ACE being present amongst adults (Bellis et al. 2014b; Dong et al. 2004; Felitti et al. 1998; Mersky et al. 2017). The ACE-Q coefficients are all above 0.60, thus suggesting it holds acceptable to high levels of internal reliability (Bruskas, 2013; Ford et al., 2014; Mersky et al., 2017; Wingenfeld et al., 2011; Zanotti et al., 2017).

Test-Retest

Test-retest reliability is obtained by administering a given measure twice over a period of time to the same individual to evaluate whether it holds stability over time. Notably, the ACE-Q relies on respondents to remember past events; therefore, the evaluation of its test-retest reliability is particularly useful as strong correlations strengthen confidence in retrospective reports of adverse experiences. Within this context, issues relating to the self-report nature of the ACE-Q will be addressed in the validity section.

Dube et al. 2004(b) examined the ACE-Q's test-retest reliability using data from the original study. This version of the tool did not include physical/emotional neglect and thus comprised of 8 categories of trauma. The mean time between administrations was 20 months. The total ACE yielded moderate stability, with a Kappa coefficient of .64. For item-level reliability, physical, emotional, and sexual abuse produced values that ranged from .55 to .69 and for household dysfunction items the values ranged from .46 to .86. Kappa values under 0.40 are considered poor, between 0.40 and 0.75 are deemed fair to good, and values above 0.75 are excellent (Fleiss; 1986).

Zanotti et al. (2017) focused on college students and reported a correlation coefficient of .71 for the full-scale ACE-Q, across an average period of 12 months. The sum of abuse and neglect yielded a correlation coefficient of .52 and the sum of household dysfunction items produced a value of .65.

More recently, Mersky et al. (2017) examined reliability with a sample of low-income women in the US with a mean time between administrations of 9 months. It is important to highlight that this study did not use the actual ACE-Q to gather data about traumatic events. Nevertheless, it measured the same 10 categories of adverse events included in the ACE-Q. Therefore, findings can still provide a degree of evidence as to whether the results of ACE-Q remain stable over time. The authors used the Intraclass correlation coefficient (ICC) to determine the test-retest reliability. According to Portney & Watkins (2000), ICC values less than 0.5 indicate poor reliability, values between .5 and .75 suggest moderate reliability, values between .75 and .90 denote good reliability, and values above .90 are indicative of excellent reliability. The study found that some ACEs had good reliability, with values equal to or higher than .75. However, the ICC values for physical neglect was .41 and for emotional neglect was .43, which denote poor reliability. The ICC value for the full-scale was .90, thus suggesting excellent test-retest reliability.

Overall, the evidence available suggests that test-retest reliability for the full scale has yielded moderate to high values. However, varied findings have been reported for item-level reliability of the ACE-Q. These results may be explained by the notion that some of the adverse events included the scale are more susceptible to interpretation than others (Mersky et al., 2017). For example, it is reasonable to infer that events relating to household dysfunction (e.g. divorce, domestic violence, etc.) are less open to interpretation compared to events relating to abuse

and neglect. Nevertheless, very few studies have addressed the test-retest reliability of the ACE-Q and additional evidence is needed to draw any meaningful conclusions.

Validity

Validity is defined as the extent to which the desired concept is accurately measured. Several methods can be used to assess validity.

Concurrent Validity

Studies have assessed the concurrent validity of the ACE-Q by examining associations between its constructs and relevant identified correlates.

Karatekin and Hill (2018) assessed the concurrent validity of the ACE-Q with undergraduates and found that higher ACE scores were associated with higher levels of anxiety and depression, perceived stress, and measures of mental health wellbeing. Of relevance, Karatekin and Hill (2018) study replicated findings previously yielded by Anda et al. (2006). However, Anda and colleagues' study used a version of the ACE-Q that only included 8 categories of trauma (excluded physical and emotional neglect). Concurrent validity has also been investigated prospectively with adolescents transitioning to adulthood from diverse socio-economic backgrounds.

Overall, the evidence concerning the concurrent validity of the ACE remains limited and needs further investigation.

Predictive validity

Predictive validity refers to the extent to which a measure can predict other outcomes of the same construct at a point in the future. For the ACE- Q this could mean many outcomes, including physical and mental health difficulties, and social

and behavioural problems. Due to the high number of empirical studies focusing on potential outcomes, it is not possible to include all findings in the present critique. Generally, high scores on the ACE-Q and/ or the presence of specific ACEs have been correlated with poorer physical health outcomes (Anda, et al., 2008), depression (Ege., et al, 2015), PTSD symptoms (Swopes., et al 2013; Yehuda, 2001), psychosis (Bebbington et al., 2011), suicidal behaviours (Corcoran et al., 2006; De Ravello et al., 2008), alcohol use (Ramiro et al., 2010; Strine et al., 2012), nicotine use (Anda, 1999; Bellis, et al., 2014a, 2014b), illicit drug use (Dube et al., 2003), involvement with the Criminal Justice System (De Ravello et al., 2008; Reavis, Looman, Franco, & Rojas, 2013), and homelessness and unemployment (Dong et al., 2005; Dube, et al., 2010; Patterson et al., 2014)

Caution should be exercised when considering and applying these findings in relation to the ACE-Q predictive validity. As highlighted by the authors themselves, risks observed in epidemiological studies should not be applied to individuals to forecast the risk of health or social outcomes as this can lead to an underestimation or overestimation of actual risk (Anda et al., 2020). Consistently, a recent study from Baldwin et al. (2020) found that whilst the ACE-Q scores can predict population risk (i.e. group mean) of poor health outcomes, this measure holds poor predictive accuracy in predicting individual risk.

Construct Validity

Construct validity refers to how well a given test is operationalised to measures its intended outcome.

Retrospective Recall

The ACE-Q relies on self-reported retrospective memories which in turn may introduce biases, such as recall bias. Within this context, inaccurate reporting can

occur both intentionally and unintentionally. People may not genuinely remember events that have taken place decades earlier. For example, studies have indicated that children who experienced adversities prior to the age of 5 were more likely to forget such events in adulthood (Fergusson, et al., 2000). In addition, trauma disclosure can evoke negative feelings in participants, who may be reluctant to report (Fergusson, et al., 2000). Furthermore, studies have found trauma reporting may be affected by demographic characteristics, such as education and gender. For instance, gender stereotypes may lead males to underreport sexual abuse (Juyal et al., 2017).

Some have raised concerns about how valid retrospective recall is, particularly, when it relates to early trauma (Meinick et al., 2017). Therefore, it has been suggested that recall bias may be present when measuring trauma with the ACE-Q. Some have suggested that recall bias may be present when recalling ACEs amongst respondents who have depression (Scott et al. 2010). However, other evidence suggested the reliability of reports are not affected by depression symptoms in young males (Pinto et al., 2014). Furthermore, evidence showed that the relationship between the number of ACEs and negative outcomes is accounted for in both prospective (Clark et al. 2010; Scott et al. 2010) and retrospective studies (Affifi et al. 2011; Anda et al. 2008). Additionally, no assessment bias or differences between reported ACEs were found when comparing data between prospective and retrospective studies (Hardt et al. 2010; Scott et al. 2010). Finally, as already discussed, although variable for individual items, the test-retest reliability of the ACE-Q was found to be acceptable. In sum, just like any other self-reported measure, the ACE-Q is susceptible to recall bias. However, the evidence available does not suggest that it is a significant concern for this

measure. Nevertheless, additional prospective studies would aid in clarifying the issue of recall bias.

Convergent Validity

Dobson et al. (2021) were the first to examine the convergent validity of several measures of trauma, including the ACE-Q, The Child Trauma Questionnaire (CTQ; Bernstein et al. 1997), the ACE-IQ (WHO), and the CATS (Sanders & Becker-Lausen, 1995). They used a single sample comprising of adults attending outpatient clinics at their physician. High correlations were found between the scores of the total measures, ranging from 0.75 to 0.89 (measured with Cronbach's alpha coefficient). Thus, indicating significant amounts of shared variance between the measures. Similarly, Wingenfeld et al. (2011) found satisfactory convergent validity with the CTQ amongst clinical and non-clinical samples. In addition, Schmidt et al., (2020) examined the convergent validity of the ACE maltreatment items with the CTQ with a perinatal sample and found a significant association between the total childhood maltreatment scores on the ACEs and the CTQ ($r = .73$). In turn, these studies suggest that the ACE-Q measures a similar construct as other childhood trauma tools.

Factor Analysis can also help determining the construct validity of a given measure. Several studies have investigated the factor structure of the ACE-Q using both exploratory and confirmatory factor analyses (EFAs and CFAs). Of interest, all findings were inconsistent with the original ACE study, which yielded a 6-factor solution.

Ford et al. (2014) carried out both analyses with a large epidemiological sample and results found a total of three factors relating to household dysfunction, physical/emotional abuse, and sexual abuse. Correlations between factors ranged

from moderate to high for the CFA. Similarly, Scott et al. (2013) carried out an EFA and found a three-factor solution with a sample of low-income parents. Their results yielded an abuse factor (physical, sexual, and emotional abuse), a household dysfunction factor, and a mixed factor (sexual abuse, emotional neglect, parental drug use and absence). The authors did not report the correlation coefficients between factors.

Affifi et al. (2020) conducted a CFA of the ACE-Q as well as an expanded version of the tool that included other types of adverse events. Their findings confirmed that a two-factor solution provided a good fit to the data, comprising of (a) child maltreatment and (b) household dysfunction, with a correlation coefficient of .60 between factors. Similarly, Karatekin & Hill (2018) explored an expanded version of the ACE-Q and the ACE-Q itself. Both EFA and CFA analyses of the ACE-Q found a two-factor solution, comprising of child maltreatment and household dysfunction. These were correlated with each other (moderate to high). Similarly, Mersky et al (2017) carried out an EFA with low-income women and found a two-factor solution (i.e. maltreatment and household dysfunction) which yielded a correlation of .48 between factors. Thus, confirming the initial conceptualisation of the ACE-Q.

Overall, studies concerned with the factorial structure of the ACE-Q have yielded mixed results. However, this is likely due to the diversity of target samples, and research methodology. In addition, studies have often used different versions of the ACE-Q which contained different numbers of categories (e.g. original ACE-Q, expanded versions). Thus, results have often been contingent upon the items included. However, regardless of variations in the included items, the factors that emerged from different studies appear to be moderately correlated with each other.

Content Validity

Content validity relates to the extent to which elements of an instrument are relevant to and representative of the construct it is trying to assess.

The normative population from which the ACE was developed, and the knowledge originated from the original study is a cause for concern as not representative of the general population. The data collected was predominantly from white, middle, and upper-middle-class respondents and solely focused on experiences within one's household. It has been therefore argued that the contents of ACE-Q are not representative of adversities experienced across various sociodemographic groups (Cronholm et al., 2015). Furthermore, the ACE-Q was developed in a Western country, thus failing to include events that may not be relevant to such populations, such as war and displacement.

