

THE RELATIONSHIP BETWEEN MULTIPLE
TRAUMATISATION, EMOTION REGULATION AND VIOLENT
BEHAVIOUR

By

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ABSTRACT

To date, a significant proportion of research has predominantly focused upon childhood abuse and neglect (CAN) without considering the impact of exposure to wider forms of trauma. Importantly, recent research has highlighted that children exposed to one form of victimisation are often exposed to multiple types of trauma. This emphasises the importance of considering a broad range of victimisations above and beyond CAN.

This thesis therefore examines the impact of exposure to recurrent CAN and multiple traumatisation (i.e., exposure to recurrent CAN and at least one wider form of trauma) upon emotion regulation (ER) and the perpetration of violence. Chapter Two presents a systematic review that explores the literature on factors associated with the impact of recurrent CAN in comparison to multiple forms of victimisation (i.e., bullying, dating violence) among an adolescent and young adult population (aged 12-25 years). Although the conceptualisation of multiple traumatisation varied between studies, findings from all of the included studies indicated that individuals exposed to multiple traumatisation are at increased risk of greater deleterious outcomes across a number of domains of functioning, in comparison to recurrent CAN alone. Given that coping has been proposed as an important determinant in understanding the long-term functioning of individuals with a history of CAN, Chapter Three explores the construct of coping and critiques the Brief Coping Orientation to Problem Experience (Brief COPE; Carver, 1997) assessment.

Until recently, many researchers had focused only upon the problematic control of anger in relation to aggression, without considering the impact of broader difficulties in ER upon aggression. Therefore, Chapter Four presents an empirical paper exploring the impact of recurrent CAN and multiple traumatisation on ER and coping, in addition to the role of ER in relation to aggressive behaviour among university students (n=237) and the general population (n=95). Statistically significant findings demonstrated that both recurrent CAN and multiple traumatisation were predictive of difficulties both in ER and violent behaviour. Differences in coping were also found in relation to recurrent CAN and multiple traumatisation. Furthermore, a number of further variables including optimism, violent attitudes and level of education were found to contribute to difficulties in ER and violent behaviour. These findings are discussed in light of the wider empirical literature in Chapter Five.

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CHAPTER ONE: INTRODUCTION

At present, approximately 50,500 children in the United Kingdom are known to be at risk of abuse and neglect. However, for every child subject to a child protection plan in the UK, it is estimated that a further eight children will have endured abuse or neglect (Harker, Jutte, Murphy, Bentley, Miller, & Fitch, 2013). Recent research has indicated that one in four young adults (25.3%) in the UK have been severely maltreated during childhood (Radford et al., 2011). Notably, child maltreatment is a complex phenomenon that has a devastating impact on individuals, families and wider society (Cicchetti & Lynch, 1993). It occurs at every socioeconomic level, all levels of education, across all cultures and ethnicities, and within all religions. As such, child maltreatment continues to pose a significant worldwide public health concern that requires a multifaceted approach to prevention and intervention. Research in this area has evolved through various stages over time; from focusing upon single forms of child maltreatment through to exploring the co-occurrence of multiple types of abuse. However, to date, few research studies have examined the impact of individuals' exposure to wider forms of trauma in addition to child abuse and neglect (CAN).

1.1 Definition of Child Maltreatment

Child maltreatment is defined as “...all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power” (World Health Organisation, WHO, 1999, p.15). Within the overall definition of child maltreatment, four categories of abuse are traditionally recognised; physical abuse, sexual abuse, emotional or psychological abuse and neglect (Department of

Health, 2006; WHO, 1999, 2002, 2006; see Table 1). In addition, exposure to domestic violence is also recognised as causing significant harm to children and thus represents a form of maltreatment. Notably, the Adoption and Children Act 2002 amended the previous definition of ‘harm’ from the Children’s Act 1989 to include the “...impairment suffered from seeing or hearing the ill-treatment of another” (S. 31(9)).

Table 1: Definitions of Child Maltreatment (Butchart et al., 2006 and Hester et al., 2007)

Type of Maltreatment	Definition
Physical abuse	The intentional use of physical force against a child that results in – or has a high likelihood of resulting in – harm for the child’s health, survival, development or dignity. This includes hitting, beating, kicking, shaking, biting, strangling, scalding, burning, poisoning and suffocating. Much physical violence against children in the home is inflicted with the object of punishing.
Sexual abuse	The involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violates the laws or social taboos of society. Children can be sexually abused by both adults and other children who are – by virtue of their age or stage of development – in a position of responsibility, trust or power over the victim.
Emotional and Psychological abuse	Emotional and psychological abuse involves both isolated incidents, as well as a pattern of failure over time on the part of a parent or caregiver to provide a developmentally appropriate and supportive environment. Acts in this category may have a high probability of damaging the child’s physical or mental health, or its physical, mental, spiritual, moral or social development. Abuse of this type includes: the restriction of movement; patterns of belittling, blaming, threatening, frightening, discriminating against or ridiculing; and other non-physical forms of rejection or hostile treatment.
Neglect	Neglect includes both isolated incidents, as well as a pattern of failure over time on the part of a parent or other family member to provide for the development and well-being of the child – where the parent is in a position to do so – in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions. The parents of neglected children are not necessarily poor.
Exposure to Domestic Violence	Any violent or abusive behaviour (whether physical, sexual, psychological, emotional, verbal, financial) that is used by one person to control and dominate another with whom they have or have had a relationship.

1.2 Prevalence of Child Maltreatment

Rates of child maltreatment vary significantly across countries and cultures, largely due to the way in which maltreatment is defined and investigated. Methodological

factors such as the definition of abuse used, the type of sample assessed and the method of data collection are likely to explain some of the variation among prevalence rates (Andrews, Corry, Slade, Issakidis, & Swanston, 2004; Fallon, Trocmé, Fluke, MacLaurin, Tonmyr, & Yuan, 2010). A review of studies conducted in the UK, Australia and the USA indicate that annual rates of neglect range from 1 to 15%, with similar rates of 4-16% for physical abuse, 10-20% for witnessing domestic violence and approximately 10% for emotional abuse (Gilbert et al., 2009a; Gilbert, Spatz-Widom, Browne, Fergusson, Webb, & Janson, 2009b). Data collected on lifetime rates of sexual abuse among high-income countries indicate that approximately 10% of girls and 5% of boys experience some form of sexual abuse prior to the age of 18 (Gilbert et al., 2009b). Worldwide, the self-reported prevalence rate of child sexual abuse is estimated to be 12.7% (Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011). Overall, in March 2012, 42,850 of UK children were known to be at risk of some form of maltreatment, which represents a 67% increase in the number of child protection plans since 2002 (Department for Education, 2012).

Crucially, these figures are likely to represent only the ‘tip of the iceberg’ as child maltreatment is significantly under-reported and undetected (Gilbert et al., 2009a; Theodore, Chang, Runyan, Hunter, Bangdiwala, & Agans, 2005). It should be noted that cases of maltreatment are more likely to be reported by family members or other officials than the victims themselves (Finkelhor, Cross, & Cantor, 2005). What is more, research suggests that professionals are reluctant to report suspected cases of abuse due to lack of confidence that a child’s circumstances will improve following the report (Gilbert et al., 2009b). Furthermore, not all countries have a legal definition

of child maltreatment or possess mandatory reporting laws for suspected cases of maltreatment (Liao, Lee, Roberts-Lewis, Hong, & Jiao, 2011). As such, it is difficult to capture the true extent to which children are subject to maltreatment. Notwithstanding this, it is clear that child maltreatment represents a significant public health issue and is associated with an array of adverse outcomes. Aside from any physical injuries caused to the child, or in some cases even death, maltreatment has devastating long-term implications for a child's neurological, physical, psychological and emotional wellbeing (Hillberg, Hamilton-Giachritsis, & Dixon, 2011; Mills, Scott, Alati, O'Callaghan, Najman, & Strathearn, 2013; Norman, Byambaa, Butchart, Scott, & Vos, 2012; Strathearn, 2011; Widom, Czaja, Bentley, & Johnson, 2013; Wilson, Hansen, & Li, 2011).

1.3 Long-Term Outcomes

The empirical literature has long documented the association between exposure to child maltreatment and an array of difficulties manifesting in childhood, adolescence and adulthood, including poor academic achievement, mental health problems, physical health problems, criminal offending, substance misuse, parenting difficulties and becoming a perpetrator of maltreatment (Bailey, DeOliveira, Wolfe, Evans & Hartwick, 2012; Hillberg et al., 2011; Gilbert et al., 2009b; Mersky & Topitzes, 2010; Norman et al., 2012). Specifically, considerable research indicates that physical abuse, sexual abuse, psychological or emotional abuse and neglect all represent significant etiologic factors in the development of a number of externalising problems (i.e., conduct problems, aggression and risky sexual behaviours) and internalising problems (i.e., depression, self-harming behaviour and suicidality; Mills et al., 2013).

1.4 Theories explaining Child Maltreatment

Within the literature, a number of theoretical models have been proposed to explain the occurrence of child maltreatment, drawing influence from social learning theory (Bandura, 1977, 1989), attachment theory (Bowlby, 1980), victim-to-offender (Widom, 1991) and ecological theories (Bronfenbrenner, 1974, 1979). The value of each in understanding the occurrence of child abuse and neglect is outlined below.

The Ecological Model

Within the empirical literature, a multitude of risk factors have been proposed to explain child maltreatment. Importantly, however, no isolated factor has been causally linked to maltreatment on its own; child maltreatment is a phenomena best understood by examining the complex interactions between multiple factors (Garbarino, 1975; Newberger, 1977; Starr, 1978). The ecological model, arguably the most frequently utilised model, provides a framework in which to understand how a combination of individual, parental, familial, community and wider societal factors increase a child's vulnerability to experiencing child maltreatment (Belsky, 1980, 1993; Bronfenbrenner, 1974, 1979; Cicchetti & Lynch, 1993). The ecological model posits four contextual levels that interact with one another in order to increase the likelihood that child maltreatment will take place:

- i. the ontogenic system (i.e., the child's individual characteristics and developmental stage);
- ii. the microsystem (i.e., the family environment);
- iii. the exosystem (i.e., peer groups, neighbourhood and community characteristics);
- iv. the macrosystem (i.e., cultural beliefs and values)

From the ecological perspective, factors at each level of the child's ecology interact reciprocally to increase or decrease the risk that a child will endure maltreatment. A summary of the individual, familial, community and societal factors that have been proposed to increase the risk of child maltreatment can be found in Table 2. Crucially, though, while research has demonstrated associations between a broad array of risk factors and child maltreatment, the nature of these relationships is complicated by evidence indicating that not all children in high-risk environments will subsequently experience maltreatment. In recent years, the literature has evolved to include the role of protective influences in relation to child maltreatment. Specifically, the presence of protective factors can have a buffering effect and “...*modify the effects of risk in a positive direction*” (Luthar & Cicchetti, 2000, p.3). Like risk factors, protective factors are observed at each level of the child's ecology. Therefore, Table 2 also includes a summary of protective factors in relation to child maltreatment.

Table 2: Summary of Risk and Protective Factors for Child Maltreatment (Child Welfare Information Gateway, 2004)

Risk Factors	Protective Factors
Individual Factors	
<ul style="list-style-type: none"> • Premature birth / low birth weight • Disability • Serious illness • Under 12-months of age • Aggressive behaviour • Attention deficits • Difficult temperament 	<ul style="list-style-type: none"> • Good health and development • Social competence • High self-esteem • Above average intelligence • Adaptive functioning skills • Hobbies and interests • Easy temperament • Active coping style
Relationship / Familial Factors	
<ul style="list-style-type: none"> • Parental substance misuse • Parental psychopathology • High level of parental stress • Young parental age • Low parental education • Low socioeconomic status • Family conflict and domestic violence • Social isolation / lack of support network • Parental antisocial behaviour • Antisocial peer group • Poor parenting (negative attributions, unrealistic expectations of the child, high levels of physical discipline) • Large family size; high number of children 	<ul style="list-style-type: none"> • Positive peer relationships • Positive relationships with teachers • Secure attachment with caregiver • Supportive family environment • Good parental coping skills • Household rules and boundaries • Parental monitoring • Warm parent-child relationship • Consistent parental employment • Family expectations of pro-social behaviour
Community Factors	
<ul style="list-style-type: none"> • Community violence and crime • High rates of unemployment • High population density • Lack of access to support services • Exposure to discrimination or racism • Poor schools • Poor housing • Poverty 	<ul style="list-style-type: none"> • Community networking • Mid to high socio-economic status • Good schools • Access to health care and social care services
Societal Factors	
<ul style="list-style-type: none"> • Societal norms that accept child maltreatment • Narrow legal definitions of child maltreatment • Approval of physical punishment • Media acceptance of violence • Attitudes supportive of violence • Political views • Religious views 	<ul style="list-style-type: none"> • Social policies that support parents • Provision of health care and social care services • Economic forces

Attachment Theory

Attachment theory (Bowlby, 1969, 1973) emphasises the importance of a warm, affectional bond between child and caregiver for the development of healthy working models of the self and of others. Bowlby defined attachment as a "*lasting psychological connectedness between human beings*" (Bowlby, 1969, p.194). While children exposed to sensitive and responsive caregiving go on to develop secure models, children exposed to abusive or neglectful parenting are likely to develop insecure and negative models of their attachment figures and of themselves (Bartholomew, 1990; Toth, Maughan, Manly, Spagnola, & Cicchetti, 2002). The quality of previous relationships is expected to influence the nature of later relationships (Ainsworth, Blehar, Waters, & Wall, 1978). From this perspective, it is proposed that disruptions in attachment experiences can lead to a number of subsequent emotional and behavioural difficulties, including aggression (Briere, 1992; Farrington, 1997).

Victim-to-Offender

Another view within the empirical literature indicates that there is a significant link between experiencing maltreatment in childhood and going on to experience interpersonal violence in later life, either as a victim and/or as a perpetrator of such violence.

Among the negative sequelae of child maltreatment is the increased risk for the *intergenerational transmission of violence* (Curtis, 1963; Spinetta & Rigler, 1972). This idea is closely linked to *Social Learning Theory* (Bandura, 1977, 1989) which postulates that children directly exposed to the acceptance and practice of aggression within the family environment, will then imitate such aggressive behaviour in their

subsequent interactions with others, including their own children. According to this view, “...each generation learns to be violent by being a participant in a violent family” (Straus, Gelles, & Steinmetz, 1980, p.121). Once these patterns of aggressive behaviour have been learned (i.e., the individual believes that aggression is an effective means of realising goals and resolving interpersonal conflict), they are likely to remain stable and persist into adulthood (Ireland, Rivera, & Hoffmann, 2009; Olweus, 1979, 1984; Smith, Ireland, Park, Elwyn, & Thornberry, 2011).

Whilst reported rates of intergenerational transmission of maltreatment vary within the literature, research studies conducted to date indicate that despite elevated risk for maltreatment among children of parents with a history of abuse, the majority of parents with such histories do not go on to perpetrate abuse into the next generation (Browne, 1995; Browne & Herbert, 1997; Dixon, Hamilton-Giachritsis, & Browne, 2005; Pears & Capaldi, 2001; Widom, 1989). Even among ‘high risk’ populations (i.e., adults with a history of child abuse and/or neglect), it is estimated that only approximately 30% of parents with such histories will go on to maltreat their own children (Kaufman & Zigler, 1987). Crucially, whilst a history of maltreatment may increase one’s propensity for becoming a perpetrator of abuse, the pathway linking such events is “...far from direct or inevitable” (Kaufman & Zigler, 1987, p.190) and is likely to involve a number of intervening factors (Egeland, 1988; Dixon, Browne, & Hamilton-Giachritsis, 2009).

In addition to the intergenerational transmission of maltreatment, the *victim-to-offender cycle* also encompasses the link between child maltreatment and more general antisocial, delinquent and violent behaviour (Duke, Pettingell, McMorris, &

Borowsky, 2010; Elklit, Karstoft, Armour, Feddern, & Christoffersen, 2013; Lee et al., 2012; Mersky & Reynolds, 2007). Longitudinal studies have highlighted that exposure to child maltreatment is a significant risk factor for externalising problems among children and adolescents, particularly delinquency and violence (Evans, Davies, & DiLillo, 2008; Fagan, 2001; Smith, Ireland, & Thornberry, 2005). Moreover, research has identified that young adults with a history of maltreatment are more likely to become both victims and perpetrators of violence. In particular, research studies have demonstrated that young men and women with such histories are more likely to report IPV perpetration and victimisation in their adult sexual and romantic relationships (Gómez, 2011; Smith et al., 2011). Importantly, the various contexts in which interpersonal violence is perpetrated towards others (i.e., towards family members, intimate partners or individuals in the community) are not mutually exclusive. For example, approximately 50% of adult males who are violent in the home are also violent in the community (Dixon & Browne, 2003).

1.5 The Nature and Severity of Child Maltreatment and the Link with Offending

Further research that has examined the impact of recurrent CAN (i.e., repeated abuse by the same and/or different perpetrators) upon offending behaviour highlighted that young people most likely to have committed a violent and/or sexual crime were those that had been the victims of recurrent extrafamilial maltreatment (Hamilton, Falshaw, & Browne, 2002). In addition, recurrent CAN has been found to be a significant predictor of the initiation, continuation, and severity of delinquency (Lemmon, 2006). Importantly, whilst there is a lack of empirical research examining the impact of recurrent CAN upon offending behaviour, the research conducted in this area to date suggests that children exposed to repeat incidents of maltreatment may be at increased

risk of offending behaviour compared to those exposed to single incidents of abuse. Further research in this area may therefore aid understanding of offending outcomes following exposure to child maltreatment.

A number of researchers have suggested that individual forms of maltreatment are related to the development of subsequent antisocial conduct. In particular, exposure to physical abuse has been found to be independently predictive of subsequent violent behaviour (Grogan-Kaylor, Ruffolo, Ortega, & Clarke, 2008; Herrenkohl, Huang, Tajima, & Whitney, 2003; Klika, Herrenkohl, & Lee, 2012; Maas, Herrenkohl, & Sousa, 2008; Thornberry, Henry, Ireland, & Smith, 2010; Widom, 1989). Notwithstanding this, there is research to indicate that concurrent exposure to both physical abuse and witnessing domestic violence is associated with exacerbated harm in terms of antisocial and aggressive outcomes (Bourassa, 2007). However it should be noted that not all studies in this area have found evidence to suggest that concurrent exposure is associated with poorer outcomes (Moylan, Herrenkohl, Sousa, Tajima, Herrenkohl, & Russo, 2010; Sousa et al., 2011). A review of the literature suggested that while concurrent exposure appears to be associated with poorer outcomes, both forms of maltreatment tend to occur in the context of many other risk factors whose impact is difficult to disentangle (Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Furthermore, researchers have highlighted the importance of the timing of maltreatment in predicting subsequent antisocial outcomes. Specifically, Ireland, Smith and Thornberry (2002) found that maltreatment occurring in childhood alone was not predictive of antisocial behaviour during adolescence, whereas exposure to maltreatment during adolescence alone or in

both childhood and adolescence was significantly predictive of antisocial behaviour in adolescence.

1.6 Exposure to Multiple Forms of Victimization

As highlighted above, whilst considerable previous research has explored the impact of CAN upon subsequent functioning (e.g., Crittenden, 1998; Kendall-Tackett, 2001, 2003), in recent years increased attention has been focused upon the impact of cumulative exposure to adversity in childhood. Importantly, such research has highlighted that cumulative exposure to adversity is associated with more negative and enduring outcomes across psychological, behavioural and social domains of functioning (Briere, Kaltman, & Green, 2008; Dong et al., 2004; Edwards, Holden, Felitti, & Anda, 2003; Margolin, Vickerman, Oliver, & Gordis, 2010; Rutter, 1983). For example, a study by Appleyard, Egeland, van Dulmen and Sroufe (2005) found a significant association between cumulative exposure to child maltreatment, intimate partner violence, family dysfunction, high levels of parental stress, low socio-economic status and poorer behavioural outcomes among adolescents. Models of cumulative risk are also pertinent in understanding long-term outcomes for adults exposed to maltreatment and adversity. In particular, Anda et al. (2006) reported a graded relationship between the number of adverse childhood experiences and the level of subsequent psychological distress in adulthood.

Subsequently, increased recognition that most forms of child maltreatment occur in the presence of other types of abuse and adversity led to a marked increase in research studies exploring the impact of concurrent forms of maltreatment (e.g., Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Clemmons, DiLillo, Martinez,

DeGue, & Jeffcott, 2003; Hahm, Lee, Ozonoff, & Van Wert, 2010; Moylan et al., 2010; Trickett, Kim, & Prindle, 2011). For example, Edwards et al. (2003) found that approximately one third of adults reported exposure to two or more separate forms of child maltreatment before the age of 18. Similarly, a review by Herrenkohl et al. (2008) highlighted that a high proportion of children exposed to one form of child maltreatment are also simultaneously exposed to domestic violence. Dong et al. (2004) found that the likelihood of an individual's exposure to a direct form of child maltreatment significantly increased when there was domestic violence in the home. Specifically, the prevalence of physical abuse was 57.5% for adults who also reported earlier exposure to domestic violence and 21.7% for those who reported no prior exposure.

Research has highlighted that a significant proportion of child maltreatment is perpetrated by victims' parents or guardians (Gilbert et al., 2009a). However it should also be noted that victims of maltreatment are at increased risk of experiencing further victimisation in a variety of other contexts and by a number of different perpetrators (Finkelhor, Ormrod, & Turner, 2009; Gilbert et al., 2009a). Children and youth exposed to multiple types of abuse at home, at school and in the community have been referred to as *polyvictims* in recent literature (Finkelhor et al., 2009). In particular, the work of Finkelhor and colleagues has highlighted the importance of considering youth exposure to a broad range of victimisations in addition to child maltreatment, for example, exposure to conventional crime and peer violence (Finkelhor, Ormrod & Turner, 2007a, 2007b, 2007c). In one research study, Finkelhor et al. (2007b) found that it was common for children and youth to have experienced multiple types of victimisation in the same year. Specifically, 69% of children who

had experienced one type of victimisation (from child maltreatment, sexual victimisation, peer/sibling victimisation, physical assault, property victimisation, or witnessed victimisation) had also endured another type of victimisation in that same year.

Crucially, exposure to multiple forms of victimisation is associated with increased levels of psychological distress in comparison to exposure to a single incident of victimisation or repeated exposure to victimisation of the same type (Stevens, Ruggiero, Kilpatrick, Resnick, & Saunders, 2005; Finkelhor, Ormrod, Turner, & Hamby, 2005). For example, Finkelhor et al. (2007b) found that poly-victims were 20.2 times more likely than other children to be depressed, 10.3 times more likely to be anxious and 5.8 times more likely to be angry. As such, children who experience multiple kinds of victimisation from multiple sources appear to be more at risk of enduring severe psychological distress.

Together, such research emphasises the importance of examining multiple forms of victimisation in childhood. To date, a significant proportion of research has predominantly focused upon CAN without considering exposure to wider forms of trauma. Prior research that has adopted this narrow focus may overestimate the impact of CAN alone upon a range of adverse outcomes. Critically, with the co-occurrence of various types of CAN well documented within the literature, it is clear that individual types of maltreatment are not distinct phenomena that can easily be examined in isolation. Consequently, there is a need for further research in this area to encompass a much broader range of childhood victimisations and trauma. The adoption of a more comprehensive approach to assessment, one that considers a broader range of

victimisations, will permit enhanced exploration of the impact of child abuse and neglect in addition to further types of victimisation. Importantly, research indicates that victimisations are not randomly distributed, but tend to cumulate for specific individuals in specific environments. It is proposed that prior victimisation creates vulnerability for further victimisation through factors such as low self-esteem, distorted cognitions and learned helplessness; these have been termed as “flags” (which reflect enduring risk) and “boosts” (elevated vulnerability following victimisation) (Outlaw, Ruback, & Britt, 2002; Saunders, 2003; Tseloni & Pease, 2003). A more holistic approach to assessment may therefore also facilitate better understanding of the pathways that lead to victimisation vulnerability.

1.7 Positive Adaption Following Adversity

It should be noted that there is much variation among individuals exposed to CAN in relation to the type and extent of their subsequent difficulties in functioning. Crucially, while some individuals experience a number of social, behavioural and psychological difficulties following their exposure to CAN, others appear to function comparatively well without seeking professional help or ever coming to the attention of victim services (Gannon & Mihorean, 2005; McGloin & Widom, 2001). For example, the findings from one longitudinal study indicated that while 55% of adults with a childhood history of recurrent sexual or physical maltreatment were diagnosed with at least one psychiatric disorder in adulthood, 45% were not (Collishaw, Pickles, Messer, Rutter, Shearer, & Maughan, 2007). Furthermore, the abused resilient subgroup in this study also demonstrated lower rates of criminality in comparison to the non-abused population (6.1% vs. 19.3%). As such, individuals exposed to CAN are likely to demonstrate varying degrees of resilience, an array of positive and

negative reactions, and will also differ in their capability to move forward with their lives.

Resilience is a term that refers to “...*the capacity of a dynamic system to withstand or recover from significant threats to its stability, viability or development*” (Masten, 2011, p.494). Importantly, this does not indicate an absence of difficulties but rather the ability to overcome such difficulties and cope effectively in the face of adversity. As such, resilience is typically defined by the display of average functioning, a lack of trauma symptoms or other psychopathology, and among children, the achievement of age-appropriate developmental tasks (Masten & Tellegen, 2012).

The study of resilience is concerned with those protective factors and underlying mechanisms that mitigate the negative sequelae associated with exposure to adversity. While research indicates that children with a history of maltreatment tend to show lower levels of resilient functioning in comparison to their non-maltreated peers (Cicchetti & Rogosch, 2012), further research has highlighted a number of factors that may explain positive adaption in the face of childhood adversity. Characteristics such as high self-esteem, above average intelligence, social competence, active coping styles, optimism, secure attachment and adaptive functioning skills (Jaffee, Caspi, Moffitt, Polo-Thomas, & Taylor, 2007; Richardson, 2002; Schultz, Tharp-Taylor, Haviland, & Jaycox, 2009) have all been associated with positive adaption in response to adversity. Furthermore, the presence of positive peer relationships, positive parental care, loving adult relationships and a more flexible personality style have also been linked to resilient functioning in adulthood (Burt & Paysnick, 2012; Collishaw et al., 2007).

1.8 Emotion Regulation (ER) and Resilience

The definition of resilience has been utilised in a number of ways, typically across behavioural, emotional and educational domains of functioning (DuMont, Widom, & Czaja, 2007; Masten, 2007; McGloin & Widom, 2001). Other authors, however, suggest that domain specific or within domain measures of resilience may be of greater relevance given that individuals may function well in some areas but not in others (Herrenkohl, 2010). In particular, research has proposed that the ability to effectively *regulate* emotions is a significant factor in the development of resilience (Beasley, Thompson, & Davidson, 2003; Tugade & Fredrickson, 2004).

Crucially, research on attachment has proposed that attachment to significant others is a form of dyadic ER. Notably, infants are not born with the ability to regulate their own arousal and emotions, and therefore require their caregiver to support this process. Over time, the ways in which children learn how to regulate their emotions is largely determined by how their caregiver(s) regulate their own emotions. As children become more proficient at expressing their needs and emotions, they learn self-regulation skills (Sroufe, 1995; Tronick, 1989). As such, the attachment system significantly impacts upon the view adults have of relationships with others, the ability to implement adaptive coping strategies and the ability to regulate distress (Mikulincer & Shaver, 2007).

Effective ER is therefore proposed to exert a protective function against significant life stressors (Gross & John, 2003; Mak, Ng, & Wong, 2011; Troy & Mauss, 2011; Wagnild & Young, 1993). Based on this research, individuals that are better able to regulate their emotions in the face of adversity may have improved outcomes in terms

of mental health, social relationships, education and employment and abstaining from criminality. While ER predominantly involves the appraisal of stressors as threatening or not, as well as the strategies an individual might use to deal with stressors, resilience refers to a personality construct and the belief that oneself is able to cope effectively with stressors (Karreman & Vingerhoets, 2012); Wagnild & Young, 1993). As such, ER and resilience are closely related factors in the stress-appraising process. At present, however, there is limited research about the impact of ER upon the perpetration of violence.

1.9 Coping and Resilience

Given that such variation exists among individuals' subsequent functioning in response to adversity, it is essential to gain understanding of the factors that may help to buffer against some of the negative consequences. In particular, the literature has established a link between exposure to CAN and poor coping styles. For instance, Robboy and Anderson (2011) found that females who had experienced more forms of abuse were more likely to endorse maladaptive coping strategies such as substance misuse, self-mutilation and eating disturbances. Avoidant and denial-focused strategies appear to be commonly used following exposure to CAN and have been linked to elevated levels of psychological distress and symptomatology (Brand & Alexander, 2003; Steel, Stanna, Hammond, Whipple, & Cross, 2004). Furthermore, studies exploring multiple forms of CAN have highlighted that exposure to additional forms of abuse may influence the use of particular coping strategies. For instance, among women reporting exposure to both physical and sexual abuse, Futa, Nash, Hansen and Garbinn (2003) found that all CAN victims displayed an increased

tendency to use distancing and self-blame, whereas victims of sexual abuse used self-isolation to a greater degree than did victims of physical abuse.

Although the detrimental correlates of CAN are common, the literature has highlighted that these outcomes are also variable and inconsistent (e.g., Kendall-Tackett, Williams, & Finkelhor, 1993). As such, coping strategies employed by individuals following abuse have been proposed as an important determinant in understanding the long-term functioning of individuals with a history of CAN (Walsh, Fortier, & DeLillo, 2009). In particular, adaptive coping has been proposed to mediate the link between CAN and psychological adjustment (Folkman & Lazarus, 1986; Vollrath & Angst, 1993). Specifically, individuals who possess more adaptive ways of coping with negative emotions may experience less distress than those who experience difficulties in coping with such emotions. Understanding individuals' coping following exposure to childhood adversity therefore provides an important area worthy of exploration (Walsh et al., 2009).

1.10 Aims of the Thesis

Therefore, the aims of this thesis are as follows:

1. To explore the literature on factors associated with the impact of childhood exposure to recurrent CAN in comparison to multiple forms of victimisation (i.e., bullying, dating violence).
2. To explore the role of coping following exposure to recurrent CAN or multiple traumatisation.
3. To explore the role of ER on the impact of recurrent CAN and multiple traumatisation.

4. To explore the role of ER in relation to aggressive behaviour.
5. To investigate whether ER mediates the link between exposure to childhood victimisation (i.e., recurrent CAN or multiple traumatisation) and aggressive behaviour.

To achieve these aims, Chapter Two is a systematic literature review that examines both the prevalence and range of adverse outcomes associated with childhood exposure to recurrent CAN in comparison to multiple traumatisation (i.e., exposure to recurrent CAN in addition to at least one further type of trauma or victimisation) among adolescents and young adults. The findings from this review are presented in light of their implications for child protective services, policy makers and those working in clinical practice.

Given that coping has been proposed as an important determinant in understanding the long-term functioning of individuals with a history of CAN, Chapter Three explores the construct of coping and critiques the Brief COPE (Carver, 1997) in relation to its scientific properties, its applicability to both offending and non-offending populations and its research uses.

Finally, having identified the current literature on factors associated with exposure to recurrent CAN plus wider forms of trauma, Chapter Four presents an empirical paper that explores the impact of recurrent CAN and multiple traumatisation on ER, in addition to the role of ER in relation to aggressive behaviour.

1.11 Definitions of terms used within the thesis

Within the empirical literature, the definitions in relation to CAN and further types of trauma in childhood vary considerably. Throughout this thesis, the following definitions will be referred to:

Victimisation: The unfair treatment or exploitation of an individual; to victimise is to punish unjustly. The process of victimisation can also be indirect in nature, whereby an individual witnesses someone else being victimised (e.g., witnessing a parent being physically assaulted).

Multiple Traumatisation: Exposure to recurrent CAN (0-17 years) in addition to at least one further type of trauma or victimisation in childhood or adulthood. Further types of victimisation can include being a victim of dating violence, sexual assault, peer violence or bullying and exposure to community violence. While exposure to these aforementioned types of victimisation have the potential to cause traumatic symptoms, it should be noted that not all individuals will perceive such events as ‘traumatic’ and not all individuals will go on to experience associated adverse outcomes as a result.

Poly-victimisation: Refers to a group of multiply victimised individuals who experience a significant amount of victimisation, including serious forms of victimisation, and who demonstrate high levels of traumatic symptomatology. Individuals experiencing the highest levels of victimisation (e.g., 4+ types in the same year) are referred to as “poly-victims” (Finkelhor et al., 2007a).

Recurrent Child Abuse and Neglect (Recurrent CAN): Exposure to any form of CAN (physical abuse, sexual abuse, psychological abuse, neglect or witnessing domestic violence) on more than one occasion, involving the same perpetrator or different perpetrators, aged 0-17 years.

CHAPTER TWO

THE IMPACT OF EXPOSURE TO RECURRENT CHILD ABUSE AND NEGLECT IN COMPARISON TO MULTIPLE TRAUMATISATION: A SYSTEMATIC REVIEW

Chapter Rationale

As previously highlighted, to date, a significant proportion of research has predominantly focused upon CAN without considering the impact of exposure to wider forms of trauma. Crucially, recent research has highlighted that children exposed to one form of victimisation are often exposed to multiple types of trauma. The aim of this chapter is therefore to systematically explore the literature on factors associated with the impact of childhood exposure to recurrent CAN alone in comparison with multiple forms of victimisation (i.e., bullying, dating violence).

2.1 Introduction

Considerable literature has highlighted the significant adverse outcomes for children and young people exposed to violence, crime and maltreatment (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009; Finkelhor, Turner, Ormrod, & Hamby, 2009; Gilbert et al., 2009b). To date, a significant proportion of research in this area has focused upon the impact of individual types of victimisation, such as physical abuse, sexual abuse (Fergusson, McLeod, & Horwood, 2013), bullying (McMahon, Reulbach, Keeley, Perry, & Areansman, 2010), exposure to community violence (Lorion & Saltzman, 1993) or witnessing domestic violence (Spilsbury, Kahana, Drotar, Creedon, Flannery, & Friedman, 2008) in relation to a variety of outcomes such as mental health, physical health, social competence, academic achievement and offending (Bailey et al., 2012; Hillberg et al., 2011; Gilbert et al., 2009b; Mersky & Topitzes, 2010; Norman et al., 2012). Previous research has consistently demonstrated significant associations between exposure to individual types of CAN and poor outcomes in these domains. For instance, substantial research has established a link between exposure to childhood sexual abuse and childhood physical

abuse and subsequent depression, anxiety, suicidal ideation, post-traumatic stress disorder, delinquency, conduct disorder, antisocial personality disorder, relationship difficulties and substance misuse (Coid et al., 2003; Fergusson, Boden, & Horwood, 2008; Fergusson et al., 2013; Hillberg et al., 2011; Radford et al., 2011). Moreover, similar findings have been observed in relation to psychological abuse and neglect (Cohen, Brown, & Smailes, 2001; Green et al., 2010).

Among children exposed to various forms of child maltreatment, it should be noted that the consequences of such exposure can vary widely. Whilst some children may experience immediate adverse consequences associated with maltreatment, such as trauma-related symptoms, equally such consequences may also emerge some years later in adolescence or adulthood (Kelly & Odenwalt, 2006). The severity and chronicity of such experiences can significantly impact on later psychological symptomatology and behaviour, as can the interaction with other influential variables such as social support (Runtz & Schallow, 1997), the child's relationship with the perpetrator (Ullman, 2007), external stressors (Herrenkohl & Herrenkohl, 2007) and developmental stage at the time of exposure (Finkelhor, 1997; Stewart, Livingston, & Dennison, 2008). Repeated exposure to maltreatment (i.e., recurrent maltreatment) has also been associated with increased prevalence of psychopathological outcomes in comparison to exposure to single or isolated maltreatment experiences (Collishaw et al., 2007; Higgins & McCabe, 2001).

2.2 Concurrent Forms of Child Maltreatment

For many years, the co-occurrence of individual forms of child maltreatment was overlooked in the literature (Ney, Fung, & Wickett, 1994). Subsequent recognition

that most forms of child maltreatment occur in the presence of other types of abuse led to a marked increase in research exploring the impact of co-occurring types of abuse. While emotional abuse and neglect can occur independently of other types of abuse, their co-occurrence with physical and sexual abuse is also well established (Dong et al., 2004). Indeed a number of authors have proposed that psychological abuse is inherent in all forms of child maltreatment (Crittenden, 1996; Garbarino, 1986), but can also occur in isolation. Furthermore, research has identified that children exposed to direct forms of maltreatment are also at an increased risk of witnessing domestic violence (Holt, Buckley, & Whelan, 2008; Jouriles, McDonald, Smith, Heyman, & Garrido, 2008). While the rates of exposure to domestic violence and co-occurring forms of abuse vary between studies, in a review by Holt et al. (2008), a range of 45 - 70% was reported among studies examining such overlap. Studies examining the impact of co-occurring physical abuse and witnessing domestic violence have yielded mixed findings. While some studies suggest that the co-occurrence of these types of maltreatment leads to worse outcomes than exposure to either type alone (Kernic, Wolf, Holt, McKnight, Huebner, & Rivara, 2003; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003), others have failed to observe such worsened outcomes (Kitzmann, Gaylord, Holt, & Kenny, 2003).

2.3 Methodological Concerns in Child Maltreatment Research

Importantly, research exploring the impact of childhood exposure to various types of maltreatment has been affected by a number of methodological concerns. Notably, the co-occurrence of various forms of abuse is well documented in the literature and as such, it is clear that individual types of maltreatment are difficult to examine in isolation. Crucially, the failure to differentiate physically abused children from those

who have also witnessed domestic violence or other types of adversity may result in incorrectly attributing a child's difficulties to one type of maltreatment. Furthermore, failure to consider variability in relation to both the severity and type(s) of maltreatment to which children are exposed may obscure any potential differential impact upon subsequent outcomes.

Further research has identified that in the overall context of child maltreatment, a number of other risk factors such as family disruption, parental stress and low socioeconomic status commonly co-occur with child maltreatment and can potentiate associated psychopathological outcomes (Appleyard, Egeland, van Dulmen, & Sroufe, 2005). The cumulative risk hypothesis suggests that the accumulation of risk factors adversely impacts upon developmental outcomes, such that the higher the number of risk factors, the greater the likelihood of poor clinical outcomes (Rutter, 1979; Sameroff, 2000). Two models of cumulative risk are suggested in light of previous research; one suggests a threshold effect whereby the presence of a certain number of risk factors leads to a dramatic increase in deleterious outcomes (Rutter, 1979) and the other suggests a linear or dose-response relationship between risk factors and observed outcomes (Edwards et al., 2003; Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998).

2.4 Exposure to Multiple Forms of Victimization

While a number of studies have examined the impact of the frequency, severity and chronicity of childhood exposure to specific forms of maltreatment, less attention has been paid to childhood exposure to multiple forms of victimisation. Crucially, the research literature has consistently identified a relationship between childhood

victimisation and increased vulnerability to further victimisation (Finkelhor, Moore, Hamby, & Straus, 1997; Griffing, Ragin, Morrison, Sage, Madry, & Primm, 2005; Messman-Moore & Brown, 2006; Radford et al., 2011). The concept of re-victimisation refers to the pattern in which individuals who have experienced one form of victimisation are at increased risk of being victimised again, either shortly after the initial victimisation, or later in life (Hamilton & Browne, 1998; Finkelhor et al., 2007c). Typically, research studies have focused on examining the recurrence of a narrow range of victimisations. For example, there is a wealth of literature to indicate that exposure to childhood sexual abuse is associated with an increased risk of further sexual victimisation in both adolescence (Arata, 2002; Fergusson, Horwood, & Lynskey, 1997) and adulthood (Classen, Paresh, & Aggarwal, 2005). Furthermore, exposure to childhood sexual or physical abuse is also linked to increased likelihood of intimate partner violence in adolescence and adulthood (Coid, Petruckevitch, Feder, Chung, Richardson, & Moorey, 2001; Messman & Long, 2000).

Importantly, what emerges from the empirical literature is that a significant proportion of prior research has typically focused on individuals' exposure to individual types of victimisation or re-victimisation. Crucially, those research studies adopting such a narrow focus are likely to overestimate the impact of these experiences, given that adverse outcomes could be related to other types of victimisation or their co-occurrence with other forms of trauma. In recent years, increased empirical attention has been paid to childhood exposure to multiple forms of victimisation. Significantly, much of this research has highlighted that children exposed to one type of victimisation, are often exposed to multiple types of victimisation. In particular, the work of Finkelhor and colleagues has highlighted the

importance of considering a broad range of victimisations in addition to child maltreatment, for example, exposure to conventional crime and peer violence (Finkelhor et al., 2007a,b,c).

The link between exposure to peer violence and bullying with subsequent psychological distress is well established within the literature (McMahon, Reulbach, Keeley, Perry, & Areansman, 2010; Staubli & Killias, 2011). Importantly, peer assaults, unless very severe in nature or occurring between older children, typically fail to come to the attention of the criminal justice system (Finkelhor, 2008). As such, many children affected by such victimisation are unlikely to come to the attention of victim services. Similarly, an association between exposure to community violence and poor mental health outcomes has also been widely acknowledged within the literature (Cooley-Quille, Boyd, Frantz, & Walsh, 2001; Fitzpatrick, Piko, Wright, & LaGory, 2005). Given the adverse consequences associated with these forms of victimisation in conjunction with evidence to indicate that exposure to one form of victimisation increased the risk of further victimisation, it is essential that future research addresses the wider spectrum of victimisation experiences children are potentially exposed to.

2.5 Measuring Child Maltreatment and Wider Forms of Trauma

The Juvenile Victimization Questionnaire (JVQ; Finkelhor, Hamby, Ormrod, & Turner, 2005) was developed in order to assess a wide range of victimisation types across childhood. Specifically, the JVQ examines child maltreatment, crime victimisation and sexual assault, in addition to bullying, sibling victimisation and the witnessing of violence. In a study utilising the JVQ, Finkelhor et al. (2007b) found

that 69% children exposed to any form of victimisation within a one-year period had also endured a further type of victimisation in the same year. Significantly, children who had been physically assaulted by a caregiver were also 60% more likely to have been assaulted by a peer in the same year. Comparable prevalence rates have been reported among further studies exploring the multiple victimisation experiences of youth (Romano, Bell, & Billette, 2011; Saunders, 2003). Together, these findings highlight the importance of examining multiple types of victimisation in order to accurately and comprehensively explore the impact upon individuals' subsequent wellbeing.

Significantly, the literature suggests that the experiences of youth exposed to multiple forms of victimisation differ in some respects to those exposed to a single incident of victimisation or repeated exposure to victimisation of the same type (Stevens, Ruggiero, Kilpatrick, Resnick, & Saunders, 2005; Finkelhor, Ormrod, Turner, & Hamby, 2005). Specifically, multiple victimisation has been linked to an increased risk of experiencing further victimisations, increased levels of psychological distress and concurrent exposure to considerably more lifetime adversities, such as major illness and family dysfunction (Appleyard et al., 2005; Briere et al., 2008; Edwards et al., 2003; Finkelhor et al., 2007a,b,c). Moreover, children who experience a single form of victimisation, such as physical child abuse or bullying, appear better able to recover from such adversity. Conversely, the prognosis for those exposed to multiple types of victimisation from multiple sources is typically much poorer (Finkelhor, 2008). Furthermore, research suggests that like many victims who endure recurrent maltreatment, many children are subjected to a number of different types of victimisation over a relatively short period of time. Such findings led Finkelhor

(2007) to conclude that for some children, victimisation is “*more like a condition than an event*” (p.20).

2.6 Definitions

Within the empirical literature, the definitions pertaining to childhood victimisation experiences and their degree of frequency and severity vary considerably between studies. For the purpose of the current review, the following terms have been used:

- *Recurrent CAN* is defined as exposure to any form of CAN (physical abuse, sexual abuse, psychological abuse, neglect or witnessing domestic violence) on more than one occasion, involving the same perpetrator or different perpetrators, aged 0-17 years. Recurrent CAN encompasses exposure to one form of child maltreatment only and also exposure to more than one type of maltreatment, for example, physical abuse in addition to witnessing domestic violence.
- *Multiple traumatisation* is defined as exposure to recurrent CAN (0-17 years) in addition to at least one further type of trauma or victimisation in childhood or adulthood. Further types of victimisation can include being a victim of dating violence, sexual assault, peer violence or bullying and exposure to community violence.

2.7 Current Review

The objective of the current review was to investigate the impact of childhood exposure to recurrent CAN (CAN only) versus multiple traumatisation (CAN plus at least one wider form of trauma) among either an adolescent (12-17 years) or young adult (18-25 years) population. In addition, the current review aimed to explore both

the prevalence rates of multiple traumatisation within the aforementioned populations and the methodologies utilised within the included studies.

2.8 Existing Review Assessment

In order to ascertain whether the current review was justified, a scoping search was conducted on the 9th February 2013. The search terms as defined in section 2.9.3 were included in the 1990 search. The following databases were included in the search:

- Cochrane Database of Systematic Reviews
- The Centre for Reviews and Disseminations (DARE)
- Campbell Collaboration
- PsycINFO (Search limited to reviews)
- Medline (Search limited to reviews)
- EMBASE (Search limited to reviews)

This search of the literature revealed a number of previous systematic reviews in relation to the effectiveness of psychological interventions with children and adolescents exposed to trauma or child maltreatment. For example:

- The effectiveness of interventions to reduce psychological harm from traumatic events among children and adolescents (Wethington et al., 2008).
- Effectiveness of psychological interventions for child maltreatment: a meta-analysis (Skowron & Reinemann, 2005).

In addition, a number of previous reviews were found in relation to specific forms of childhood victimisation, for example:

- Sexual exploitation of children and youth over the internet: a rapid review of the scientific literature (Ospina, Harstall, & Dennett, 2010).
- The neglect of child neglect: A meta-analytic review of the prevalence of neglect (Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2013).

However, no previous reviews were found in relation to ‘poly-victimisation’ or exposure to multiple forms of victimisation or trauma in childhood. Based on the existing empirical literature in this area, further exploration of the adverse outcomes associated with exposure to multiple traumatisation is required.

2.9 Method

2.9.1 Sources of Literature

A search of electronic databases was conducted on 9th February 2013. The following databases were included in the search:

- ASSIA (1990 - Week 6, 2013)
- Sociological Abstracts (1990 - Week 6, 2013)
- EMBASE (1988 – 2013 Week 6)
- PsychINFO (1987 – February Week 2, 2013)
- Ovid MEDLINE (1946 – February Week 2, 2013)
- Web of Science (1990 - Week 6, 2013)

2.9.2 Search Strategy

The databases were accessed electronically which permitted the application of specific limits to the searches. Searches were limited to articles published in English, predominantly due to the financial and time constraints involved in translating foreign articles. Unpublished articles were also omitted for these reasons, although it is

acknowledged that this may have excluded more recent findings. In addition, editorials and opinion papers were omitted from the search in order to reduce the bias of individual perspectives that are not supported by empirical research or theory.

The same search limits and search terms were applied to all electronic databases. The initial search results were then filtered by hand, using the title and abstracts of articles, to remove those studies unrelated to the current review, or duplicates of included studies.

2.9.3 Search Terms

The following search terms were included in searches of the aforementioned databases:

(adolescen*) OR (juvenile*) OR (youth*) OR (young*) OR (teen*) OR (minor*) OR (school age*) OR (student*) OR (pupil*) OR (young* adult*) OR (graduate*)

AND

(abuse) OR (maltreat*) OR ("sex* abuse") OR ("physical abuse") OR ("emotional abuse") OR ("psychological abuse") OR (neglect) OR ("domestic abuse") OR ("family violence") OR ("interpersonal violence")

AND

(multiple*) OR (cumulative*) OR (repeat*) OR (recurrent) OR (re-victim*) OR
(revictim*) OR (continu*) OR (re*) adj3 (victim*) OR (expos*) OR (trauma*)

AND

(poly*) OR (poly-victim*) OR (polyvictim*)

OR

(bullying) OR (bullied) OR (“peer abuse”) OR (“peer assault”) OR (“sibling assault”)
OR (crime) OR (“sex* assault”) OR (“family violence”) OR (“dating violence”) OR
(witness*) OR (“community violence”)

2.9.4 Study Selection

Initial scoping searches of the databases, in addition to review of previous literature in the research area, contributed to the formulation of specific inclusion and exclusion criteria. These criteria are outlined below.

Population: Adolescents (male and female, aged 12-17 years) and/or young adults (male and female, aged 18-25 years) who have been exposed to either multiple traumatisation or recurrent CAN only.

Exposure: Multiple traumatisation (exposure to recurrent CAN *and* at least one wider form of trauma).

Comparator: Exposure to recurrent CAN only; No exposure to other forms of maltreatment and/or multiple traumatisation.

Outcome: Diagnosis of mental illness or mental disorder; Trauma symptoms; Psychological distress; Substance use; Educational achievement; Employment; Offending; Delinquent behaviour; Physical health.

Study Design: Cohort studies, Cross-sectional studies, Case control studies, Case series; Randomised Controlled Trials.

Excluded Studies: Adults aged 26 and older; Children under 12; Studies addressing recurrent CAN only; Studies exploring multiple forms of victimisation but not recurrent CAN; Studies reporting rates only without outcomes; Non-English papers; Opinion papers; Editorials; Commentaries; Reviews; Unpublished papers.

Studies carried out prior to 1990 were also excluded. As previously highlighted, it is only relatively recently that the research literature has begun to address the impact of exposure to multiple types of trauma upon individuals' subsequent functioning. To date, there are no known articles exploring the impact of multiple types of trauma or victimisation in existence prior to 1990. As such, the impact of excluding articles prior to 1990 was considered minimal.

Although it is recognised that the onset of some psychopathology can occur during adulthood (i.e., 18-years+), the age range of 12-25 years was selected in order to explore the outcomes associated with recurrent CAN and multiple traumatisation

within these specific developmental periods. Notably, exposure to childhood victimisation is associated with a number of longitudinal adverse outcomes, however the purpose of the current review was to assess the nature of the impact on young people. Adolescence is a key risk period for the development of some problems - so even though there are other risk periods later (e.g., stressful times, transition to parenthood, etc), this is a good time to study. In addition, the empirical literature is too vast to also consider outcomes further into adulthood.

Prior to formal application of the inclusion and exclusion criteria, the preliminary results were searched by hand in order to eliminate studies that were clearly irrelevant, as judged by the title and/or abstract. Duplicate papers were also excluded at this point. The studies still included in the search were then examined in relation to the inclusion and exclusion criteria, with those studies failing to meet such criteria being discarded. Where possible, the abstracts of each study were assessed in relation to the inclusion and exclusion criteria. In cases where the abstract did not provide sufficient information, the full text article was retrieved. All articles that met the inclusion criteria were downloaded as full text articles. The numbers of articles identified at each stage and a flow chart detailing the number of studies at each phase of the selection process can be found in the results section and in Figure 1. The studies that were excluded according to the inclusion/exclusion criteria and details of why they were excluded can be found in Appendix 1.

2.9.5 Quality Assessment

Following the application of inclusion and exclusion criteria against each article, the included studies were then quality assessed in terms of their methodological value and

significance of findings (Appendix 2). The key variables assessed in terms of their quality were the aims and hypotheses of the study, validity and reliability of the measures used, outcome quality, statistical analyses, attempts made to eliminate bias, reliability and applicability of findings and consideration of limitations.

A quality assessment protocol was followed, with each item on the quality assessment form being assessed according to a three-point scale; a score of two was given if the item was present, a score of one if the item was partially present and zero if the item was not present (Appendix 3). Items could also be rated as 'unclear' if there was insufficient information available. Unclear items were not given a numerical value. The total quality score was achieved by summing the individual item scores, yielding a total score ranging from 0 to 60 for both cross-sectional and cohort studies. For inter-rater reliability, a sub-sample (n=4, 36.4%) of the included studies was independently rated by a second psychologist. A total of four papers was considered sufficient to assess the degree to which two raters made consistent estimates of the same phenomenon. Following this, three of the four randomly selected papers were given the same total score or were rated within one point difference of each other and a discrepancy of two points was found for the remaining study. This level of agreement (97.2%) between the two raters was considered acceptable.

Studies that fulfilled the inclusion/exclusion criteria but did not attain a minimum quality assessment threshold of 60% were excluded from the study. While excluding studies below a threshold of 60% is selective, this method ensures that only studies of the highest quality are included in the review. As such, it is hoped that any conclusions drawn from the review will be more robust in nature and have greater

reliability and validity in terms of their application to the broader population. Furthermore, previous research suggests that studies with a quality assessment score below 50% may not be of a suitable methodological quality to be included in the review. Specifically, the inclusion of lower quality studies has been associated with an enhanced estimate of benefit and thus increased likelihood that results could be misinterpreted (Bisset, Paungmali, Vicenzino, & Beller, 2004; Moher et al., 1998). As such, a slightly higher threshold of 60% (e.g., Kuijpers, van der Windt, van der Heijden, & Bouter, 2004) was selected to ensure studies of only the highest methodological quality were included in the review.

2.9.6 Data Extraction

A pre-defined data extraction form was designed by the researcher in order to extract relevant data from each study included in the review (Appendix 4). The form enabled both general and specific information to be considered in a coherent and strategic manner. Importantly, this permitted a reliable and unbiased approach to the reporting of conclusions. The data extraction form included the following information:

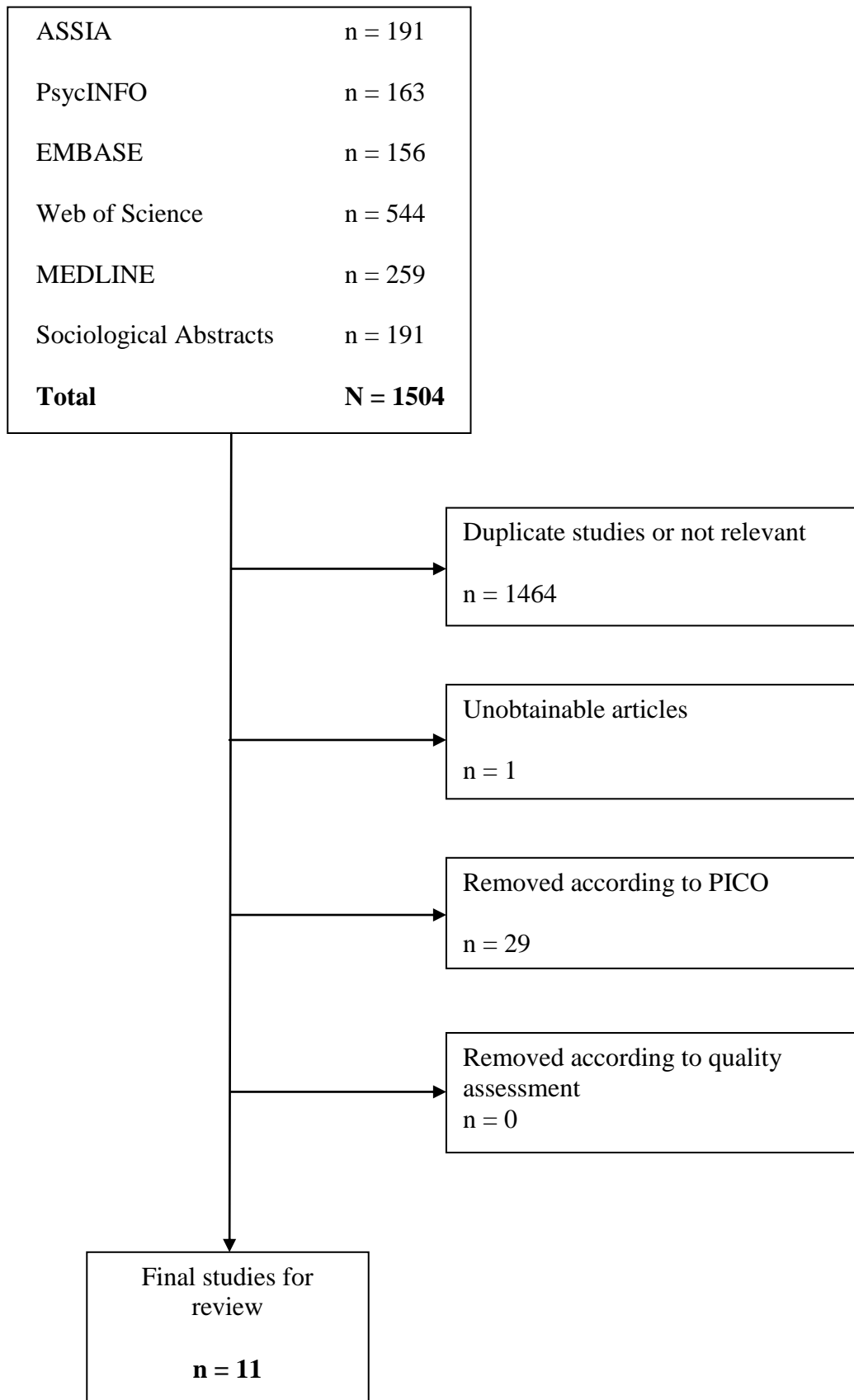
- Applicability to PICO criteria
- Study design
- Population (e.g. age, recruitment procedures, other characteristics)
- Type of exposure (multiple traumatisation, recurrent maltreatment or neither)
- Outcome (Prevalence of multiple traumatisation and / or recurrent maltreatment and associated effects)
- Steps taken to enhance the validity and reliability of measures
- Length of follow-up period (if applicable)

- Attrition rates
- The overall clarity of the written report
- Statistical analyses and confounding variables
- Limitations of the study

2.10 Results

Initial searches of the electronic databases using the specified search terms yielded a total of 1504 studies. Upon review of the titles and abstracts of these studies 1464 were found to be irrelevant or duplicates of studies already viewed and were therefore excluded on this basis. The remaining 40 studies were then checked against the inclusion and exclusion criteria, whereby a further 29 studies were excluded (see Appendix 3). The remaining 11 studies were then subject to quality assessment using the quality assessment form. All 11 studies fulfilled the inclusion criteria according to the PICO, and were considered to be of high quality ($\geq 60\%$ quality assessment score). The process of study selection is displayed in Figure 1 and illustrates how many studies were excluded at each stage in the process.

Figure 1: Study Selection Process



2.10.1 Descriptive Data Synthesis

The results of the included studies were not statistically combined for quantitative data synthesis due to the heterogeneity of the sample populations and the outcome measures utilised within each study. Instead, the included studies were considered from a qualitative perspective thus allowing for comparison of both the homogenous and heterogeneous elements between each of the included studies. An understanding of study quality was therefore achieved through consideration of individual qualitative aspects, as indicated by the quality assessment.

2.10.2 Study Populations

Of the 11 studies included in the review, three studies comprised an exclusively adolescent sample (Annerbäck, Sahlqvist, Svedin, Wingren, & Gustafsson, 2012; Ford, Elhai, Connor, & Frueh, 2010; Strøm, Thoresen, Wentzel-Larsen, & Dyb, 2013), three comprised an exclusively young adult sample (Elliot, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Richmond, Elliot, Pierce, Aspelmeier, & Alexander, 2009a,b; Romito & Grassi, 2007) and the remaining five comprised a mixed sample of both adolescents and young adults (Gustafsson, Nilsson, & Svedin, 2009; Jirapramukpitak, Harpham, & Prince, 2011; Kennedy & Bennett, 2006; Soler, Paretilla, Kirchner, & Forns, 2012; Turner, Finkelhor, Shattuck, & Hamby, 2012). Eight studies employed a male and female sample, in comparison to three studies that employed a female only sample (Elliot et al., 2009; Kennedy & Bennett, 2006; Richmond et al., 2009a,b). It should be noted that one article (Richmond et al., 2009) contained two studies; ‘study 1’ and ‘study 2’ and therefore these studies will be referred to as ‘a’ and ‘b’ for the purposes of this review.

The total number of participants recruited for each study varied significantly, ranging from 120 (Kennedy & Bennett, 2006) to 7343 (Strom et al., 2013). In total, 21,913 subjects are included in the current review. The sampling methods also varied between studies, with two utilising a nationally representative sample (Ford et al., 2010; Turner et al., 2012), several utilising a school-based sample (Annerbäck et al., 2012; Gustafsson et al., 2009; Soler et al., 2012; Strøm et al., 2013) and another electing for a community-based sample (Jirapramukpitak et al., 2011). Studies employing these recruitment methods tended to have the largest sample sizes (average $N = 2952$). Further convenience samples were recruited from a University population (Elliot et al., 2009; Richmond et al., 2009a,b; Romito & Grassi, 2007) or a specific population such as pregnant or parenting female adolescents (Kennedy & Bennett, 2006). Studies addressing these more specific populations tended to recruit smaller, but still adequate, sample sizes (average $N = 311$). It should be noted that the same sample of participants ($N = 321$) was used in both the Elliot et al. (2009) and Richmond et al (2009b) studies.

Of the 11 studies included in the review, five were conducted in the United States, two in Sweden, one in Thailand, one in Italy, one in Spain and one in Norway. Although five studies utilised a European population, it should be noted that none of the included studies were conducted in the United Kingdom.

Tables 3 and 4 provide a summary of the characteristics of each study (cross-sectional and cohort studies respectively) along with the quality assessment score. Details of quality assessment for each of the included studies can be found in Appendix 2.

Table 3: Characteristics of Cross-sectional Studies examining the Effects of Multiple Traumatization in Adolescents and Young Adults (N = 10)

Study and Date	Study Location	Participants and Recruitment Method	N	Types of Victimization Measured	Outcome Measure(s)	Findings	Statistical Analysis	Quality Score
Annerbäck, Sahlqvist, Svedin, Wingren, & Gustafsson (2012)	Söderman-land County, Sweden	Male and female adolescents aged 15-17 years. All schools in the county with pupils aged 15-17 were invited to participate in the surveys.	5933	Child physical abuse (CPA; once and recurrent), bullying (infrequent and chronic), witnessing DV (once or twice and recurrent), forced sex (by peer / adult). Multiple child abuse: 3 groups; CPA + 1 other type of abuse (bullying, DV or forced sex), CPA + 2 other types, CPA + 3 other types. No abuse group.	Questionnaires measuring: Poor general health Physical health problems Mental health problems (insomnia, anxiety, depression, self-injurious behaviour) Tobacco, alcohol, substance and sexual risk-taking Shoplifting Violent acts	More than half of children reporting CPA also reported concurrence of other types of wider victimisation (e.g. bullying - 56.3%). 123 (2%) adolescents reported CPA + 2 further types of abuse and 36 (<1%) adolescents reported CPA + 3 other types of abuse. Associations with health indicators and risk-taking behaviours increase with number of concurrent abuse in analysis controlling for socio-demographic factors. Strongest associations found with bad general health, self-injurious behaviour, violent behaviour and drug taking.	Multiple logistic regression analyses.	76.7%
Elliot, Alexander, Pierce, Aspelmeier, & Richmond (2009)	U.S.A.	Young female adults aged 18 to 24 years. Recruited from psychology courses at a U.S. university.	321	Conventional crime; child abuse and neglect (CAN); peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation.	JVQ-Adult Retrospective version. College Adjustment Scale (CAS)	41.1% endorsed at least one type of CAN. Physical abuse (20.6%), neglect (6.5%), emotional abuse (31.2%). PV was a better predictor of college adjustment domains (academic	Hierarchical regression analyses.	81.7%

				Conceptualisation and measurement of poly-victimisation (PV) was based on work by Finkelhor et al.	Student Adaption to College Questionnaire (SACQ)	problems, anxiety, interpersonal problems, depression, suicidal ideation, substance abuse, low self-esteem, family problems) than any individual categories of victimisation. CAN uniquely predicted the family problems subscale of the CAS, after PV was entered into the model.		
Ford, Elhai, Connor, & Frueh (2010)	U.S.A.	Male (51.5%) and female (48.5%) adolescents aged 12-17 years. Data was acquired from the National Survey of Adolescents (NSA), via a computer assisted telephone interview. Household probability sample.	4023	24 items measured: community violence; sexual abuse/assault; physical abuse/assault; witness to assault; accident/disaster victim. 3 groups; poly-victims, those with trauma histories (but not poly-victimised) and those with no trauma history. Poly-victims were further separated into subgroups: 1) Sexual abuse / assault poly-victims, 2) Physical abuse / assault poly-victims, 3) Community violence poly-victims and 4) Assault poly-victims	DSM-IV criteria for major depressive disorder (MDD), substance use disorder (SUD). PTSD symptoms Alcohol abuse	One third of participants reported a history of poly-victimisation. Poly-victims were more likely to meet criteria for psychiatric disorders including double the risk for depression, triple the risk for PTSD, 3 to 5 times the risk for SUDs and 5 to 8 times more increased risk of comorbid disorders compared those with trauma histories but no poly-victimisation. Poly-victims also reported more delinquent acts than other trauma-exposed youth.	Latent class analyses and logistic regression analyses.	80%
Gustafsson, Nilsson, & Svedin (2009)	Linköping, Sweden	Male and female adolescents and young adults aged 12-20 years.	400	Witnessing DV, physical abuse / assault, kidnap, sexual abuse / assault, threatened,	Life Incidence of Traumatic Events self-report version (LITE-S)	PT was highly predictive of trauma-related symptoms, above and beyond the influence of most individual potentially traumatic	Pearson correlations and hierarchical	80%

		The sample was drawn from 7 th , 8 th , and 9 th grades of compulsory school and from 2 nd grade of secondary school. Out of all schools in the area, four were randomly chosen. Three classes from each grade were chosen at random.		robbery / burglary, witnessing assault. The total number of different traumatic events was used as a score of poly-traumatisation (PT).	Trauma Symptom Checklist for Children (TSCC)	events. The items most strongly related to trauma symptoms in bivariate analysis were interpersonal events (witnessing DV, being threatened, sexual abuse/assault). These individual types of victimisation contributed to trauma symptoms independently of PT.	regression analyses.	
Jirapramukpitak, Harpham, & Prince (2011)	Bangkok, Thailand	Male and female adolescents and young adults aged 16-25 years. Community sample from a population catchment area. Young people were identified initially by knocking on doors. One eligible resident from each household was selected to be interviewed by a trained interviewer in their own home.	1052	Exposure to domestic violence (DV) prior to the age of 16. Physical abuse (PA) prior to the age of 16. Intimate partner violence at any point during current relationship.	Modified Conflict Tactics Scale (CTS) Revised Clinical Interview Schedule (CIS-R) Diagnostic Interview Schedule (DIS) Alcohol Use Disorder Identification Test (AUDIT)	Exposure to both DV and PA in childhood was highly predictive of current IPV. A higher risk of adverse outcomes was associated with exposure to multiple as opposed to single forms of violence. Those exposed to all 3 forms of violence (1.5%) experienced poorer mental health outcomes in terms of 'common mental disorders', suicidal thoughts, illicit drug abuse and alcohol abuse.	Multiple logistic regression analyses.	80%
Kennedy & Bennett (2006)	U.S.A.	Female adolescents and young adults aged 16 to 20 years. Participants were either pregnant or	120	Community violence, witnessing DV, childhood physical abuse, partner violence	Revised Conflict Tactics Scale (CTS2) Things I have seen and heard	75% of the sample reported lifetime exposure to at least 3 out of 4 types of violence. Exposure to these forms of violence was often severe. As lifetime exposure to each type	Pearson correlations and hierarchical regression analyses.	68.3%

		had given birth prior to the age of 20.			scale	of violence increases, school outcomes worsened. Specifically, attention and behaviour problems in school and school suspension/expulsion rates. In the final model of behavioral problems, lifetime violence exposure explained 34% of the variance. For each increase in lifetime violence exposure, there was a .17 increase in attention problems. In the final model of drop-out history, lifetime violence exposure explained 27% of the variance. For each increase in lifetime violence exposure, there was a .19 increase in the rate of expulsion and suspension.		
		Recruited from a high school for pregnant and parenting adolescent, a youth homeless shelter and a street outreach programme.			Youth Self Report (YSR) Attentional Problems and Aggressive Problems subscales			
					Social Support Behaviours Scale (SS-B)			
						Among four types of exposure to violence, only exposure to community violence was independently significant across each model.		
Richmond, Elliot, Pierce, Aspelmeier, & Alexander (2009a)	U.S.A.	Young female adults aged 18 to 23.	311	Conventional crime; CAN; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation.	JVQ-Adult Retrospective version.	29.6% endorsed at least one type of CAN. Physical abuse (18%), psychological abuse (20.3%), neglect (3.5%).	Hierarchical regression analyses.	80%
Study 1		Undergraduate Psychology students were recruited, for which they received course credit.			Symptom Checklist 90-Revised (SCL-90-R)	More than 40% of sample has experienced 5 or 6 different categories of victimisation.		
					Global Severity Index (GSI)	While sexual victimisation and CAN were independently associated with psychological distress, each category of victimisation alone accounted for little to no variance beyond that of		
					Inventory of Altered Self-Capacities (IASC)			

PV.								
Richmond, Elliot, Pierce, Aspelmeier, & Alexander (2009b) Study 2	U.S.A.	Young female adults aged 18 to 24 years. Recruited from psychology courses at a U.S. university. This sample consisted of the same subjects used by Elliot et al. (2009).	321	Conventional crime; CAN; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation.	JVQ-Adult Retrospective version. Symptom Checklist 90-Revised (SCL-90-R) Global Severity Index (GSI) Trauma Symptom Inventory (TSI; Briere, 1995)	41.4% endorsed at least one type of CAN. Almost half (49.2%) of the sample has experienced 5 or 6 different categories of victimisation. PV accounted for a significant proportion of variability in psychological distress. Each category of victimisation alone accounted for little to no variance than that of PV. Although peer/sibling was also unique predictor of 3 SCL-90-R subscales (Obsessive-Compulsive, Interpersonal Sensitivity and Depression).	Hierarchical regression analyses.	80%
Romito & Grassi (2007)	Trieste, Italy	Young adults, 92% of sample were 25-years of age and under. (64% female; 36% male) Convenience sample of university students.	502	Family violence (psychological, physical), witnessed family violence (psychological, physical), peer/ school violence (psychological, physical), sexual violence and intimate partner violence (IPV).	General Health Questionnaire (GHQ) DSM-IV criteria for panic attack 18-item questionnaire about IPV Further questions in relation to other types of violence	For both genders, the more types of violence experienced, the higher the risk of experiencing problems. From 0 to 3 types of violence, the risks increased gradually, however for 4 or 5 types of violence (a predominantly female group) the risk of mental suffering increased dramatically. Women who experienced both direct and witnessed family violence, high IPV, sexual violence and peer/school violence (8.7%) were 7 to 10 times more likely to experience panic attacks, eating disorders, alcohol abuse and depression. The risk of suicidal	Multiple logistic regression analyses.	76.7%

ideation or attempted suicide rose 20 fold.