Although the ACE provides a snapshot of adverse experiences, it fails to include events that are potentially equally traumatic for people. Linked to the issues raised about normative data and beyond, the ACE-Q does not account for other sources of trauma that may occur outside the household, including community violence, discrimination, witnessing violence, sexual exploitation and assault, and bullying (Cronholm et al., 2015; Holden., 2020).

Furthermore, the original ACE-Q relied on "traditional" beliefs about families and/ or gender. For example, divorce is now a common event in most societies and may even improve household dysfunction. In addition, violence towards partners can also be perpetrated by females and couples may comprise of same-sex people. Again, these issues highlight that the contents of ACE-Q do not adequately represent the general population.

An additional issue underlying the ACE-Q is the lack of consideration for the severity and chronicity adversities measured, which are both important dimensions of childhood trauma. First, all types of adversities are equally weighted when it comes to scoring the tool, thus not accounting for the variation in severity of the experience. Secondly, it is now well established that chronic exposure to trauma carries greater consequences compared to single-event trauma (Putnam et al., 2013) and the ACE-Q fails to account for this.

In summary, there are some significant limitations to the validity of the contents of the ACE-Q.

Application of the ACE-Q in Psychological Research

As mentioned above, the ACE-Q has attracted criticism for ignoring a wide range of adverse events that may cause trauma responses and its inadequate consideration for adversities experienced by other sociodemographic groups (Cronholm et al., 2015; Holden, 2020). Indeed, there is a lack of consensus within research as to what constitute adverse events. However, the ACE-Q ignores to include adversities that are empirically known to cause trauma responses and negative outcomes for individuals. In addition, it fails to measure key variables, including the intensity and chronicity of trauma. This can be particularly problematic for research as studies may overlook the salience of other traumatic experiences as well as relevant variables. Thus, depending on the question researchers are trying to address, ACE-Q may not be appropriate.

Modified versions of the ACE-Q have been developed to account for different sociodemographic groups, circumstances, and relevant categories of trauma (Wade et al., 2014; Cronholm et al., 2015). For example, the item on domestic abuse was expanded to include either parent as the perpetrator, new items were

included to capture collective violence and displacement, bullying, and placement in foster care. In addition, the item on sexual abuse was changed to include harm perpetrated by individuals of similar age. Nevertheless, despite these changes, it is argued that experiences of discrimination, oppression, illness, and events outside the household (e.g. sexual abuse and exploitation) should also be included (McNally, 2003; Kelly-Irving & Delpierre, 2019). In sum, the ACE-Q may not always be an appropriate tool to investigate childhood trauma and its effects on various outcomes. Adapted versions may therefore be more suitably options for research.

Notably, some of these adapted tools and trauma questionnaires more generally, are lengthier than the ACE-Q. This can pose a range of additional problems. The use of lengthy measures can lead to respondent's fatigue, which in turn may introduce the risks of data losing its quality and sampling biases (Cook et al., , 2000). The latter issue can be further compounded if studies also use measures in addition to the ACE-Q. Furthermore, lengthy measures and data collection processes more generally may not be suitable when investigating vulnerable populations (Jackson et al., 2019; Amann & Sleigh, 2021). In these circumstances, participants may not fully complete measures or drop out altogether. In the context of research with traumatised individuals, repetitive questions about the adverse experience may trigger distressing recollections about negative events and potentially cause harm (Pynoos et al., 1999). Therefore, the ACE-Q can be a popular and convenient option to measure childhood trauma as it benefits from a user-friendly nature and brief administration time; ultimately, minimising the risks just outlined.

Applications of the ACE-Q in Clinical Practice

The ACE-Q has become a very popular tool in clinical practice (Kelly-Irving & Delpierre, 2019). This has caused general concerns and attracted much criticism from various bodies. The measure is overly focused on negative/ risk factors, thus ignoring factors that may be protective and relevant to recovery. Arguably, using this tool in clinical practice with vulnerable individuals may cause them to believe that their future is defined by traumatic experiences, thus leading to them feel trapped, helpless, and hopeless (Leitch, 2017).

Indeed, screening for ACEs is useful in trauma-informed services. However, this should not involve the practice of "scoring people" as it may invalidate and reduce human experiences (Winninghoff, 2020). Consistently, it has been recommended that this tool is not used in Trauma-Informed services (Leitch, 2017). Furthermore, as highlighted in the *Psychometric Properties* section, the ACE-Q ignores other forms of traumatic experiences. In turn, this may feel invalidating for people and would not provide any benefits to formulation or treatment. Notably, denying these equally traumatic experiences may lead to negative feelings or re-traumatization (Elliott et al., 2005).

Issues associated with its clinical use also extend to professionals. The ACE study and ACE-Q are often incorporated in training focusing on trauma for staff across various disciplines. In turn, if not contextualised appropriately, this information may lead to problematic practice, including the misuse of the ACE-Q and its scores. Ultimately, potentially causing negative outcomes for clients.

To minimise the misuse of this particular tool, the authors recently published a statement urging clinicians and relevant services not to use the ACE-Q scores for screening and decision-making purposes about treatment options (Anda et al.,

2020). The authors emphasised that this tool was designed for research, particularly, of epidemiological nature. In addition, as previously mentioned, the ACE-Q holds poor accuracy in predicting individual risk. In summary, the ACE-Q should not be employed as a diagnostic or screening tool, or to make treatment decisions and to predict individual outcomes.

Conclusions

The ACE-Q has provided valuable epidemiological evidence and informed research regarding the long-term negative outcomes associated with childhood trauma. However, despite the high number of published studies using the ACE-Q, its psychometric properties remain under-investigated. Indeed, the studies outlined in this critique have shown positive results with several populations. However, the ACE-Q validity and reliability could be further strengthened to gain a more accurate view of this tool and adapted versions.

In terms of its use for research, the ACE-Q presents some benefits and trade-offs. Depending on the aims and the design of a given piece of research, consideration must be given to how it conceptualises and measures early adversities, as well as the target sample. Within this context, it could be argued that the ACE-Q is better suited for epidemiological studies with the aim of awareness-raising and public funding allocation. Nevertheless, understandably, the length and user-friendly nature of the ACE-Q remain attractive features of this measure. Finally, it is not recommended for ACE-Q to be used in clinical practice.

CHAPTER VI

General Discussion and Conclusions

This thesis investigated the role of Early Maladaptive Schemas (EMSs) in accounting for the relationship between childhood trauma and offending behaviour. In addition, it explored the value of treatments that target such schemas (i.e. Schema Therapy) and the potential benefits of a training-focused organizational intervention based on the Trauma Informed Care (TIC) model. An overarching aim was to influence future interventions and service provision for traumatised forensic populations based in the community. Each Chapter provided a contribution to the literature concerned with these subject areas. Chapter VI will discuss and consider the findings of the present thesis and their implications for research and clinical practice.

Chapter II presented an empirical study investigating EMSs as a potential mediator for childhood trauma and violent convictions. The findings are preliminary in nature and contribute towards a limited amount of existing research that investigates the association between EMSs and harmful behaviour, and the role of EMSs in mediating the relationship between childhood trauma and offending behaviour. As mentioned in the introduction of the thesis, the relationship between childhood trauma and offending behaviour is still poorly understood. This has been partially attributed to the research designs employed, including a lack of prospective longitudinal and mediation designs (Kerig & Becker, 2010). Similarly, the design of this study is not appropriate to demonstrate temporal causal links between the variables of interest. However, the use of mediation designs is a good starting point towards elucidating some of the mechanisms underlying the relationship between childhood trauma and offending behaviour.

This study found that most participants experienced either one or more ACEs (M= 4.09; SD= 2.55); thus confirming that childhood trauma, particularly of cumulative nature, is prevalent amongst forensic populations (Reavis et al., 2013; Fazel & Danesh, 2002). In addition, this study highlighted associations between EMSs and frequencies of both general offending and violent convictions. In turn, suggesting that EMSs may play a part in both general and violent offending behaviour. Nevertheless, more studies are needed to explore this link and establish whether specific schemas are more salient than others. In addition, research may focus on the types of coping strategies people use to mitigate schema activation. This, because behavioural responses are contingent upon the types of coping strategies people tend to use; in turn, people endorsing the same schemas may react in different ways.

This study also demonstrated that elevated EMSs scores were predictive of violent behaviour amongst individuals with experiences of childhood trauma. When individual domains were examined, only disconnection/ rejection was found to be predictive of violent convictions. Consistent with the existing literature, findings suggested that early trauma may lead to the development of negative schemas, and that endorsement of such schemas can lead individuals to engage in problematic patterns of behaviour. Moreover, as demonstrated in previous studies, the disconnection/rejection domain appears to be particularly predictive of harmful behaviour in the presence of childhood trauma. Therefore, Chapter II supports the theory that the manner by which people see themselves, others, and the world can account for the relationship between childhood trauma and violent behaviour. However, findings should be carefully interpreted due to the small sample size used for the study. In turn, more evidence is needed to gain a better understanding of the role of EMSs in predicting violent behaviour and/or offending

behaviour more generally amongst individuals with histories of childhood trauma. Future studies may therefore focus on replicating the present findings utilising a bigger and more representative pool of participants.

Together with the existing literature, the findings outlined in Chapter II offered a rationale for addressing EMSs during psychological interventions. More specifically, it is argued that targeting the "deeper" cognitive structures (as opposed to more "superficial" cognitions) that influence social information processing and give rise to biased judgments and attributions may be lead to positive behavioural outcomes, and longer-lasting changes in cognitive functioning. As mentioned in previous Chapters, Schema Therapy (Young et al., 2003) strives to address underlying negative beliefs, and associated behavioural responses and coping strategies. Thus, these findings support the notion that traditional Schema Therapy (ST) or ST based interventions may be of significant value to forensic populations who have experienced childhood trauma. In turn, they provide a rationale for exploring the effectiveness of ST based interventions.

The overarching aim of Chapter III and IV was to investigate the benefits of specialist and organizational psychological interventions for forensic populations with experiences of trauma. Based on the findings outlined in Chapter II, Chapter III presented a literature review that focused on the effectiveness of traditional ST and ST informed interventions with forensic populations.

ST was initially devised for people with personality disorder and complex presentations; however, the review demonstrated that its application has been extended to forensic populations with a wide range of therapeutic needs. Despite this, the review also highlighted the limited extent to which the use of ST in forensic settings has been investigated. To the researchers' knowledge, the

present review was the first one conducted on the subject and therefore fills this research gap.

The review included 8 articles and the quality of the studies ranged from "acceptable" to "good". Generally, the review found that ST produced a variety of positive therapeutic outcomes, thus suggesting that ST interventions have the potential to address a variety of difficulties, which may or may not be conceptualised as trauma responses. Nevertheless, it is important to highlight that the lack of statistical methods for data synthesis means that it is not possible to make inferences about the strength of the effects observed across studies. In addition, the variation in participants' clinical presentation, intervention delivery, and outcomes measured means that further research will have to further replicate results observed in this review to develop a robust body of evidence.

The only comparable outcomes identified were emotion regulation and EMSs endorsement, for which ST was found to be effective in addressing. Of particular relevance, most studies focused on correlates of offending or health outcomes as opposed to behavioural ones (e.g. recidivism). In turn, it was not possible to determine whether ST effectively reduces recidivism and/or harmful behaviour more broadly, and more research focusing on behavioural outcomes is needed. In addition, the studies included only utilised male samples in secure settings such as prison or hospital, thus, limiting the extent to which findings can be generalised.

Overall, despite the promising findings, the body of evidence concerning the benefits of ST remains limited. Therefore, further studies are needed to gain a better understanding of the benefits of ST interventions for different forensic population with experiences of childhood trauma. However, taken together, the evidence presented in Chapter II and Chapter III make a compelling argument to

support the relevance of EMSs endorsement in the context of offending behaviour and the potential value of interventions that target underlying schemas. Practitioners working in forensic settings may therefore consider the use of interventions based on ST theory with individuals with histories of trauma.

Chapter IV presented a second piece of research which investigated the effects of a brief training based psychological intervention informed by the TIC framework (Elliott et al., 2005), for professionals working with traumatised individuals who have had contact, or are at risk of further experiencing the CJS, in community settings. The aim of this study was to explore alternative interventions for those who may not be able to access mental health or psychological services for therapy.

Findings yielded mixed results; the intervention had a positive impact on the number of incidents within the service although no intervention effects were observed for service users' outcomes. Furthermore, staff related outcomes were not examined beyond descriptive statistics due to the low sample size. Thus, Chapter IV did not provide concrete evidence supporting the effectiveness of training based organizational interventions based on the TIC approach.

The study highlighted several challenges involved in implementing and evaluating organizational interventions based on the TIC model. First, there is no universal definition of "Trauma Informed Care" and there is no prescribed way to implement it or evaluating it across public services. Thus, services implement the TIC approach differently and this can cause difficulties in terms of evaluation. An additional challenge relates to the extent to which staff and organizations are willing to fully integrate psychological knowledge into practice. Within this context, frontline or senior members of staff may be resistant to change or may not want to fully engage in the intervention. Alternatively, psychologically informed

practices and policies may be incongruent with the organization's performance targets and therefore only partially implemented. These challenges have already been identified within the literature (Keats, 2012; Purtle, 2020) and are likely to affect future research unless clear guidance on how to implement and evaluate the TIC approach is developed. Furthermore, challenges may be minimised if organizations fully embrace TIC principles by using a top-down approach. For this to be effective, senior management must both lead by example and provide education to front line staff in relation to the benefits of psychologically informed practice.

Indeed, more research is needed to establish a more robust body of evidence supporting the implementation of organizational interventions for forensic populations who have experienced trauma. In addition, more evidence is needed to establish whether organizational interventions may be of benefit to staff members. Despite this, it is argued that Chapter IV highlighted that trauma informed organizational interventions have the potential to create meaningful and positive change for service users. Particularly, for those who do not have the opportunity to access specialist mental health services. In addition, it highlighted that staff have a vital role to play in the recovery of service users, and it is therefore necessary to place emphasis on their needs, wellbeing, and development.

Chapter V presented a critique of the Adverse Childhood Experiences questionnaire (ACE-Q; Felitti et al., 1998; Dube et al., 2004), which was used for the first research study. Despite the ACE -Q popularity, it was evident that its psychometric properties remain under investigated; hence, more research is needed to strengthen the current body of evidence.

Chapter V highlighted that the ACE-Q presents with some benefits and limitations, which were considered when selecting a measure of trauma for study 1. Generally, the ACE-Q holds acceptable validity and reliability. Nevertheless, concerns have been identified in relation to its predictive and content validity. Baldwin et al. (2020) found that whilst the ACE-Q scores can predict population risk of poor health outcomes, this measure holds poor predictive accuracy in predicting individual risk. Consistently, the authors emphasized that the tool should not be applied to individuals to predict health or social outcomes (Anda et al., 2020). Furthermore, the ACE-Q fails to measure key variables (i.e. intensity or chronicity of traumatic experiences), and to capture a range of adverse events that may cause trauma responses, particularly, amongst other sociodemographic groups (Cronholm et al., 2015; Holden et al., 2020). Notably, the normative data used to develop this tool was not representative of the general population, which led to the development of modified versions of the ACE-Q that aim to account for different sociodemographic groups, circumstances, and relevant categories of trauma (Wade et al., 2014; Cronholm et al., 2015). Thus, prior to selecting the ACE-Q for given study, researchers should carefully consider how they wish to conceptualise trauma and the nature of their target population.

Despite the concerns outlined above, the ACE-Q also presents with several strengths. For instance, the ACE-Q brief and user-friendly nature makes it attractive to researchers focusing on vulnerable populations and measuring a high number of variables. Specifically, brief measures that do not contain repetitive questions may reduce the risk of respondent's fatigue and minimise the risk of causing harm to participants with experiences of trauma (Pynoos et al., 1999). In turn, these strengths led to the selection of the ACE-Q for the empirical study presented in Chapter II.

This Chapter also highlighted that the use of the ACE-Q in clinical practice has attracted considerable criticism. More specifically, some have argued that the tool is being misused. As outlined by the authors, its scores should not be used for screening or decision making about treatment options (Anda et al., 2020). Indeed, the tool may be purely used to assess whether individuals have experienced childhood trauma. However, practitioners may need to consider how this tool and its theoretical underpinnings may be perceived by vulnerable people. For example, the ACE-Q is overly focused on negative/ risk factors and ignores factors that may be protective and relevant to recovery. In addition, vulnerable individuals may believe that their future is defined by traumatic experiences, thus leading to them feeling trapped, helpless, and hopeless (Leitch, 2017). Thus, relevant to Chapter III, it has been recommended that this tool is not used in trauma-informed services (Leitch, 2017).

Conclusions

Considering the thesis in its entirety, additional research in needed to better understand the role of EMSs in mediating the relationship between childhood trauma and offending behaviour. Furthermore, additional research is needed to explore the association between EMSs and offending behaviour more generally. At present, most studies have focused on intimate partner violence amongst non-forensic populations. Thus, future research may consider replicating the present findings with forensic populations convicted for other types of offences. In addition, future research may consider replicating the present findings with a larger pool of participants who are more representative of the general forensic population.

Gaining a better understanding of the role of EMSs in mediating this relationship as well as their associations with offending behaviour more generally is necessary to inform future clinical practice. Within this context, this thesis highlighted that more research is also needed to grasp the benefits of interventions that focus on schemas (i.e. Schema Therapy) as well as organizational interventions available to traumatised forensic populations who use public services. Nevertheless, despite the need for further research, the present thesis makes a compelling argument for the potential benefits of both ST interventions and organizational interventions grounded on TIC principles.

These findings may be considered by practitioners working with traumatised forensic populations when developing formulations and devising treatment plans. Moreover, organizations may wish to pilot TIC based organizational interventions to establish a stronger body of evidence. Indeed, this would mean allocating enough funding and psychological expertise to ensure that organizational interventions are implemented effectively. Nevertheless, it is argued that efforts should first be directed towards reaching general consensus in relation to how TIC is implemented and evaluated more broadly. In turn, it is recommended that practitioners and researchers work towards developing robust guidance for organizations.

Overall, the present thesis has achieved its general aim of contributing to the literature concerned with these particular areas. It provides preliminary evidence about the role of EMSs in accounting for the relationship between childhood trauma and offending behaviour, and raises compelling arguments supporting the benefits of ST based interventions and organizational interventions that strive to improve outcomes for traumatised people and their staff

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APPENDICES

Appendix A

Ethical Approval Letter

University of Nottingham
UK | CHINA | MALAYSIA

Faculty of Medicine & Health Sciences Research Ethics Committee
Faculty Hub
Room E41, E Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH
Email: FMHS-ResearchEthics@nottingham.ac.uk

13 March 2020

Ms Carolina E Antonini
Trainee/Doctorate Student in Forensic Psychology
c/o Dr Kathleen Green, Assistant Professor
Division of Psychiatry and Applied Psychology
School of Medicine
YANG Fujia Building
Jubilee Campus, University of Nottingham
Wollaton Road
Nottingham, NG8 1BB

Dear Ms Antonini

Ethics Reference No: 293-1903 – **please always quote**	
Study Title: The Mediating Effects of Early Maladaptive Schemas on the Relationship between Childhood Trauma and Offending Behaviour amongst Adults with Complex Needs.	
Chief Investigator/Supervisor: Dr Katheen Green, Assistant Professor, Dr Nigel Hunt, Associate Professor, Forensic Psychology, Division of Psychiatry and Applied Psychology.	
Lead Investigators/student: Carolina Antonini, Trainee Forensic Psychologist/Doctorate.	
Other Key Investigators: Monika Spencer, Team Leader, Look Ahead Care & Support and Housing, London, Dr James Fowler, Principal Forensic Psychologist at St Andrew's Healthcare/Placement clinical and co-ordinating supervisor.	
Proposed Start Date: 31/05/2019	**Proposed End Date:** 31/09/2020

Thank you for notifying the committee of amendment no 1: 02.03.2020 as detailed which was considered by the Committee on 12 March 2020 and the following documents were received:

- FMHS REC Application form and supporting documents version 1.2: 17.02.2020
- Conditional Approval from Research Centre St Andrew's Healthcare dated 05.02.20

These have been reviewed and are satisfactory and the study amendment no 1: 02.03.20 has been given a favourable opinion.

A favourable opinion has been given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr John Williams, Associate Professor in Anaesthesia and Pain Medicine
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix B

Background Information Sheet

Age:

Gender:

Male Female Other (please specify):

Ethic background:

- White (English, Welsh, Scottish)
- White (Irish)
- White (other)
- Chinese
- Pakistani
- Bangladeshi
- Indian
- Asian (other)
- Arab
- Black African
- Black Caribbean
- Latino or South American
- Mixed Ethnic background
- Prefer not to say
- Any other ethnic background

Housing circumstances:

- Temporary accommodation
- Rented accommodation
- Owner of own house
- Rough sleeping (including sofa surfing or sleeping in car

Have you ever had or do you currently have a substance misuse problem?