Soler, Paretilla, Kirchner, & Forns (2012)	Catalonia, Spain.	Adolescents aged 14-18 years. (64% female; 35.3% male; 0.7% gender unknown) Recruited from 7 different schools, contacted via in-class announcements.	722	Conventional crime; CAN; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation during the past year. 3 groups: 'poly-victims' (the 10% most victimised), 'victims' (between one and eight victimisations) and 'non-victims' (no victimisations).	Juvenile Victimization Questionnaire (JVQ) Rosenberg Self-Esteem Scale (RSES) Youth Self Report (YSR)	In the past year 88.4% had been exposed to at least one form of victimisation, 71.6% exposed to 2 or more, 31.7% to 5 or more and 5.1% to 11 or more. 48.8% of males and 48% of females reported peer/sibling victimisation in the past year. Poly-victims had lower levels of self-liking compared to victim and non-victim groups. Poly-victims had significantly higher levels of post-traumatic stress symptoms (PTSS) compared to victim and non-victim groups. In girls, the number of PTSS increased with degree of victimisation. Significantly higher levels of PTSS in both victim and poly-victim groups.	MANOVA, Post hoc comparisons, Mann-Whitney U test, Kruskal-Wallis test.	81.7%
Strøm, Thoresen, Wentzel-Larsen, & Dyb (2013)	Oslo, Norway	Adolescents aged 15-16 years. (50.6% female; 49.4% male) Recruited from schools in Oslo.	7343	Sexual abuse, physical violence (by youths and/or adults) and bullying.	Academic achievement as indicated by most recent recorded grades.	Regardless of type of violence exposure, all categories showed reduced grades. However results did indicate the types and number of violence categories to be important. Those exposed to 2 or 3 categories of violence had lower grades than those exposed to only one type of violence. 1 type violence ($r^2=.06-.33$), 2 types ($r^2=.32-.81$), 3 types ($r^2=.53$).	Linear regression analyses.	68.3%

Table 4: Characteristics of Cohort Studies examining the Effects of Multiple Traumatization in Adolescents and Young Adults (N = 1)

Study and Date	Study Location	Participants and Recruitment Method	N	Types of Victimization Measured	Outcome Measure(s)	Findings	Statistical Analysis	Quality Score
Turner, Finkelhor, Shattuck & Hamby (2012)	U.S.	Male and female adolescents and young adults aged 12-19 years. Data from the National Survey of Children's Exposure to Violence, a 2-wave longitudinal study. Interviews were conducted over the telephone via random digit dialing. In wave 2, wave 1 respondents were re-contacted.	1186	Peer victimization, sexual assault, CAN, witnessing family violence and exposure to community violence. Past year rates.	Enhanced version of the JVQ Suicidal ideation item from TSCC	Forms of past-year victimization most associated with past-month suicide ideation were peer victimization (8.1%), sexual assault (22.9%) and CAN (16%). Poly-victims were also substantially more likely to report suicide ideation (15.6%). Poly-victimization was the most powerful predictor of suicidal ideation. Poly-victims were almost 6 times more likely to report suicidal ideation than. Peer victimized individuals were 2.5 times more likely and those exposed to CAN were 4.5 times more likely.	Logistic regression analyses.	83.3%

2.11 Assessment of Multiple Traumatization

A range of assessment tools were used to measure exposure to recurrent CAN and multiple traumatization in the included studies. The most common measure used was the JVQ (Hamby et al., 2004). The JVQ is a self-report measure that assesses 34 types of childhood victimization and covers 5 areas of concern; (1) Conventional crime, (2) Child maltreatment, (3) Peer and Sibling victimization, (4) Sexual victimization and (5) Witnessing and Indirect victimization. The JVQ was used in four of the 11 studies; two studies utilized the adult retrospective version in order to identify lifetime rates of childhood victimization from 0-17 years (Elliot et al., 2009; Richmond et al., 2009a,b) and two studies used the JVQ to identify the rate of victimization in the previous year (Soler et al., 2012; Turner et al., 2012).

Other measures used included the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Kennedy and Bennett (2006) selected the Physical Assault subscale from the CTS2 in order to measure exposure to partner violence, physical abuse by a caregiver and witnessing of parental violence, whereas Jirapramukpitak et al. (2011) adopted a slightly modified version of the original Conflict Tactics Scale (CTS; Straus, 1979) in their study. Gustafsson et al. (2009) employed the Life Incidence of Traumatic Events (LITE-S; Larsson, 2003), a self-report checklist of traumatic events to assess the occurrence of both interpersonal events and non-interpersonal traumatic events. Further measures used to assess exposure to victimization included Richters and Martinez's (1990) 'Things I have seen and heard scale' (Kennedy & Bennett, 2006).

A number of studies included questionnaires that had been developed by the authors for the purpose of collecting data about subjects' victimisation experiences. Typically, these questionnaires had been developed based on prior research or review of the literature and had also been piloted in previous work with the intended population (Annerbäck et al., 2012; Ford et al., 2010; Romito & Grassi, 2007).

In summary, although some studies utilised an equivalent assessment measure (i.e. the JVQ), there is still great variability between studies in relation to how the constructs of multiple traumatisation and recurrent CAN were measured. Crucially, the measurement of these variables should be taken into consideration when interpreting the findings from each study.

2.12 Conceptualisation of Multiple Traumatisation

The conceptualisation of exposure to multiple traumatisation also varied between studies. Based on previous research conducted with the JVQ (Finkelhor et al., 2007a,b; Finkelhor et al., 2005), a number of studies chose to utilise a threshold in which to identify the group of most severely victimised youth. Specifically, Turner et al. (2012) identified subjects endorsing 7 or more victimisation types in the previous year as "polyvictims". Consistent with previous research, this cutoff identified approximately the top 10% of multiply victimised subjects. Furthermore, Ford et al. (2010) employed latent class analysis to construct their "poly-victimization" variable although it was not clear how many types of victimisation subjects in each poly-victimisation group had been exposed to, only that poly-victims had experienced multiple types of victimisation.

Other studies chose to measure exposure to multiple types of victimisation as a continuous variable, summing the number of victimisation types endorsed by each subject (Elliot et al., 2009; Gustafsson et al., 2009; Richmond et al., 2009; Soler et al., 2012). In their study, Soler et al. (2012) went on to identify a “poly-victim” group (the 10% most victimised) as those who had experienced 9 or more different victimisation types in the previous year.

Further studies assigned subjects to a group according to the extent of their exposure to victimisation, for example, exposure to no victimisation, exposure to one form, two forms, three forms and so forth (Annerbäck et al., 2012; Jirapramukpitak et al., 2011; Romito & Grassi, 2007; Strøm et al., 2013). In other studies, the criteria for exposure to multiple traumatisation was less clear. For example, Kennedy and Bennett (2006) included a “cumulative violence exposure” variable in their analysis, however did not report how many types of violence the subjects in this category had been exposed to. Overall, this makes drawing conclusions very difficult.

2.13 Outcome Assessment Measures

A variety of outcomes were assessed in relation to recurrent CAN and multiple traumatisation. Of the 11 studies included in the review, nine explored the association between victimisation and adverse mental health outcomes (Annerbäck et al., 2012; Elliot et al., 2009; Ford et al., 2010; Gustafsson et al., 2009; Jirapramukpitak et al., 2011; Richmond et al., 2009a,b; Romito & Grassi, 2007; Soler et al., 2012; Turner et al., 2012). Further outcomes explored included alcohol and substance misuse (Annerbäck et al., 2012; Ford et al., 2010; Jirapramukpitak et al., 2011; Romito & Grassi, 2007), general health status (Annerbäck et al., 2012), academic achievement, performance in school or adjustment to university (Elliot et al., 2009; Kennedy &

Bennett, 2006; Strøm et al., 2013), violent acts, delinquency and other risk-taking behaviours (Annerbäck et al., 2012; Ford et al., 2010).

In relation to mental health outcomes, a variety of assessment measures were employed. Specifically, some studies selected psychometric tools designed to assess an array of trauma-related symptoms and psychopathology in children or in adults. For example, Richmond et al. (2009a,b) utilised the Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1994), the Global Severity Index (GSI) and the Trauma Symptom Inventory (TSI; Briere, 1995), whereas Gustafsson et al. (2009) employed the Trauma Symptom Checklist for Children (TSCC; Briere, 1996).

Some studies adopted a more focused approach, selecting particular items or a subscale from a more comprehensive measure. For example, two of the included studies employed subscales from the Youth Self Report (YSR; Achenbach, 1991, 2001), a self-report inventory that measures social competency and psychological distress in children and adolescents aged 11 to 18 years. Soler et al. (2012) utilised the Post-Traumatic Stress Problems subscale while Kennedy and Bennett (2006) used the Attentional Problems and Aggressive Problems subscales. In their study, Turner et al. (2012) selected one item from the TSCC in order to assess suicidal ideation.

Other studies implemented structured clinical interviews, such as the Revised Clinical Interview Schedule (CIS-R; Lewis, Pelosi, Araya, & Dunn, 1992) in addition to ICD-10 diagnostic criteria in order to determine the prevalence of adverse mental health outcomes in their sample (Jirapramukpitak et al., 2011). A similar approach was employed by Ford et al. (2010), whom employed questions from the Diagnostic

Interview Schedule, a validated epidemiological survey, in combination with DSM-IV diagnostic criteria to assess mental health outcomes. Furthermore, Romito and Grassi (2007) employed the General Health Questionnaire (GHQ; Goldberg, 1972) to measure anxiety, depression and self-esteem in their subjects. In addition, the researchers formulated additional questionnaire items to assess symptoms of panic attack, eating problems, suicidal ideation and heavy alcohol use, guided by the diagnostic criteria from DSM-IV or as indicated by previous research. Therefore, outcomes varied considerably between studies.

2.14 Prevalence of Multiple Traumatization (recurrent CAN plus wider trauma)

As previously highlighted, a number of studies chose to use a particular cutoff in which to identify a group of the most victimised subjects (Elliot et al., 2009; Richmond et al., 2009a,b; Soler et al., 2012; Turner et al., 2012). In these studies, findings in relation to multiple traumatization therefore refer to the top 10% of multiply victimised individuals. For the remaining studies, definitions of multiple traumatization varied. This variation is reflected in the wide range of prevalence rates reported between studies.

Past Year Rates

Overall, past year rates of multiple traumatization ranged from 5.3% to 94% between studies. In Soler et al.'s study, 71.6% of subjects had been exposed to 2 or more types of victimisation in past year, 31.7% to 5 or more and 5.1% to 11 or more. The prevalence of CAN in the previous year was 24.9% for males and 48.9% for females. Strøm et al. (2013) found that 3.9% of subjects had been exposed to recurrent CAN only (sexual and/or physical abuse), 5.3% reported exposure to both recurrent CAN

and bullying, 6.2% reported exposure to three forms of victimisation and 1.7% to four forms. Furthermore, Kennedy and Bennett (2006) reported that 94% of participants had been exposed to current cumulative violence exposure. Turner et al. (2012) did not report prevalence rates of victimisation. It should be noted that the inclusion of less severe types of victimisation (e.g., being hit by a sibling) within particular studies (i.e., those that employed the JVQ) is likely to account for the much higher prevalence rates reported in some of the included studies.

Lifetime Rates

Overall, lifetime rates of multiple traumatisation ranged from 5.1% to 75% between studies. Richmond et al. (2009) reported that 29.6% of female subjects had been exposed to CAN. Furthermore, more than 40% of females had been exposed to 5 or 6 types of victimisation (i.e., multiple traumatisation), with 15.4% having experienced victimisation across 6 different categories. Similarly, Elliot et al. (2009) reported 24.6% of female subjects had been exposed to 6 different categories of victimisation, with 41.1% reporting exposure to CAN. In their study, Ford et al. (2010) reported that approximately one-third of subjects reported a history consistent with poly-victimisation.

Annerbäck et al. (2012) found that 7% of subjects had been exposed to recurrent physical abuse and 4.3% to recurrent witnessing of IPV. In addition, 5.1% had been exposed to physical abuse plus one further type of victimisation (i.e., multiple traumatisation), 1.4% had been exposed to physical abuse plus 2 other forms and 0.3% to physical abuse plus 3 other forms. Furthermore, Romito and Grassi (2007) found that 51.4% of males had experienced direct family violence (psychological or

physical abuse) and/or witnessed family violence. Similarly, 56.1% of females reported exposure to such violence. The prevalence of exposure to multiple forms of violence was much lower, with 14.9% of males reporting exposure to three forms of violence and 5.5% to four or five forms. Among females, 12.5% reported exposure to three forms of violence and 8.7% to four or five forms.

Kennedy and Bennett (2006) reported that 98% of participants had been exposed to lifetime cumulative violence exposure, with 75% reporting lifetime exposure to at least three out of four types of violence (physical abuse, witnessing parental violence, partner violence and community violence). Furthermore, Jirapramukpitak et al. (2011) found that 18.3% of subjects had been exposed to one form of victimisation, 5.3% to two forms and 1.5% to all three forms. It should be noted that only exposure to domestic violence, physical abuse and IPV were examined in this study. Gustafsson et al. (2009) did not report prevalence rates of victimisation.

2.15 The Impact of Recurrent CAN only

Appendix 5 provides a detailed table of the synthesised evidence from all included studies for each types of outcome. However, based on the nature of the outcomes measured by the studies, outcome variables were grouped accordingly in terms of internalising disorders or behaviours, externalising disorders or behaviours, physical health problems and academic outcomes. A significant proportion of the included studies employed regression analyses to examine the relative impact of both multiple traumatisation and recurrent CAN in predicting the aforementioned outcomes. Table 5 therefore provides a brief overview of the outcomes explored within the included

studies, along with a summary of significant findings for exposure to recurrent CAN and multiple traumatisation.

Predominantly, the included studies found that multiple traumatisation predicted increased risk of developing an array of internalising and externalising disorders, poorer physical health and greater academic-related difficulties in comparison to recurrent CAN alone. While many of the included studies found a significant association between exposure to recurrent CAN alone and a number of the aforementioned adverse outcomes, the association with multiple traumatisation was typically much stronger across all of the 11 included studies.

For example, following examination of the independent impact of recurrent maltreatment upon a range of outcomes, Elliot et al. (2009) found that multiple traumatisation added significant variability beyond that of recurrent CAN alone in relation to outcomes such as suicide ideation, low self-esteem, depression, anxiety, substance misuse or academic or career problems. Similar findings were observed by Richmond et al. (2009a,b) for depression and anxiety, in addition to affect dysregulation, obsessive compulsive symptoms and paranoid ideation. Thus, while recurrent CAN alone was independently and significantly associated with a range of adverse outcomes, the impact of multiple traumatisation upon such outcomes was much greater.

For those studies examining the cumulative impact of exposure to victimisation, similar findings were observed. Specifically, as exposure to more types of victimisation increased, the risk of a number of adverse outcomes also increased. For example, Jirapramukpitak et al. (2011) found that subjects reporting exposure to any

one type of violence were generally more likely to report adverse outcomes however this risk increased significantly in response to multiple types of violence exposure. Furthermore, Romito and Grassi (2007) found that for those exposed to one to three forms of violence, the risk of adverse outcomes increased gradually but for those exposed to four of five types of violence, the risk of adverse outcomes increased dramatically. Similarly, Strøm et al. (2013) reported that exposure to any one type of violence was associated with poor outcomes, however such outcomes were significantly poorer among those exposed to two or three different forms of violence.

Annerbäck et al. (2012) observed a linear pattern between exposure to child physical abuse plus further types of victimisation and adverse outcomes, with the strongest associations observed in relation to child physical abuse plus three further types of victimisation. However it should be noted that exposure to physical abuse alone was not significantly associated with physical health outcomes or sexual risk behaviour. Moreover, while Kennedy & Bennett (2006) found lifetime cumulative violence exposure to be associated with school-related difficulties, exposure to parental violence or physical abuse were not independently predictive of such outcomes.

In those studies examining ‘poly-victimisation’ or ‘poly-traumatisation’, comparable findings were also reported. For instance, Gustafsson et al. (2009) found that the number of different traumatic events was more important in predicting poor psychological outcomes than exposure to one type of CAN or other trauma alone. Ford et al. (2010) found that multiply victimised subjects were significantly more likely to report adverse outcomes than those with CAN histories not consistent with poly-victimisation. Similar findings were observed by Soler et al. (2012) who found that poly-victimised subjects had significantly lower self-liking, than both victims and

non-victims. While poly-victimised subjects also reported significantly higher rates of PTSS, in comparison to victims and non-victims, the female victim group also reported higher levels of PTSS in comparison to non-victim females. Furthermore, although poly-victimisation emerged as the strongest predictor (5.8 times more likely) of suicidal ideation in Turner et al.'s (2012) study, it was also noted that CAN exerted a particularly strong influence upon suicidal ideation (4.4 times more likely).

In addition, a number of included studies highlighted the association between exposure to recurrent CAN and increased risk of re-victimisation, i.e. multiple traumatisation. In particular, those subjects exposed to both parental domestic violence and physical abuse were more likely to endure IPV in their subsequent adult relationships (Jirapramukpitak et al., 2011). Furthermore, exposure to any form of family violence was associated with increased risk of both peer or school violence and IPV among both genders. In females, exposure to recurrent CAN was also associated with an increased risk of sexual violence (Romito & Grassi, 2007).

Table 5: Summary of Outcomes following Exposure to Recurrent CAN or Multiple Traumatization

Symptom	No. of studies finding significant association with Recurrent CAN / No. of studies <u>not</u> finding a significant association	Statistics	No. of studies finding significant association with Multiple Traumatization / No. of studies <u>not</u> finding a significant association	Statistics
PTSD or PTSS	1 / 1	U=6525.5, p=.017	2 / 0	OR=3.12
Panic	1 / 1	OR=1.16-2.40	1 / 0	OR=2.63-8.83
Eating Problems	0 / 1	NS	1 / 0	OR=2.23-7.34
Affect Dysregulation	0 / 1	NS	1 / 0	R ² = .11
Self-harm	1 / 0	OR=2.4	1 / 0	OR=8.1-132.1
Suicide Ideation	3 / 1	OR=2.1-6.3	4 / 0	OR=2.5-20.91 R ² = .5 to .8
Low Self-esteem	0 / 2	NS	2 / 0	R ² = .12
Depression	4 / 2	OR=1.9-2.0 R ² = .4 to .7	6 / 0	OR=3.83-10.11 R ² = .6 to .12
Anxiety	4 / 0	OR=1.9-2.0 R ² = .4 to .8	4 / 0	OR=2.2-9.1 R ² = .5 to .12
Obsessive-Compulsive Disorder	1 / 0	R ² = .4 to .6	1 / 0	R ² = .5 to .17
Paranoid Ideation	1 / 0	R ² = .6	1 / 0	R ² = .8 to .18
Substance Misuse	3 / 1	OR=2.3-4.2 R ² = .2	4 / 0	OR=2.3-25.6 R ² = .9 to .10
Alcohol Misuse	3 / 1	OR=1.6-3.4	4 / 0	OR=2.1-7.25
Violence	1 / 0	OR=3.2	1 / 0	OR=4.2-29.9
Delinquency	1 / 1	OR=3.3	2 / 0	OR=2.74-14.8
Risky Sexual Behaviour	0 / 1	NS	1 / 0	OR=2.6-8.0
Poor General Health	1 / 1	OR=1.25-2.39	2 / 0	OR=2.19-12.4
Academic Problems	1 / 0	R ² = .5	1 / 0	R ² = .4 to .12
Behavior Problems at School	1 / 1	R ² = .12 to .21	2 / 0	R ² = .10 to .78

Note. OR=Odds Ratio; R²=Regression co-efficient; U=Mann-Whitney

2.16 Impact of Multiple Traumatization (recurrent CAN plus wider trauma)

As demonstrated in Table 5, although many of the included studies found a significant association between recurrent CAN and a number of adverse outcomes, the association with multiple traumatization was found to be more consistent across studies and much stronger.

Mental Health

Mental health was the most frequent outcome variable measured by the studies in this review. Of the 11 included studies, nine studies measured at least one adverse mental health outcome. As previously highlighted, while some studies employed comprehensive measures in order to examine an array of mental health outcomes (e.g., Richmond et al., 2009a,b), others opted for a more narrow focus (e.g., Turner et al., 2012).

Exposure to multiple traumatization was found to be significantly associated with an increased risk of a number of internalising disorders or behaviours. Specifically, a number of studies reported an elevated risk of depression (3.8 to 10.1 times more likely; Annerbäck et al., 2012; Elliot et al., 2009; Ford et al., 2010; Jirapramukpitak et al., 2011; Richmond et al., 2009a,b; Romito & Grassi, 2007), anxiety (2.2 to 9.1 times more likely; Annerbäck et al., 2012; Elliot et al., 2009; Jirapramukpitak et al., 2011; Richmond et al., 2009;) and panic (2.6 to 8.8 times more likely; Romito & Grassi, 2007). Further studies highlighted a significant association with self-injurious behavior (8.1 to 132.1 times more likely; Annerbäck et al., 2012) and suicide ideation (2.5 to 20.9 times more likely; Elliot et al., 2009; Jirapramukpitak et al., 2011; Romito & Grassi, 2007; Turner et al., 2012), as well as eating problems (2.2 to 7.3 times more

likely; Romito & Grassi, 2007), lowered self-esteem (Elliot et al., 2009; Soler et al., 2012) and affective dysregulation (Richmond et al., 2009a,b).

Furthermore, exposure to multiple traumatisation was also associated with an increased risk of Post-Traumatic Stress Disorder (PTSD) and Post-Traumatic Stress symptoms (PTSS). For example, Ford et al. (2010) found that multiply victimised subjects (i.e., those that fulfilled criteria for poly-victimisation) were 3 times more likely to meet the diagnostic criteria for PTSD in comparison to those who had a history of witnessing violence only. In addition, Soler et al. (2012) found that exposure to multiple forms of victimisation was associated with a significantly higher level of PTSS. Similarly, exposure to multiple traumatic events was associated with elevated levels of trauma symptomatology as indicated by increased scores on the TSCC (Gustafsson et al., 2009).

Externalising Behaviours

Five studies reported a significant association between multiple traumatisation and increased risk for alcohol or substance misuse (Annerbäck et al., 2012; Elliot et al., 2009; Ford et al., 2010; Jirapramukpitak et al., 2011; Romito & Grassi, 2007). Following exposure to physical abuse in addition to three further forms of victimisation, Annerbäck et al. found that individuals were 25.6 times more likely to report substance misuse and 6.5 times more likely to report alcohol abuse. In comparison, substance misuse and alcohol abuse were only 2.7 and 1.6 times more likely, respectively, following exposure to physical abuse alone. Similarly, Jirapramukpitak et al. found that individuals exposed to three forms of violence were 12.3 times more likely to report substance misuse, whereas those exposed to one form only were 3.6 times more likely to report such behaviour. Furthermore, Ford et al.

found that exposure to poly-victimisation was associated with prevalence rates of 2.3% to 10.9% for substance misuse, in comparison to 0% to 1.5% among those with trauma histories not consistent with poly-victimisation.

Only two studies examined the relationship between multiple traumatisation and externalising behaviour. Specifically, Annerbäck et al. (2012) found a strong association between exposure to multiple forms of victimisation and the perpetration of violent acts (4.2 to 30 times more likely). The risk of engaging in violence increased dramatically (i.e., 30 times more likely) with exposure to child physical abuse plus three further forms of victimisation (witnessed IPV, bullying and forced sex). In addition, a significant association was also found in relation to shoplifting and sexual risk-taking behaviour (under 14-years at first sexual intercourse; 2.6 to 8 times more likely). Again, the highest risk was found in relation to exposure to child physical abuse plus two or three further forms of victimisation. Similarly, Ford et al. (2010) found a significant association between multiple traumatisation and delinquent behaviour. Specifically, multiply victimised youth were more likely to engage in delinquent acts themselves and were also more likely to associate with delinquent peers. This association was independent of the effects of any current PTSD, depression or substance misuse diagnoses. Importantly, Ford et al. also found that 'poly-victims' were much more likely to have co-morbid disorders, in comparison to those with a history of CAN (but not poly-victimisation) or no CAN history.

Physical Health

Only two studies explored the impact of multiple traumatisation upon physical health outcomes (Annerbäck et al., 2012; Romito & Grassi, 2007). Notwithstanding this,

both studies found a significant association between exposure to multiple traumatisation and poor physical health outcomes (2.2 to 12.4 times more likely). Specifically, these studies examined overall poor general health and the presence of specific health problems such as frequent headaches, migraines, stomach ache, tinnitus and back, hip or shoulder pain. Both studies reported exposure to multiple types of victimisation to be associated with significantly poorer physical health outcomes. It should be noted that in Romito and Grassi's study, this finding applied to female subjects only. For males, no significant association between exposure to any level of victimisation and physical health outcomes was observed.

Academic Outcomes

Three studies considered the impact upon academic outcomes. Elliot et al. (2009) examined the relationship between multiple traumatisation and adjustment to university. Specifically, multiple traumatisation was significantly associated with academic problems, career problems and academic adjustment, as measured by the CAS and SACQ. Exposure to multiple traumatisation was not found to be predictive of subjects' current academic attainment, i.e., their current Grade Point Average (GPA). In addition, Kennedy and Bennett (2006) examined the presence of school-based attention and behaviour problems in addition to subjects' current participation in school. Exposure to multiple forms of violence was significantly associated with increased prevalence of attention and behaviour problems, as well as increased suspension and expulsion rates. Similarly, Strøm et al. (2013) reported that exposure to increased forms of violence was associated with significantly poorer grades.

2.17 Discussion

The aim of this systematic review was to explore the impact of childhood exposure to recurrent maltreatment versus multiple traumatisation among an adolescent and young adult population. In addition, the current review aimed to explore both the prevalence rates of multiple traumatisation within the aforementioned populations and the methodologies utilised within the included studies. Eleven studies were included in the final review, all of which were carried out in the United States, Europe or Asia, and all of which comprised a study population aged between 12 and 25 years.

As previously highlighted, a number of studies chose to use a particular cut-off in which to identify a group of the most victimised subjects. Consequently, in these particular samples it is possible that more subjects were exposed to multiple traumatisation than were accounted for by the top 10% of most victimised subjects. These disparities in sample size and conceptualisation of multiple traumatisation are likely to explain the large variation in lifetime rates of multiple traumatisation, ranging from 1.5% to 75% between studies. Lower prevalence rates were found in studies measuring a narrower range of victimisation types (e.g., Jirapramukpitak et al., 2011) and significantly higher prevalence rates were found among ‘high risk’ samples (e.g., Kennedy & Bennett, 2006) or those measuring a more comprehensive range of victimisations (e.g., Ford et al., 2010).

Crucially, the findings from the current review highlight the significant prevalence of multiple traumatisation occurring within the general adolescent and young adult population. The victimisation literature suggests that prevalence rates typically represent only the ‘tip of the iceberg’ (e.g., Gilbert et al., 2009) and therefore it is

likely that many subjects exposed to victimisation within the current review will not have reported this previously and will not have come to the attention of victim services. Indeed, the findings from a previous study by Annerbäck et al. (2010) indicated that less than 10% of subjects reporting exposure to childhood physical abuse had reported this to the appropriate services. As such, there are clearly a significant number of individuals within the general population who are currently enduring a range of adverse outcomes associated with multiple traumatisation.

Significantly, although the conceptualisation of multiple traumatisation varied between studies, findings from all of the included studies indicated that adolescents and young adults exposed to multiple traumatisation are at increased risk of greater deleterious outcomes across a number of domains of functioning. The majority of included studies examined at least one adverse mental health outcome. Other outcome variables measured included academic-related outcomes, physical health and delinquency. Specifically, exposure to multiple traumatisation was associated with increased risk of experiencing an array of mental health problems, alcohol and substance misuse, poor physical health, increased risk of engaging in delinquent or other risk-related behaviours and poorer academic outcomes. While adolescents and young adults exposed to recurrent CAN only were also found to be at risk of experiencing a number of these adverse outcomes, the risk associated with such outcomes was not as consistent when compared to that of multiple traumatisation. For instance, while multiply traumatised individuals were found to be 25.6 times more likely to report substance misuse, those exposed to CAN alone were only 2.7 times more likely to report substance misuse (Annerbäck et al., 2012); a pattern that was observed across studies. Crucially, this would suggest that exposure to wider forms of

trauma, beyond that of recurrent CAN, significantly increases an individuals' risk of developing a number of psychosocial difficulties.

Such findings are consistent with the wider research literature that demonstrates a significant association between exposure to multiple forms of victimisation and worsened outcomes across individuals' physical, psychological, social and emotional domains of functioning (Finkelhor, 2008; Finkelhor et al., 2005). Importantly, among those studies examining the cumulative impact of exposure to multiple traumatisation, exposure to higher levels of victimisation was associated with a dramatic increase in risk of adverse outcomes. This finding provides support for a cumulative risk framework in which an increasing number of victimisation experiences corresponds to an increased likelihood of poor outcomes across a range of domains (e.g., Rutter, 1979). Given the strength of this association observed within the current review, there are clearly significant implications for individuals' ability to 'bounce back' following exposure to multiple traumatisation.

Furthermore, consistent with previous research, a number of studies also highlighted that exposure to recurrent CAN was associated with an increased risk of subsequent re-victimisation (Jirapramukpitak et al., 2011; Romito & Grassi, 2007). Specifically, such findings indicate that childhood exposure to recurrent CAN is linked to increased risk of subsequent victimisation in wider contexts such as school and adult intimate relationships, which also implies further victimisation by different perpetrators. Importantly, given the cross-sectional design of these studies, it cannot be concluded that this relationship is causal in nature. However it should be noted that there is a robust and consistent finding within the literature to indicate that childhood

victimisation is a key predictor of future victimisation across most types of victimisation (e.g., Coid et al., 2001; Messman & Long, 2000). It may be that factors responsible for an individuals' vulnerability to recurrent CAN in the first instance may also increase individuals' vulnerability to subsequent victimisation, whilst the impact of recurrent CAN upon individuals subsequent functioning may also create or potentiate vulnerability to further victimisation. Irrespective of causal factors, the clustering of multiple victimisation experiences among certain individuals should not be ignored and further emphasises the notion that for some individuals, victimisation is chronic and pervasive over time.

Notably, a small number of the included studies examined the effect of gender upon outcomes associated with exposure to recurrent CAN and multiple traumatisation (Romito & Grassi, 2007; Soler et al., 2012). In particular, exposure to multiple traumatisation among females was associated with poorer physical health outcomes, whereas no such association was found among males (Romito & Grassi, 2007). In addition, females exposed to recurrent CAN only were found to be more at risk of developing PTSS and alcohol misuse problems in comparison to males (Romito & Grassi, 2007; Soler et al., 2012). Importantly, these findings suggest that while recurrent CAN and multiple traumatisation appear to exert a pervasive and deleterious impact upon both males and females, gender may indeed play a role in determining the nature of an individual's subsequent presenting difficulties. The role of gender in relation to outcomes associated with multiple traumatisation therefore represents an important area worthy of further exploration.

2.18 Strengths and Limitations

Comprehensive search strategies were employed in the current review, in addition to effective quality assessment tools. Importantly, this permitted the selection of relevant information from each study along with the assurance that each study was of a high standard. Notwithstanding this, the review process was subject to a few inevitable methodological limitations. Firstly, time constraints permitted the inclusion of English language papers only as the author did not have the resources with which to translate non-English articles. It is likely that statistically significant findings from studies published in non-English speaking countries will be published in English, in contrast to those not finding significant results. As such, the current review may be subject to an element of language and/or publication bias. Secondly, the searches were limited to published articles within electronic databases only. As such, any potentially relevant studies unavailable electronically, or those that were unpublished at the time of this review, were not included.

In relation to the studies examined, the way in which the construct of multiple traumatisation was conceptualised and measured varied between studies. Although a number of studies utilised an equivalent measure of victimisation (i.e., the JVQ), the lack of consistency regarding an operational definition and measurement across all studies makes the drawing of comparisons inherently difficult. Furthermore, the definitions of different forms of victimisation are likely to vary between countries and cultures, which in turn are likely to impact upon individuals' awareness and perception of victimisation and thus the rates of victimisation between studies. Consequently, the conclusions from the current review should therefore be examined with these considerations in mind.

Of the 11 included studies, 10 employed samples from the general population or academic settings rather than clinical settings or secure institutions. Such homogeneity between sample populations enabled more accurate comparisons to be made between findings and further enhances the generalisability of such findings. Furthermore, the included studies examined an array of outcomes in relation to multiple traumatisation, thus permitting exploration of the widespread impact upon individuals' subsequent functioning. Importantly, the findings from the current review therefore contribute to our understanding of the prevalence and impact of multiple traumatisation occurring within the general adolescent and young adult population. Notably, a number of the included studies encompassed a 'non-victim' comparator group which permitted the effective comparison of outcomes alongside the victimised groups. This further increases the robustness of the findings from these particular studies (Annerbäck et al., 2012; Ford et al., 2010; Jirapramukpitak et al., 2011; Romito & Grassi, 2007; Soler et al., 2012; Strøm et al., 2013).

Notably, many of the included studies utilised large sample sizes, permitting the use of multivariate analyses. Importantly, this permitted exploration of the relative impact of both recurrent CAN and multiple traumatisation simultaneously. Evidently, a limitation of observational studies is that subjects clearly cannot be randomly allocated to abuse or non-abuse groups, which has implications for confounding variables. While most of the included studies presented multivariable adjusted odds ratios controlling for a range of socio-demographic and study design variables (Annerbäck et al., 2012; Ford et al., 2010; Jirapramukpitak et al., 2011; Strøm et al., 2013; Turner et al., 2012), a few studies presented unadjusted associations, or

adjusted for age and gender only (e.g., Gustafsson et al., 2009; Romito & Grassi, 2007).

In clinical settings, psychometric measures are typically used in conjunction with clinical judgement. Notably, a significant proportion of studies within this review relied exclusively on the self-report of subjects when implementing psychometric measures or their researcher-developed questionnaires. As such, factors that could potentially interfere with the accuracy of subjects' self-report, such as a tendency to minimise current difficulties or a poor level of self-awareness, have not been examined in light of the results. Furthermore, asking participants to recall past experiences of victimisation inherently relies on individuals' ability to willingly and accurately recall such memories. The reliability of subjects' self-report alone should therefore be taken into consideration when interpreting the findings of such studies.

Notwithstanding this, research examining individuals' past victimisation experiences typically relies on a retrospective approach. Future studies should endeavor to adopt a longitudinal design in order to help eliminate such bias and verify the findings from the current review.

Importantly, it should also be noted that memory recall can be affected following exposure to a traumatic event. In particular, memory disturbances are prominent in the presentation of PTSD and neuroimaging research has demonstrated reduced hippocampal volume and impaired hippocampal functioning among individuals with PTSD (Shin, Rauch, & Pitman, 2006). Given the robust association between exposure to CAN and PTSD (King et al., 2003; Saywitz, Mannarino, Berliner, & Cohen, 2000), it is possible that a number of individuals included within the current review fulfil

diagnostic criteria for PTSD along with associated memory deficits. This should therefore be taken into consideration when interpreting the findings of the current review.

Importantly, the use of self-report measures also relies upon participants' capacity to recognise an act as violent or abusive in nature. For those individuals exposed to violence and abuse within a number of contexts (e.g., at home, at school and in the community) violence becomes increasingly 'normal' and therefore is more difficult to recognise as being abusive. Furthermore, individuals currently exposed to violence or abuse may be reluctant to identify with being a 'victim' or equally may not recognise they are being subjected to abuse.

Of the 11 studies included in the review, 10 were of a cross-sectional design. As such, the relationship between exposure to various forms of traumatisation and subsequent adverse outcomes cannot be assumed to be causal in nature. A longitudinal design would therefore be more accurate in determining the direction of causality. Notwithstanding this, the studies included in the review were considered to be methodologically robust as identified by the quality assessment process. Notably one study in the current review utilised a longitudinal design (Turner et al., 2012). In this study, subjects' exposure to recent victimisation and the presence of suicidal ideation was examined using two waves of longitudinal data, within a one-year period. Importantly, the findings from this study were comparable to those from studies utilising a cross-sectional design.

Evidently, the included studies examined a wide array of outcomes in relation to recurrent CAN and multiple traumatisation. Whilst the study findings concluded that multiple traumatisation exerts a more deleterious effect upon individuals' subsequent functioning, many studies failed to examine the co-morbidity of such outcomes (e.g., Annerbäck et al., 2012; Elliot et al., 2009; Richmond et al., 2009) or chose to examine only one outcome (e.g., Strøm et al., 2013; Turner et al., 2012). Importantly, those studies exploring the co-morbidity of mental health outcomes highlighted that individuals exposed to multiple forms of victimisation are far more likely to endure a number of co-morbid difficulties in comparison to those experiencing single types of victimisation or no victimisation (Ford et al., 2010). Crucially, the increased prevalence of adverse outcomes among multiply traumatised adolescents and young adults strongly suggests the increased prevalence of co-morbid difficulties. Further research should endeavour to explore such co-morbidity, with a view to providing a more comprehensive picture of the outcomes associated with multiple traumatisation.

Importantly, while the included studies examined an array of adverse outcomes following exposure to recurrent CAN or multiple traumatisation, it should be noted that not all individuals from these studies went on to experience such poor outcomes. Despite this, none of the included studies explored factors that may help to explain resilient outcomes in such individuals. Future research in this area should therefore endeavour to not only explore risk factors associated with multiple traumatisation, but also those protective factors that may help to buffer against the harmful effects associated with exposure to such adversity.

2.19 Interpretation of Findings

Given the disparity in measurement of individual victimisation types and overall multiple traumatisation, it becomes inherently difficult to identify the true prevalence rate of multiple traumatisation. Despite this, the results of the current review indicate that multiple traumatisation is not only highly prevalent within the general adolescent and young adult population, but the outcomes associated with such exposure are particularly deleterious and pervasive in nature.

As previously highlighted, the research literature has long documented the link between exposure to individual types of victimisation and an array of adverse outcomes. The current review has important implications for such findings. In particular, the prevalence of multiple traumatisation reported in the current review suggests that previous studies examining exposure to individual forms of CAN, or the recurrence of CAN, may have failed to consider the confounding impact of further types of potential trauma. Findings from the current review highlight that many individuals exposed to one form of CAN are likely to experience further victimisations, either within a one-year period or across the lifespan. Consequently, research studies failing to measure a broad array of victimisations are at risk of drawing conclusions based on an incomplete and thus incorrect picture of an individual's victimisation history. Conversely, those studies examining a broad range of victimisation experiences and associated outcomes are therefore of enhanced value to both child protective services and clinical practice.

Notably, those studies utilising a more comprehensive measure of victimisation (for example the JVQ), typically reported much higher levels of victimisation. This may

be due to the JVQ assessing relatively common, low severity types of victimisation such as theft and being hit by a sibling, in addition to uncommon, high severity types such as rape. Given that a large proportion of individuals are likely to have been hit by a sibling during childhood, the reported rates of victimisation with this tool are likely to be elevated. Notwithstanding this, the findings suggest that many adolescents and young adults have experienced a broad range of potentially traumatic events, which further emphasises the need for an extensive assessment tool to be used in research of this nature. Evidently, those studies examining only a few types of victimisation (e.g., Jirapramukpitak et al., 2011) risk omitting participants' exposure to a number of potentially important victimisations from their analysis.

Notably, the findings from the current review highlighted a robust association between multiple traumatisation and the risk of internalising disorders such as anxiety and depression. What is more, exposure to multiple traumatisation was also associated with poorer outcomes across broader domains, such as academic-related difficulties and externalising behaviours. In particular, the findings from the current review highlighted a significant association between exposure to multiple traumatisation and increased risk of delinquent behaviour and the perpetration of violence. Whilst the included studies predominantly focused on the increased risk of internalising disorders, the link with externalising behaviours should not be overlooked (Ford et al., 2010). Crucially, not only does multiple traumatisation have significant implications for victims' own personal distress, but the increased risk of externalising disorders clearly has broader implications for others' wellbeing and society in general. Importantly, further research is required to explore the wider impact of multiple traumatisation.

It should be noted that the impact of multiple traumatisation is difficult to disentangle from other variables that may also adversely affect adolescent and young adult wellbeing. For example, it is possible that non-victimisation trauma, such as a family bereavement, may adversely impact upon outcomes such as mental health. Additionally, pre-existing psychological symptomatology may further complicate the relationship between multiple traumatisation and mental health outcomes. As such, research studies in this area should endeavour to address the potential contribution of such variables in relation to their findings. Notably, a number of studies included in the current review controlled for variables such as internalising disorder diagnoses and past suicidal ideation (e.g., Turner et al., 2012), thus enhancing the quality of their methodology and findings further.

2.20 Applicability of Findings

The findings of this review are applicable to adolescents and young adults within the general population. Of the 11 studies included in the review, 10 employed samples from the general population or academic settings as opposed to clinical settings or secure institutions. Notably, Kennedy and Bennett (2006) utilised a sample of urban adolescent mothers (N =120) who could be classified as a ‘high risk’ population and therefore the findings from this particular study should be examined with this consideration in mind. Many of the studies utilised large sample sizes, with several employing large nationally representative samples made up of an equivalent number of male and female participants (e.g., Ford et al., 2010). Importantly, this enhances the reliability and applicability of findings to the wider adolescent and young adult population. Notably, current evidence does not strongly suggest that youth exposed to multiple forms of victimisation are from poor backgrounds (Finkelhor, 2008). Indeed,

the results from the current review would provide support for this finding, particularly as socio-demographic variables were controlled for in many of the studies.

In terms of age, while some studies employed an adolescent and/or young adult sample with a broad age range, others recruited subjects from a much narrower age range (for example 15-17 year olds; Annerbäck et al., 2012). The age range of participants should therefore be considered in view of the generalisability of findings to a wider adolescent or young adult population. Of the 11 studies included in the review, five were conducted in the United States and five were conducted in Europe. As such, the findings are particularly applicable to Western culture, although it should be noted that none of the included studies were conducted in the United Kingdom and therefore the generalisability of the current findings to a United Kingdom population should be considered with caution. Further to this, while eight studies employed a male and female sample, three studies examined a female-only sample and therefore the findings from these particular studies may not be generalisable to a male population.

2.21 Conclusions and Recommendations: Practical Implications

Despite the limitations outlined above, the results emerging from the current review indicate that multiple traumatisation poses a significant risk to the wellbeing of adolescents and young adults. Crucially, the results suggest that multiple traumatisation is prevalent within the general adolescent and young adult population, with a number of young people enduring multiple and serious forms of victimisation across the lifespan. Based on such findings, it is essential that increased attention is

attributed to both the detection and prevention of multiple traumatisation, in addition to addressing the widespread impact of those affected by such victimisation.

In relation to current practice, the findings from the current review suggest that more attention should be paid in relation to the detection of multiple traumatisation, particularly in cases where a child has already been identified as at risk for maltreatment. Specifically, it would be advantageous for child protection services to employ a screening measure for multiple traumatisation in order to effectively identify children at increased risk for multiple traumatisation; thus enabling appropriate services to be targeted accordingly. A 12-item version of the JVQ has demonstrated its effectiveness in the assessment of multiple victimisation (Finkelhor, Ormrod, Turner, & Hamby, 2005). The cost of implementing such a measure would be low, particularly in light of the long-term consequences associated with multiple traumatisation. Crucially, the findings from the current review highlight the importance of assessing for a broad range of victimisations whilst simultaneously not underestimating the impact of certain types of victimisation (i.e., recurrent CAN) upon subsequent wellbeing.

It is essential that practitioners are aware of the pervasive impact multiple traumatisation can have upon individuals' subsequent functioning. Specifically, multiple traumatisation can adversely impact upon a range of mental health, physical health and academic outcomes. As such, it is critical that the intervention work carried out with young people reporting exposure to such victimisation sufficiently addresses potential difficulties across these multiple domains. Individuals exposed to multiple traumatisation may suffer from low self-esteem and may have difficulty in

establishing supporting and trusting relationships with others. As such, developing a therapeutic relationship is a crucial first step to working effectively with individuals reporting such histories. Subsequently, a CBT-informed approach may help individuals to understand how their experiences have shaped their current ways of thinking in addition to maintaining some of their current difficulties (e.g., psychological symptomatology, interpersonal difficulties).

Importantly, comprehensive psychological assessment should be undertaken with individuals reporting a history of victimisation in order to comprehend the extent of their victimisation history and subsequently ensure that appropriate intervention work is conducted. Specifically, clinicians should give careful consideration to the nature, frequency and severity of maltreatment experiences, as well as the nature, frequency and severity of exposure to victimisation experiences in wider contexts (e.g., bullying, dating violence). All of these adverse experiences are likely to be relevant to an individual's current presenting difficulties and should therefore be used to inform psychological formulations.

Crucially, young people reporting histories consistent with multiple traumatisation are likely to have endured substantial adversity across multiple contexts, which in turn is likely to adversely impact upon their capacity to develop resilience. Intervention work should therefore endeavour to enhance protective factors in these young people's lives. In particular, intervention efforts should focus upon enhancing self-esteem, effective ER skills and psycho-education about healthy relationships with others, as well as helping young people to fulfill educational and employment goals.

Importantly, establishing the pathways in which individuals become exposed to multiple traumatisation is of great significance. Notably, the findings from the current review, in addition to the wider research literature, demonstrate that proneness to victimisation can persist throughout childhood, adolescence and into adulthood. As such, unearthing the factors that increase individuals' vulnerability to further victimisation is crucial in order to disrupt this cycle and help individuals escape future victimisation. Moreover, research should endeavour to highlight those factors which could protect individuals from enduring further victimisations, with a view to enhancing such factors in 'at risk' children and young people.

Crucially, whilst the findings from the current review suggest that multiple traumatisation is associated with the presence of worsened outcomes across a range of domains, it should be noted that not all individuals exposed to multiple traumatisation will go on to develop such difficulties. Importantly, there is a great deal of variability among individuals exposed to recurrent CAN and multiple traumatisation in relation to the nature and extent of their subsequent difficulties in functioning. The findings from the present review, in addition to previous research, suggest that those with a history of victimisation are not a homogenous group. In actuality, a significant number of individuals will present as resilient in response to such adversity and will go on to demonstrate healthy adjustment. Therefore, whilst the findings from the current review are significant in demonstrating an association between multiple traumatisation and adverse outcomes, it is also important to consider further variables that may influence subsequent adjustment.

In conclusion, despite the findings from the current review being compelling, multiple traumatisation is still an emerging area of research and as such, further research is required to consolidate and develop these current findings. In particular, future research should endeavour to explore the developmental pathways in which individuals become exposed to multiple forms of victimisation. In addition, the exploration of multiple traumatisation within a clinical sample of adolescents and young adults would also help to build upon current research findings in this area. As previously highlighted, there is great disparity between studies in relation to the definition and measurement of multiple traumatisation. Consequently, further research should seek to employ a consistent operational definition of multiple traumatisation in conjunction with standardised assessment measures in order to facilitate effective comparison between research findings.

CHAPTER THREE:
CRITIQUE OF A PSYCHOMETRIC ASSESSMENT BRIEF COPE
(CARVER, 1997)

Chapter Rationale

Chapter Two highlighted that both recurrent CAN and multiple traumatisation are associated with a broad array of adverse psychosocial outcomes. Crucially, while the findings from Chapter Two suggest that multiple traumatisation in particular is associated with worsened outcomes across a number of domains, it is also clear that not all individuals exposed to high levels of victimisation will go on to develop such difficulties. As such, it is essential that those factors responsible for building resilience to adverse experiences are examined in conjunction with an individual's exposure to trauma. The aim of this chapter is therefore to explore the role of coping in relation to childhood adversity and its importance as a protective factor.

3.1 Introduction

The construct of coping was first introduced by Lazarus in 1966 and, since then, has continued to receive significant attention in psychological research over the past several decades. Lazarus argued that stress consists of three processes: *Primary appraisal* refers to the process of perceiving a threat to oneself. *Secondary appraisal* involves the evaluation of a potential response to the threat. *Coping* is the process of executing that response. Synder and Dinoff (1999) define coping as “...a response aimed at diminishing the physical, emotional and psychological burden that is linked to stressful life events and daily hassles” (p.5). A considerable body of research indicates that coping strategies play a significant role in an individual's physical and psychological wellbeing when faced with stressful life events (e.g., Skinner, Edge, Altman, & Sherwood, 2003). Notably, maladaptive coping strategies have been highlighted in a number of literatures, including alcoholism, depression, chronic illness and abuse (Gordon et al., 2002; Tennen, Affleck, Armeli, & Carney, 2000).

Coping appears to be a multidimensional construct, however there does not appear to be a universal understanding of the many possible ways in which people cope. Coping has been conceptualised in a number of different ways. Some researchers have concentrated on the focus of the coping, i.e., whether an individual utilises problem-solving strategies or endeavours to manage their emotions in response to the stressor. In particular, Folkman and Lazarus (1980) view coping as having two main functions: the regulation of distressing emotions (emotion-focused coping) and doing something to change the source of a stressor (problem-focused coping). Other researchers have been interested in the method of coping, that is, whether an individual utilises cognitive or behaviour coping strategies (e.g., Billings & Moos, 1981). Other researchers have suggested that the concepts of approach and avoidance provide a coherent theoretical structure with which to understand coping; whereby the cognitive or behavioural strategy reflects the method of coping and the approach/avoidance distinction refers to the focus of the coping (Holohan & Moos, 1987).

Coping encompasses a wide range of responses, some of which are considered effective whereas others may be considered problematic. A coping strategy may be considered adaptive when it leads to the achievement of desired goals, increased levels of subjective wellbeing or a reduction in emotional distress (Folkman & Moskowitz, 2004; Lazarus, 1991). There is significant evidence to indicate that problem-focused coping and seeking social support are related to positive health outcomes and enhanced wellbeing, including a reduced risk of mental health problems (Hefner & Eisenberg, 2009). Such strategies are therefore considered more adaptive. In comparison, emotion-focused and avoidance coping responses are considered less adaptive and have been associated with negative outcomes such as depression,

smoking and panic attacks (Haaga, Thorndike, Friedman-Wheeler, Pearlman, & Wernicke, 2004; Ottenbriet & Domson, 2004).

Coping has been proposed as an important element in understanding the long-term functioning of those exposed to childhood victimisation (Walsh, Fortier, & DiLillo, 2009). Evidently, exposure to childhood victimisation has been associated with an array of adverse outcomes including poor academic achievement, mental health problems, criminal offending, substance misuse and becoming a perpetrator of maltreatment (Mersky & Topitzes, 2010; Turner, Finkelhor, & Ormrod, 2006). Importantly, although the detrimental correlates of childhood victimisation may be common, the literature indicates that both the short- and long-term consequences are variable and inconsistent. Such variation highlights the need to understand the processes that may contribute to the various outcomes associated with childhood victimisation. Importantly, coping is an important mediator of psychological adjustment following exposure to such stressors (Folkman & Lazarus, 1986; Vollrath & Angst, 1993).

Research exploring the mediational role of coping in victims' long-term adjustment suggests that coping may explain, in part, the variability in outcomes associated with childhood victimisation. For example, exposure to some forms of abuse (e.g., child sexual abuse) has been shown to predict greater use of maladaptive coping strategies (Filipas & Ullman, 2006). In turn, the use of maladaptive coping has been linked to increased levels of self-reported distress and trauma symptomatology (Fortier et al., 2009). Thus, one important question in the literature has been how to evaluate coping.

3.2 Measures of Coping

A number of researchers have attempted to assess the construct of coping. In their review of coping assessments, Skinner et al. (2003) identified over 100 assessments of coping. Early contributions to the assessment of coping, (e.g., Pearlin & Schooler, 1978) took the approach of interviewing large cross-sections of adults about coping with stress and categorised these behaviours according to three styles of coping: 1) responses that change the situation, 2) responses that change the meaning or the appraisal of the stress, and 3) responses aimed at controlling distressful feelings. Further assessments of coping have asked respondents to respond to 19 statements about coping with a simple 'yes' or 'no' (Billings & Moos, 1981). Subsequently, such responses were divided into categories of coping based on face validity and were not factor analysed. Skinner et al. (2003) highlighted that the most sophisticated instruments are those constructed on the basis on theory and are also factor analysed to generate a set of different coping strategies.

One such scale is the Ways of Coping Questionnaire (WCQ; Folkman & Lazarus, 1988), a widely used measure of coping. The WCQ consists of two main subscales of emotion-focused and problem-focused coping. However, although widely used in research, the empirical support for the validity of the coping subscales within the WCQ has generally been weak. In particular, the two factors of emotion- and problem-focused coping have been criticised for their disproportionate weightings among items (Endler & Parker, 1990).

Although the distinction between problem-focused coping and emotion-focused coping is widely acknowledged, many researchers have argued that this idea is too

simplistic. For example, Carver, Weintraub and Scheier (1989) proposed that the functions of coping should be subdivided, as there are a variety of distinct strategies that individuals use in order to solve problems or regulate their emotions. Importantly, Carver et al. noted that some emotion-focused responses involve denial, some involve positive reinterpretation of events and others may include seeking support from others'. Crucially, these responses are distinct from each other and, as such, may have diverse implications for an individual's coping outcome. Carver et al. (1989) sought to overcome this problem by developing the Coping Orientation to Problem Experience (COPE) scale, a 60-item instrument intended to measure a range of coping strategies. The full COPE was validated with a sample of 978 undergraduate students at the University of Miami and demonstrated adequate internal consistency, test-retest reliability, convergent and divergent validity. The full COPE consists of 13 scales, each with 4 items.

This review examines the *Brief COPE*, a psychometric assessment of coping by Carver (1997). The instrument is reviewed in terms of its scientific properties, its applicability to forensic populations and its research uses.

3.3 Theoretical Development of the Brief COPE

What distinguishes the COPE instruments from other measures of coping is that the instrument is primarily theoretically derived in nature. Two theoretical models informed the development of the COPE instruments: the Lazarus model of stress (Lazarus, 1966) and a model of behavioural self-regulation (Carver & Scheier, 1981, 1983, 1985; Scheier & Carver, 1988). Carver and Scheier's self-regulation theory proposes that individuals make decisions and act upon them in ways that reduce the

discrepancy between actual and desired outcomes. Individuals employ coping strategies that they perceive to be effective for them in a given situation, consistent with their interpretation of the experience.

In their research using the full COPE, Carver and colleagues (1993) found that patient samples became impatient when completing the full instrument. Carver (1997) attributed this in part to the length of the instrument but also due to the redundancy of items within a given scale. Carver highlighted that the inclusion of multiple measures within a study increases the likelihood of participant response burden. Consequently, Carver made a number of adaptations to the original instrument in order to develop the Brief COPE.

Carver removed the Restraint Coping and Suppression of Competing Activities scales because they had not been found to be valuable in previous research. Further to this, the names of three original COPE scales were modified in order to sharpen their focus: 'Positive Reinterpretation and Growth' became 'Positive Reframing', 'Focus on and Venting of Emotions' became 'Venting' and 'Mental Disengagement' became 'Self-Distraction'. Moreover, the author added the 'Self-Blame' scale to the Brief COPE in response to research that has identified self-blame as a predictor of poor adjustment under stress (Bolger, 1990; McCrae & Costa, 1986).

To shorten the original COPE, the author included two questions for each scale instead of four. In selecting which items to include in the Brief COPE, Carver firstly ensured that items possessed high loading on the relevant factor in the original factor analyses (Carver et al., 1989). Secondly, based on experience with the full COPE,

items were selected based on their clarity and ease of communication with non-student populations.

3.4 Overview of the Brief COPE

The Brief COPE is a 28-item instrument comprising of 14 theoretically derived subscales of two items each: (1) Active Coping, (2) Planning, (3) Positive Reframing, (4) Acceptance, (5) Humour, (6) Religion, (7) Using Emotional Support, (8) Using Instrumental Support, (9) Self-Distraction, (10) Denial, (11) Venting, (12) Substance Use, (13) Behavioural Disengagement, (14) Self-Blame. Response options for each item range from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). The instrument is self-administered and typically takes less than ten minutes to complete. The Brief COPE is scored according to higher scores on a particular scale indicating a stronger endorsement of that scale. As such, there is no 'overall' coping score as the instrument contains subscales of conceptually different coping strategies. Given that the Brief COPE has a strong theoretical and empirical basis, it would therefore appear to possess face validity, that is, it appears to be measuring pertinent elements of coping.

The Brief COPE can be utilised in three formats. Firstly, a 'dispositional' or trait-like version whereby respondents report the extent to which they usually do the things listed when they are feeling stressed. Secondly, a time-limited version that requires respondents to indicate how they have responded to stress during a particular period in the past. Thirdly, a time-limited version in which respondents report the degree to which they have experienced each response during a period of time up to the present. The items can be converted into these formats by adjusting their verb forms: the

dispositional format is present tense, the situational-past format is past tense and the third format is present perfect tense.

Carver (1997) highlighted that some of the coping responses in the Brief COPE reflect adaptive coping whereas other responses are indicative of problematic or maladaptive coping. However, Carver does not provide guidance on how to distinguish between 'adaptive' and 'maladaptive' composites. Instead, Carver intended the Brief COPE to reflect the plethora of coping strategies that individuals turn to in times of stress.

3.5 Use of the Brief COPE in Research

The Brief COPE is available in a number of languages including English, Spanish, French, German, Greek and Korean. Validation studies have also been published with French (Muller & Spitz, 2003) and Greek (Kapsou, Panayiotou, Kokkinos, & Demetriou, 2010) translations of the instrument. Importantly, the worldwide use of this inventory facilitates a broad comparison of coping research with an array of different populations and pathologies.

Notably, stress and coping are universal experiences encountered by individuals irrespective of culture and race, however members of diverse cultures may differ in the way they consider and respond to particular stressors in relation to coping goals, strategies and outcomes (Chun, Moos, & Cronkite, 2006; Lam & Zane, 2004). Wong (1993) suggested that culture shapes an individual's primary (significance of stressor) and secondary appraisal (controllability over stressor and available resources) and the selection of coping strategies, which in turn determines the eventual coping outcome

(i.e., adaptive or not). As such, it is important to consider the impact of cultural context within coping research.

Furthermore, empirical research has examined the role of gender in relation to coping and has found gender differences in relation to the significance of particular stressors (e.g., family and health-related events versus relationship, employment and finance-related events) and coping styles (e.g., emotion-focused or problem-focused). In particular, research has indicated that females are more likely than males to employ emotion-focused and avoidance styles of coping (e.g., Eaton & Bradley, 2008; Hall et al., 2006, Matud, 2004), which may, in part, explain their higher propensity towards depression, anxiety and other internalising disorders.

The Brief COPE has been cited in over 400 publications and is used worldwide in a range of research settings. The Brief COPE has been used in research with adolescent populations (Stratta et al., 2013; Yusoff, 2011), university students (Muller & Spitz, 2003; Panayiotou, Strahan, & Clements, 2005), athletes (Dias, Cruz, & Fonesca, 2009), cancer patients (Saniah & Zainal, 2010; Yusoff, Low, & Yip, 2009), mentally ill populations (Brenner, St-Hilaire, Liu, Laplante, & King, 2011; Meyer, 2001), substance abusers (Eftekhari et al., 2004), and with HIV/AIDS sufferers (Armon & Lichtenstein, 2012; Vosvick et al., 2003).

Although the Brief COPE (like other coping instruments) has been predominantly used within health research, it has also been used with populations of offenders. For example, Engelstatter (2004) used the Brief COPE with a sample of male child sex offenders (n=49) and a sample of male domestic violence perpetrators (n=30) to

explore the coping strategies used by these offenders. In this study, child sex offenders reported the use of denial, behavioural disengagement and self-distraction more frequently than did domestic violence perpetrators. Furthermore, the Brief COPE has also been used with a population of incarcerated female offenders to explore the relationship among trauma, coping and mental health (Frith, 2006). In addition, the instrument has been used with a population of female domestic violence victims (Clements, Sabourin, & Spiby, 2004), court-involved adolescents (Hofstein, 2009) and with prison officers (Gould, Watson, Price, & Valliant, 2012). In addition, the Brief COPE has been used to assess coping with imprisonment prior to engaging with Cognitive-Behavioural Therapy (CBT) and after a course of CBT (Riaz & Agha, 2012). As such, the Brief COPE has demonstrated its use in a wide range of research settings.

3.6 Psychometric Properties

Kline (1986) proposed that for a psychological test to be considered a good test, it should be a) at least interval scale data, b) reliable, c) valid, d) be able to discriminate, and e) have appropriate normative data. In terms of these, the Brief COPE yields interval data for each of its 14 subscales, with a score ranging from 0 to 3 for each item. The other properties are considered in turn below.

Reliability of the Brief COPE

The reliability of a psychometric tool refers to the extent to which the instrument measures a construct accurately, consistently and with minimal error. Although the use of psychometric tools aims to increase the scientific basis of psychological research, it should be noted that there is some level of error inherent in any

psychometric tool. Cronbach's alpha (Cronbach, 1951) provides a statistical measure of the internal consistency of a psychometric tool and is expressed as a number between 0 and 1. A minimum alpha value of 0.7 has been recommended to indicate that a test has acceptable reliability (Nunnally, 1978).

To test the reliability of the Brief COPE, Carver distributed the instrument to a relatively small sample of community residents 3, 6 and 12-months after Hurricane Andrew. The total number of respondents at the 3, 6 and 12-month assessment stages were 168, 124 and 126, respectively. While Carver (1997) acknowledged that the sample size was not as large as it could have been, the use of a non-student sample exposed to real-life stress was advantageous in determining the reliability of such an instrument.

Internal Consistency

Internal consistency describes the extent to which all of the items within a test measure the same construct and is therefore concerned with the inter-relatedness of items. Carver (1997) reported the following alpha values for each subscale within the Brief COPE: Active Coping ($\alpha = .68$), Planning ($\alpha = .73$), Positive Reframing ($\alpha = .64$), Acceptance ($\alpha = .57$), Humour ($\alpha = .73$), Religion ($\alpha = .82$), Using Emotional Support ($\alpha = .71$), Using Instrumental Support ($\alpha = .64$), Self-Distraction ($\alpha = .71$), Denial ($\alpha = .54$), Venting ($\alpha = .50$), Substance Use ($\alpha = .90$), Behavioural Disengagement ($\alpha = .65$) and Self-Blame ($\alpha = .69$). Notably, all scales within the Brief COPE met or exceeded an alpha value of .50, but of the 14 scales, six exceeded .70 and a further five exceeded .60.

Although Nunnally (1978) recommended a minimum alpha value of .70 to indicate acceptable reliability, it should be noted that Nunnally also recommended that the desired degree of reliability is a function of the purpose of the research i.e. whether the research is exploratory or applied. Moreover, it should be highlighted that the Cronbach's alpha statistic is influenced by the number of items within a scale and increases as the number of factors pertaining to each item increases (Hattie, 1985). Crucially, given that each subscale within the Brief COPE consists of only two items, it could be suggested that overall the instrument possesses very good internal reliability.

Factor Analysis of the Brief COPE

In order to further assess the internal structure of the Brief COPE, Carver (1997) conducted an exploratory factor analysis to identify correlations among factors. This analysis yielded nine factors with eigenvalues greater than 1.0, which accounted for 72.4% of the variance in responding. Carver determined that although the factor structure emerging from the Brief COPE was not perfect, it was remarkably similar to that of the full COPE.

Test-Retest Reliability

Test-retest reliability is concerned with the consistency of a psychometric tool over time. Test-retest reliability is measured by administering the test at least twice at two different points in time. As such, the correlation coefficient between two sets of responses is typically used as a quantitative measure of the test-retest reliability.

Although Carver (1997) administered the Brief COPE at three different points in time, the correlation coefficients between responses were not reported in the initial validation study. Notwithstanding this, further studies have reported adequate test-retest reliability over a period of one year for the composite subscales of emotion-focused, problem-focused and dysfunctional coping ($r=0.58$, $r=0.72$, $r=0.68$; Cooper et al., 2008). It should also be noted that good test-retest reliability is desirable in measures of constructs that are not expected to change over time. As such, while good test-retest reliability would be desirable if the Brief COPE is used to measure dispositional coping, it is likely to be a less useful statistic in relation to the measurement of situational or context-specific coping.

3.7 Validity of the Brief COPE

Content validity

Content validity is concerned with the extent to which the items of a tool measure the construct under consideration, which for the purpose of the Brief COPE would be coping. In their study, Muller and Spitz (2003) confirmed that each of the fourteen subscales within the Brief COPE formed a distinct factor. Further to this, Perczek, Carver, Price and Pozo-Kaderman (2000) yielded a 12 factor structure which replicated the intended structure of the Brief COPE except for active coping and planning loaded together onto one factor.

Although the Brief COPE was designed to measure more detailed aspects of coping, a number of factor analytic studies have indicated that broader dimensions of coping also exist. Importantly, Carver (1997) highlighted that researchers are able to use the Brief COPE in a flexible manner and suggested that researchers are able to select a

subset of subscales to suit the purpose of their research. Researchers using the Brief COPE therefore possess the autonomy to conduct an exploratory analysis to determine empirically how the data from their sample should be analysed. Indeed, a number of researchers have done so and have reported good reliability in relation to a number of composite scales of the Brief COPE. For example, Cooper, Katona and Livingston (2008) reported good internal consistency for three composite subscales of emotion-focused ($\alpha = .72$), problem-focused ($\alpha = .84$) and dysfunctional ($\alpha = .75$) coping. Further studies have reported similar internal consistencies for these three subscales (Chiavarino et al., 2012).

In addition, some researchers have chosen to distinguish the items according to higher order factors. For example, David and Knight (2008) used two higher order factors of 'active' ($\alpha = .88$), and 'disengaged' ($\alpha = .94$) coping in their research. However, despite the elevated rates of disengaged coping among older black homosexual men in this study, increased rates of negative mental health outcomes were not observed.

Construct validity

Construct validity is concerned with the extent to which a tool measures the construct that it purports to measure. Evaluation of construct validity requires examination of the extent to which the instrument correlates with variables that theoretically should be related to the construct, and is unrelated to variables that theoretically should be unrelated.

Muller and Spitz (2003) explored the construct validity of the Brief COPE using measures of self-esteem (SEI, Rosenberg, 1979), perceived stress (PSS, Cohen et al.,

1983) and psychological distress (GHQ-12, Goldberg, 1972). Significantly, adaptive coping strategies were associated with high self-esteem, lower perceived stress and lower psychological distress, whereas maladaptive coping strategies were linked to low self-esteem, higher perceived stress and higher psychological distress. Fillion et al. (2002) provided further support for the construct validity of the Brief COPE, highlighting that specific coping skills are associated with disturbances in mood. In particular, the behavioural disengagement subscale was highly correlated with anxiety, depression and anger, as indicated by the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971).

Concurrent validity

Concurrent validity is concerned with the extent to which a psychometric tool correlates with a previously validated measure of the same construct. Correlations between Brief COPE subscales have identified congruent (positive) relationships with instruments intended to measure similar constructs, and inverse (negative) relationships with instruments measuring dissimilar constructs. For example, Fillion, Kovacs, Gagnon and Endler (2002) found that subscales of the Brief COPE correlated in a theoretically meaningful manner with the Coping with Health Injuries and Problems Inventory (CHIP; Endler & Parker, 1998). In particular, the disengagement scale was highly correlated with anxiety, depression and anger. Furthermore, Khayat (2007) established the instrument's concurrent validity with the Coping Resources Inventory (CRI; Hammer, 1983).

Predictive validity

Predictive validity is a measurement of how effectively a tool is able to predict the outcome of another measure. The available evidence suggests that many of the coping strategies assessed by the Brief COPE are important in the coping process and some are predictive of clinical outcomes. In particular, the Brief COPE has been shown to consistently predict psychological distress in a number of populations.

For example, among breast cancer patients, Saniah and Zainal (2010) found that increased levels of denial, behavioural disengagement, self-blame and venting predicted symptoms of anxiety and depression. Among parents of children with cancer, Greening and Stoppelbein (2007) found that substance use and self-blame were predictive of depressive ($\beta=.20$ and $\beta=.57$) and Post-Traumatic Stress Disorder (PTSD) ($\beta=.36$ and $\beta=.22$) symptoms. Furthermore, among inpatients with schizophrenia, Meyer (2001) found that schizophrenia symptom severity correlated inversely with adaptive coping. Moreover, deficits in adaptive coping predicted relative increases in schizophrenia symptom severity over time. Furthermore, among victims of domestic violence, the use of ineffective coping strategies was associated with increased levels of dysphoria ($r=.27$ to $.56$) and hopelessness ($r=.14$ to $.37$) and lower levels of self-esteem ($r=.25$ to $.49$; Clements, Sabourin, & Spiby, 2004).