Yes No

Please tick substance:

- Alcohol
- Cocaine
- Crack cocaine
- Cannabis
- Heroin
- Ecstasy
- Steroids
- Chrystal Meth
- Prescription medication
- Other (please specify):

Have you ever experienced or been diagnosed with any of the following mental health difficulties?

- Depression
- Social Anxiety
- Generalised Anxiety
- Anxiety (other)
- Anxiety & Depression
- Obsessive Compulsive Behaviour (OCD)
- Bipolar Disorder
- Schizophrenia
- Psychosis
- Delusional Disorder
- ADHD (Attention Deficit Hyperactivity Disorder)
- Dissociative disorders
- Drug induced psychosis
- Post-Traumatic Stress Disorder (PTSD)
- Complex PTSD
- Personality Disorder
- Other (please specify):
-

Appendix C

Adverse Childhood Experience (ACE) Questionnaire

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 If yes enter 1 _____

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 If yes enter 1 _____

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**
   Try to or actually have oral, anal, or vaginal sex with you?
   Yes No If yes enter 1 _____

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 each other?
   Yes No If yes enter 1 _____

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 If yes enter 1 _____

6. Were your parents **ever** separated or divorced?
   Yes No If yes enter 1 _____

7. Was your mother or stepmother:
   Often pushed, grabbed, slapped, or had something thrown at her? **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 If yes enter 1 _____

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

Yes No If yes enter 1 _____

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

Yes No If yes enter 1 _____

10. Did a household member go to prison?

Yes No If yes enter 1 _____

Appendix D

Young Schema Questionnaire – Short Version 3

Instructions: Listed below are statements that people might use to describe themselves. Please read each statement, then rate it based on how accurately it fits you **over the past year**. When you are not sure, base your answer on what you **emotionally feel**, not on what you think to be true.

A few of the items ask about your relationships with your parents or romantic partners. If any of these people have died, please answer these items based on your relationships when they were alive. If you do not currently have a partner but have had partners in the past, please answer the item based on your most recent significant romantic partner.

Choose the **highest score from 1 to 6** on the rating scale below that best describes you, then write your answer on the line before each statement.

RATING SCALE

1 = Completely untrue of me	**4 = Moderately true of me**
2 = Mostly untrue of me	**5 = Mostly true of me**
3 = Slightly more true than untrue	**6 = Describes me perfectly**

1. _____ I haven't had someone to nurture me, share him/herself with me, or care deeply about everything that happens to me.

2. _____ I find myself clinging to people I'm close to because I'm afraid they'll leave me.

3. _____ I feel that people will take advantage of me.

4. _____ I don't fit in.

5. _____ No man/woman I desire could love me once he or she saw my defects or flaws.

6. _____ Almost nothing I do at work (or school) is as good as other people can do.

7. _____ I do not feel capable of getting by on my own in everyday life.

8. _____ I can't seem to escape the feeling that something bad is about to happen.

9. _____ I have not been able to separate myself from my parent(s) the way other people my age seem to.
10. _____ I think that if I do what I want, I'm only asking for trouble.

11. _____ I'm the one who usually ends up taking care of the people I'm close to.

12. _____ I am too self-conscious to show positive feelings to others (e.g., affection, showing I care).

13. _____ I must be the best at most of what I do; I can't accept second best.

14. _____ I have a lot of trouble accepting "no" for an answer when I want something from other people.

15. _____ I can't seem to discipline myself to complete most routine or boring tasks.

16. _____ Having money and knowing important people make me feel worthwhile.

17. _____ Even when things seem to be going well, I feel that it is only temporary.

18. _____ If I make a mistake, I deserve to be punished

19. _____ I don't have people to give me warmth, holding, and affection.

20. _____ I need other people so much that I worry about losing them.

21. _____ I feel that I cannot let my guard down in the presence of other people, or else they will intentionally hurt me.

22. _____ I'm fundamentally different from other people.

23. _____ No one I desire would want to stay close to me if he or she knew the real me.

24. _____ I'm incompetent when it comes to achievement.

25. _____ I think of myself as a dependent person when it comes to everyday functioning.

26. _____ I feel that a disaster (natural, criminal, financial, or medical) could strike at any moment.

27. _____ My parent(s) and I tend to be over-involved in each other's lives and problems.

28. _____ I feel as if I have no choice but to give in to other people's wishes, or else they will retaliate, get angry, or reject me in some way.

29. _____ I am a good person because I think of others more than myself.

30. _____ I find it embarrassing to express my feelings to others.

31. _____ I try to do my best; I can't settle for "good enough."

32. _____ I'm special and shouldn't have to accept many of the restrictions or limitations placed on other people.

33. _____ If I can't reach a goal, I become easily frustrated and give up.

34. _____ Accomplishments are most valuable to me if other people notice them.

35. _____ If something good happens, I worry that something bad is likely to follow.

36. _____ If I don't try my hardest, I should expect to lose out.

37. _____ I haven't felt that I am special to someone.

38. _____ I worry that people I feel close to will leave me or abandon me.

39. _____ It is only a matter of time before someone betrays me.

40. _____ I don't belong; I'm a loner.

41. _____ I'm unworthy of the love, attention, and respect of others.

42. _____ Most other people are more capable than I am in areas of work and achievement.

43. _____ I lack common sense.

44. _____ I worry about being physically attacked by people.

45. _____ It is very difficult for my parent(s) and me to keep intimate details from each other without feeling betrayed or guilty.

46. _____ In relationships, I usually let the other person have the upper hand.

47. _____ I'm so busy doing things for the people that I care about that I have little time for myself.

48. _____ I find it hard to be free-spirited and spontaneous around other people.

49. _____ I must meet all my responsibilities.

50. _____ I hate to be constrained or kept from doing what I want.

51. _____ Unless I get a lot of attention from others, I feel less important.

52.

53. _____ Unless I get a lot of attention from others, I feel less important.

54. _____ You can't be too careful; something will almost always go wrong.

55. _____ If I don't do the job right, I should suffer the consequences.

56. _____ I have not had someone who really listens to me, understands me, or is tuned into my true needs and feelings.

57. _____ When someone I care for seems to be pulling away or withdrawing from me, I feel desperate.

58. _____ I am quite suspicious of other people's motives.

59. _____ I feel alienated or cut off from other people.

60. _____ I feel that I'm not lovable.

61. _____ I'm not as talented as most people are at their work.

62. _____ My judgment cannot be counted on in everyday situations.

63. _____ I worry that I'll lose all my money and become destitute or very poor.

64. _____ I often feel as if my parent(s) are living through me – that I don't have a life of my own.

65. _____ I've always let others make choices for me, so I really don't know what I want for myself.

66. _____ I've always been the one who listens to everyone else's problems.

67. _____ I control myself so much that many people think I am unemotional or unfeeling.

68. _____ I feel that there is constant pressure for me to achieve and get things done.

69. _____ I feel that I shouldn't have to follow the normal rules or conventions that other people do.

70. _____ I can't force myself to do things I don't enjoy, even when I know it's for my own good.

71. _____ If I make remarks at a meeting, or am introduced in a social situation, it's important for me to get recognition and admiration.

72. _____ No matter how hard I work, I worry that I could be wiped out financially and lose almost everything.

73. _____ It doesn't matter why I make a mistake. When I do something wrong, I should pay the consequences.

74. _____ I haven't had a strong or wise person to give me sound advice or direction when I'm not sure what to do.

75. _____ Sometimes I am so worried about people leaving me that I drive them away.

76. _____ I'm usually on the lookout for people's ulterior or hidden motives.

77. _____ I always feel on the outside of groups.

78. _____ I am too unacceptable in very basic ways to reveal myself to other people or to let them get to know me well.

79. _____ I'm not as intelligent as most people when it comes to work (or school).

80. _____ I don't feel confident about my ability to solve everyday problems that come up.

81. _____ I worry that I'm developing a serious illness, even though nothing serious has been diagnosed by a doctor.

82. _____ I often feel I do not have a separate identity from my parent(s) or partner.

83. _____ I have a lot of trouble demanding that my rights be respected and that my feelings be taken into account.

84. _____ Other people see me as doing too much for others and not enough for myself.

85. _____ People see me as uptight emotionally.

86. _____ I can’t let myself off the hook easily or make excuses for my mistakes.

87. _____ I feel that what I have to offer is of greater value than the contributions of others.

88. _____ I have rarely been able to stick to my resolutions.

89. _____ Lots of praise and compliments make me feel like a worthwhile person.

90. _____ I worry that a wrong decision could lead to disaster.

91. _____ I’m a bad person who deserves to be punished.

Appendix E

Offending History Sheet

1. Have your ever been convicted for an offence? (Please circle)

YES NO

2. How old were you the first time you were convicted of an offence? (Please circle)

Under 12 years old 12-17 years old 18-24 years old 25-34 years old

35-44 years old 45-54 years old 55-64 years old 65-74 years old

3. PLEASE TICK THE OFFENCE OR OFFENCES THAT RELATE TO YOU. PLEASE INCLUDE HOW MANY TIMES YOU WERE CONVICTED FOR A SPECIFIC OFFENCE (See example answer below)

EXAMPLE: 1. Theft V (x2 times)

1. Theft
2. Robbery
3. Possession of an offensive weapon
4. Domestic violence related offence (e.g. assault on partner, ex-partner, or spouse)
5. Murder
6. Manslaughter
7. Common assault
8. More Serious assault (GBH; ABH)
9. Rape
10. Harassment
11. Drug related offences (possession)
12. Drug related offences (distribution)
13. Drug or illegal merchandize smuggling

14. Driving offences (drink driving, speeding, road rage)
15. Threatening behaviour or harassment
16. Breach of court order
17. Antisocial behaviour (property damage; drinking in public places; busking;
18. Sexual assault (on person over 18 years of age)
19. Sexual assault (on person under 18 years of age)
20. Viewing indecent images (children)
21. Downloading indecent images (children)
22. Other:……
23. ……

Appendix F

Research Poster

Call for Participants for Research Study.

Hello, my name is Carolina and I am currently looking into how early experiences of trauma may affect the way people see themselves, and the world. We want to find out if early trauma and people's views of themselves and the world may be linked to offending behaviour in adulthood. The Information found from the study will help us to give better support to people with histories of childhood trauma.

We are looking for participants to fill out 4 surveys. To participate, you **MUST** be a service user of XXXX and be over the age of 18. You will also be able to give informed consent (e.g. not intoxicated by alcohol) on the day. The survey is **COMPLETELY ANONYMOUS.** Once you complete the survey, nobody will know who you are (not even me!). Participation is **COMPLETELY VOLUNTARY.** We will support you if you have any difficulties with completing the questionnaire; the researcher can read the questions to you.

Please be **AWARE** that the surveys will ask sensitive and personal questions.

INTERESTED? Please contact the researcher either by email, or text message. If you do not have access email/phone, please ask your support worker/ therapist to email the researcher.

Researcher Contact Details: Carolina Antonini
Email: carolina.antonini@nottingham.ac.uk;
Phone: [TO BE ADDED]

Appendix G

Study Information Sheet

Study Title: The Mediating Effects of Early Maladaptive Schemas on the Relationship between Interpersonal Childhood Trauma and Offending Behaviour amongst Adults.

University of Nottingham: Faculty of Medicine & Health Sciences, School of Forensic and Family Psychology, YANG Fujia Building, Jubilee Campus, Wollaton Road, Nottingham, NG8 1BB

Lead Researcher: Carolina Antonini, Trainee Forensic Psychologist

Research Supervisor: Dr Kathleen Green, Associate Professor

Research Ethics Ref: 293-1903

General Information

Thank you for your interest in taking part in the study. You have been invited to participate as you are a service user of St Andrew's Healthcare London TR and are over the age of 18. Please read through this information before agreeing to participate by ticking the 'yes' box below. This study is being done by Carolina Antonini, Trainee Forensic Psychologist from the University of Nottingham.

The research looks into how early experiences of trauma may affect the way people see themselves, and the world. We want to find out if early trauma and people's views of themselves and the world may be linked to offending behaviour in adulthood. You will be asked to complete some background questions, followed by two questionnaires. It should take you about 30 minutes to complete all the questionnaires. No background knowledge is required and there is no right or wrong answer! One questionnaire will ask you about adverse childhood experiences, whereas the other one focuses on how you see yourself and the world.

What else?

As part of the research we are interested in looking into people's offending histories (if they have one). In order to gather information about your offending history we would like to access your personal St Andrew's/ CRC records. To do

so, we would need your date of birth and name initials. We know this type of information is very sensitive and we appreciate your participation to the study. Please be assured that your date of birth and initials will be permanently deleted within 24 hours after the researcher receives your survey.

Are there any risks in taking part?

The surveys include sensitive and personal questions, including substance misuse and mental health issues, childhood trauma and experiences of abuse. This may cause you to feel upset. Remember, you are under no obligation to complete the surveys if you believe you may become distressed by these questions. Lastly, all your answers will remain completely confidential.

What will happen if I don't want to carry on with the study?

This study is completely voluntary. Even after you have signed the consent form, 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.

If you wish to withdraw consent after you have already submitted the surveys, you can do so by emailing the researcher and quote your date of birth. Please be aware that you have 24 hours from today to withdraw from the study, if you wish to. This is because after 24 hours your DoB and name initials will be permanently deleted and the researcher will not be able to identify your surveys as they will not include any personal information.

How will your data be used?

All the information collected about you during this research is anonymised and will be kept strictly confidential. As such, data gathered will not include anything that may lead you to be identified. Instead, a number will be allocated to each questionnaire and consent form, thus ensuring anonymity and confidentiality.

Please be assured that your date of birth and initials will be permanently deleted within 24 hours after the researcher receives your survey. This means that your surveys will remain completely anonymous thereafter.

The research will be written up as a thesis. On successful submission of the thesis, it may be published, or deposited both in print and online in the University archives, to facilitate its use in future research. The results of the study may be published in scientific journals and presented at scientific conferences. The data will be reported anonymously, with any identifying information removed.

How will data be stored?

All data is kept on password-protected databases sitting on a restricted access computer system. Under UK Data Protection laws the University of Nottingham is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (Carolina Antonini) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Once the research is finished, data will shared securely with the University of Nottingham and will be kept in secure password protected servers. The research data will be stored confidentially. All research data and records will be stored for a minimum of 7 years after publication or public release of the work of the research. If you have any questions about this project, you may contact the Lead Researcher Carolina Antonini, who will do their best to answer your query or concern within 10 working days.

If you have any concerns about any aspect of this study please contact the Research Supervisor, Dr Kathleen Green. If you remain unhappy and wish to complain formally, you should then contact the FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. **E-mail:** FMHS.ResearchEthics@nottingham.ac.uk

This study has been reviewed and given a favourable opinion by the University of Nottingham, Faculty of Medicine & Health Sciences Research Ethics Committee.

Further information and contact details:

Lead Researcher: carolina.antonini@nottingham.ac.uk

Research Supervisor: Kathleen.Green@nottingham.ac.uk

Appendix H

Participants Consent Form

Title of Study: The Mediating Effects of Early Maladaptive Schemas on the relationship between Childhood Trauma and Offending Behaviour.

REC ref: 293-1903

Name of Researcher: Carolina Antonini

Participant's allocated number:

1. I confirm that I have read and understand the information sheet for the above study which is attached and have had the opportunity to ask questions.

2. I confirm that I am able to give informed consent because I am not intoxicated by alcohol, or other substances. You will be given another chance to complete the questionnaires if unable to give informed consent.

3. I understand that my participation is voluntary and that I am free to withdraw without giving any reason and understand how to proceed if I want to withdraw from the study in the future.

4. I understand that I will not be asked to provide any personal information that can identify me personally.

5. I understand that the scores of my questionnaires (data) will be looked at by the research team, including the lead researcher, and the academic staff at the University Of Nottingham.

6. I understand that data will be uploaded into a secure database on a computer kept in a secure place. Data will be kept by the lead researcher, the University of Nottingham. Data will be kept for 7 years after the study has ended and then destroyed.

7. I give permission to the lead researcher, the University of Nottingham, and the organization to store, analyse and publish information obtained from my participation in this study.

8. I agree to take part in the above study by completing the questionnaires provided. I understand the questionnaires will ask sensitive and personal questions.

9. I understand that should I withdraw more than 14 days after filling out the questionnaires then the information collected so far cannot be erased and that this information may still be used in the study analysis

_____	_____	_____
Number of Participant (Number)	Date	Signature

_____	_____	_____
Name of Person taking consent	Date	Signature

Appendix I

Participants Debrief Form

Title of Study: The Mediating Effects of Early Maladaptive Schemas on the relationship between Childhood Trauma and Offending Behaviour among Adults.

Lead Researcher: Carolina Antonini; Carolina.antonini@nottingham.ac.uk

Thank you for taking part in the study!

What was the purpose of the study?

The research looks into how early experiences of trauma may affect the way people see themselves, and the world. We want to find out if early trauma and people's views of themselves and the world may be linked to offending behaviour in adulthood.

What if I have any questions about the study that I would like to ask now? Or in the future? Please speak to the lead researcher if you have any concerns or feeling particularly distressed. In the future, you can contact the lead researcher by email (address above) for further questions.

Can I obtain a summary of the results of the study? To obtain details of the results contact the researcher by email.

This study has raised personal issues– what should I do? Please call a friend or family member to have a chat or if feeling low. You could also do something that you enjoy, such as going for a walk, or listen to some music. If you feel particularly affected by the contents of the questionnaires and need to speak to someone independently, please contact:

Samaritans: 116 123

Site: https://www.samaritans.org/how-we-can-help-you/contact-us

Victims support line for free: 08 08 16 89 111

Site: https://www.victimsupport.org.uk/help-and-support/get-help

Speak to your GP

If you feel that you may benefit from support around your mental health or psychological wellbeing speak to your GP for advice.

I have concerns about this study, or the way in which it was conducted who should I contact? In the first instance you should contact the supervisor of the project (Dr Kathleen Green at Kathleen.Green@nottingham.ac.uk ; or Dr Nigel Hunt Nigel.hunt@nottingham.ac.uk). If your concerns are not dealt with then you can contact the Ethical Committee in confidence by writing to: FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail: FMHS-ResearchEthics@nottingham.ac.uk

Appendix J

Search terms for each database

Search Terminology

Concept 1: Schema Therapy	**Concept 2:** Offenders / Forensic Settings
Schema Therapy Terms	**Offender terms**
Schema Therapy	Offender
Schema Focused Therapy	Criminal
Schema Based Therapy	Perpetrator
Schema Oriented Therapy	Convict
	Inmate
	Prisoner
Therapy Terms:	**Forensic settings terms (various)**
therapy/therapies	Prison(s)
Intervention(s)	Correctional facility/Facilities
Approach(es)	Jail(s)
treatment(s)	Secure Setting(s)
	Secure Hospital(s)
	secure unit(s)
	Forensic Psychiatry

Database Searches

Ovid MEDLINE

1. (schema adj2 therap*).mp.
2. (schema adj2 intervention*).mp.
3. (schema adj2 approach*).mp.
4. (schema adj2 treatment*).mp.
5. 1 OR 2 OR 3 OR 4
6. exp Criminals/
7. exp Prisons/
8. exp Prisoners/

9. exp Forensic Psychiatry/
10. (offender* OR inmate* OR criminal* OR convict* OR perpetrator* OR prison*).mp
11. forensic psychiatry.mp
12. (forensic adj2 setting*).mp
13. (secure adj2 facilit*).mp
14. (correctional* adj2 unit*).mp
15. (secure adj2 hospital*).mp.
16. 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15
17. 5 AND 16

Total hits: 12

Ovid Embase

1. (schema adj2 therap*).mp.
2. (schema adj2 intervention*).mp.
3. (schema adj2 approach*).mp.
4. (schema adj2 treatment*).mp.
5. 1 OR 2 OR 3 OR 4
6. exp Offender/
7. exp Prison/
8. exp Prisoner/
9. exp Forensic Psychiatry/
10. (offender* OR inmate* OR criminal* OR convict* OR perpetrator* OR prison*).mp
11. forensic psychiatry.mp
12. (forensic adj2 setting*).mp
13. (secure adj2 facilit*).mp
14. (correctional* adj2 unit*).mp
15. (secure adj2 hospital*).mp.
16. 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15
17. 5 AND 16

Total Hits: 30

OVID PSYCHinfo

1. exp Schema Therapy/

2. (schema adj2 therap*).mp.
3. (schema adj2 intervention*).mp.
4. (schema adj2 approach*).mp.
5. (schema adj2 treatment*).mp.
6. 1 OR 2 OR 3 OR 4 OR 5
7. exp Criminal Offenders/
8. exp Prisoners/
9. exp Prisons/
10. exp Correctional Institutions/
11. exp Criminal Rehabilitation/
12. Forensic Psychiatry/
13. (offender* OR inmate* OR criminal* OR convict* OR perpetrator* OR prison*).mp.
14. forensic psychiatry.mp
15. (forensic adj2 setting*).mp
16. (secure adj2 facilit*).mp
17. (correctional* adj2 unit*).mp
18. (secure adj2 hospital*).mp.
19. 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18
20. 6 AND 19