A number of researchers have also demonstrated that the use of positive coping strategies as assessed by the Brief COPE is predictive of lower levels of depression ($r=-.19$ to $r=-.26$; Hastings et al., 2005) and lower levels of distress ($\beta=-.15$ to $\beta=-.29$; Culver, Arena, Antoni, & Carver, 2004).

The Brief COPE has also demonstrated its predictive utility with offending populations. Among registered sex offenders, Tewksbury and Zgoba (2010) found that high levels of self-distraction and low levels of acceptance were predictive of higher levels of perceived stress. Furthermore, among female prisoners, increased use of self-blame, behavioural disengagement, venting and denial were predictive of conviction status, with those awaiting trial engaging in these coping strategies much more frequently (Rasheed, Sawal, Taj, & Najam, 2005). In addition, Robertson, Xu and Stripling (2010) found that the religious coping subscale predicted less frequent use of alcohol and other drugs among female adolescent offenders.

3.8 Limitations of the Brief COPE

The Brief COPE is superior to many of its predecessors in that the instrument has a strong theoretical and empirical foundation. A number of previous researchers have attempted to assess the construct of coping however such measures appear to present with a number of psychometric weaknesses (Billings & Moos, 1981; Folkman & Lazarus, 1988; Pearlin & Schooler, 1978). Although the Brief COPE represents a valid and reliable tool in which to measure coping, it should be noted that there are still a number of shortfalls applicable to this instrument.

The fundamental issue in identifying core coping strategies is that coping is not a behaviour that can be reliably observed. Instead, it represents a construct that encompasses the myriad of strategies that individuals use to deal with stress. As highlighted by Pearlin and Schooler (1978), *“Coping, in sum, is certainly not a unidimensional behavior. It functions at a number of levels and is attained by a*

plethora of behaviors, cognitions, and perceptions” (p.7-8). Notably, this issue is not confined to the Brief COPE but is applicable to all measures of coping.

Moreover, the measurement of coping is further complicated when the construct of coping is to be separated from coping *resources* (e.g. hardiness, dispositional optimism, social support). For example, an optimistic attitude towards life is more likely to result in a favourable appraisal of a stressful situation and may also increase the likelihood of selecting a more efficient problem-solving strategy. Although it may prove difficult to truly disentangle coping from coping resources, Carver acknowledged that it is advantageous to make this distinction in theory and research (Perczek, Carver, & Price, 2000). In particular, to further understand the coping process it is important to explore the factors that make individuals more or less likely to experience difficulties under conditions of stress.

Research exploring stress and coping has highlighted that personality is a key source of resilience or vulnerability. As such, researchers may choose to administer a further assessment in conjunction with the Brief COPE. For example, one way of exploring individual differences in relation to coping is to examine expectancies for the future, specifically optimism versus pessimism (Carver & Scheier, 1999). The Life Orientation Test-Revised (Scheier, Carver, & Bridges, 1994) provides a measure of this personality variable. Although, it should be noted that more comprehensive assessments of personality functioning such as the Millon Multiaxial Clinical Inventory-III (MCMI-III, Millon, Millon, Davis, & Grossman, 2006) are likely to yield more complete findings regarding the link between personality and coping.

As previously highlighted, the Brief COPE can be administered in a dispositional or situational format. Importantly, this enables the researcher to assess whether an individual consistently uses the same coping strategies (i.e., their coping style), or whether an array of strategies are applied and adapted according to changing encounters. Crucially, the assessment of dispositional coping implies that an individual possesses preferred ways of coping and that these are stable over time. Some researchers have suggested that coping is a dynamic process, which consists of episodes of dealing with different stressors. As such, assessing styles of coping may fail to provide a detailed description of specific strategies employed in particular contexts. Researchers should consider this issue when deciding upon which format of the Brief COPE to administer.

In terms of its disadvantages as a measure, perhaps a shortfall of the Brief COPE to date is that there is no test-retest reliability data available. As such, it is not possible to allude to the temporal stability of the test items over time. Furthermore, as previously highlighted, there are no specific cut-off scores for the Brief COPE and population norms have not been established. Given that the Brief COPE was intended to assess the wide range of coping resources used by individuals in response to stress, the absence of reported norms may be explained by the underlying idiographic nature of coping. Moreover, it could be argued that given the presence of individual differences among coping styles, the standardisation of the Brief COPE is likely to add little value to the instrument.

3.9 Conclusions

In conclusion, the Brief COPE is a short, easy-to-administer, self-report measure of coping, eliciting information about which coping strategies individuals use and how frequently. The Brief COPE has demonstrated its effectiveness as an instrument in applied research settings, particularly where participant response burden is a concern. In such settings, the Brief COPE provides a means to quickly assess a range of different coping strategies, with an equal focus on both adaptive and maladaptive ways of coping. Additionally, the empirical evidence suggests that the factorial structure of the instrument is stable, having been used to assess different aspects of coping, in different samples and with diverse stressors.

Importantly, the Brief COPE has demonstrated its usefulness in predicting a number of clinically relevant outcomes amongst a range of populations. As such, the instrument is able to identify individuals at risk for poor coping outcomes and therefore may highlight viable targets for intervention. Among forensic populations, the Brief COPE may provide an effective measure with which to assess the coping strategies an offender is likely to utilise upon encountering future stress. Crucially, supporting offenders to develop and employ adaptive coping strategies is likely to help them lead an offence-free lifestyle in the future and is an important factor to be considered in an offender's relapse prevention plan. Overall, enhancing offenders' (and non-offenders') capacity to cope effectively in the face of stressors is likely to have a positive impact upon relationships with others and their sense of wellbeing.

In clinical settings, the Brief COPE should be administered in the context of a comprehensive psychological assessment. Importantly, the intended use of the Brief

COPE should not be to pathologise individuals presenting with difficulties in coping, but instead should be used to highlight how the use of maladaptive coping strategies is likely adversely impacting upon an individuals' level of distress and subsequent wellbeing. As such, the therapist should aim to work with the client in a collaborative manner to support the development and use of more adaptive strategies. Notably, the Brief COPE was first validated with a community sample following their exposure to a natural disaster however respondents' reactions to completing the measure were not reported. It is possible that respondents may have felt that normal coping responses following exposure to such adversity were being pathologised. It is therefore essential to consider an appropriate rationale for using the Brief COPE (e.g., that difficulties in coping may be contributing to an individual's distress) and that appropriate clinical follow-up is conducted with each client.

Furthermore, the Brief COPE need not be used in an all-or-none fashion. Researchers with focused interests or those under time pressures are granted the flexibility to select the subscales of central interest to their sample without compromising the integrity of the instrument. However, researchers should give clear justification for utilising only a selection of the Brief COPE subscales, giving acknowledgement to the potential for researcher bias with this approach.

In addition, the use of the Brief COPE should not only be considered in relation to its utility with patients in clinical settings, but also in relation to its potential use with staff in clinical settings. In particular, the Brief COPE may provide an effective measure of coping following exposure to a particularly distressing event at work (e.g., witnessing a serious incident of self-harm or being the victim of an aggressive

incident). Furthermore, the measure could be used in conjunction with the recruitment process to assess whether potential staff members possess an adequate repertoire of coping strategies or whether they may require additional support in a demanding clinical environment. As such, the Brief COPE may provide supervisory staff with a tool to assess ongoing training and support needs of their staff.

Furthermore, given that the instrument can be used to assess dispositional or situational coping, the Brief COPE provides a valuable assessment with which to continue research into the stability of the construct of coping.

CHAPTER FOUR:
THE IMPACT OF RECURRENT CHILD ABUSE AND NEGLECT
AND MULTIPLE TRAUMATISATION ON EMOTION
REGULATION AND VIOLENCE

Chapter Rationale

Chapters One and Two identified that exposure to recurrent CAN and multiple traumatisation are associated with an array of internalising and externalising symptomatology. Underlying difficulties in ER are associated with a broad range of psychopathologies and problematic behaviours, including aggression, which highlights the importance of exploring the role of ER in relation to childhood adversity. What is more, until recently, many researchers had focused only upon the problematic control of anger in relation to aggression, without considering the impact of broader difficulties in ER upon aggression. This chapter therefore aims to explore the impact of recurrent CAN and multiple traumatisation on ER, in addition to the role of ER in relation to aggressive behaviour.

4.1 Introduction

The empirical literature has long documented the association between exposure to CAN and an array of neurological, physical, psychological and emotional difficulties manifesting in childhood, adolescence and adulthood (Hillberg et al., 2011; Norman et al., 2012; Widom, Czaja, Bentley, & Johnson, 2013; Wilson, Hansen, & Li, 2011). Specifically, considerable research indicates that physical abuse, sexual abuse, psychological or emotional abuse and neglect all represent significant etiologic factors in the development of a number of externalising problems (i.e., conduct problems, aggression and risky sexual behaviours) and internalising problems (i.e., depression, self-harming behaviour and suicidality) (Bailey et al., 2012; Hillberg et al., 2011; Gilbert et al., 2009b; Mersky & Topitzes, 2010; Norman et al., 2012). Furthermore, the link between exposure to child maltreatment and later antisocial, delinquent and violent behaviour is also widely recognised (Duke, Pettingell, McMorris, & Borowsky, 2010; Elklit, Karstoft, Armour, Feddern, & Christoffersen, 2013; Gómez,

2011; Lee, Cronley, White, Mun, Stouthamer-Loeber, & Loeber, 2012; Mersky & Reynolds, 2007; Smith et al., 2011).

4.2 Exposure to Multiple Forms of Trauma

While individual types of CAN have consistently been associated with numerous physical, psychological and social correlates, the majority of research studies in this area have focused exclusively on CAN without giving consideration to wider forms of trauma. Crucially, recent research has highlighted that children exposed to one form of CAN are at increased risk of experiencing not only concurrent forms of maltreatment (Annerbäck et al., 2012; Ney et al., 1994) but also further types of victimisation in a variety of other contexts and by a number of different perpetrators (Finkelhor, Ormrod, & Turner, 2009; Gilbert et al., 2009a; Herrenkohl et al., 2008; Moylan et al., 2010). In particular, the work of Finkelhor and colleagues has highlighted the importance of considering children's exposure to a broad range of victimisations, including exposure to conventional crime, witnessing of violence, bullying and peer violence (Finkelhor et al., 2007a,b,c).

To date, relatively few research studies have explored the extent to which children and young people have been exposed to multiple forms of victimisation, above and beyond CAN. Importantly, the lack of such a comprehensive approach to exploring childhood victimisation is likely to result in incorrectly attributing a child's difficulties to only one form of trauma or adversity. Specifically, outcomes associated with one type of victimisation could equally be the result of a further, unmeasured type of victimisation, or indeed the cumulative result of exposure to multiple forms of victimisation. Further researchers have also highlighted the importance of assessing

the inter-relationships that exist between different categories of victimisation (Finkelhor et al., 2005; Saunders, 2003).

4.3 Definitions within the Empirical Literature

In recent years, there has been an increase in the number of research studies exploring individuals' exposure to multiple forms of child maltreatment and victimisation. These studies vary in terms of the definitions and assessment measures employed. For example, Finkelhor et al. (2007b) coined the term *poly-victimisation* to describe children's cumulative exposure to multiple forms of victimisation (i.e., conventional crime, maltreatment, peer and sibling victimisation, sexual victimisation and witnessing and indirect victimisation) using the Juvenile Victimization Questionnaire. Research by Higgins and McCabe (2000) has employed the term *multi-type maltreatment* to describe the co-occurrence of one or more types of CAN (i.e., physical abuse, sexual abuse, psychological abuse, neglect and witnessing family violence) as measured by the Comprehensive Child Maltreatment Scale. Other researchers have employed the terms *poly-traumatisation* (Gustafsson, Nilsson, & Svedin, 2009) or *cumulative adversity* (Turner & Lloyd, 1995) to describe lifetime exposure to a wide array of potentially traumatic events and is measured by a checklist of such events (e.g., the Life Incidence Checklist of Traumatic Events; LITE).

Notably, irrespective of the differences in definitions or assessment measures used in these studies, the findings indicate that exposure to multiple forms of victimisation is not only prevalent but demonstrates a much more robust association with poorer psychological outcomes than exposure to one form of victimisation or CAN in

isolation. Evidence from a number of studies has indicated that exposure to multiple adversity and multiple traumatic events places individuals at increased risk of greater deleterious outcomes across a number of domains of functioning (e.g., Elliot et al., 2009; Finkelhor et al., 2007a,b,c; Ford et al., 2010; Soler et al., 2012). In particular, the findings from Chapter Two highlight that adolescents and young adults exposed to multiple traumatisation are at increased risk of poorer mental health, academic, physical health and behavioural outcomes, in comparison to those exposed to recurrent CAN alone.

Whilst a number of empirical studies have highlighted the association between CAN, and wider forms of trauma (e.g., bullying) and an array of internalising and externalising disorders, to date no such studies have explored the role of difficulties in ER in relation to childhood adversity. Crucially, underlying difficulties in ER are associated with a broad range of psychosocial difficulties, including aggression, and is therefore an important research area worthy of further exploration.

4.4 Emotion Regulation and Aggression

In recent years, increased attention has been paid to ER as being crucial for mental wellbeing, with difficulties in ER being associated with an array of problematic behaviours and psychopathologies (Bradley, 2000; Gross, 1998). In particular, there is research evidence to suggest that difficulties in ER underlies anxiety and depression (Cisler, Olatunji, Feldner, & Forsyth, 2010; John & Gross, 2004), substance misuse (Kun & Demetrovics, 2010), deliberate self-harm (Buckholdt, Parra, & Jobe-Shields, 2009), borderline personality disorder (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006) and posttraumatic stress disorder (Tull, Barrett, McMillan, & Roemer, 2007).

Furthermore, there is also evidence to suggest that difficulties in ER are associated with aggressive behaviour. To date, a significant proportion of research in this area has focused upon the association between anger regulation and aggression, employing measures such as the State-Trait Anger Expression Inventory (STAXI) (Norstrom & Pape, 2010), the Ward Anger Rating Scale (Doyle & Dolan, 2006) or the Novaco Anger Scale (Cornell, Peterson, & Richards, 1999). More recently, however, moving beyond the problematic control of anger, research has also found an association between aggression and difficulties in ER (Cohn, Jakupcak, Seibert, Hildebrandt, & Zeichner, 2010; Gratz, Paulson, Jakupcak, & Tull, 2009; Izard et al., 2008; Sullivan, Helms, Kliwer, & Goodman, 2010; Tager, Good, & Brammer, 2010).

In particular, Sullivan et al. (2010) found that among adolescents, difficulty in regulating anger and sadness was associated with their use of physical and relational aggression. Furthermore, Cohn et al. (2010) found that difficulties in emotion regulation (particularly low emotional clarity and awareness) was associated with increased aggression among university students, as measured by the intensity of electrical shocks administered to an ostensible opponent. There are a number of proposed explanations for the association between difficulties in emotion regulation and involvement in violence. For some individuals, engaging in violent behaviour may reduce an uncomfortable, negative emotional state, such as anxiety, shame or worthlessness. Over time, aggressive behaviour may also become integrated into an individual's emotional pattern in response to stressful life situations such as interpersonal conflict (Anderson & Bushman, 2002; Bushman, Baumeister, & Phillips, 2001).

Moreover, research studies exploring the role of ER in relation to intimate partner violence (IPV) suggest that aggressive behaviour can function to reduce feelings of emotional vulnerability, which the perpetrator is otherwise unable to regulate (Gardner & Moore, 2008; Harper, Austin, Cercone, & Arias, 2005; Jakupcak, 2003; Jakupcak, Lisak, & Roemer, 2002; O'Neil & Harway, 1997; Shorey, Brasfield, Febres, & Stuart, 2011; Shorey, Cornelius, & Bell, 2008). It has been further suggested that that aggression enables the individual to externalise their distress and try to regulate their partner's behaviour rather than address their own internal emotional state (Tager et al., 2010). Among studies employing the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), broad difficulties with ER in addition to more specific ER problems have both been significantly associated with the perpetration of violence (Gratz et al., 2009; Gratz & Roemer, 2004; Harper et al., 2005; Shorey et al., 2011). Together, the results from these studies highlight the value in comprehensively exploring the role of difficulties in ER in relation to the perpetration of interpersonal violence.

Difficulties in ER have also been examined as an indicator of increased risk for violence among individuals with mental disorders. In particular, individuals who frequently experience their emotions as overwhelming and who have a reduced capacity to regulate their emotions (predominantly negative emotions like sadness or irritation) are more likely to be involved in repeated incidents of violence (Newhill, Eack, & Mulvey, 2009). Further research suggests that a proneness to experiencing fluctuations in levels of hostility and anger, along with a lowered capacity to modulate the intensity of these fluctuations, is also associated with increased likelihood of violence (Odgers, Mulvey, Skeem, Gardner, Lids, & Schubert, 2009; Skeem,

Schubert, Odgers, Mulvey, Gardner, & Lidz, 2006). A number of authors have therefore proposed that difficulties in ER represents an important research area for assessing dynamic changes in violence risk (Yang & Mulvey, 2012).

4.5 Emotion Regulation and Resilience

Crucially, in the face of comparable stressors, while some develop significant difficulties in functioning others show remarkable resilience (Cicchetti, 2013). As highlighted in previous chapters, resilience does not indicate an absence of difficulties but rather the ability to overcome such difficulties and cope effectively in response to adversity (Masten, 2007). Research has highlighted a number of mechanisms that may explain positive life trajectories in the face of childhood adversity. In particular, it is hypothesised that effective ER is an important contributor in the development of resilience (Troy & Mauss, 2011; Tugade & Fredrickson, 2007).

ER is viewed as a salient developmental process that emerges as a result of both intrinsic factors and extrinsic experiences, predominantly within the context of parent-child interactions (Sroufe, 1995; Thompson, 2008). Parents and caregivers play a crucial role in explaining, structuring and regulating the emotional world of children (Thompson, 2008). When children are exposed to an invalidating, abusive and/or neglectful childhood environment, they often fail to learn adaptive ways of coping with difficult emotions and thus, child maltreatment represents a significant risk factor for the development of difficulties in ER (Kim & Cicchetti, 2010; Linehan, 1993). Importantly, difficulties in ER may be formed and/or maintained via subsequent relationships in adolescence and early adulthood (Kim, Pears, Capaldi, & Owen, 2009). Among children, effective ER skills have been linked to prosocial behaviour

(Shields, Cicchetti, & Ryan, 1994) and resilience to multiple risks, including subsequent internalising and externalising symptomatology (Kim & Cicchetti, 2010; Lengua, 2002).

ER has also been proposed as a mediator in the context of adjustment following exposure to adversity (Schwartz & Proctor, 2000; McCarthy, Lambert, & Moller, 2006; Silk et al., 2007). According to such mediator models, exposure to stress and adversity may lead to difficulties in ER, which in turn may lead to negative outcomes such as poor mental health (McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011). In the context of CAN and exposure to broader types of victimisation, difficulties in ER have been found to mediate the association between exposure to maltreatment or other victimisation and subsequent psychological difficulties such as eating disorder symptoms (Burns, Fischer, Jackson, & Harding, 2012), peer victimisation (Shields & Cicchetti, 2001), aggression (Herts, McLaughlin, & Hatzenbuehler, 2012; Teisl & Cicchetti, 2008), posttraumatic stress symptoms (Burns, Jackson, & Harding, 2009) and anxiety and depression (Maughan & Cicchetti, 2002; Moretti & Craig, 2013).

However, exploring the role of difficulties in ER on aggressive behaviour has little practical value without giving consideration to the underlying skills required to effectively regulate emotion. Based on a review of the literature, Robertson, Daffern and Bucks (2012) highlighted that emotional awareness, emotional acceptance and access to a variety of ER strategies appear to be the three most key skills thought to underlie adaptive ER (Berking & Znoj, 2008; Gratz & Roemer, 2004; Gratz & Tull, 2010; Greenberg, Elliot, & Pos, 2007). Moreover, based on a review of the existing conceptual definitions of ER, Gratz and Roemer (2004) proposed a clinically useful

definition of ER that is focused on adaptive ways of responding to emotional distress rather than the control of emotions. Specifically, this conceptualisation emphasises the multidimensional nature of the ER construct which involves the: (a) awareness, understanding and acceptance of emotions; (b) ability to engage in goal-directed behaviours and inhibit impulsive behaviours when experiencing negative emotions; (c) flexible use of situationally-appropriate strategies to modulate the intensity and/or duration of emotional responses, rather than to eliminate emotions entirely; and (d) willingness to experience negative emotions as part of pursuing meaningful activities in life. Importantly, deficits in any of these aforementioned areas are indicative of ER difficulties.

4.6 Aims and Hypotheses

Although violent behaviour has been the focus of considerable research attention, the role of ER in relation to violence has received little empirical attention to date (Robertson, Daffern, & Bucks, 2012). The present study therefore explores the impact of exposure to CAN in addition to further types of childhood victimisation (i.e., multiple traumatisation) upon difficulties in ER and the perpetration of violence. The primary hypotheses for the present study are as follows:

Hypothesis 1: Compared to recurrent CAN alone, exposure to multiple traumatisation will be significantly associated with greater difficulties in a range of ER processes, including difficulties with emotional clarity and awareness, non-acceptance of emotions, difficulties in engaging in goal-directed behaviour when distressed, impulse control problems and limited access to ER strategies.

Hypothesis 2: Difficulties in ER will be significantly associated with the perpetration of interpersonal violence in adulthood.

Hypothesis 3: There will be significant differences in coping strategies following exposure to different forms of victimisation in childhood.

Hypothesis 4: It is hypothesised that ER will mediate the association between CAN and multiple traumatisation and the perpetration of interpersonal violence in adulthood.

Hypothesis 5: There will be significant differences between groups in relation to their exposure to different forms of victimisation, ER, coping and the perpetration of interpersonal violence in adulthood.

4.7 Method

4.7.1 Participants

The total sample size was 332. Of these, 237 participants were psychology students attending the University of Birmingham during the 2012-2013 academic year (mean age: 19.62, median: 19, SD: 1.93, range: 18 – 37) and 95 were adults from the UK general population (mean age: 35.49, median: 29, SD: 12.74, range: 18 – 63) (N=332). Further demographic information for participants is provided in Table 6. As might be expected, Chi square tests revealed significant associations for both level of education ($\chi^2(6)= 176.065$, $p<.001$) and marital status ($\chi^2(4)= 126.769$, $p<.001$) between the university student and general population groups.

A university student sample was selected as, in at least one domain, these individuals are demonstrating resilient functioning (i.e., educational achievement). A further sample of adults from the general population was selected in order to provide a comparison group. It should be noted that ethical approval from the National Offender Management Service (NOMS) was obtained in order to examine an offending population from one of the UK's high security prisons within the present study, however due to current resourcing issues the prison were ultimately unable to facilitate the research. Notwithstanding this, at the time of the current thesis' submission, further prison establishments have been approached in order to facilitate this research and thus obtain data from an offending sample.

Table 6: Demographic Characteristics of Total Sample (N=332)

Variable	University Students n(%)	General Population n(%)	Test Statistics
Gender			$\chi^2=3.662$; p= .056
Male	48(20.3)	29(30.9)	
Female	189(79.7)	65(69.1)	
Ethnicity			
White	189(79.8)	90(95.7)	
Black	4(1.7)	0	
Asian	29(12.2)	2(2.1)	
Mixed Race	7(3.0)	0	
Other	3(1.3)	0	
Unknown	5(2.1)	2(2.1)	
Level of Education			$\chi^2=176.065$, p=.000**
Primary school	0	0	
Secondary School (GCSE's)	0	8(8.7)	
Secondary School (no GCSE's)	0	5(5.4)	
Vocational qualifications	0	7(7.6)	
A Levels	0	8(8.7)	
Undergraduate degree	229(97.0)	41(44.6)	
Masters degree	5(2.1)	14(15.2)	
PhD or Doctorate	2(0.8)	9(9.8)	
Marital Status			$\chi^2=126.769$; p=.000**
Single	179(75.8)	27(28.7)	
Long-term r'ship (1 year+)	50(21.2)	17(18.1)	
Co-habiting	6(2.5)	15(16.0)	
Married	1(0.4)	29(30.9)	
Separated or Divorced	0	6(6.4)	
Widowed	0	0	

*p < .01 **p < .001

4.7.2 Procedure

Undergraduate Psychology students were invited to take part in the study through the University of Birmingham's Research Participation Scheme website. Through this website, participants were able to view an advertisement that provided details in relation to the nature of the study and how to participate (see Appendix 6). Adults

from the general population were recruited via a snowball sampling method whereby a number of potential participants were approached in the community (i.e., the town centre) and were asked to recruit further subjects among their acquaintances following their own participation. Upon approach, participants were provided with information about the study and how to access the online questionnaires through Survey Monkey, an online survey tool. Although participants were given the option of completing paper copies of the questionnaires and returning these by post in an enclosed stamped addressed envelope, all participants opted to complete the questionnaires in the online format.

The undergraduate students that took part in the study received course credit for their participation. Participants from the general population were not provided with any form of compensation in return for their participation, which may explain why this sample is smaller in size.

4.8 Ethical Considerations

The study was conducted in accordance with the University of Birmingham's ethical principles for carrying out research in addition to the Health and Care Professions Council (HCPC) and the British Psychological Society's (BPS) codes of conduct. Ethical approval for the study was granted on 30th January 2013 by the University's ethics committee (Ref: ERN_12-1328).

The sensitive nature of the study was highlighted to all participants prior to their participation. Participants were informed that they would be required to answer questions about their own adverse experiences that may have occurred in both

childhood and adulthood. Specifically, participants were informed that the questionnaires contained questions about experiences of child maltreatment, bullying and witnessing of violence and abuse towards others, in addition to their personal experiences of perpetrating violent behaviour. Consequently, participants were encouraged to think carefully about whether they wanted to take part in the study or not (see Appendix 7). Following participation, it was acknowledged that participants could encounter some distress from thinking about adverse lifetime experiences and therefore contact details for support organisations (e.g., The Samaritans) were provided should they wish to talk to a trained individual following participation (see Appendix 8).

4.9 Measures

4.9.1 Demographic Information

A basic demographic questionnaire asked participants to indicate their gender, age, level of educational achievement, ethnicity, relationship status, current mental health problems and previous convictions (see Appendix 9).

4.9.2 Emotion Regulation

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was employed to measure participants' ER skills (see Appendix 10). Based on the authors' aforementioned conceptualisation of ER, the DERS is a 36-item self-report instrument that examines difficulties within the following six dimensions of ER: Non-acceptance of emotional responses (NON-ACCEPTANCE), difficulties in engaging in goal-directed behaviour (GOALS), impulse control difficulties (IMPULSE), lack of emotional awareness (AWARENESS), limited access to ER strategies

(STRATEGIES) and lack of emotional clarity (CLARITY). Scores for each of the subscales can be calculated to reflect each of the six dimensions of ER in addition to a total score that reflects broad deficiencies in ER that encompasses each subscale. Participants rate each item according to a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*) to indicate how frequently the item describes them. The DERS has demonstrated high internal consistency in addition to good construct and predictive validity (Gratz & Roemer, 2004).

4.9.3 Coping

The Brief COPE is a 28-item self-report instrument developed by Carver (1997) to measure the use of effective and ineffective coping strategies (see Appendix 11). The Brief COPE comprises 14 theoretically derived subscales of two items each: (1) Active Coping, (2) Planning, (3) Positive Reframing, (4) Acceptance, (5) Humour, (6) Religion, (7) Using Emotional Support, (8) Using Instrumental Support, (9) Self-Distraction, (10) Denial, (11) Venting, (12) Substance Use, (13) Behavioural Disengagement, (14) Self-Blame. Participants rate each item according to a 4-point scale ranging from 1 (*I haven't been doing this at all*) to 4 (*I've been doing this a lot*) to indicate how frequently they have been using each strategy, with higher scores reflecting a stronger endorsement of that scale. Participants were asked to think about their response to a recent stressor when completing this measure. A time-limited version of the Brief COPE was selected based on the notion that individuals utilise a number of different strategies to cope with different stressors. As such, the use of a time-limited measure permitted exploration of how respondents have coped *recently*, rather than at different points over time.

4.9.4 Optimism

The Life Orientation Test – Revised (LOT-R; Scheier, Carver, & Bridges, 1994) is a brief self-report measure to assess individual differences in generalised optimism versus pessimism (see Appendix 12). Participants rate each item according to a 5-point scale ranging from 1 (*I agree a lot*) to 5 (*I disagree a lot*) to indicate the extent to which they agree with each item.

4.9.5 Childhood Victimisation

A 16-item questionnaire was developed in order to assess the nature and frequency of participants' exposure to CAN in addition to wider forms of victimisation during childhood (0-17 years). The questionnaire covers a number of victimisation domains; child maltreatment, victimisation by peers and siblings, sexual victimisation and witnessing and indirect victimisation, and is adapted from the Juvenile Victimization Questionnaire (Hamby, Finkelhor, Ormrod, & Turner, 2005). The full questionnaire can be found in Appendix 13.

4.9.6 Perpetration of Violence

A 16-item questionnaire was developed in order to assess the nature and frequency of participants' perpetration of psychological, physical and sexual violence in a) later childhood (aged 12-17 years) and b) adulthood (18+ years). In addition, the questionnaire assessed whether or not participants had been subjected to victimisation in the aforementioned domains in adulthood. Participants rate each item on a 5-point scale ranging from 0 (*never*) to 4 (*always*) according to how frequently a) they have behaved in this way towards someone else and b) someone has behaved in this way towards them.

In addition, a 15-item questionnaire was developed in order to assess participants' attitudes towards violence. Participants rate each item according to a 5-point scale ranging from 0 (*I strongly disagree*) to 4 (*I strongly agree*) to indicate the extent to which they agree with each item. It should be noted that the validity of measures developed by the researcher in the present study have not been explored, however the original measures in which these tools are based upon have demonstrated sound reliability and validity.

4.10 Statistical Analyses

All data analysis was performed using the Statistical Packages for Social Sciences (SPSS version 19). In order to test the study's hypotheses, bivariate relationships were investigated using Chi-Square statistics (for categorical variables), Pearson correlation coefficients and independent samples t-tests. Binary logistic regression analyses were then conducted in order to explain difficulties in ER and the perpetration the violence (outcome variables) using a set of explanatory variables (socio-demographic variables, exposure to CAN and multiple traumatisation, optimism and attitudes supportive of violence). In determining the required sample size for regression analyses, Green (1991) suggests adhering to the following equation: $\geq 50 + 8 \times$ number of predictors. The largest number of predictor variables included in any of the regression models was 18, which indicates that N=194 would be required to obtain adequate statistical power.

It should be noted that conducting multiple comparisons within a study increases the risk of a type 1 error (i.e., finding significance by chance). The Bonferroni correction procedure is often applied to reduce the problems associated with conducting multiple

comparisons, however it also dramatically increases the probability of committing type II errors (i.e., incorrectly rejecting the null hypothesis). A significant criticism of the Bonferroni procedure is that it overcorrects the overall type I error rate, which results in lower statistical power (Salkind, 2010, p. 100). Given the resultant loss of statistical power, the Bonferroni correction procedure was therefore not applied in this study. However, the alpha level was retained at .01 throughout the study when multiple comparisons were performed, which allowed for potentially significant variables to be explored and simultaneously counteracted the problem of multiple comparisons.

In order to test the proposed mediational hypothesis, a series of regression analyses were performed following the procedure outlined by Baron and Kenny (1986). In a three-step series of regression analyses, firstly, the independent variable must be associated with the dependent variable. In the second regression, the independent variable must be associated with the proposed mediator variable. Finally, the effects of both the independent and mediator variables are tested. Mediation is confirmed when the addition of the mediator variable into the third equation notably reduces or eliminates the previously significant association between the independent and dependent variable. The proposed mediational hypothesis was further tested using the Preacher and Hayes (2008) bootstrapping method for calculating total and indirect effects of X (independent variable) on Y (dependent variable) through M (mediator variable).

4.11 Results

Socio-demographic Characteristics of Participants

A basic questionnaire was used to measure socio-demographic characteristics of participants (Appendix 6). Table 7 presents frequency and Chi-Square statistics in relation to prevalence rates for participants' current social network, current mental health issues and conviction history. Notably, a significant proportion of participants reported having either 'lots of close friends' (33.8% vs. 28.7%) or 'a few close friends' (63.3% vs. 64.9%), with a Chi-Square test finding no significant differences between groups in terms of social network ($p > .01$). Rates of perceived depression and anxiety were 10.5% and 17.7% within the student population and 9.6% and 12.8% among the general population, with no significant differences found between groups ($p > .01$). As shown in Table 7, Chi-Square tests revealed significant associations among the prevalence rates of 'other' perceived mental health diagnoses between the university students and general population groups ($\chi^2(1) = 9.268$, $p < .01$). This finding indicates that almost one in every ten university students reported having an 'other' current mental health diagnosis. However, these participants chose not to specify the nature of 'other' diagnoses.

In addition, a significant association was found for rates of violent convictions ($\chi^2(1) = 9.233$, $p < .01$) between groups, with participants in the general population reporting higher prevalence rates for both violent and non-violent convictions. However it should be noted that the number of participants endorsing any form of conviction was very small. Notably, comparable rates of all other mental health indices and social network were found between university students and general population groups ($p > .01$).

Table 7: Socio-demographic Characteristics of the Total Sample (N=332)

Variable	University Students n(%)	General Population n(%)	Test Statistics
Social Network			$\chi^2=3.50$; p=.368
Lots of close friends	80(33.8)	27(28.7)	
A few close friends	150(63.3)	61(64.9)	
Friends but no-one close	5(2.1)	3(3.2)	
Largely acquaintances	1(0.4)	1(1.1)	
Prefer own company	1(0.4)	2(2.1)	
Current Mental Health			
Depression	25(10.5)	9(9.6)	$\chi^2=.004$; p=.950
Anxiety	42(17.7)	12(12.8)	$\chi^2=.875$; p=.350
Psychosis / Schizophrenia	1(0.4)	0	$\chi^2=.000$; p=1.00
Eating Disorder	4(1.7)	0	$\chi^2=.503$; p=.478
Phobia	8(3.4)	0	$\chi^2=1.978$; p=.160
OCD	7(3.0)	3(3.2)	$\chi^2=.000$; p=1.00
Other	25(10.5)	0	$\chi^2=9.268$; p=.002*
History of addiction	4(1.7)	6(6.4)	$\chi^2=3.588$; p=.058
History of self-harm or attempted suicide	40(16.9)	19(20.2)	$\chi^2=.309$; p=.578
Criminal History			
Any Conviction(s)	1(0.4)	4(4.3)	$\chi^2=4.321$; p=.038*
Violent Conviction(s)	0	1(1.1)	$\chi^2=9.233$; p=.010*

*p < .01 **p < .001

4.12 Exposure to CAN and Wider Forms of Trauma: Prevalence Rates

A 16-item questionnaire was used to measure a range of childhood victimisations (Appendix 10). Table 8 presents frequency and Chi-Square statistics for prevalence rates of CAN and exposure to wider forms of trauma within the total sample. The percentage of participants endorsing ‘yes’ to each type of victimisation in their lifetime (0-17 years) is displayed, along with the percentage of participants reporting recurrent exposure to each type of victimisation (i.e., exposure on more than one occasion). Notably, Table 8 highlights high levels of lifetime childhood victimisation within the present sample, with approximately one fifth of university students and almost one quarter of the general population reporting exposure to one form of CAN.