Total hits: 55

CINAHL

1. "Schema N2 Therap*"
2. "Schema N2 Intervention*"
3. "Schema N2 Approach*"
4. "Schema N2 Treatment*"
5. 1 OR 2 OR 3 OR 4
6. (MH "Public offenders"+)
7. (MH "Forensic Psychiatry"+)
8. (MH "Prisoners") NO OPTION TO EXPAND
9. (MH "Correctional Facilities") NO OPTION TO EXPAND
10. "forensic psychiatry"
11. "offender*"
12. "inmate*"

13.“prison*”
14.“criminal*”
15.“convict*”
16.“perpetrator*”
17.“forensic N2 setting*”
18.“secure N2 facility”
19.“correctional* N2 unit”
20. “secure N2 hospital*”
21.6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20
22.5 AND 21
Total hits: 20

ASSIA via ProQuest

1. (MAINSUBJECT.EXACT.EXPLODE("Schemas") OR MAINSUBJECT.EXACT.EXPLODE("Forensic psychotherapy") OR Mainsubject(Schema Therap*) OR Mainsubject(Schema N2 Therap*) OR Mainsubject(Schema N2 Intervention*) OR Mainsubject(Schema N2 Approach*) OR Mainsubject(Schema N2 Treatment*) OR (Schema N2 Therap*) OR (Schema N2 Intervention*) OR (Schema N2 Approach*) OR (Schema N2 Treatment*))
2. (MAINSUBJECT.EXACT.EXPLODE("Offenders") OR MAINSUBJECT.EXACT.EXPLODE("Prisoners") OR MAINSUBJECT.EXACT.EXPLODE("Perpetrators") OR MAINSUBJECT.EXACT.EXPLODE("Prisons") OR MAINSUBJECT.EXACT.EXPLODE("Forensic psychiatry") OR (Forensic Psychiatry) OR Mainsubject(offender*) OR Mainsubject(inmate*) OR Mainsubject(criminal*) OR Mainsubject(convict*) OR Mainsubject(perpetrator*) OR Mainsubject(forensic N2 setting*) OR Mainsubject(secure N2 facilit*) OR Mainsubject(correctional* N2 unit) OR Mainsubject(secure N2 hospital))
3. 1 AND 2

Total hits= 36

Web of Science

1. TS=(schema therapy OR schema NEAR/1 Therap* OR schema NEAR/1 Intervention* OR Schema NEAR/1 Approach* OR Schema NEAR/1 Treatment*)
2. TS=(Offender* OR Prison* OR Perpetrator* OR Forensic psychiatry OR inmate* OR criminal* OR convict* OR forensic NEAR/1 setting* OR secure NEAR/1 facilit* OR correctional* NEAR/1 unit OR secure NEAR/1 hospital)
3. 1 AND 2

Total hits: 46

Appendix K

Data extraction and synthesis template

Study details	**Study aims:**	**Study methodology**	**Findings**
	Hypotheses:	**Design**: **Analysis:** **Participants:** **Therapy:**. **Therapist and treatment adherance**. **Outcome measures:**	**Results:**
Additional Comments:			

Appendix L

Quality and risk of bias assessment

SIGN	**Methodology Checklist 2: Controlled Trials**

Study identification (*Include author, title, year of publication, journal title, pages*)

Study:	Participants:	Reviewer:

Before completing this checklist, consider:

1. Is the paper a **randomised controlled trial** or a **controlled clinical trial**? If it is a **controlled clinical trial** questions 1.2, 1.3, and 1.4 are not relevant, and the study cannot be rated higher than 1+
2. Is the paper relevant to key question?

Reason for rejection: 1. Paper not relevant to key question ☐ 2. Other reason ☐ (please specify):

SECTION 1: INTERNAL VALIDITY

In a well conducted RCT study…		***Does this study do it?***
1.1	The study addresses an appropriate and clearly focused question.	Yes ☐ No ☐ Can't say ☐
1.2a	The assignment of subjects to treatment groups is randomised.	Yes ☐ No ☐ Can't say ☐
1.2b	Does the above meet the standards for an RCT? (or is employed a "quasi-random" method?)	Yes ☐ No ☐ Can't say ☐
1.3	An adequate concealment method is used.	Yes ☐ No ☐ Can't say ☐
1.4	The design keeps subjects and investigators 'blind' about treatment allocation. **NOT POSSIBLE for studies of this nature**	Yes ☐ No ☐ Can't say ☐
1.5	The treatment and control groups are similar at the start of the trial.	Yes ☐ No ☐ Can't say ☐
1.6	The only difference between groups is the treatment under investigation.	Yes ☐ No ☐ Can't say ☐

1.7 1.7.1	All relevant outcomes are measured in a standard, valid and reliable way. Has the study used measures relevant to Schema Therapy (e.g. YSQ)	Yes ☐ No ☐ Can't say ☐ Yes ☐ Can't say ☐ No ☐
1.8	What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed? Were data for this outcome available for all, or nearly all, participants randomized?	7.9% dropped out No ☐ Does not apply ☐ Yes ☐ Can't say ☐
1.9	All the subjects are analysed in the groups to which they were randomly allocated (often referred to as intention to treat analysis).	Yes ☐ No ☐ Can't say ☐ Does not apply ☐
1.9.1	Were outcome assessors aware of the intervention received by study participants?	Yes ☐ Can't say ☐ No ☐ Does not apply ☐
1.10	Where the study is carried out at more than one site, results are comparable for all sites.	Yes ☐ No ☐ Can't say ☐ Does not apply ☐
ADDITIONAL QUESTIONS		
A	*Treatment Adherence* 1. How are specific psychotherapies categorized? Are these valid and reliable categories? Was the intervention illustrated? 2. Was the treatment clearly linked to ST theory? 3. Was treatment adherence assessed throughout the trial? 4. Was supervision delivered throughout? 5. Was treatment dosage acceptable? (i.e. at least once per week)	Overall Judgement on treatment adherence: Poor/ Acceptable/Good

B	*Therapist Competence* 1. Was the therapist trained in ST? 2. Did the therapist have adequate background training? **3.** Was therapist' competence assessed throughout the treatment?	Overall Judgement on therapist' competence: Poor/ Acceptable/Good
C	Was a waiting list used as control condition? Were there any differences between experimental intervention and control intervention that may have influenced the outcome? e.g. intensity, duration, therapist competence, etc. Is this well described?	Yes □ Can't say □ No □ Does not apply □ Yes □ Can't say □ No □ Does not apply □ Yes □ Can't say □ No □ Does not apply □
D	***Variables that may lead to confounding (quasi-experimental design only)*** Have common confounders been measured and controlled for? (i.e. gender, age, ethnicity, socio-economic background) Co-Interventions balanced? Readiness for treatment Psychopathology at baseline	Notes:
E	***Adverse effects of therapy measured and reported?***	

F	Were relevant statistical analyses used to control for confounding?	Notes:

SECTION 2: OVERALL ASSESSMENT OF THE STUDY		
2.1	How well was the study done to minimise bias? *Code as follows:*	High quality (++)☐ Acceptable (+)☐ Low quality (-)☐ Unacceptable – reject 0 ☐
2.2	Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, are you certain that the overall effect is due to the study intervention?	
2.3	Are the results of this study directly applicable to the patient group targeted by this guideline?	
2.4	**Notes:**	

Appendix M

Ethical Approval Letter

University of Nottingham
UK | CHINA | MALAYSIA

Faculty of Medicine & Health Sciences
Research Ethics Committee
Faculty Hub
Room E41, E Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH
Email: FMHS-ResearchEthics@nottingham.ac.uk

24 April 2019

Ms Carolina E Antonini
Trainee/Doctorate Student in Forensic Psychology
c/o Dr Kathleen Green, Assistant Professor
Division of Psychiatry and Applied Psychology
School of Medicine
YANG Fujia Building
Jubilee Campus, University of Nottingham
Wollaton Road
Nottingham, NG8 1BB

Dear Ms Antonini

Ethics Reference No: 292-1903 – **please always quote**
Study Title: Implementing and Evaluating the Psychologically Informed Environment (PIE) Model within Supported Housing Settings for Adults with Complex Needs at Risk of Reoffending.
Chief Investigator/Supervisor: Dr Katheen Green, Assistant Professor, Dr Nigel Hunt, Associate Professor, Forensic Psychology, Division of Psychiatry and Applied Psychology.
Lead Investigators/student: Carolina Antonini, Trainee Forensic Psychologist/Doctorate.
Other Key Investigators: Monika Spencer, Team Leader, Look Ahead Care & Support and Housing, London.
Proposed Start Date: 01/05/2019 — **Proposed End Date:** 29/02/2020

Thank you for submitting the above application and the following documents were received:

- FMHS REC Application form and supporting documents version 1.0: 27.02.2019

These have been reviewed and are satisfactory and the study has been given a favourable opinion.

A favourable opinion has been given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix N

Incident Log

Instructions

Please write an "X" inside the box corresponding to a specific event each time it happens. For example, if there are 5 incidents of verbal abuse in one day, the box should contain five "Xs". If for some reason the form is not completed, please write "Not completed" in the box.

See example below:

	Verbal Abuse
Monday	X X X X X
Tuesday	X

Glossary

Verbal abuse: Characterized by underlying anger and hostility, it is a destructive form of communication intended to harm the other person and produce negative emotions.

Hate speech: Expressions of hatred toward someone based on the person's ethnicity, disability, nationality (including citizenship), national origin, religion, gender identity, or sexual orientation. This also includes derogatory or misogynistic comments towards women.

Inappropriate sexual or sexist comments: Comments and jokes of a sexual nature. This may include explicit sexual behaviour (propositions), staring in a sexually suggestive or offensive manner, whistling, making sexual comments about appearance, clothing, or body parts.

Incidents involving physical violence: The use of physical force so as to injure, abuse, or intimidate.

Incidents involving Damage to property: Damage of property around the hostel through wilful acts of destruction.

Threats of violence or damage to property: A declaration of the intention to inflict harm, pain, or misery to the person. This also includes the intention to damage property.

Ambulance or Police Call Out: Phone calls made to the ambulance of police service in response to any incident or physical/ mental health emergency.

Incidents involving self-harm or suicide: This relates to acts of deliberate self-harm, and attempted or successful suicide**.** Deliberate self-harm is defined as intentionally damaging or injuring one's body (e.g. cutting or burning skin, punching or hitting oneself). Deliberate self-harm may not necessarily relate to a desire to die but rather to the intent to punish oneself, express distress, or relieve unbearable distress.

Weekly Recording Sheet 1 Date From to

	Verbal abuse	Hate speech	Inappropriate sexual/ sexist comments	Incidents involving Physical violence	Incidents involving Damage to property	Threats of violence or damage to property
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

Weekly Recording Sheet 2

	Ambulance Call Out (Please also record on additional form)	Police Call out (Please also record on additional form)	Incidents involving self-harm or suicide	Any other incident worth recording (Please use an additional sheet if needed)
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

Appendix O

The Secondary Traumatic Stress Scale (STSS)

Questions	Never	Rarely	Occasionally	Often	Very Often
1. I felt emotionally numb					
2. My heart started pounding when I thought about my work with clients					
3. It seemed as if I was reliving the trauma(s) experienced by my client(s)					
4. I had trouble sleeping					
5. I felt discouraged about the future					
6. Reminders of my work with clients upset me					
7. I had little interest in being around others					
8. I felt jumpy					
9. I was less active than usual					

10. I thought about my work with clients when I didn't intend to					
11. I had trouble concentrating					
12. I avoided people, places, or things that reminded me of my work with clients					
13. I had disturbing dreams about my work with clients					
14. I wanted to avoid working with some clients					
15. I was easily annoyed					
16. I expected something bad to happen					
17. I noticed gaps in my memory about client sessions					

Appendix P

Oldenburg Burnout Inventory (OLBI)

		strongly agree	*agree*	*disagree*	*strongly disagree*
1.	I always find new and interest- ing aspects in my work *(D)*	*1*	*2*	*3*	*4*
2.	There are days when I feel tired before I arrive at work (*E.R.)*	*1*	*2*	*3*	*4*
3.	It happens more and more often that I talk about my work in a negative way *(D.R)*	*1*	*2*	*3*	*4*
4.	After work, I tend to need more time than in the past in order to relax and feel better *(E.R)*	*1*	*2*	*3*	*4*
5.	I can tolerate the pressure of my work very well *(E)*	*1*	*2*	*3*	*4*
6.	Lately, I tend to think less at work and do my job almost mechanically *(D.R)*	*1*	*2*	*3*	*4*
7.	I find my work to be a positive challenge *(D)*	*1*	*2*	*3*	*4*
8.	During my work, I often feel emotionally drained *(E.R.)*	*1*	*2*	*3*	*4*
9.	Over time, one can become dis- connected	*1*	*2*	*3*	*4*

	from this type of work *(D.R)*				
10.	After working, I have enough energy for my leisure activities *(E)*	*1*	*2*	*3*	*4*
11.	Sometimes I feel sickened by my work tasks *(D.R)*	*1*	*2*	*3*	*4*
12.	After my work, I usually feel worn out and weary *(E.R)*	*1*	*2*	*3*	*4*
13.	This is the only type of work that I can imagine myself doing *(D)*	*1*	*2*	*3*	*4*
14.	Usually, I can manage the amount of my work well *(E)*	*1*	*2*	*3*	*4*
15.	I feel more and more engaged in my work *(D)*	*1*	*2*	*3*	*4*
16.	When I work, I usually feel energized *(E)*	*1*	*2*	*3*	*4*

Appendix Q

Descriptive Statistics for Learning Outcomes

Questions	Pre Training		Post Training	
	Mean	SD	Mean	SD
General understanding of psychological trauma	3.12	0.35	4.12	0.22
How trauma affects the brain and body	2.37	0.37	4.25	0.25
Understanding of array of difficulties associated to trauma	3.25	0.36	4.37	0.26
Interventions available for traumatised people	2.75	0.31	4.25	0.25
Understanding of TIC	2.37	0.37	4.12	0.29
Perceived confidence of own skills and knowledge	3.25	0.25	4.27	0.18

N=8

Appendix R

Intervention Components

Component	**Contents**
1a) Training on Psychologically Informed Environments and relevant psychological theories. (1 day)	The training package was developed to provide the audience with a background of PIEs and its underlying principles and how these can be translated into practice. In addition, it presented relevant theories (e.g. attachment theory, trauma theories) which formed part of psychological framework driving practices and policies within the service. Trauma theories were only briefly mentioned as covered in day 2. In addition, the intervention covered the importance of self-care in the context of vicarious trauma, burnout, and stress. The latter followed an introduction on vicarious trauma and burnout, including causes, symptoms, and long term consequences.
1b) Training psychological trauma and Trauma Informed Care. (1 day)	The general aim of the training was to increase staff awareness of psychological trauma and associated long term difficulties, and to provide staff with the tools to work in a psychologically minded manner. Specific learning objectives were to increase staff knowledge and awareness of psychological trauma and its prevalence, to introduce the biological bases of trauma, to increase knowledge of the long term social, psychological, mental, and physical health difficulties associated with trauma, and to introduce current interventions including the TIC approach.
2) Workshop: "Translating Theory into Practice"	The workshop summarised previous learning and aimed to define how to effectively embed relevant principles and models within the hostel's practices. A dynamic goal

(half a day)	based plan ("PIE Plan") is developed to direct future practices and policies with direct contribution from staff members.
3) Reflective Practice Sessions (90min every 4 weeks)	Reflective practice (RP) introduced to the service and facilitated by a trainee psychotherapist. Whilst use of the Gibbs Model (1988) of RP was encouraged, discretion was given to the facilitator to employ and/or integrate different psychological models if relevant.

Appendix S

PARTICIPANT INFORMATION SHEET (FOR STAFF MEMBERS)

Research Ethics Reference: 292-1903

Study Title: Implementing and evaluating a brief intervention within supported housing settings for adults with complex needs.

We would like to invite you to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. One of our team will go through the information sheet with you and answer any questions you have. Please take time to read this carefully and discuss it with others if you wish. Ask us anything that is not clear.

What is the purpose of the research?

The research aims to look into the outcomes associated with having psychological input and awareness in the way services for homeless people with complex needs are run. Specifically, we want to observe if staff, service users, and the service as a whole will benefit from following the principles set out as part of the Trauma Informed Care and Psychologically Informed Environments Models.

Why have I been invited to take part?

You have been invited to complete a variety of questionnaires as part of the study. The questionnaires are concerned with staff wellbeing; as such, if you are a permanent staff member working at Cromwell Road (support worker, personal support assistant or part of the management team), you are invited to take part in the study.

Do I have to complete questionnaires of surveys?

No. It is up to you to decide if you want to complete the questionnaires as part of the study. We will describe the contents of the questionnaires and go through this information sheet with you to answer any questions you may have. If you agree to participate, we will ask you to sign a consent form and will give you a copy to keep. However, you would still be free to withdraw without giving a reason and

without any negative consequences, by advising the researchers of this decision. Please note that there would be no disadvantages to you personally or professionally if you decide not to complete the questionnaires or if you decide to withdraw at any point.

1. What will happen to me if I take part?

If you agree to take part, you will be asked to complete 4 different questionnaires. You will be able to ask the researcher to go through a pre – screening with you to check if it is safe for you to complete the questionnaires. You may also ask the researcher to go over this form with you, or to discuss the instructions of the questionnaires.

Each questionnaire, could take up to approx. 10 minutes to complete. It could take up to 50 minutes to complete all questionnaires. If you agree to take part in the study, you will be asked to complete the questionnaires again in 6 months. Questionnaires are completely anonymous. You will not be asked to provide any personal information that could identify you. If you are still happy to take part, then you will then be asked to sign a consent form.

2. What questionnaires will I be completing?

- The Work Burnout Measure: This assesses levels of work burnout. It will ask questions about physical, emotional, and mental exhaustion. It includes 16 questions.
- The Secondary Traumatic Stress Scale: This questionnaire is designed for professionals working with clients who histories of trauma. It includes of 17 questions.

3. Are there any risks in taking part?

The surveys include sensitive personal questions. These may include questions about the psychological, emotional, and physical symptoms of work burn out and secondary trauma. You may therefore become distressed by the questions, especially if previously unaware of such symptoms. Remember, you are under no obligation to complete the surveys if you believe you may become distressed by these questions. Lastly, all your answers will remain completely confidential. The researcher will then give you a debrief form, which will include relevant

information about work related stress, and what steps the organization can take to support you.

4. Are there any benefits in taking part?

The questionnaires focus on staff wellbeing, your contribution may therefore help to understand how to improve your wellbeing and work satisfaction. Ultimately, your contribution may help to support the benefits of having a psychological input in services for homeless people with complex needs.

5. What happens to the data provided?

Data gathered during the study will therefore be shared with the organization. **All questionnaires will be anonymous.** As such, data gathered will not include anything that may lead a participant to be identified. Instead, a number will be allocated to each questionnaire and consent form, thus ensuring complete anonymity and confidentiality. Data acquired from participants will be kept in electronic form in a password protected folder within the organization's secure server and the researcher private IT equipment. Original hard copies of questionnaires will be discarded in confidential bins. Data will also be shared securely with the University of Nottingham.

Remember, we won't know who you are. Your consent form will have a pre-assigned number and your personal data, including formal signature, will not appear. The same number will also appear on each questionnaire. If you decide to participate, please do keep the copy of your consent form in order to match you to the questionnaires that you will complete in 6 months. Once the research project is finished, data will be stored confidentially by both the researcher, the University Of Nottingham and the organization. Data will be kept in secure servers and password protected. The research data will be stored confidentially. All research data and records will be stored for a minimum of 7 years after publication or public release of the work of the research.

We would like your permission to use anonymised data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organisations both inside and outside the European Union. This would be used for research in health and social care. Sharing research data

is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. Data shared does not include personal information that could identify you.

6. What will happen if I don't want to carry on with the study?

Even after you have signed the consent form, you are free to withdraw from the study at any time without giving any reason and without your legal rights being affected. Any personal data will be destroyed. If you wish to withdraw consent, you can do so by emailing or calling the researcher (details below) and give the number allocated to your consent form. Please be aware that should you misplace the number or cannot recall it, we won't be able to find your questionnaires as they do not include any personal information about you. Please be aware that you have 4 weeks from today to withdraw from the study, if you wish to. After this deadline, data collected will be merged and the researcher will be unable to locate your questionnaires.

Who will know that I am taking part in this research?

All information collected about you during this research would be kept strictly confidential. All such data are kept on password-protected databases sitting on a restricted access computer system and any paper information (such as your consent form, or questionnaires) would be stored safely in lockable cabinets in a secured building and would only be accessed by the research team.

Under UK Data Protection laws the University of Nottingham, is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (Carolina Antonini) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

You can find out more about how we use your information and to read our privacy notice at:
https://www.nottingham.ac.uk/utilities/privacy.aspx/

Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines.

7. What will happen to the results of the research?

The research will be written up as a thesis. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. The thesis will be published open access. The research may be published. Data collected may be used by the organization to write up their own article/ study. This may be published online, or elsewhere.

8. Who has reviewed this study?

All research involving people is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine and Health Sciences Research Ethics Committee (Reference number: FMHS 292-1903)

9. What if something goes wrong?

If you have a concern about any aspect of this project, please speak to the researcher Carolina Antonini, who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how he/she intends to deal with it.