Furthermore, 9.4% of university students and 16% of the general population reported exposure to two or more separate forms of CAN, which could suggest high levels of concurrent exposure to CAN in the total sample. Importantly, comparable rates of exposure to each form of CAN and recurrent exposure to each form of CAN were reported by both groups, thus indicating that a substantial proportion of CAN within the total sample was recurrent in nature.

High levels of physical and emotional bullying were also reported within both populations. Approximately one quarter of university students reported exposure to childhood physical bullying in comparison to more than one third of the general population, with much of this victimisation reported as recurrent in nature. In addition, high levels of physical assault were reported in both groups (33.3% vs. 39.4%), with particularly high levels of physical assault with a weapon being reported in the general population (22.3%). Furthermore, a high number of participants reported childhood exposure to peer or sibling assault (48.5% of university students and 23.4% of the general population).

Chi-Square tests did not reveal any significant associations for the prevalence rates of exposure to different forms of childhood victimisation among the university student and general population groups ($p > .01$).

Table 8: Lifetime Rates of CAN and Wider Forms of Trauma for the Total Sample (N=332)

Type of Victimization	University Students n(%)		General Population n(%)	
	Yes (Single and Recurrent)	Recurrent only	Yes (Single and Recurrent)	Recurrent only
Child Abuse and Neglect (CAN)				
Physical Abuse	27(11.4)	23(9.7)	20(21.3)	17(18.1)
Sexual Abuse	6(2.5)	6(2.5)	8(8.5)	8(8.5)
Emotional Abuse	39(16.5)	37(15.6)	20(21.3)	20(21.3)
Neglect	6(2.5)	-	4(4.3)	-
Exposure to Domestic Violence	30(12.7)	20(8.4)	11(11.7)	9(9.6)
Exposure to 1 form of CAN	48(20.5)		22(23.4)	
Exposure to 2 forms of CAN	14(6.0)		8(8.5)	
Exposure to 3+ forms of CAN	8(3.4)		7(7.5)	
Sibling/Peer Victimization				
Sibling/Peer Assault	115(48.5)	93(39.2)	50(53.2)	46(48.9)
Physical Bullying	61(25.7)	60(25.3)	36(38.3)	30(31.9)
Emotional Bullying	96(40.5)	92(38.8)	40(42.6)	38(40.4)
Dating Violence				
Dating Violence	13(5.5)	11(4.6)	10(10.6)	6(6.4)
Physical Assault				
With weapon	30(12.7)	28(11.8)	21(22.3)	12(12.8)
Without weapon	79(33.3)	63(26.6)	37(39.4)	32(34.0)
Sexual Victimization				
Sibling/Peer Sexual Assault	20(8.4)	11(4.6)	11(11.7)	7(7.4)
Verbal Sexual Harassment	22(9.3)	16(6.8)	15(16.0)	11(11.7)
Indirect/Witnessing Victimization				
Know someone murdered	8(3.4)	-	4(4.3)	-
Physical assault of sibling	24(10.1)	18(7.6)	7(7.4)	8(8.5)

Note. Recurrent exposure encompasses those participants answering ‘yes’ to experiencing a particular form of victimisation, but who have also been exposed more than once.
*p < .01 **p < .001

Table 9 displays overall mean values for participants' exposure to CAN (i.e., a cumulative score from 0 to 5 according to how many distinct forms of CAN each participant endorsed), other trauma (i.e., a cumulative score from 0 to 10) and multiple traumatisation (i.e., a cumulative score from 0 to 15 which combined participants' exposure to CAN plus wider trauma).

Independent t-tests were conducted to compare childhood exposure to overall rates of victimisation between groups. No significant differences were found between groups in relation to overall exposure to CAN, other trauma exposure or multiple traumatisation ($p > .01$).

Table 9: Descriptive Statistics and T-tests among Childhood Victimization Variables

	Students(n=235)	General(n=94)	Test Statistics	
	M(SD)	M(SD)	t(df)	p
CAN Total	0.43(0.77)	0.67(1.06)	-1.98(134.47)	.050
Other Trauma	1.70(1.54)	2.05(1.81)	-1.68(149.72)	.096
Multiple Traumatisation	1.20(2.15)	1.71(2.59)	-1.71(147.10)	.090

* $p < .01$ ** $p < .001$

4.13 The Role of Coping

Table 10 presents descriptive and t-test statistics for each of the 14 Brief COPE subscales for both groups.

	Students (n=236)	General (n=89)	Test Statistics	
Brief COPE Subscales	M(SD)	M(SD)	t(df)	p
Active Coping	3.28(1.52)	3.38(1.62)	-.54(149.48)	.591
Planning	3.41(1.60)	3.61(1.79)	-.93(144.02)	.356
Positive Reframing	3.10(1.60)	3.24(1.80)	-.64(144.00)	.525
Acceptance	3.39(1.43)	3.96(1.57)	-2.95(146.59)	.004*
Humour	2.55(1.91)	2.31(1.87)	.99(161.43)	.324
Religion	1.03(1.75)	0.45(1.36)	3.11(199.31)	.002*
Emotional Support	3.42(1.80)	2.39(1.83)	4.56(153.47)	.000**
Instrumental Support	1.62(0.98)	1.07(0.92)	4.71(165.29)	.000**
Self-Distraction	3.42(1.41)	3.12(1.70)	1.44(136.12)	.153
Denial	0.93(1.45)	0.68(1.21)	1.57(186.18)	.119
Venting	2.30(1.49)	1.94(1.54)	1.84(146.06)	.068
Substance Use	1.01(1.57)	1.00(1.47)	.07(168.08)	.946
Behavioural Disengagement	1.14(1.26)	0.55(1.03)	4.27(186.35)	.000**
Self-Blame	2.73(1.74)	2.15(1.89)	2.54(145.36)	.012*

*p < .01 **p < .001

Independent t-tests revealed significant differences between groups in relation to six of fourteen Brief COPE subscales. Specifically, there were significant differences in the use of religion ($t(199.31) = 3.11, p < .01$), emotional support ($t(153.47) = 4.56, p < .001$), instrumental support ($t(165.29) = 4.71, p < .001$), behavioural disengagement ($t(186.35) = 4.27, p < .001$) and self-blame ($t(145.36) = 2.54, p < .01$) between groups, with university students choosing to utilise these particular coping strategies more frequently during a recent period of stress. In addition, a significant difference was found in relation to the use of acceptance ($t(146.59) = -2.95, p < .01$) with the general population reporting to use this coping strategy more frequently during a recent period of stress. Comparable use of active coping, planning, positive reframing, humour, self-distraction, denial, venting and substance use were observed among both groups ($p > .01$).

To explore the role of coping following exposure to different types of childhood experiences, bivariate correlations among childhood victimisation variables and coping revealed some clear associations. Exposure to multiple traumatisation was significantly associated with the use of substance misuse ($r=.171$, $p<.01$) and self-blame ($r=.200$, $p<.001$).

4.14 Difficulties in Emotion Regulation (DERS)

Table 11 displays descriptive and t-test statistics for participants' overall DERS scores, in addition to each of the six DERS subscales.

Table 11: Difficulties in Emotion Regulation Scores for the Total Sample (N=321)

DERS Scale	Students(n=237) M(SD)	General (n=84) M(SD)	Test Statistics	
			t(df)	p
DERS TOTAL	86.70(18.96)	73.42(18.13)	5.70(151.83)	.000**
DERS NON-ACCEPTANCE	13.95(5.33)	11.86(4.98)	3.37(179.32)	.001**
DERS GOALS	16.14(4.59)	12.90(4.52)	5.78(165.39)	.000**
DERS IMPULSE	11.42(4.41)	9.47(3.63)	4.10(197.04)	.000**
DERS AWARENESS	15.87(3.55)	15.65(5.29)	.438(124.06)	.712
DERS STRATEGIES	18.27(6.60)	14.00(5.43)	6.01(199.68)	.000**
DERS CLARITY	11.05(3.36)	9.11(3.05)	5.06(184.54)	.000**

* $p < .01$ ** $p < .001$

Independent t-tests were conducted to compare difficulties in ER between groups. On average, university students experienced significantly greater difficulties in ER and obtained higher overall DERS scores ($t(151.83) = 5.70$, $p < .001$) in addition to significantly higher scores on five out of six DERS subscales; NON-ACCEPTANCE ($t(179.32) = 3.37$, $p < .001$), GOALS ($t(165.39) = 5.78$, $p < .001$), IMPULSE ($t(197.04) = 4.10$, $p < .001$), STRATEGIES ($t(199.68) = 6.01$, $p < .001$) and CLARITY ($t(184.54) = 5.06$, $p < .001$). No significant differences were found between groups for the AWARENESS subscale ($t(124.06) = .438$, $p > .01$).

4.15 Optimism

Overall, Mean LOT-R scores were 13 (SD=4.94) for university students and 14.13 (SD=5.57) for the general population. An independent t-test revealed no significant difference between groups in relation to overall LOT-R scores ($t(141.33) = -1.67$, $p > .01$).

4.16 Perpetration of Violence: Prevalence Rates

Table 12 displays frequency statistics for reported rates of ‘less severe’ acts of aggression in later childhood (aged 12-17 years) and in adulthood (aged 18+ years). Less severe acts of violence were considered to be incidents of psychological aggression e.g., calling someone names or threatening to hit them, as well as some less severe incidents of actual physical aggression e.g., slapping someone on the hand, arm or leg, or pinching them. The incidents of physical aggression referred to in Table 12 were considered to be less severe than those included in the ‘severe’ acts of aggression category (Table 13).

Table 12: Reported Rates of Less Severe Acts of Aggression in Later Childhood and Adulthood

Study Variable	Students n(%)	General n(%)	Test Statistics	
			t(df)	p
V1 Later childhood	155(65.4)	46(55.4)	-2.08(319)	.038
V1 Adulthood	96(40.5)	45(53.6)	1.58(137.65)	.116
V3 Later childhood	90(38.0)	19(22.6)	.38(319)	.702
V3 Adulthood	41(17.3)	13(15.5)	2.76(167.0)	.007*
V7 Later childhood	27(11.4)	7(8.4)	1.18(168.07)	.238
V7 Adulthood	34(14.3)	8(9.6)	.75(318)	.453
V8 Later childhood	74(31.2)	13(15.5)	-.16(319)	.876
V8 Adulthood	35(14.8)	13(15.5)	3.16(184.84)	.002*
V12 Later childhood	38(16.0)	4(4.8)	-.77(319)	.441
V12 Adulthood	14(5.9)	7(8.3)	3.37(250.68)	.001**

* $p < .01$ ** $p < .001$

Note. V1=shouted, screamed, called someone names or threatened to hit them (but didn't). V3=slapped someone on the hand, arm, leg or pinched them. V7=got so drunk or high that you were so caught up in your own problems you were unable to show someone important you loved/cared for them. V8=acted in a way intended to embarrass or humiliate someone. V12=thrown an object at someone during an

Among university students, the prevalence rates of less severe incidents of aggression appear to be higher in later childhood in comparison to adulthood. In contrast, comparable rates of less severe incidents of aggression appear to have been perpetrated in both later childhood and adulthood within the general population. Among both groups, shouting, screaming, calling someone names or threatening to hit someone was the most frequent aggressive behaviour reported, with the general population reporting higher rates of such behaviour in adulthood (53.6%). The least frequent aggressive behaviour reported was throwing an object at someone during an argument, with 5.9% of students and 8.3% of the general population reporting to have engaged in this behaviour during adulthood.

Independent t-tests were conducted to compare less severe acts of aggression between groups. While significantly higher rates adulthood slapping or pinching ($t(167) = 2.76$, $p < .01$) were found among university students, significantly higher rates of adulthood acts intended to humiliate or embarrass ($t(184.84) = 3.16$, $p < .01$) and throwing of objects during arguments ($t(250.68) = 3.37$, $p < .001$) were found among the general population.

Table 13 displays frequency statistics for reported rates of 'severe' acts of aggression in later childhood (aged 12-17 years) and in adulthood (aged 18+ years). Severe acts of aggression included incidents of using a weapon to threaten or physically harm someone, in addition to incidents of physical aggression likely to cause serious physical injury to others.

Table 13: Reported Rates of Severe Acts of Aggression in Later Childhood and Adulthood

Study Variable	Students n(%)	General n(%)	Test Statistics	
			t(df)	p
V2 Later childhood	87(36.7)	31(36.9)	-3.28(117.72)	.001**
V2 Adulthood	35(14.8)	28(33.3)	-.03(319)	.975
V4 Later childhood	15(6.3)	5(6.0)	.39(319)	.696
V4 Adulthood	14(5.9)	4(4.8)	.12(319)	.903
V5 Later childhood	12(5.1)	0	1.29(237.63)	.198
V5 Adulthood	8(3.4)	1(1.2)	3.55(236)	.000**
V9 Later childhood	79(33.3)	20(23.8)	-1.49(126.96)	.139
V9 Adulthood	33(13.9)	18(21.4)	1.7(159.51)	.091
V10 Later childhood	9(3.8)	1(1.2)	-.384(319)	.701
V10 Adulthood	9(3.8)	4(4.8)	1.51(255.95)	.131
V11 Later childhood	10(4.2)	1(1.2)	.72(319)	.471
V11 Adulthood	6(2.5)	1(1.2)	1.71(267.44)	.088
V13 Later childhood	97(40.9)	20(23.8)	-2.42(124.26)	.017
V13 Adulthood	41(17.3)	26(31.0)	3.02(166.20)	.003*
V14 Later childhood	51(21.5)	15(17.9)	-.81(319)	.419
V14 Adulthood	21(8.9)	10(11.9)	.71(319)	.477
V15 Later childhood	13(5.5)	5(6.0)	-.668(318)	.505
V15 Adulthood	10(4.2)	5(6.0)	-.16(319)	.873
V16 Later childhood	15(6.3)	1(1.2)	-.265(319)	.791
V16 Adulthood	23(9.7)	9(10.7)	2.59(303.10)	.010*

*p < .01 **p < .001

Note. V2=hit someone with a fist, kicked them, hit them with a hard object, threw them or knocked them down, slapped them on the face, head or ears. V4=grabbed someone around the neck and choked them, beat them up, burned or scalded someone. V5= threatened someone with a knife or gun. V9= lashed out causing someone a physical injury. V10=lost a friend or partner due to your aggressive behaviour. V11=used a weapon to harm someone. V13=lashed out at someone physically but regretted it afterwards. V14=attacked someone physically following a verbal insult. V15=attacked someone physically with a group of others. V16=hit or slapped your partner or someone who you went on a date with.

Among both groups, high rates of hitting someone with a fist, kicking someone, hitting someone with a hard object, throwing them or knocking them down or slapping someone on the face, head or ears were reported, with 14.8% of students and 33.3% of the general population reporting to have engaged in such behaviour as an adult. Moreover, 17.3% of students and 31% of the general population reported lashing out at someone physically as an adult but then regretted it afterwards. The

least frequent incidents of severe violence reported were using a weapon to harm someone and sexual violence, as displayed in Table 14 below.

Independent t-tests were conducted to compare severe acts of aggression between groups. Significantly higher rates of threatening someone with a knife or gun in adulthood ($t(236) = 3.55, p < .001$) and hitting, kicking or throwing a hard objects in later childhood ($t(117.72) = -3.28, p < .001$) were found among university students, while significantly elevated rates of lashing out at others ($t(166.20) = 3.02, p < .01$) and dating violence ($t(303.10) = 2.59, p < .01$) in adulthood were found among the general population. However, it should be noted that the total number of participants that reported to have threatened someone with a weapon or had perpetrated dating violence was small and therefore these findings should be interpreted with this consideration in mind. Table 14 displays frequency statistics for reported rates sexual violence in later childhood (aged 12-17 years) and in adulthood (aged 18+ years).

Table 14: Reported Rates of Sexual Violence in Later Childhood and Adulthood

	Students n(%)	General n(%)	Test Statistics t(df)	p
Sexual Violence Later childhood	8(3.4)	0	1.51(255.95)	.131
Sexual Violence Adulthood	9(3.8)	1(1.2)	2.87(236)	.004*

* $p < .01$ ** $p < .001$

Note. Sexual violence was defined as ever touching someone else or making them touch you in a sexually inappropriate way, or insisting or forcing someone else to perform oral or penetrative sex.

An independent t-test revealed significantly higher rates of sexual violence in adulthood among the student population ($t(236) = 2.87, p < .01$). No significant differences were found between groups for perpetration of sexual violence in later childhood.

Table 15 below displays the mean scores for overall violence perpetration in both later childhood and adulthood, overall victimisation in adulthood and overall attitudes supportive of violence.

Table 15: Descriptive Statistics and T-tests among Violence Variables

Study Variable	Students (n=237)	General (n=84)	Test Statistics	
	M(SD)	M(SD)	t(df)	p
Physical Aggression Perpetration (A)	0.84(1.80)	1.25(1.89)	-1.72(137.98)	.088
Physical Aggression Perpetration (C)	1.63(2.05)	1.18(1.70)	2.00(174.47)	.048
Sexual Violence Perpetration (A)	0.04(0.12)	0.01(0.12)	1.51(255.95)	.131
Sexual Violence Perpetration (C)	0.03(0.18)	0(0)	2.87(236)	.004*
Physical Aggression Victimisation (A)	0.92(1.84)	1.51(2.23)	-2.13(115.53)	.036
Sexual Violence Victimisation (A)	0.08(0.28)	0.07(0.26)	.39(155.75)	.700
MVQ	10.90(8.21)	9.26(7.07)	1.77(173.52)	.078

*p < .01 **p < .001

Independent t-tests were conducted to compare perpetration of violence between groups. While no significant differences were found between groups for perpetration of physical aggression in adulthood ($t(137.98) = -1.172$, $p > .01$), a significant difference between groups was found in relation to the perpetration of sexual violence in childhood, with university students perpetrating significantly more acts of sexual violence in childhood than those in the general population ($t(236) = 2.87$, $p < .01$). However, it should be noted that the total number of participants that reported to have engaged in sexual violence was small and therefore this finding should be interpreted with this consideration in mind. No significant difference was found between groups in relation to the perpetration of sexual violence in adulthood ($t(255.95) = 1.51$, $p > .05$).

4.17 Bivariate Correlations

Tables 16 and 17 below display the bivariate correlations among childhood victimisation variables, the perpetration of violence in adulthood, difficulties in ER, optimism and violent attitudes for both university students and the general population.

Difficulties in ER

An examination of bivariate correlations among childhood victimisation variables revealed some clear associations with difficulties in ER. Among university students, exposure to CAN, other trauma and multiple traumatisation were all significantly associated with the overall DERS score, along with the subscales of poor IMPULSE control, NON-ACCEPTANCE of emotions and limited access to STRATEGIES, with significant correlations ranging from .167 to .315. Among the general population, exposure to CAN and multiple traumatisation were not found to be significantly associated with difficulties in ER. Notwithstanding this, exposure to other trauma in the general population was significantly associated with the NON-ACCEPTANCE ($r=.297$) and STRATEGIES subscales of the DERS ($r=.277$).

Optimism

Pessimism was found to be significantly correlated with difficulties in ER among both groups. Specifically, LOT-R scores were negatively associated with the overall DERS score in addition to a number of the DERS subscales for both groups, with significant correlations ranging from -.183 to -.631.

Interpersonal Violence

Further bivariate correlations revealed significant associations among childhood victimisation variables and the perpetration of violence. Specifically, for both groups, exposure to CAN, other trauma and multiple traumatisation were significantly associated with the perpetration of physical violence in adulthood, with significant correlations ranging from .203 to .468. In addition, among university students, multiple traumatisation ($r=.209$) was also significantly associated with the perpetration of sexual violence in adulthood.

Among university students, the overall DERS score, in addition to the IMPULSE subscale, was significantly associated with the perpetration of physical violence in adulthood, with significant correlations ranging from .179 to .281 ($p<.01$). Furthermore, for the general population, a significant association between the NON-ACCEPTANCE subscale and the perpetration of physical violence in adulthood was also found ($r=.333$, $p<.01$). For both groups, violence supportive attitudes (MVQ) were significantly correlated ($p<.01$) with the perpetration of physical and sexual violence in adulthood, with correlations of .389 (physical) and .234 (sexual) for university students and .476 (physical) and .292 (sexual) for the general population.

Coping

Comparisons of difficulties in ER (DERS) and coping (Brief COPE) found that coping strategies considered to be adaptive e.g., active coping or positive reframing were found to be negatively correlated with the overall DERS score ($p<.001$), whereas coping strategies considered maladaptive e.g., denial or behavioural disengagement, were found to be positively correlated with the overall DERS score ($p<.001$).

Consequently, due to the likelihood of multicollinearity between the DERS and a number of subscales within the Brief COPE, only the DERS variable was included in the logistic regression analyses. Multicollinearity between variables was checked through bivariate correlations. A number of subscales within the Brief COPE were found to be highly correlated with the DERS, an indicator that multicollinearity might be a problem between these particular variables.

Table 16: Bivariate Correlations among Study Variables for University Students

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
University students (n = 237)														
1. CAN Total	1	.443*	.913*	.203*	.118	.225**	.144	.094	.315**	-.140	.107	.274**	-.285**	.187*
2. Other Trauma	.443*	1	.610**	.228**	.126	.188*	.167*	.159	.152	-.071	.061	.200*	-.204*	.131
3. MT	.913**	.610**	1	.261**	.209**	.247**	.175*	.078	.303**	-.087	.146	.283**	-.305**	.201*
4. Physical Perpetration (A)	.203*	.228**	.261**	1	.631**	.179*	.084	.032	.281**	.055	.092	.161	-.092	.389**
5. Sexual Perpetration (A)	.142	.056	.209**	.631**	1	.142	.056	-.025	.227**	.163*	.063	.109	-.040	.234**
6. DERS Total	.225*	.188*	.247**	.179*	.142	1	.761**	.668**	.764**	.212**	.614**	.858**	-.461**	.270**
7. DERS NONACCEPT	.144	.167*	.175*	.084	.056	.761**	1	.380**	.408**	.096	.410**	.582**	-.321**	.050
8. DERS GOALS	.094	.159	.078	.032	-.025	.668**	.380**	1	.475**	-.155	.179*	.593**	-.346**	.192*
9. DERS IMPULSE	.315**	.152	.303**	.281*	.227*	.764**	.408**	.475**	1	-.013	.355**	.695**	-.353**	.322**
10. DERS AWARENESS	-.140	-.071	-.087	.055	.163	.212**	.096	-.155	-.013	1	.409**	-.099	.008	.134
11. DERS CLARITY	.107	.061	.146*	.092	.063	.614**	.410**	.179*	.355**	.409**	1	.342**	-.183*	.209**
12. DERS STRATEGIES	.274*	.200*	.283*	.161	.109	.858**	.582**	.593**	.695**	-.099	.342**	1	-.502**	.208**
13. LOT-R	-.285**	-.204*	-.305**	-.092	-.040	-.461**	-.321**	-.346**	-.353**	.008	-.183*	-.502**	1	-.143
14. MVQ	.187*	.131	.201*	.389**	.234**	.270**	.050	.192*	.322**	.134	.209**	.208**	-.143	1

Note. A = Adulthood; DERS = Difficulties in Emotion Regulation Scale. High scores on the DERS indicate difficulties in ER; low scores indicate adaptive ER skills.

*p < .01 **p < .001

Table 17: Bivariate Correlations among Study Variables for the General Population

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
General Population (n = 77- 94)														
1. CAN Total	1	.289*	.860**	.223	-.072	-.056	.076	-.082	.021	-.152	-.079	.044	-.108	-.049
2. Other Trauma	.289*	1	.555*	.468**	.171	.255	.297*	.180	.234	.020	.225	.277*	-.248	.342**
3. MT	.860**	.555**	1	.453**	-.076	.058	.163	.005	.157	-.112	-.008	.174	-.186	.126
4. Physical Perpetration (A)	.223	.468**	.453**	1	.162	.269	.333*	.114	.280	.061	.180	.229	-.166	.476**
5. Sexual Perpetration (A)	-.072	.171	-.076	.162	1	.390**	.196	.201	.145	.234	.464**	.335*	-.200	.292*
6. DERS Total	-.056	.255	.058	.269	.390*	1	.691**	.628**	.696**	.523**	.659**	.812**	-.560**	.299*
7. DERS NONACCEPT	.076	.297*	.163	.333*	.196	.691**	1	.330*	.390**	.242	.276*	.413**	-.285*	.196
8. DERS GOALS	-.082	.180	.005	.114	.201	.628**	.330*	1	.547**	-.167	.147	.595**	-.310*	.143
9. DERS IMPULSE	.021	.234	.157	.280	.145	.696**	.390**	.547**	1	.055	.303*	.596**	-.298*	.282*
10. DERS AWARENESS	-.152	.020	-.112	.061	.234	.523**	.242	-.167	.055	1	.633**	.165	-.317*	.191
11. DERS CLARITY	-.079	.225	-.008	.180	.464**	.659**	.276*	.147	.303*	.633**	1	.408**	-.385**	.339**
12. DERS STRATEGIES	.044	.277*	.174	.229	.335*	.812**	.413**	.595**	.596**	.165	.408**	1	-.631**	.158
13. LOT-R	-.108	-.248	-.186	-.166	-.200	-.560**	-.285*	-.310*	-.298*	-.317*	-.385**	-.631**	1	-.182
14. MVQ	-.049	.342*	.126	.476**	.292*	.299*	.196	.143	.282*	.191	.339**	.158	-.182	1

Note. A= Adulthood; DERS = Difficulties in Emotion Regulation Scale. High scores on the DERS indicate difficulties in ER; low scores indicate adaptive ER skills.

*p < .01 **p < .001

4.18 Logistic Regression Analysis

Exposure to Recurrent CAN and difficulties in ER

In order to further explore the relationships between study variables, logistic regression analyses were conducted to test a) whether exposure to CAN and multiple traumatisation predicted difficulties in ER and b) if difficulties in ER predicted the perpetration of physical aggression in adulthood.

Model 1 explored the contribution of participants' overall exposure to CAN (i.e., cumulative score from 0 to 5), level of optimism, level of attitudes supportive of violence as well as a number of sociodemographic variables (age, gender, education, marital status and social network) in predicting overall difficulties in ER.

The results from model 1 (Table 18) indicated that lower level of education, total exposure to CAN, attitudes supportive of violence (MVQ) and a lack of optimism (LOT-R) were all significant predictors of difficulties in ER. The overall model successfully predicted 81.2% of responses correctly, with a lack of optimism being the largest predictor variable.

Table 18: Logistic Regression Results for Model 1 (N=303)

Predictor	B	S.E.	Sig.	Exp(B)	95% Confidence Intervals	
					Lower	Upper
Age	-.109	.091	.232	.897	.751	1.072
Gender	.527	.450	.242	1.694	.701	4.094
Education	-.598	.290	.039*	.550	.311	.970
Marital Status	.	.	.670	.	.	.
Single	.603	.393	.125	1.828	.846	3.947
1 year+	.210	1.001	.834	1.233	.173	8.782
Co-habiting	-17.798	6983.276	.998	.000	.000	.
Married	-17.632	18886.586	.999	.000	.000	.
Social Network	.281	.295	.340	1.325	.744	2.360
Total CAN	.434	.198	.029*	1.543	1.046	2.274
MVQ	.053	.020	.008**	1.054	1.014	1.096
LOT-R	-.189	.038	.000***	.828	.768	.892
Group	.023	.820	.978	1.023	.205	5.105

*p < .05 **p < .01 ***p < .001

When controlling for differences in socio-demographic factors, attitudes supportive of violence, low levels of optimism and participant group, exposure to CAN significantly increased the likelihood of difficulties in ER by 1.54 times ($p < .05$). This suggests that as exposure to CAN increases, the odds of experiencing difficulties in ER also increase. Specifically, for every one unit increase in participants' reported exposure to CAN (as measured by a 5-unit index) participants were 1.54 times (or 54.3%) more likely to experience difficulties in ER.

Participants who reported higher levels of attitudes supportive of violence were also significantly more likely to experience difficulties in ER ($p < .01$). The results indicate that for every one unit shift towards the 'strongly agree' category in the violent attitudes questionnaire, participants were 1.05 times (or 5.4%) more likely to experience difficulties in ER after controlling for the other factors in the model.

Furthermore, the findings indicate that as optimism decreases, the likelihood of experiencing difficulties in ER significantly increases ($p < .001$). Specifically, for every one unit decrease in the LOT-R score, participants were .83 times (or 8.3%) more likely to experience difficulties in ER after controlling for the other factors in the model. In addition, the results demonstrate that as level of education decreases, the likelihood of experiencing difficulties in ER increases ($p < .05$). For every one unit decrease in education (as measured by a 7-unit index), participants were .55 times (or 5.5%) more likely to experience difficulties in ER after controlling for the other factors in the model.

Given that participants reported different levels of exposure to CAN (i.e., 1 form, 2 forms, 3 forms, and so on), model 2 (Table 19) therefore examined the relative contribution of each level of exposure to CAN (as measured by a 5-unit index) in predicting difficulties in ER after controlling for the other factors in the model. Exposure to one form of CAN significantly increased the likelihood of difficulties in ER by 2.05 times ($p = .063$). But, exposure to three forms of CAN significantly increased the likelihood of difficulties in ER by 5.48 times ($p = .059$). The overall model successfully predicted 80.9% of responses correctly. Again, a lack of optimism was the most significant predictor variable.

Table 19: Logistic Regression Results for Model 2 (N=303)

	B	S.E.	Sig.	Exp(B)	95% Confidence Intervals	
					Lower	Upper
Age	-.109	.090	.227	.897	.751	1.070
Gender	.575	.458	.209	1.777	.725	4.359
Education	-.628	.300	.037*	.534	.296	.962
Marital Status	.	.	.602	.	.	.
Single	.650	.397	.102	1.915	.880	4.170
1 year+	-.012	1.037	.991	.988	.130	7.539
Co-habiting	-18.128	7022.916	.998	.000	.000	.
Married	-17.948	18630.370	.999	.000	.000	.
Social Network	.287	.301	.341	1.333	.738	2.405
CAN (1)	.716	.385	.063	2.046	.962	4.351
CAN (2)	.524	.603	.385	1.689	.518	5.511
CAN (3)	1.702	.899	.059	5.482	.941	31.950
CAN (4)	.812	2.004	.685	2.253	.044	114.353
CAN (5)	1.683	40801.914	1.000	5.383	.000	.
MVQ	.053	.020	.008**	1.055	1.014	1.097
LOT-R	-.184	.039	.000***	.832	.772	.897
Group	.237	.838	.777	1.268	.245	6.556

*p < .05 **p < .01 ***p < .001

Exposure to Multiple Traumatisation and Difficulties in ER

Model 3 explored the contribution of participants' overall exposure to multiple traumatisation (i.e., cumulative score from 0 to 15), level of optimism, level of attitudes supportive of violence (MVQ) as well as a number of sociodemographic variables (age, gender, education, marital status and social network) in predicting overall difficulties in ER.

The results from model 3 (Table 20) indicate that lower level of education, exposure to multiple traumatisation, higher levels of attitudes supportive of violence and low levels of optimism were all significant predictors of difficulties in ER. The overall model successfully predicted 80.9% of responses correctly, with a lack of optimism being the largest predictor variable.

Table 20: Logistic Regression Results for Model 3 (N=303)

	B	S.E.	Sig.	Exp(B)	95% Confidence Intervals	
					Lower	Upper
Age	-.113	.094	.229	.893	.743	1.074
Gender	.571	.456	.210	1.771	.725	4.326
Education	-.523	.287	.069	.593	.338	1.041
Marital Status	.	.	.665	.	.	.
Single	.609	.395	.123	1.839	.848	3.985
1 year+	.193	.996	.846	1.213	.172	8.555
Co-habiting	-17.608	7006.519	.998	.000	.000	.
Married	-17.691	18588.482	.999	.000	.000	.
Social Network	.243	.298	.415	1.275	.711	2.287
Total MT	.168	.072	.019*	1.183	1.028	1.362
MVQ	.051	.020	.011*	1.053	1.012	1.095
LOT-R	-.186	.038	.000***	.831	.770	.895
Group	.071	.816	.931	1.073	.217	5.313

*p < .05 **p < .01 ***p < .001

As displayed in Table 20, when controlling for differences in socio-demographic factors, attitudes supportive of violence, optimism and participant group, exposure to multiple traumatisation significantly increased the likelihood of difficulties in ER ($p < .05$). This indicates that as exposure to multiple traumatisation increases, the odds of experiencing difficulties in ER also increase. Specifically, for every one unit increase in participants reported exposure to multiple traumatisation, participants were 1.18 times (or 18.3%) more likely to experience difficulties in ER.

Further significant results for Model 3 were similar to those of Model 1 (i.e., the impact of recurrent CAN). Again, participants who reported higher levels of attitudes supportive of violence were also significantly more likely to experience difficulties in ER ($p < .05$). Specifically, for every one-unit shift towards the ‘strongly agree’ category in the violent attitudes questionnaire, participants were 1.05 times (or 5.5%) more likely to experience difficulties in ER after controlling for the other factors in

the model. Similarly, as optimism decreases, the likelihood of experiencing difficulties in ER increases ($p < .001$). Specifically, for every one unit decrease in the LOT-R score, participants were .83 times (or 8.3%) more likely to experience difficulties in ER after controlling for the other factors in the model. In addition, the results demonstrate that as level of education decreases, the likelihood of experiencing difficulties in ER increases by .59 times (or 5.9%) ($p = .069$), however this particular result was only tendentially significant.

Exposure to Recurrent CAN and Violent Behaviour

Model 4 explored the contribution of participants' level of exposure to CAN, level of optimism, level of attitudes supportive of violence as well as a number of sociodemographic variables (age, gender, education, marital status and social network) in predicting the perpetration of violence in adulthood.

The results from model 4 (Table 21) could indicate that exposure to one and two forms of CAN, higher levels of attitudes supportive of violence and participant group are all significant predictors of physical aggression in adulthood. The overall model successfully predicted 82.6% of responses correctly, with violent attitudes and group emerging as the largest predictor variables.

Table 21: Logistic Regression Results for Model 4 (N=299)

	B	S.E.	Sig.	Exp(B)	95% Confidence Intervals	
					Lower	Upper
Age	-.032	.040	.417	.968	.895	1.047
Gender	-.077	.393	.845	.926	.429	1.999
Education	-.327	.201	.104	.721	.486	1.070
Marital Status			.197			
Single	.401	.388	.302	1.493	.698	3.195
1 year+	-.731	.824	.375	.481	.096	2.422
Co-habiting	-1.095	1.190	.357	.335	.032	3.445
Married	1.847	1.758	.294	6.340	.202	199.003
Social Network	-.360	.283	.204	.698	.401	1.216
CAN (1)	.834	.400	.037*	2.302	1.051	5.045
CAN (2)	1.353	.561	.016*	3.869	1.287	11.626
CAN (3)	1.214	.812	.135	3.366	.686	16.518
CAN (4)	1.795	1.322	.175	6.021	.451	80.419
CAN (5)	-18.800	40192.97	1.000	.000	.000	.
MVQ	.091	.021	.000***	1.095	1.052	1.141
LOT-R	.027	.036	.447	1.028	.958	1.102
DERS	.367	.407	.366	1.444	.651	3.205
Group	1.972	.604	.001***	7.185	2.201	23.456

*p < .05 **p < .01 ***p < .001

When controlling for all other factors in the model, exposure to one form of CAN increased the likelihood of perpetration of physical aggression in adulthood by 2.3 times ($p < .05$), while exposure to two forms of CAN further increased the likelihood of perpetration of physical aggression in adulthood by 3.87 times. In addition, those participants reporting higher levels of attitudes supportive of violence were also significantly more likely to report perpetrating physical aggression in adulthood ($p < .001$). The results indicate that for every one-unit shift towards the ‘strongly agree’ category in the violent attitudes questionnaire, participants were 1.09 times (or 9.5%) more likely to report perpetrating of physical aggression in adulthood after controlling for the other factors in the model.

Furthermore, the findings from model 4 indicate a significant main effect of participant group ($p < .001$) upon the perpetration of physical aggression in adulthood, with participants from the general population being 7.19 times more likely to report perpetrating physical aggression in adulthood.

The results from model 5 (Table 22) indicated that exposure to multiple traumatisation, attitudes supportive of violence and participant group were all significant predictors of perpetration of physical aggression in adulthood. The overall model successfully predicted 82.3% of responses correctly.

Table 22: Logistic Regression Results for Model 5 ($N=299$)

	B	S.E.	Sig.	Exp(B)	95% Confidence Intervals	
					Lower	Upper
Age	-.036	.040	.366	.964	.892	1.043
Gender	-.066	.394	.866	.936	.433	2.024
Education	-.298	.199	.133	.742	.503	1.096
Marital Status			6.568			
Single	.405	.383	.290	1.500	.707	3.180
1 year+	-.722	.806	.370	.486	.100	2.358
Co-habiting	-1.212	1.206	.315	.298	.028	3.161
Married	1.867	1.777	.293	6.467	.199	210.526
Social Network	-.374	.286	.191	.688	.393	1.205
MVQ	.088	.021	.000***	1.092	1.049	1.137
LOT-R	.022	.035	.498	1.025	.957	1.099
DERS	.322	.409	.431	1.380	.619	3.076
Total MT	.226	.069	.001***	1.253	1.094	1.435
Group	2.008	.591	.001***	7.447	2.340	23.697

* $p < .05$ ** $p < .01$ *** $p < .001$

When controlling for all other factors in the model, exposure to multiple traumatisation increased the likelihood of perpetrating of physical aggression in adulthood by 1.25 times (or 25.3%) ($p < .001$). Comparable to model 4 (i.e., exposure to recurrent CAN), participants reporting higher levels of attitudes supportive of

violence were also significantly more likely to report perpetrating physical aggression in adulthood ($p < .001$). The results indicate that for every one unit shift towards the 'strongly agree' category in the violent attitudes questionnaire, participants were 1.09 times (or 9.2%) more likely to report perpetrating physical aggression in adulthood after controlling for the other factors in the model.

Furthermore, the findings from model 5 indicate a significant main effect of participant group ($p < .001$) upon the perpetration of physical aggression in adulthood, with participants from the general population being 7.45 times more likely to report perpetrating physical aggression in adulthood. Notably, difficulties in ER were not found to be a significant predictor of violence perpetration in either model 4 or 5.

4.19 Mediation Analysis

In order to test the proposed mediational hypothesis, a series of regression analyses were performed following the procedure outlined by Baron and Kenny (1986). Crucially, while a significant association between the independent (CAN and/or multiple traumatisation) and dependent (interpersonal violence) variables was found in step one of the analysis, a subsequent association between the independent (interpersonal violence) variable and the proposed mediator (ER) variable was not found. Importantly, the failure to reject the null hypothesis in step two of the analysis, ceased the process of mediational analysis, thus indicating that ER does not fully nor partially mediate the effect of CAN and/or multiple traumatisation upon current ER.

Subsequently, the proposed mediational hypothesis was further tested using the Preacher and Hayes (2008) bootstrapping method for calculating total and indirect

effects of *X* (multiple traumatisation) on *Y* (interpersonal violence). However, the direct effect of *X* on *Y* (*c'* path) was found to be significant ($p < .01$) thus indicating that ER was not a mediator of this relationship. As such, the mediational hypothesis was therefore rejected following this series of regression analyses.

Using the mean values of significant predictor variables, the predicted probabilities of being in the 'high' DERS score group (i.e., an overall DERS score of ≥ 100) based on individuals exposure to CAN and multiple traumatisation were calculated and are displayed in the table below.

4.20 Predicted Probabilities

The results indicate that the predicted probabilities of difficulties in ER increase with increased exposure to both CAN and multiple traumatisation. Notably, as cumulative exposure to both CAN and multiple traumatisation increase, the risk of experiencing difficulties in ER also increases. This increase is presented graphically in Figures 2 and 3. From these figures, it is clear that the higher the CAN or multiple traumatisation score, the more substantial increase in the risk of difficulties in ER. For example, while the difference between exposure to 1 and 2 forms of CAN is associated with a 1% increase in predicted probability of difficulties in ER, the difference between exposure to 3 and 4 forms of CAN is associated with a 2.3% increase in the predicted probability of experiencing difficulties in ER. Similarly, the difference between exposure to 5 and 10 forms of CAN plus wider forms of trauma (i.e., multiple traumatisation) is 5.2%, whereas the difference between a score of 10 and 15 is 9.9%.

Table 23: Predicted Probabilities for Difficulties in ER (DERS score of ≥ 100)

Total Multiple Traumatism score	Victimisation Score					
	0-4	5-9	10-14	15		
Predicted Probabilities	0.019	0.042	0.094	0.193		
Total CAN score	0	1	2	3	4	5
Predicted Probabilities	0.012	0.018	0.028	0.043	0.066	0.098

Figure 2: Graph depicting the predicted probability of a high DERS score (≥ 100) versus overall level of exposure to CAN

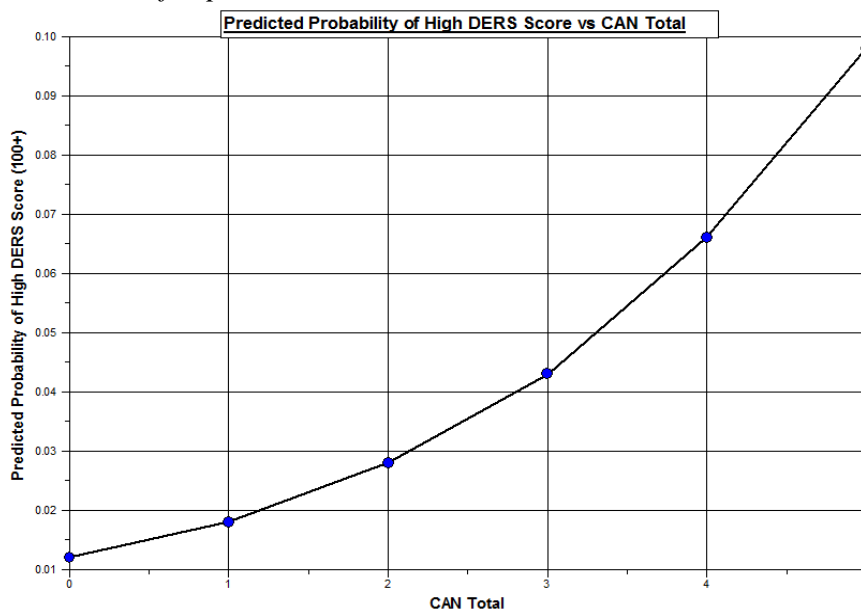
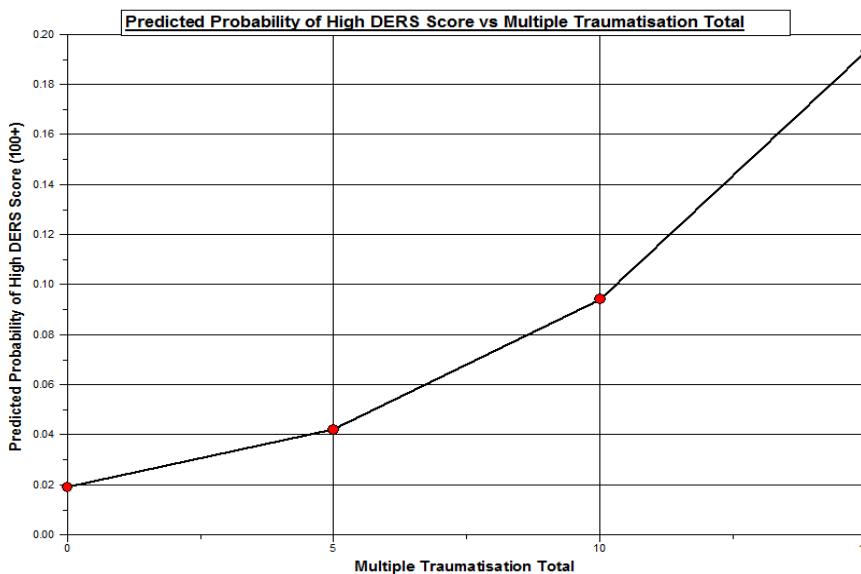


Figure 3: Graph depicting the predicted probability of a high DERS score (≥ 100) versus overall level of exposure to Multiple Traumatism



4.21 Discussion

The aim of the present study was to explore the impact of recurrent CAN and multiple traumatisation on ER, in addition to the role of ER in relation to aggressive behaviour. In order to investigate the study hypotheses, first, the rates of exposure to CAN and wider forms of childhood trauma were examined, before examining differences in victimisation histories, socio-demographic variables, coping, levels of optimism, attitudes towards violence, difficulties in ER and perpetration of violence between the groups (university students and general population). Finally, the extent to which these variables predicted difficulties in ER and the perpetration of violence was examined through logistic regression analysis.

4.22 Summary of Findings

The findings from the present study indicate that both university students and the general population are reflective of highly victimised populations. Overall, 29.9% of university students and 39.4% of the general reported exposure to CAN during the course of childhood (0-17 years), with 9.4% and 16% respectively reporting exposure to more than one form of CAN. Overall, there are some comparisons that can be drawn between these rates and those observed in recent literature. For instance, Radford et al. (2011) reported that one in four young adults aged 18-24 (25.3%) had been severely maltreated during childhood; a very similar rate was observed within the current university student population (29.9%). However the overall rate observed within the current general population sample was somewhat higher (39.4%). Much higher rates of emotional abuse (16.5% and 21.3%) and sexual abuse (2.5% and 8.5%) were observed in the current study, compared to the 6.9% (emotional) and 1% (sexual) found in Radford et al.'s study. Furthermore, significantly higher rates of

physical abuse were observed in the general population within the current study (21.3%), in comparison to the university students (11.4%) and Radford et al.'s sample (8.4%). Given the wider age range of the general population sample (i.e., 18-63 years), the elevated rate of physical abuse among this population may be explained by the banning of corporal punishment in schools in the 1980's (Department for Education and Employment, 1998). Until then, the smacking and caning of children was common practice in schools.

Rates of neglect were much higher in Radford et al.'s study, with one in six young adults reported neglect during childhood (16%), with nearly one in ten (9%) reporting exposure to severe neglect. The rates of neglect reported in the present study are therefore comparably low (2.5% for university students; 4.3% for general population). Notably, the literature has long highlighted the association between indices of low-socioeconomic status and neglect (Slack et al., 2011). Given that many of the current participants had previously or were currently engaged in some form of higher education, an indicator of higher socio-economic status, it is probable that the current participants may have been less likely to experience childhood neglect in the form of lack of food or physical provisions.

Importantly, within the current study, a very high proportion of CAN was reported to be recurrent in nature. All participants reporting exposure to childhood sexual abuse and neglect reported that such abuse was recurrent in nature. In addition, 85% of participants reporting childhood physical abuse were exposed to recurrent physical abuse. Of those reporting a history of childhood emotional abuse, 95% of students and 100% of the general population reported that this type of abuse was recurrent in

nature. Comparably lower rates of exposure to recurrent domestic violence were reported, with 66% of university students and 82% of the general population reporting exposure that was recurrent in nature. However it should be noted that in the present study, exposure to domestic violence was defined as directly *seeing* this type of abuse, which clearly does not account for those individuals who may have heard such abuse taking place or witnessed caregiver injuries after the abuse had occurred. This may therefore explain the relatively lower rates of recurrent exposure to domestic violence in comparison to other forms of CAN.

Further to this, both groups reported high rates of exposure to wider types of trauma during childhood (i.e., physical bullying, dating violence etc.), with 73% of university students and 77.7% of the general population reporting exposure to at least one form of trauma other than CAN during the course of childhood. In particular, high rates of sibling and peer assault were reported in both groups (48.5% and 53.2%). However it should be noted that when participants were asked to indicate whether or not they had been hurt after being hit by a peer or sibling, these rates reduced dramatically (18.1% and 27.7%). Only those that endorsed being hurt were included in the subsequent analysis. Furthermore, high rates of both physical (25.7% and 38.3%) and emotional (40.5% and 42.6%) bullying were reported among both groups, in addition to physical assault without a weapon (33.3% and 39.4%).

Overall, rates of multiple traumatisation (i.e., exposure to recurrent CAN plus at least one wider form of trauma) were 27.4% for university students and 34% for the general population. Significantly, among students, of those who reported exposure to any form of CAN, 92.9% went on to experience at least one wider form of trauma

during childhood. Among the general population, 86.5% of those who reported exposure to any form of CAN also went on to experience at least one wider form of trauma during childhood. Crucially, this suggests that children and young people exposed to CAN are likely to experience multiple forms of victimisation during the course of childhood. This finding is consistent with the wider literature to indicate that CAN represents a significant risk factor for re-victimisation (Classen et al., 2005; Coid et al., 2001; Finkelhor et al., 2007c).

Overall, similar rates of exposure were reported for most types of childhood victimisation between groups, with chi-square analyses failing to reveal any significant differences between the groups ($p > .01$). However, in terms of CAN histories, the general population reported higher rates of childhood physical and sexual abuse, although this result was not found to be statistically significant. Furthermore, higher rates of physical bullying and assault with a weapon were also observed among the general population. While these findings may suggest that the general population appear to be more victimised in relation to certain types of abuse, overall the findings indicate that recurrent CAN and exposure to wider forms of childhood trauma are far from rare among both groups of participants.

4.23 Evaluation of Findings

Hypothesis 1: Compared to recurrent CAN alone, exposure to multiple traumatisation will be significantly associated with greater difficulties in a range of ER processes, which will include difficulties with emotional clarity and awareness, non-acceptance of emotions, difficulties in engaging in goal-directed behaviour when distressed, impulse control problems and limited access to ER strategies.

The findings from the present study indicated that difficulties in a range of ER processes are associated with childhood exposure to both recurrent CAN and multiple traumatisation. Bivariate analysis revealed a number of significant associations between exposure to CAN, other trauma and multiple traumatisation and participants' overall DERS scores, in addition to a number of the DERS subscales. Further to this, logistic regression analyses indicated that exposure to both recurrent CAN and multiple traumatisation significantly predicted a high overall score on the DERS (≥ 100), highlighting that these individuals possess difficulties in a range of ER processes. Further analysis revealed that childhood exposure to one and three forms of CAN were found to be significantly predictive of difficulties in ER. A score of ≥ 100 on the DERS indicates that individuals scoring this highly are likely to possess difficulties with a number of, if not all, ER processes as defined within the DERS. These include difficulties with emotional clarity and awareness, non-acceptance of emotions, difficulties in engaging in goal-directed behaviour when distressed, impulse control problems and limited access to ER strategies.

Furthermore, the findings from the present study indicated that the predicted probability of difficulties in ER increases with increased exposure to both recurrent CAN and multiple traumatisation. This finding is consistent with models of cumulative risk (Rutter, 1979; Sameroff, 2000), whereby a dose-response relationship exists between exposure to CAN and multiple traumatisation, and subsequent difficulties in ER. Crucially, this indicates that exposure to multiple forms of CAN and/or further types of trauma, is associated with increasingly deleterious outcomes in terms of ER, in comparison to single forms of CAN or trauma. This finding is consistent with previous literature to indicate that exposure to multiple forms of

victimisation is associated with worsened outcomes across a number of domains of functioning (Finkelhor et al., 2007a,b,c).

In addition to recurrent CAN and multiple traumatisation, logistic regression analyses indicated that a number of further study variables contributed to the regression model and thus were significantly predictive of difficulties in ER. In particular, low levels of optimism, as indicated by low LOT-R scores, significantly predicted difficulties in ER (i.e., a score of ≥ 100 on the DERS). Personality traits are generalised response dispositions that “...initiate and guide consistent forms of adaptive and expressive behaviours” (Allport, 1937, p.295). As such, it should be expected that individual differences in optimism will play an important role in generating differences in ER processes. In particular, higher levels of optimism are likely to facilitate individuals’ adoption of effective ER strategies in times of distress. Furthermore, optimism is likely to impact upon one’s deployment of attention and the cognitive appraisal of a situation (i.e., positive or negative). Individuals with lower levels of optimism may be less likely to believe that they can change their emotions and may therefore engage in fewer attempts to employ ER strategies.

Further to this, participants who reported higher levels of attitudes supportive of violence were also significantly predictive of difficulties in ER ($p < .01$). It is possible that individuals with higher levels of violent attitudes in addition to difficulties in ER may be more likely to employ unhelpful ER strategies, such as aggression towards objects or towards others. Attitudes supportive of violence are likely to guide individuals’ behaviour during times of distress and conflict and therefore may increase the likelihood that an individual will adopt a violent versus non-violent

response in order to regulate a difficult emotion. As previously highlighted, exposure to CAN and wider forms of trauma in childhood was significantly associated with higher levels of violent attitudes. Importantly, the empirical literature strongly suggests that exposure to violent models in childhood, particularly one's caregivers, is associated with the development of both violent attitudes (Temple, Shorey, Tortolero, Wolfe, & Stuart, 2013) and difficulties in ER (Kim & Cicchetti, 2010; Linehan, 1993). As such, individuals exposed to CAN and multiple traumatisation are likely to be at increased risk of developing both difficulties in ER and violent attitudes.

Level of education was also found to contribute to the regression model and lower level of education was significantly predictive of difficulties in ER, which suggests that a higher level of education may be protective against difficulties in ER. This finding is consistent with the wider empirical literature to demonstrate that above average intelligence, academic competence and access to higher education can help to buffer against some of the adverse outcomes associated with exposure to CAN (Collishaw et al., 2007; DuMont, Widom, & Czaja, 2007; Jaffee & Gallop, 2007; Perkins & Jones, 2004).

However, despite these education level findings, participant group was not significantly predictive of difficulties in ER, thus indicating that being a university student or from the general population did not have a significant impact upon predicting the likelihood of an individual possessing a high (≥ 100) or low (< 100) score on the DERS. This suggests that neither group were more 'resilient' to difficulties in ER than one another and factors other than group membership were significantly predictive of difficulties in ER (i.e., childhood victimisation, attitudes

supportive of violence, low optimism and lower level of education). Moreover, it is possible that an un-measured, confounding variable also associated with a lower level of education (i.e., a further indicator of lower socioeconomic status such as household income) may account for this finding. Notably, socioeconomic status (SES) in adulthood has been found to be a powerful predictor of health outcomes, with each increase in SES hierarchy being associated with further health benefits (Cohen, Janicki-Deverts, Chen, & Matthews, 2010).

Hypothesis 2: Difficulties in ER will be significantly associated with the perpetration of interpersonal violence in adulthood.

Of significance is that while only one participant in the total sample reported having a conviction for a violent offence, participants' self-reported rates of interpersonal violence towards others were comparably high. For instance, 14.8% of university students and 33.3% of the general population reported that, as an adult, they had hit someone with a fist, kicked someone, slapped someone on the face, hit someone with a hard object or knocked them down. Moreover, 13.9% of students and 21.4% of the general population reported inflicting a physical injury after lashing out at someone in adulthood, with 9.7% of university students and 10.7% of the general population also reporting that they had hit or slapped their partner or someone they had been on a date with as an adult.

Crucially, some participants in the present study reported engaging in very serious acts of violence, for instance 5.9% of university students and 4.8% of the general population reported to have grabbed someone around the neck and choked them, beat

someone up, or burned or scalded someone. Moreover, 3.4% of students and 1.2% of the general population reported threatening someone with a knife or gun, with 2.5% and 1.2% reporting to have actually harmed someone with a weapon. In addition, 4.2% of students and 6% of the general population reported physically attacking someone when they were with a group of others. Notably, such acts of violence have the potential to cause serious physical and psychological harm to others. What is more, it is clear from these findings is that a high proportion of these serious acts of interpersonal violence are occurring within general and student populations without coming to the attention of the criminal justice system. In addition, 3.8% of university students and 1.2% of the general population reported perpetrating at least one act of sexual violence in adulthood. Again, such acts do not appear to have come to the attention of the criminal justice system. Importantly, such findings suggest that while the present sample are reflective of a highly victimised population, a proportion of these individuals are also responsible for the victimisation of others. The empirical literature has demonstrated a robust overlap that exists between victims and offenders (Piquero, Jennings, & Reingle, 2012), with the current findings providing further support for this link. Notably, rates of the victim-offender overlap vary according to the nature of population being measured; for instance, general population, violent offenders or the mentally disordered. While the rates observed within the current study are low in comparison to those found within violent offender populations (Piquero et al., 2012), the current findings provide support for exposure to childhood victimisation being a risk factor for violent behaviour.

For university students, bivariate correlations revealed that the overall DERS score, in addition to the IMPULSE subscale, was significantly associated with the perpetration

of physical violence in adulthood. Furthermore, for the general population, a significant association between the NON-ACCEPTANCE subscale and the perpetration of physical violence in adulthood was also found. This indicates that as the DERS score increased, the perpetration of both physical violence and sexual violence also increased. Despite these significant findings, logistic regression analyses revealed that overall difficulties in ER (i.e., a score of ≥ 100 on the DERS), were not significantly predictive of the perpetration of violence in adulthood. Consequently, these findings appear to indicate that whilst an overall high score on the DERS may not significantly predict perpetration of violence in adulthood, difficulties in particular ER processes (e.g., impulse control problems), appear to be associated with violence. As such, it is possible that specific ER processes (i.e., difficulties with impulse control and non-acceptance of emotions) may increase the likelihood that an individual will engage in interpersonal violence.

The logistic regression analyses revealed that a number of further variables also contributed to the regression model and thus were significantly predictive of interpersonal violence in adulthood. In particular, childhood exposure to one and two forms of CAN ($p < .05$) and multiple traumatisation ($p < .001$) both significantly predicted increased likelihood of perpetrating violence in adulthood. Furthermore, among university students, bivariate analysis revealed that exposure to CAN and multiple traumatisation was also significantly associated with the perpetration of sexual violence in adulthood. Such findings support the wider empirical literature to demonstrate that adults with histories of maltreatment are more likely to report IPV perpetration in their adult romantic relationships and towards others (Gómez, 2011; Smith et al., 2011).

In addition, participant group was found to be significantly predictive of physical violence in adulthood ($p < .001$). Specifically, the logistic regression findings indicated that participants from the general population were approximately 7 times more likely to report perpetrating physical aggression in adulthood in comparison to university students. This finding may suggest that university students are less vulnerable to violent outcomes in comparison to the general population. However it should also be noted that the mean age of university students was 19.62 whereas the mean age of the general population was 35.49, thus representing a much wider time frame for violent acts to have been committed.

It is perhaps not surprising that the findings also indicated that higher levels of attitudes supportive of violence significantly predicted perpetration of violence in adulthood, considering the strong empirical link between violent attitudes and violent behaviour (Andrews & Bonta, 1995; Cote, Vaillancourt, LeBlanc, Nagin, & Tremblay, 2006; DeWall, Bushman, & Anderson, 2011; Fincham, Cui, Braithwaite & Pasley, 2008). Furthermore, among both groups, higher levels of attitudes supportive of violence were also significantly associated with the perpetration of sexual violence in adulthood ($p < .01$).

Hypothesis 3: There will be significant differences in coping strategies following exposure to different forms of victimisation in childhood.

Significant differences in coping were found following exposure to different forms of childhood victimisation. In particular, exposure to recurrent CAN alone was significantly and negatively associated with the use of self-blame, whereas exposure

to multiple traumatisation was significantly associated with the use of substance misuse, behavioural disengagement and self-blame. This finding suggests that exposure to recurrent CAN in addition to wider forms of trauma (i.e., multiple traumatisation) has negative implications for individuals' coping. Evidently, this finding supports prior research to indicate that childhood victimisation is a risk factor for poor coping in adulthood (Brand & Alexander, 2003; Steel et al., 2004), however also suggests that the nature and extent of such victimisation may play an important role in determining this outcome.

In addition, the current research revealed that coping strategies considered to be adaptive (e.g., active coping or positive reframing) were found to be negatively correlated with the overall DERS score ($p < .001$), whereas coping strategies considered maladaptive (e.g., denial or behavioural disengagement), were found to be positively correlated with the overall DERS score ($p < .001$). This finding suggests that the ability to implement adaptive coping strategies and the ability to regulate distress are closely linked.

Hypothesis 4: It is hypothesised that ER will mediate the association between CAN and multiple traumatisation and the perpetration of interpersonal violence in adulthood.

A mediational hypothesis was rejected following a series of regression analyses, which followed the procedures outlined by both Baron and Kenny (1986) and Preacher and Hayes (2008). This suggests that factors other than ER, or further factors in combination with ER, are likely to mediate the relationship between exposure to

childhood victimisation and the perpetration of violence. As previously highlighted, associations between difficulties in particular ER processes (poor impulse control and non-acceptance of emotions) and the perpetration of violence were found in the present study, it is possible that difficulties in these specific ER process may mediate the relationship between exposure to CAN and multiple traumatisation and violence. Further research in this area should therefore endeavour to explore the independent impact of particular ER processes upon violence in addition to overall difficulties in ER.

4.24 Limitations of the Research

The present study has demonstrated a number of strengths in comparison to previous research in the area of CAN, particularly in encompassing participants' experiences of a broad range of victimisation types. In addition, a number of other factors were included and explored, including optimism, coping, and attitudes towards violence. Further to this, two participant groups were recruited, which enabled comparisons to be made between university students and the general population.

However, it should be noted that there are some limitations to this research. Firstly, as with any measure that requires subjects to provide retrospective accounts of events, difficulties in recall may impact upon the reported rates of CAN and experiences of other trauma. Furthermore, there is potential for recall bias whereby individuals who are currently distressed are more likely to remember past victimisation experiences. Given the method of recruitment for participants (i.e., self-selection) and the nature of the research, it is possible that individuals with an abuse history may have been more inclined to participate than those without an abuse history. Indeed, this may explain

the elevated rates of CAN within the general population sample. In addition, while the current study aimed to measure a wide range of victimisation types, it should be noted that the epidemiology of victimisation is highly complex and as such, it is possible that multiple types of victimisation can occur in a single episode. For example, it is possible that a child can be assaulted and sexually assaulted as part of a single incident. As such, participants' overall multiple traumatisation score does not necessarily reflect the number of victimisation experiences that occurred in distinct incidents.

Secondly, given the cross-sectional design of the study it is not possible to determine causality between significant variables. As such, the current study provides insight in relation to participants' ER at one point in time. Future longitudinal studies would provide valuable and more robust insight into the independent effects of exposure to CAN and multiple traumatisation upon ER and the perpetration of violence over time and throughout development.

Thirdly, while the use of two participant samples is a strength of the current research, it should be noted that the general population sample was significantly smaller than that of the university sample. Ideally, a larger sample size would have been recruited if time constraints had permitted. A high number of individuals approached by the researcher to take part in the current research did not go on to participate in the study and as such, those choosing to participate may have presented with different characteristics to those declining to do so. For instance, participants with a history of victimisation may be more inclined to see the value in participating in research of this nature. Notably, the participants from the current study were predominantly white

British, well-educated females. It is possible that participants from this demographic were more likely to go on to recruit subjects of a similar demographic (i.e., acquaintances from University or place of employment) which then resulted in well-educated females accounting for a large proportion of the general population sample. Another key factor is that participants from the general population were not provided with any form of compensation, which is likely to have influenced their decision to dedicate their time to participating. It should be noted that due to the limited variation in educational backgrounds and ethnicity among the general population sample, the findings are likely to have limited generalisability to the wider community.

Furthermore, as previously highlighted, the present research should have included an offending population from a maximum security prison in the UK. Due to resourcing issues, unfortunately this was unable to be facilitated in time and therefore future research examining ER in relation to violence should endeavour to explore such processes within a population reporting high rates of violence.

4.25 Applications of the Research

Notably, the participants from the current study were predominantly white British, well-educated females. As such, it should be noted that the generalisability of the current findings to wider cultural groups and countries is limited. Furthermore, the smaller male sample included within the current research ($n = 77$) should be taken into consideration when applying the current findings to the wider male population. Notwithstanding this, the current research has a number of important applications.

The findings from the present study, which demonstrate that an array of victimisations occur in the lives of children and young people, support prior research to suggest that individuals exposed to recurrent CAN and multiple traumatisation represent an extremely vulnerable group. Consequently, early identification of exposure to CAN and/or wider forms of trauma is necessary in order to facilitate early intervention efforts in order to prevent children and young people from both immediate and long-term harm. Crucially, children exposed to one form of CAN are at increased risk for re-victimisation by further perpetrators in both childhood and adulthood. The findings from the present study provide strong support for all victimisation experiences being relevant to the study of child maltreatment, as such experiences frequently overlap and consequently this impacts upon individuals' overall wellbeing.

Further to this, findings from the present study suggest that a high proportion of victimisation that occurs at home, at school and in the community is subsequently unreported to children and young people's services. This has implications for all adults having contact with children in any capacity, whether they are parents, relatives, teachers or other professionals, to be vigilant against indicators of potential CAN or further types of victimisation and to be able to respond promptly and appropriately. The overlapping aspect of CAN and further types of victimisation necessitates that professionals look beyond a child or young person's presenting issues and consider other experiences of victimisation that may also be happening in other contexts. For instance, a young person who is being bullied at school may also be experiencing further difficulties at home e.g. witnessing of violence or being a victim of violence. It should be noted that exposure to one form of victimisation (e.g., CAN) may create

vulnerability to further forms of victimisation (e.g., bullying), however this relationship is likely to be bi-directional in nature.

Although a meditational role for ER was not found in the present study, the results revealed a significant association between difficulties in ER and childhood exposure to both CAN and multiple traumatisation. Notably, aside from the perpetration of violence, difficulties in ER are associated with an array of problematic behaviours and psychopathologies, including anxiety and depression (Cisler et al., 2010), self-harm (Buckholdt et al., 2009) and substance misuse (Kun & Demetrovics, 2010), all of which were reported by a proportion of participants in the present study. Notably, individuals with difficulties in ER are likely to endure significant distress, which in turn may have implications for relationships with others, the ability to cope with stress and individuals' overall general health and wellbeing. From a clinical perspective, individuals presenting with difficulties in ER following exposure to childhood victimisation should be afforded the opportunity to attend interventions aimed at enhancing ER skills, for example mindfulness-based interventions, which have demonstrated good efficacy among individuals with difficulties in ER (Goldin & Gross, 2010).

Furthermore, a number of significant associations between difficulties in particular ER processes (i.e., poor impulse control and non-acceptance of emotions) and the perpetration of violence were found in the current research, which suggests that difficulties in ER could be targeted in intervention work with violent individuals. A number of therapeutic approaches have been applied with individuals presenting with difficulties in ER. In particular, Dialectical Behaviour Therapy (DBT, Linehan, 1993)

is a therapeutic approach which focuses upon teaching the client skills for effective ER and has demonstrated efficacy among individuals presenting with difficulties in regulating intense negative emotions (anger, shame, guilt, fear, sadness), poor impulse control and those utilising maladaptive coping strategies in order to control their emotions (e.g., self-harm, aggression, substance misuse, purging; Kliem, Kröger, & Kosfelder, 2010). Mindfulness – *“paying attention in a particular way: on purpose, in the present moment and non-judgementally”* (Kabat-Zinn, 1994, p.4) - is one of the core concepts underpinning DBT and is considered a foundation for further skills taught in DBT (Linehan, 1993). Acceptance- and mindfulness-based treatments may be a particularly beneficial addition to current treatment of violent behaviour because they emphasise the importance of increased awareness and acceptance of all emotional experience (Chambers, Gullone, & Allen, 2009). As such, violent offenders presenting with difficulties in ER may benefit from attending a DBT skills group, incorporating four core modules of DBT: emotion regulation, mindfulness, interpersonal effectiveness and distress tolerance. However it should be noted that further research is required in this area to develop these findings and assess the efficacy of DBT skills-based interventions with a violent offending population.

4.26 Conclusions

Overall, the findings from the current study highlight the value in utilising a comprehensive measure of childhood victimisation in studies examining the impact of child maltreatment. Crucially, high rates of multiple traumatisation were found within both the university student and general population samples, thus indicating that recurrent CAN is very frequently associated with exposure to wider forms of trauma (e.g., bullying, dating violence). Both recurrent CAN and multiple traumatisation were significantly associated with broad difficulties in ER, with increased exposure to

more forms of recurrent CAN and/or multiple traumatisation being predictive of greater difficulties in ER. Such findings are consistent with the wider literature to indicate that exposure to cumulative trauma is associated with increasingly deleterious outcomes.

Importantly, given the link between childhood victimisation and difficulties in ER, consideration should be given to preventative strategies aimed at enhancing children's ER skills from an early age. One way of achieving this would be through the provision of ER skills classes within schools; these classes could be developed by psychologists and then facilitated by teachers as part of the main teaching curriculum. All children, irrespective of victimisation status, are likely to benefit in some way from having access to ER skills classes given the association between effective ER and psychological wellbeing.