If you remain unhappy and wish to complain formally, you should then contact the FMHS Research Ethics Committee Administrator, Faculty Hub, Medicine and Health Sciences, E41, E Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH or via E-mail: FMHS-ResearchEthics@nottingham.ac.uk

10. Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

Carolina Antonini
Centre for Forensic and Family Psychology
Faculty of Medicine & Health Sciences
The University of Nottingham, YANG Fujia Building,
Jubilee Campus, Wollaton Road
Nottingham, NG8 1BB
Email: Carolina.antonini@nottingham.ac.uk

Appendix T

Participants Consent Form

Title of Study: Implementing and evaluating a brief intervention within supported housing settings for adults with complex needs.

REC ref: 292-1903

Name of Researcher: Carolina Antonini, Trainee Forensic Psychologist, University of Nottingham

Research Supervisors: Dr Kathleen Green, Assistant Professor, University of Nottingham; Dr Nigel Hunt, Associate Professor, University of Nottingham.

Please read carefully and tick each box if you understand and agree with the below statements.

☐ I confirm that I have read and understand the information sheet for the above study which is attached and have had the opportunity to ask questions.

☐ I understand that my participation is voluntary and that I am free to withdraw without giving any reason at any time.

☐ I understand that I will not be asked to provide any personal information that can identify me personally. As such, if I wish to withdraw after handing the questionnaires to the researcher, I will need the number allocated to this form. Should I misplace the card or are unable to recall the number, the researcher won't be able to identify your questionnaires. - Please make sure you store this consent form in a safe place.

☐ I understand that the scores of my questionnaires (data) will be looked at by the research team, including the lead researcher, and the academic staff at the University Of Nottingham. I also understand that the scores may be looked at by the organization Look Ahead Care, Support and Housing, should they decide to conduct further research.

☐ I understand that data will be uploaded into a secure database on a computer kept in a secure place. Data will be kept by the lead researcher, the University of Nottingham, and the organization Look Ahead Care, Support, and Housing. I agree that my research data may be stored and used in possible future research during and after 7 years, and shared with other researchers including those working outside the University.

☐ I give permission to the lead researcher, the University of Nottingham, and the organization to store, analyse and publish information obtained from my participation in this study.

☐ I agree to take part in the above study by completing the questionnaires provided.

Date:

Participant's Signature:

Name of Person taking consent:

Signature:

Appendix U

Covid-19 related changes

This questionnaire was completed by the Operations Manager of the service.

Questions	**Yes**	**No**
Were the restrictions discussed implemented on the 26th of March 2020?	x	
Were staff required to observe social distance with both each other and residents?	x	
Were staff required to wear a mask at ALL times in the hostel?		x
Were staff required to wear a mask when interacting with service users?		x
Were interactions (i.e. informal conversations, key work sessions) with residents minimised?	x	
Were staff required to wear PPE? If yes, please provide details.		X (see below)
Were residents restricted from using communal areas (e.g. kitchen, activities areas, reception)?	Yes Communal activities ceased. Areas that could be locked (laundry rooms) were locked.	

If yes, please provide details.	Those services that provided food started delivering food to each individual resident.	
Were residents allowed to go into each other's rooms?		x
Were residents allowed to have visitors?		x
Were external professionals allowed to attend the hostel to meet with residents?		x
Were residents provided with extra support or guidance/education about Covid? If so, please provide details.	Yes Daily discussions took place within the service. The organisation wrote to every resident about what the changes and restrictions meant. There was a lot of confusion, especially at the beginning of the pandemic.	
Were residents who fell under the category of "at high risk" required to shield within the hostel? If so, were they provided additional support?		No Local Authority moved those residents deemed as high risk out of the service and into separate council accommodation. This was done following a

		consultation with the provider strongly arguing that our client group was not adhering to government restrictions.
Were any residents moved elsewhere as a result of covid as the environment was deemed unsafe?	X See previous question	
Was there a change in shift patterns as a result of covid? (see below)		x
If so, were staff required to work for longer hours or extra shifts?		No The organisation experienced a considerable amount of staff absences across all of its specialisms. This was due to many staff having to shield and many becoming unwell/or having to self-isolate. This put a huge strain on those staff who continued coming to work.
Did staff receive any additional support or guidance from the organization and/ or	Yes Online training (infection control/PPE) was	

management? (e.g. H&S training, emotional/practical support, Q&A sessions with senior management) If so, please provide details.	provided. Everyone based in our Head Office began working remotely. However, Heads of Operations (HoPs) continued to work out in services and provide support to their teams. HoPs attended twice weekly briefings with Directors and Head of H&S and were then tasked at cascading this information back down into their services.	
Did staff who fell under the category of " at high risk" work from home?	x	
Additional Questions		
Were service users at high risk moved out straight away (26/03) or did this take a few weeks? How many service users were moved?	No, it took quite a bit of time. It took a few weeks to identify who was considered high risk and then it took a while and a phone call from me to emphasise that residents were not adhering to the restrictions and why. The decision to move them was then agreed. A total of 7 residents were moved into separate accommodation in early May.	
What consequences residents may have faced if decided to break covid related rules within the hostel? (e.g. visited another resident, did not follow lockdown rules,	The reality in a homelessness service was that the vast majority of residents did not adhere to the COVID related restrictions. No punitive consequences were enforced, instead staff and managers continuously discussed the risks and tried to encourage residents to show respect both to their own health as well as the health of others.	

did not respect social distancing)	The risk of not following these restrictions was consistently deemed less than the risk of not acting upon addictive urges/engaging in sex work. This proved to be immensely challenging.
In relation to social isolation - Were any specific actions taken to minimise the impact of lockdown on residents?	Not during the first few months of the pandemic.
Who enforced such consequences?	N/A
Were there any other changes implemented as a result of covid that have not been addressed by the questions above?	No
Is there anything that may be relevant that I have not asked?	There was a huge drive to get all rough sleepers off the street during the first few months of the pandemic. Look Ahead set up and ran one of London's first COVID hotels. This made going down a potentially punitive route for those not adhering to restrictions even more difficult than it would have been pre-pandemic. Also, there were real issues with obtaining PPE during the first few months with significant variation across the different boroughs. Local Authority really struggled to obtain and provide the service with any PPE.

Appendix V

Impact of Covid-19 on Study Implementation

Study duration	The duration of the study was shortened due to additional demands associated with Covid-19 and the impact this had on staff. For example, some staff members were to be redeployed. In addition, it was communicated that activities such as regular discussions with team members about how the service was fulfilling TIC/PIE principles and areas of improvements were difficult to implement. It was also communicated that some staff members became ill with the virus and were absent for some weeks. It was therefore decided to end the study earlier to minimise the impact of covid on findings, as well as to avoid placing additional pressure on staff.
Reflective Practice	Not facilitated as often as planned to minimise infections.
Service Users Survey	Originally requested from the organization although the survey was not completed due to Covid-19 and therefore not provided to the researcher.
Qualitative information	It was initially planned to administer a questionnaire to gather qualitative

	information about the experience of the study and perceived changes following the intervention. However, this was not done to minimise the amount of questionnaires staff had to complete as part of the study. I was thought that the latter would create more work for staff, who were already under increased working pressure.

Appendix W

Research Poster for conference

Childhood Trauma and Violent Convictions amongst People with Histories of Contact with the Criminal Justice System: An Exploration of the Role of Early Maladaptive Schemas

Carolina Antonini, Dr Kathleen Green, Dr Kevin Browne

Background

The concept of Early Maladaptive Schemas (EMSs) has a attracted some attention within forensic research.
EMSs domains have been linked to various types of harmful behaviours, including aggression and intimate partner violence (e.g. Shorey et al., 2017; Sigre- Leiros et al., 2013). In addition, studies have also explored EMS as a potential mediator for the relationship between childhood trauma and intimate partner violence. The Disconnection/ Rejection schema domain was found to be the only domain that mediated this relationship (e.g. Gay et al., 2013; La Motte et al., 2016).
However, research in this area has mostly focused on violence perpetrated within romantic relationships amongst non - forensic samples. Thus far, no studies have focused on general violence .

Objective: To explore the role of EMS in mediating the relationship between childhood trauma and violent convictions amongst individuals with present or past links to the Criminal Justice System.

Hypotheses:
1) EMS endorsement will be positively correlated with both childhood trauma and violent behaviour.
2) Elevated EMS endorsement will mediate the relationship between childhood trauma and violent behaviour.
3) The disconnection/rejection domain is likely to be the most predictive mediator for this relationship.

Methodology

Design: The present study employed a non -experimental, correlational design.

Participants : 32 participants (13 females and 19 males) aged between 18 and X with present or previous contact with the CJS were recruited within probation and supported housing.

Measures: The Adverse Childhood Experiences Questionnaire and the Young's Early Maladaptive Schemas Questionnaire – Short Version (YSQ -S3) were used. Offending histories were retrieved from the organizations' internal systems.

Data Analyses **:** Spearman's non -parametric correlation analyses were used to explore associations. Hayes and Preacher's (2005) multiple mediation analysis with bootstrapping was conducted to the test the models.

Results

Correlation analyses showed positive associations between ACEs and frequencies of overall convictions (rs =.518, p = .002) and total EMS scores (rs =.552, p = .002). In addition, ACEs were strongly correlated with violent convictions (rs =.735, p < .001). Moreover, frequencies of violent convictions were associated with all schema domains as well as total EMS scores.

Mediation analyses showed that overall EMS scores fully mediated the relationship between childhood trauma and violent behaviour. The second model found that Disconnection/Rejection was the only domain that fully mediated this relationship (see models below)

Model 1 **Model 2**

Conclusion

- This study adds value to the existing literature, which has predominantly focused on non -forensic populations and intimate partner violence.
- The study provides preliminary evidence supporting the notion that the relationship between childhood trauma and violent behaviour may be partially accounted for by the presence of elevated EMS endorsement as well as schemas relating to emotional deprivation, abandonment/instability, mistrust/ abuse, defectiveness/shame, and social isolation.
- Findings highlights the potential benefits of Schema Therapy with forensic populations who experienced early trauma.
- However, the small sample size means it is difficult to draw definitive conclusions and more research is needed .

References:

Gay, L. E., Harding, H. G., Jackson, J. L., Burns, E. E., & Backer, D. B. (2013). Attachment style and early maladaptive schemas as mediators of the relationship between childhood emotional abuse and intimate partner violence. *Journal of Aggression, Maltreatment & Trauma*, 22(4), 408 -424.
Shorey, R. C., Strauss, C., Zapor, H., & Stuart, G. L. (2017). Dating violence perpetration: associations with early maladaptive schemas. *Violence and Victims*, 32(4), 714 -727.
Sigre-Leirós, V. L., Carvalho, J., & Nobre, P. (2013). Early maladaptive schemas and aggressive sexual behavior: a preliminary study with male college students. *The Journal of Sexual Medicine*, 10(7), 1764 – 1772.