Although ER was not found to mediate the significant association between childhood victimisation and violent behaviour in adulthood, a number of significant associations between specific ER processes (i.e., difficulties with impulse control and non-acceptance of emotions) and violent behaviour were found, which suggests that this research area remains worthy of further exploration. In particular, further research should endeavour to explore the relationship between multiple traumatisation, ER and violence among an incarcerated violent offender population in order to build upon the current findings. Specifically, the present study should be replicated (i.e., the same measures should be employed) with a large UK male and female offending sample.

CHAPTER FIVE:
DISCUSSION

5.1 Aims of Thesis

The aims of this thesis were firstly examine the impact of exposure to recurrent CAN in comparison to multiple traumatisation (i.e., recurrent CAN plus at least one wider type of trauma or victimisation). Secondly, the thesis aimed to explore the role of coping following exposure to recurrent CAN and multiple traumatisation. Next, a research study was presented that broadened the existing research area of child maltreatment through exploring the impact of recurrent CAN and multiple traumatisation on both emotion ER, and the perpetration of violence. These questions were explored through consideration of a number of further variables, including optimism, coping, attitudes supportive of violence and demographic variables. Finally, the thesis aimed to investigate whether ER mediated the link between exposure to childhood victimisation (i.e., recurrent CAN or multiple traumatisation) and aggressive behaviour.

5.2 Main Findings Relevant to the Literature

A systematic approach was utilised to assess the empirical literature on factors associated with the impact of childhood exposure to recurrent CAN in comparison to multiple forms of victimisation (i.e., bullying, dating violence) among adolescents and young adults (aged 12-25 years). An initial scoping search demonstrated that existing literature in this area had predominantly focused upon outcomes associated with exposure to one form of CAN (e.g., neglect or sexual abuse, or CAN alone), and no current reviews existed in relation to outcomes associated with multiple forms of victimisation or trauma. As such, the review presented in Chapter Two represents the first of its kind to examine the impact of multiple trauma exposure among adolescents and young adults.

The findings from the eleven included studies revealed high levels of multiple traumatisation within non-clinical populations of adolescents and young adults in Europe, Asia and the United States. Overall, past year rates of multiple traumatisation ranged from 5.3% to 94% between studies, with lifetime rates ranging from 5.1% to 75% between studies, indicating that a number of young people are enduring multiple and serious forms of victimisation across the lifespan. Crucially, the high rates of multiple traumatisation observed within some studies suggests that a number of individuals within the general population may not have come to the attention of victim services. Indeed, previous research has highlighted that CAN and wider forms of childhood trauma are significantly under-reported within the general population (Gilbert et al., 2009a; Theodore et al., 2005).

Significantly, while the conceptualisation of multiple traumatisation varied between studies, findings from all eleven studies demonstrated that adolescents and young adults exposed to multiple traumatisation are at increased risk of greater deleterious outcomes across a number of domains of functioning. In particular, exposure to multiple traumatisation was associated with poorer mental and physical health outcomes, an increased risk of alcohol and substance misuse problems, increased risk of academic difficulties and delinquent and/or other risk-related behaviours. Although exposure to recurrent CAN was also associated with poor outcomes in a number of these aforementioned areas, upon examination of statistics, it was revealed that multiple traumatisation consistently presented a greater risk to individuals' overall wellbeing. For instance, whilst recurrent CAN was associated with an elevated risk for depression (1.9 to 2.0 times more likely than those not exposed to recurrent CAN), the risk associated with multiple traumatisation was significantly higher (3.8 to 10.1

times more likely). This pattern was observed across all of the aforementioned outcomes. Evidently, this finding is consistent with the wider research literature to indicate that multiple forms of victimisation and trauma are associated with worsened outcomes across individuals' physical, psychological, social and emotional domains of functioning (Finkelhor, 2008; Finkelhor et al., 2005; Margolin et al., 2010).

Crucially, children exposed to abusive or neglectful parenting in addition to further forms of victimisation (e.g., bullying) are likely to develop insecure and negative models of their attachment figures and of themselves (Bartholomew, 1990; Toth et al., 2002). Notably, exposure to harmful relationships in childhood is likely to adversely impact upon the individual's view of the world and of others, which in turn can lead to a number of subsequent emotional and behavioural difficulties (Ainsworth et al., 1978). The pervasive nature of multiple traumatisation clearly has implications for an individual's ability to 'bounce back' from such adversity when they are likely to believe that many of the people around them (e.g., caregivers, siblings, peers, partners) are abusive and rejecting.

The findings from the review in Chapter Two emphasised the importance of examining multiple types of childhood victimisation in order to accurately and comprehensively explore the impact of such exposure upon individuals' subsequent wellbeing. Consequently, the remainder of this thesis focused upon the impact of individuals' exposure to multiple traumatisation (i.e., exposure to recurrent CAN in addition to at least one wider form of trauma) rather than exposure to single forms of CAN, or CAN alone. In particular, the empirical paper included in this thesis sought to explore the impact of recurrent CAN and multiple traumatisation in relation to

individuals' difficulties in ER and the perpetration of violence in adulthood. As highlighted within the review, to date very few studies have examined the impact of exposure to multiple forms of trauma upon violent outcomes in adulthood. Moreover, to date, no known research has explored the impact of exposure to recurrent CAN plus multiple traumatisation in relation to ER and violence.

The introductory chapter to this thesis highlighted that effective ER strategies, adaptive coping and personality style can all impact upon individuals' ability to exhibit resilience following exposure to adversity. In particular, research exploring the role of coping in relation to individuals' long-term adjustment suggests that coping may explain, in part, the variability in outcomes associated with childhood victimisation. Chapter Three therefore examined the Brief COPE (Carver, 1997) in terms of its scientific properties, its applicability to forensic populations and its research uses, in addition to the construct of coping.

The Brief COPE was found to be a widely used psychometric tool with good reliability and validity; thus supporting its use with university students, the general population and also with offending populations. This chapter further emphasised that personality is a key source of resilience or vulnerability following exposure to adversity, and therefore, research studies exploring coping variables may choose to administer a further assessment in conjunction with the Brief COPE. In particular, one way of exploring individual differences in relation to coping is to examine expectancies for the future, specifically optimism versus pessimism (Carver & Scheier, 1999). As such, the Life Orientation Test-Revised (Scheier et al., 1994),

which provides a measure of this personality variable, was employed in the empirical research paper presented in Chapter Four.

The research paper presented in Chapter Four made a number of contributions to the existing literature. Firstly, the research employed a comprehensive measure of childhood victimisation that encompassed individuals' experience of recurrent CAN, in addition to wider forms of victimisation. Crucially, the use of such a broad measure permitted a more detailed exploration of victimisation histories within a university student and general population. Importantly, the research findings demonstrated that both populations represent highly victimised groups in terms of their exposure to both recurrent CAN and wider forms of trauma. A significant proportion of individuals reported histories consistent with multiple traumatisation (i.e., exposure to recurrent CAN in addition to at least one further type of trauma). This finding supports prior research to indicate that victims of CAN are at increased risk of experiencing further victimisation in a variety of other contexts and by a number of different perpetrators (Finkelhor et al., 2009; Gilbert et al., 2009a). Thus, the current findings support prior research to demonstrate that childhood victimisations tend to accumulate in some individuals (Tseloni & Pease, 2003).

Secondly, the current study has added to the developing research base concerning the relationship between broader difficulties in ER and the perpetration of violence. While overall difficulties in ER, as measured by the DERS (Gratz & Roemer, 2004), were not found to be predictive of violence in the regression analyses, it should be noted that a number of significant associations were found between both the overall DERS scores and specific ER processes and the perpetration of violence. These

findings suggest that difficulties in ER and violence represents an important research area worthy of further exploration. It should also be noted that in addition to high rates of recurrent CAN and wider trauma exposure within the current sample, participants' self-reported rates of interpersonal violence towards others was also high, particularly as only one participant in the total sample reported a conviction for a violent offence. Significantly, this suggests that a high proportion of interpersonal violence occurring within student and general populations is under-reported and is therefore unlikely to come to the attention of the criminal justice system.

Both recurrent CAN alone and multiple traumatisation were found to be significantly predictive of the perpetration of violence in adulthood. Furthermore, a significant association was also found between recurrent CAN and multiple traumatisation and the perpetration of sexual violence among university students. These findings support the wider empirical literature to indicate that exposure to childhood victimisation represents a salient risk factor for later violence (Evans et al. 2008; Fagan, 2001; Gómez, 2011; Smith et al., 2005; Smith et al., 2011). Notably, *Social Learning Theory* (Bandura, 1977, 1989) postulates that children directly exposed to the acceptance and practice of aggression within the family environment are more likely to imitate aggressive behaviour in their subsequent interactions with others. Importantly, individuals exposed to recurrent aggression or aggression in multiple contexts (i.e., home, school, community) may be increasingly likely to believe that aggression is a normal and appropriate way of interacting with others and resolving conflict. The findings from the current thesis therefore emphasise the importance of assessing the frequency (i.e., recurrent or not) and the nature of (i.e., exposure to wider forms of trauma) the victimisation(s) in relation to aggressive outcomes.

The findings from Chapter Four also highlight that difficulties in a range of ER processes are significantly associated with childhood exposure to both recurrent CAN and multiple traumatisation. This suggests that both recurrent CAN and multiple traumatisation represent key risk factors for the development of long-term difficulties in ER. In addition, the research findings indicated that the predicted probability of difficulties in ER increased with increased exposure to both CAN and multiple traumatisation; thus providing support for models of cumulative risk (Rutter, 1979; Sameroff, 2000). Given that children's ability to regulate their own emotions is largely determined by how their caregiver(s) regulate their own emotions, exposure to harmful and neglecting environments (i.e., CAN, multiple traumatisation) is likely to lead to subsequent difficulties in expressing needs and emotions, as well as the child's opportunity to learn adaptive ways of ER (Sroufe, 1995; Tronick, 1989). Over time, the attachment system significantly impacts upon the ability to implement adaptive coping strategies and the ability to regulate distress (Mikulincer & Shaver, 2007). As such, adults with histories of CAN or multiple traumatisation are likely to be at increased risk of presenting with difficulties in ER and in coping.

Aside from recurrent CAN and multiple traumatisation, the current findings also highlighted the importance of further contributory factors in relation to difficulties in ER. In particular, pessimism, attitudes supportive of violence and lower level of education were all found to be significantly predictive of difficulties in ER. Furthermore, while recurrent CAN and multiple traumatisation were also found to be significantly predictive of the perpetration of violence, being in the general population sample and possessing higher levels of violent attitudes were also found to significantly contribute to the regression model. Together, these findings suggest that

positive adaption following exposure to childhood adversity is likely to depend on an interaction between a number of characteristics including personality style, attitudes and level of education. Thus, from the ecological perspective, factors at each level of the individual's ecology are likely to interact reciprocally to increase or decrease the likelihood of positive adaption following exposure to adversity.

In addition, the findings from Chapter Three and Chapter Four suggest an important role for coping following exposure to adversity. In the current research, multiple traumatisation was significantly associated with a number of maladaptive coping strategies, including substance misuse, behavioural disengagement and self-blame. This suggests that individuals' coping styles may be affected by their exposure to different forms of childhood adversity. Furthermore, comparisons between difficulties in ER and coping styles revealed that adaptive coping strategies (e.g., active coping and positive reframing) were negatively correlated with difficulties in ER, whereas maladaptive coping strategies (e.g., denial and behavioural disengagement) were positively correlated with difficulties in ER. As such, it would appear that ER and coping are closely related factors, both of which have been implicated as important determinants in the development of resilience (Tugade & Fredrickson, 2004; Walsh et al., 2009).

5.3 Thesis Strengths and Limitations

The current thesis comprehensively explored the impact of exposure to recurrent CAN in addition to wider forms of childhood trauma (i.e., multiple traumatisation) within a university population and the general population. As such, this thesis has built upon previous research that has examined the prevalence and impact of exposure

to multiple forms of trauma. In addition, this thesis has explored the relationship between previously under-explored variables within these populations, including difficulties in ER and the perpetration of violence. Consequently, this thesis has extended prior research that has examined difficulties in ER in relation to violence by exploring how these variables may also relate to childhood adversity.

Although the current thesis has presented a number of significant findings, based on the cross-sectional design of ten studies included in Chapter Two and the empirical research presented in Chapter Four, it should be noted that it is not possible to determine causality between significant variables. Therefore while the current thesis provides important insight regarding the association between multiple traumatisation, difficulties in ER and the perpetration of violence, future longitudinal studies are required in order to corroborate these findings.

5.4 Applicability of Findings

The findings from the current thesis indicate that an array of victimisations occur within the lives of children and young people, which can have a detrimental and long-lasting impact across a number of domains of functioning. In particular, Chapter Four highlighted that exposure to multiple forms of CAN and/or recurrent CAN plus further types of trauma, is associated with increasingly deleterious outcomes in terms of ER. This suggests that the impact of exposure to recurrent CAN and multiple traumatisation can be long-lasting, although the temporal stability of difficulties in ER requires clarification from further research. Notwithstanding this, the current findings suggest that a significant proportion of children experiencing recurrent CAN and

wider forms of trauma remain undetected and thus are at increased risk of developing an array of poor psychosocial outcomes.

The findings from the current thesis therefore highlight the need for more effective early identification of exposure to CAN and/or wider forms of trauma in order to facilitate early intervention efforts in order to prevent children and young people from both immediate and long-term harm. In relation to current practice, it would be advantageous for child protection services to employ a screening measure for multiple traumatisation in order to effectively identify children at increased risk for multiple traumatisation; thus enabling appropriate services to be targeted accordingly. In terms of broader applications, the findings of this thesis have implications for all adults having contact with children in any capacity to be vigilant against indicators of potential CAN or further types of victimisation and to be able to respond promptly and appropriately. Crucially, the overlapping aspects of CAN and further types of trauma necessitate that parents, relatives, teachers and other professionals look beyond a child or young person's presenting issues and consider other experiences of victimisation that may also be happening in other contexts.

The significant relationship found between exposure to multiple forms of victimisation and increased risk of difficulties in ER has important implications for current practice. Individuals presenting with symptoms or diagnoses associated with difficulties in ER (e.g., anxiety and depression, borderline personality disorder, posttraumatic stress disorder) following exposure to childhood victimisation should be afforded the opportunity to attend interventions aimed at enhancing ER skills, such as DBT and mindfulness, which have demonstrated good efficacy in improving ER

skills (Goldin & Gross, 2010; Orsillo & Roemer, 2005; Perich, Manicavasagar, Mitchell, & Ball, 2013). Enhancing individuals' ER skills is likely to have a positive impact upon relationships with others and the ability to cope with stress, in addition to enhancing overall psychological wellbeing. Furthermore, enhancing ER skills is likely to provide an effective foundation for any further psychological work that may have been recommended in light of an individual's exposure to childhood victimisation.

Furthermore, Chapter Four found a number of significant associations between a number of specific ER processes (i.e., poor impulse control and non-acceptance of emotions) in addition to overall difficulties in ER, and the perpetration of violence. Although tentative, these findings suggest that difficulties in ER could be targeted in intervention work with violent individuals. Acceptance- and mindfulness-based treatments may be a particularly beneficial addition to current treatment of violent behaviour because they emphasise the importance of increased awareness and acceptance of all emotional experience (Chambers et al., 2009).

5.5 Future Research

A more long-term aim of this thesis would be to use the findings to inform future research, particularly by exploring the relationship between recurrent CAN, multiple traumatisation, ER and violence within an offending population. The findings from the current thesis will therefore serve as a platform for further research, in addition to providing an effective, non-offending comparison group. It is important that the present findings are examined in relation to violent offenders, given that the participants included within the present study do not possess the extensive violence histories that those convicted of violent offences do. Extending the current empirical

research would therefore contribute to existing knowledge about broader difficulties in ER and the perpetration of violence.

Furthermore, the current thesis highlighted the value of utilising a comprehensive measure of childhood victimisation in research studies examining the impact of child maltreatment. Future research in this area should therefore give consideration to both the definitions of child maltreatment employed and also whether the intended assessment is adequately measuring a broad enough range of victimisations to be able to draw accurate conclusions. Crucially, given the cross-sectional design of much of the empirical research in the area of child victimisation, it is essential that more longitudinal studies are carried out in order to validate these findings over time and throughout key developmental periods.

5.6 Conclusions

A wide range of victimisations occur within the lives of children and young people, many of which are unlikely to be reported to the appropriate services. The current thesis highlighted that a significant proportion of individuals exposed to recurrent CAN, have also been exposed to wider forms of trauma (i.e., multiple traumatisation), thus demonstrating that exposure to one form of victimisation is linked with increased risk of further victimisation. Crucially, exposure to both recurrent CAN or multiple traumatisation can have a detrimental and long-lasting impact across a number of domains of functioning. In particular, the current research findings indicate that exposure to recurrent CAN or multiple traumatisation places individuals at increased risk of difficulties in ER. Importantly, poor ER skills are likely to adversely impact upon relationships with others, the ability to cope with stress, in addition to overall

psychological wellbeing. Furthermore, while significant associations were found between difficulties in ER and the perpetration of violence, the current research should be replicated with a population of violent offenders in order to corroborate these findings.

In conclusion, the current thesis suggests that positive adaption in the face of childhood adversity is likely to be determined by a number of interacting factors including; the frequency and nature of victimisation (i.e. has the individual been exposed to recurrent CAN or multiple traumatisation); ER; certain personality traits (i.e., optimism-pessimism); attitudes towards violence; coping style; and level of education. Future research should endeavour to develop these findings further by exploring those factors that may explain the variation in the development of resilience, so that interventions can be developed accordingly. Notably, as Zimmerman and Arunkumar (1994) highlight; *“Resilience is not a trait that a youth is born with or automatically keeps once it is achieved. Resilience is a complex interactive process”*.

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APPENDICES

Appendix 1. Table of Excluded Studies based on Full Text

Author(s) and date	Title of paper	Reason for exclusion
Boyce Rodgers & McGuire (2012)	Adolescent sexual risk and multiple contexts: Interpersonal violence, parenting and poverty.	Effects of child maltreatment (physical / sexual abuse) and peer sexual coercion examined separately.
Boynton-Jarrett, Ryan, Berkman, & Wright (2008)	Cumulative violence exposure and self-rated health: Longitudinal Study of Adolescents in the United States.	Explored the impact of witnessed gun violence, threat of violence, bullying and criminal victimisation, but not child maltreatment.
Brady (2008)	Lifetime family violence exposure is associated with current symptoms of eating disorders among both young men and women.	The impact of direct victimisation and witnessed violence were examined separately.
Burton, Foy, Bwanausi, Johnson, & Moore (1994)	The relationship between traumatic exposure, family dysfunction and Post-traumatic stress symptoms in male juvenile offenders.	Exposure to violence was measured as a continuous variable. Unclear how many subjects had been exposed to child maltreatment plus further trauma types.
Chan, Brownridge, Yan, Fong, & Tiwari (2011)	Child maltreatment polyvictimization: Rates and short-term effects on adjustment in a representative Hong Kong sample.	Only examined effects of overlapping forms of child maltreatment.
Cyr, Chamberland, Lessard, Clément, Wemmers, Collin-Vézina, & Gagné (2012)	Polyvictimization in a child welfare sample of children and youths.	Only the prevalence of poly-victimisation was examined.
Eitle & Turner (2002)	Exposure to community violence and young adult crime: The effects of witnessing violence, traumatic victimization and other stressful life events.	Effects of exposure to community violence, maltreatment and other forms of victimization were examined separately.
Finkelhor, Ormrod, & Turner (2009)	Lifetime assessment of poly-victimization in a national sample of children and youth.	Proposed a method in which to assess lifetime poly-victimisation.
Finkelhor, Turner, Ormrod, & Hamby (2009)	Violence, abuse and crime exposure in a national sample of children and youth.	Only examined the prevalence of childhood violence, abuse and victimisation.
Fernando & Karunasekera (2009)	Juvenile victimisation in a group of young Sri Lankan adults.	Used the JVQ to examine the prevalence of victimisation. No appropriate outcomes assessed.
Fowler, Toro, Tompsett & Baltes (2009)	Community and family violence: Indirect effects of parental monitoring on externalizing problems.	Community and family violence were examined separately.
Hamby, Finkelhor, & Turner	Teen dating violence: Co-occurrence with other victimizations in the National Survey	Focus on dating violence as an outcome of

(2012)	of children's exposure to violence (NatSCEV).	poly-victimisation. Further adverse outcomes were not examined.
Hetzel-Riggin & Roby (2013)	Trauma type and gender effects on PTSD, general distress and peritraumatic dissociation.	Interpersonal violence examined as one category (sexual violence, physical assault and domestic violence).
Kelleher, Harley, Lynch, Arseneault, Fitzpatrick, & Cannon (2008)	Associations between childhood trauma, bullying and psychotic symptoms among a school-based adolescent sample.	Effects of child physical abuse, child sexual abuse, witnessing DV and bullying were examined separately.
Koverola, Proulx, Battle, & Hanna (1996)	Family functioning as predictors of distress in revictimized sexual abuse survivors.	Only sexual victimisation examined.
Krupnick, Green, Stockton, Goodman, Corcoran, & Petty (2004)	Mental health effects of adolescent trauma exposure in a female college sample: Exploring differential outcomes based on experiences of unique trauma types and dimensions.	Effects of child maltreatment and sexual / physical assault were examined separately.
Lipschitz, Winegar, Hartnick, Foote, & Southwick (1999)	Posttraumatic stress disorder in hospitalized adolescents: Psychiatric comorbidity and clinical correlates.	Age range of participants was 11.1 – 18.3 years.
Lodico, Gruber, & DiClemente (1996)	Childhood sexual abuse and coercive sex among school-based adolescents in a Midwestern state.	Only sexual victimisation examined. None of the specified outcomes were examined.
McCart, Smith, Saunders, Kilpatrick, Resnick, & Ruggiero (2007)	Do urban adolescents become desensitized to community violence? Data from a national survey.	The impact of low, moderate and high levels of community violence, family violence and sexual assault were examined separately.
Meyerson, Long, Miranda, & Marx (2002)	The influence of childhood sexual abuse, physical abuse, family environment and gender on the psychological adjustment of adolescents.	Unclear what the nature of adolescents' experiences of 'family conflict' were i.e. whether or not they represented child maltreatment or a further category of victimisation.
Morojele & Brook (2006)	Substance use and multiple victimisation among adolescents in South Africa.	Only violent victimisation examined.
Mrug & Loosier (2008)	Violence exposure across multiple contexts: Individual and joint effects on adjustment.	Age range of participants was 10.7 – 16.6 years.
Mrug & Windle (2010)	Prospective effects of violence exposure across multiple contexts on early adolescents' internalizing and externalizing problems.	Average age of participants was 11.8 at wave 1.
Nilsson, Gustafsson, & Svedin (2012)	Polytraumatization and trauma symptoms in adolescent boys and girls: Interpersonal and Noninterpersonal events and moderating effects of adverse family circumstances.	Child maltreatment examined as part of 'interpersonal' traumatic life events (which included events such as robbery) and not as a distinct category of victimisation.

Sabina & Straus (2008)	Polyvictimization by dating partners and mental health among U.S. college students.	Only measured previous year dating violence in terms of poly-victimisation.
Singer, Anglin, Song, & Lunghofer (1995)	Adolescents' exposure to violence and associated symptoms of psychological trauma.	Effects of home, school and community violence were examined separately.
Taylor, Boris, Heller, Clum, Rice, & Zeanah (2008)	Cumulative experiences of violence among high risk urban youth.	Focus on IPV as an outcome of cumulative experiences of child maltreatment and/or community violence.
Tubman, Montgomery, Gil, & Wagner (2004)	Abuse experiences in a community sample of young adults: Relations with psychiatric disorders, sexual risk behaviors and sexually transmitted diseases.	Number of lifetime abuse experiences examined together without separating child maltreatment from other forms of abuse.
Turner, Finkelhor, & Ormrod (2010)	Poly-victimization in a National sample of children and youth.	Study contained a 14-17 year old group, but only prevalence rates were examined in this group. Effects of poly-victimisation were reported for all age groups combined (2-17 years).

Appendix 2. Quality Assessment of Included Studies

Study and Quality Assessment Score	Study Type	Representativeness of sample	Hypotheses/Aims	Definitions	Valid/Standardised outcome measure	Attrition Rate	Statistical Analysis
Annerbäck, Sahlqvist, Svedin, Wingren, & Gustafsson (2012) 76.7%	Cross-sectional	Large sample size (n = 5940) Representative of male and female school attending adolescents aged 15-17.	To investigate the relationship between child abuse and physical health, mental health and risk-taking behavior. Hypothesised that multiple abuse would have a stronger association with outcomes than CPA alone.	Clear definitions of recurrent CPA, bullying, IPV, forced sex, multiple abuse and no abuse were provided. Multiple child abuse: 3 groups; CPA + 1 other type of abuse (bullying, DV or forced sex), CPA + 2 other types, CPA + 3 other types. Lifetime rates.	Did not use standardised measures – information about health indicators and risk-taking behavior was obtained through a questionnaire designed by the researchers. All participants completed the same questionnaire.	Response rate was 81.8% (n = 5940) Dropouts (n = 1322) 7 respondents excluded due to hyper-response Internal dropout for some of the questions was 10.2%	Multiple logistic regression Sociodemographic variables controlled for
Elliot, Alexander, Pierce, Aspelmeier, & Richmond (2009) 81.7%	Cross-sectional	Good sample size (n = 321) Representative of female university students aged 18-24.	To examine the unique and combined effects of childhood victimisation and poly-victimisation (PV) on women's adjustment to university. Hypothesised that a) individual types of victimisation would have little to no	Measurement of PV was based on Finkelhor's conceptualisation. Conventional crime; child maltreatment; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation were	Use of valid and standardised self-report measures.	Data from 8 participants excluded due to extensive missing data.	Hierarchical regression analyses Individual types of victimisation controlled for.

			variability to university adjustment after controlling for PV and b) PV would significantly predict adjustment to university after controlling for individual types of victimisation.	measured. Lifetime rates.			
Ford, Elhai, Connor, & Frueh (2010) 80%	Cross-sectional	Large sample size (n = 4023) Male (51.5%) and female (48.5%) adolescents aged 12-17 years. National household probability sample. Urban locations were oversampled.	To determine whether PV conferred unique risk for internalising and externalising psychiatric disorders or delinquency.	Community violence; sexual abuse/assault; physical abuse/assault; witness to assault; accident/disaster victim. 3 groups; poly-victims, those with trauma histories (but not poly-victimised) and those with no trauma history. Poly-victims were further separated into subgroups: 1) Sexual abuse / assault poly-victims, 2) Physical abuse / assault poly-victims, 3) Community	Interview questions assessed each item from the DSM-IV for MDD and SUD. PTSD symptoms were assessed with items from the Diagnostic Interview Schedule, a validated survey. Exposure to traumatic events was assessed with 24 behaviourally specific items. Computer-assisted telephone interview.	Of 5367 households identified, 4023 participated.	Latent Class analyses and logistic regression analyses. Age, gender and ethnicity were controlled for. Missing data were estimated using maximum likelihood procedures.

				violence poly-victims and 4) Assault poly-victims. Lifetime rates.			
Gustafsson, Nilsson, & Svedin (2009) 80%	Cross-sectional	Good sample size (n = 400) Representative of male and female adolescents and young adults aged 12-20 years.	To examine the influence of poly-traumatisation (PT) on the association between single traumatic events and psychological symptoms. To confirm the contrasting impact of interpersonal versus non-interpersonal events on psychological symptoms.	PT represented multiple exposures to different traumatic experiences. The total number of different traumatic events was used as a continuous score of PT.	Use of valid and standardised self-report measures.	400 out of 449 (89%) agreed to take part.	Pearson's correlation and hierarchical regression analyses. Age and gender were controlled for.
Jirapramukpitak, Harpham, & Prince (2011) 80%	Cross-sectional	Large sample size (n = 1052) Representative of male and female adolescents and young adults aged 16-25 years. Representative of community population.	To investigate the co-occurrence of exposure to domestic violence (EDV) and physical abuse (PA) in childhood and intimate partner violence (IPV) in adulthood and their associations with common mental disorders, suicidal ideation, illicit drug use and problem	Clear definitions of EDV, PA and IPV provided. Exposure to 0, 1, 2 and 3 forms of violence were included in the analysis. Lifetime rates.	Use of valid and standardised assessment and self-report measures. The CIS-R was administered in subjects own homes by trained interviewers. Self-report questionnaire completed separately.	1080 households contained at least one eligible resident. 2.3% (n=25) could not be contacted and 0.3% (n=3) refused to participate. Overall response rate 97.4%	Bivariate analysis and logistic regression. Age, gender, head of household's education and asset index controlled for.

			drinking.				
Kennedy & Bennett (2006) 68.3%	Cross-sectional	Adequate sample size (n = 120) Female adolescents and young adults aged 16-20 years. Representative of young females who were either pregnant or had given birth prior to the age of 20.	To explore cumulative violence exposure in adolescent mothers, and examine the impact of such violence exposure on school participation and performance.	Clear definitions of exposure to community violence, witnessing parental violence, PA and partner violence provided. Past year and lifetime rates.	Use of valid and standardised self-report measures in addition to self-report assessment of 'overall school participation' based on current school status, GED, drop-out rates, suspension/ expulsion rates.	Nearly all potential participants took part – except “a few” who could not speak English and a few who were under 16 (and thus were ineligible).	Pearson’s correlations and hierarchical regression.
Richmond, Elliot, Pierce, Aspelmeier, & Alexander (2009a) Study 1 80%	Cross-sectional	Good sample size (n = 311) Representative of young female university students aged 18-23.	To determine the relative contributions of PV and individual categories of childhood victimisation in predicting psychological distress. Hypothesised that a) individual categories would account for little to no variability beyond PV and b) PV would contribute a significant proportion of variability in predicting psychological distress beyond that	Measurement of PV was based on Finkelhor’s conceptualisation. Conventional crime; child maltreatment; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation were measured. Lifetime rates.	Use of valid and standardised self-report measures.	Data from 10 participants excluded due to extensive missing data.	Hierarchical regression.

			of individual categories alone.				
Richmond, Elliot, Pierce, Aspelmeier, & Alexander (2009b) Study 2 80%	Cross-sectional	Good sample size (n = 321) Representative of female university students aged 18-24.	To replicate and extend findings of study 1. To determine the relative contributions of PV and individual categories of childhood victimisation in predicting psychological distress.	Measurement of PV was based on Finkelhor's conceptualisation. Conventional crime; child maltreatment; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation were measured. Lifetime rates.	Use of valid and standardised self-report measures.	Data from 8 participants excluded due to extensive missing data.	Hierarchical regression.
Romito & Grassi (2007) 76.7%	Cross-sectional	Good sample size (n = 502) Male and female young adults under 25. Only representative of a university student sample.	To analyse the relationship between violence and health, and to explore whether violence has a different impact upon males and females.	Clear definitions of family violence, witnessed family violence, peer/school violence and sexual violence. Exposure to 0, 1, 2, 3, 4 and 5 forms of violence were included in the analysis. Lifetime rates.	Interview questions were based on experience from preliminary investigation interviews about violence and the literature. Self-evaluation of health using likert scale. Use of valid and standardised self-report measures.	8 blank or incomplete questionnaire were discarded.	Logistic regression analysis.

					Self-administered questionnaires.		
Soler, Paretilla, Kirchner, & Forns (2012) 81.7%	Cross-sectional	Good sample size (n = 722) Representative of school attending, male and female adolescents aged 14-18.	To contribute further evidence to understanding of PV and its effects on PTSS and self-esteem. Hypothesised that a) adolescent boys will experience higher levels of victimisation than girls, b) poly-victims self-esteem will be greater affected than other victim groups and c) poly-victims will have more PTSS.	PV was based on Finkelhor's conceptualisation. Conventional crime; child maltreatment; peer and sibling victimisation; sexual victimisation; witnessing and indirect victimisation were measured. Past year rates.	Use of valid and standardised self-report measures.	Participation rate was 44.7% and required parental consent.	Mann-Whitney U test, Kruskal-Wallis test, MANOVA.
Strøm, Thoresen, Wentzel-Larsen, & Dyb (2013) 68.3%	Cross-sectional	Large sample size (n = 7343) Representative of school attending, male and female adolescents aged 15-16.	To assess the importance of individual exposure to abuse, bullying and school environment in relation to academic achievement. Explored whether those exposed to bullying, violence or sexual abuse perform worse academically.	Clear definitions of sexual abuse, physical violence (by youths and/or adults) and bullying were provided. Exposure to 0, 1, 2 and 3 forms of violence were included in the analysis. Past year rates.	Did not use standardised measures – information about academic achievement was indicated by most recent recorded grades. Sexual abuse measured by one question, physical violence measured with options yes by youths, yes by adults, yes by youths and adults. Bullying	Of those invited to participate (n = 8316), some refused (n = 127), some did not complete the survey. 88% (n = 7343) participated.	Linear regression, multilevel analysis.

					was measured using a likert scale.		
Turner, Finkelhor, Shattuck, & Hamby (2012) 83.3%	Cohort	Large sample size (n = 1186) Male and female adolescents and young adults aged 12-19 years.	To determine whether there are significant differences in suicidal ideation across socio-demographic factors and exposure to 5 forms of victimisation, as well as exposure to PV. To examine the independent effects of each category of victimisation on suicidal ideation at wave 2. To assess the effect of PV within a 1-year period on suicidal ideation at wave 2.	Peer-perpetrated, maltreatment, sexual assault, witnessing family violence and ECV. PV defined as exposure to 7+ individual types of victimisation in the past year. Past year rates.	Use of valid and standardised self-report measures.	45% of original wave 1 sample did not participate; did not want to be contacted for wave 2 (5%), no longer had active telephone numbers (9%) or were no longer associated with original household (8%), refused to participate (9%) or were unreachable at scheduled callbacks (13%).	Logistic regression analysis.

Appendix 3. Quality Assessment Tools for Cross-Sectional / Cohort Studies

QUESTION	Y	N	P	U	COMMENTS
INITIAL SCREENING					
Are the aims and hypotheses clearly stated?					
Is the research addressing the outcome of multiple traumatisation and/or recurrent child abuse and neglect (CAN) among adolescents and/or young adults?					
STUDY DESIGN					
Has the study addressed the research question being asked?					
Is a cross-sectional / cohort design an appropriate method of addressing the research question?					
SELECTION BIAS					
Were the participants representative of the specified population (i.e., aged 12-25?)					
Was a sufficient sample size used?					
Were the groups comparable in relation to important confounding variables?					
Were potentially confounding variables controlled for (e.g., by matching or through statistics)?					
MEASUREMENT AND DETECTION BIAS					
Have multiple traumatisation and/or recurrent CAN been clearly defined?					
Have the assessments used been clearly defined and standardised?					
Were self-report measures used?					
Were the measurements for the outcome objective?					
Was the outcome assessed in the same way across groups?					
ATTRITION BIAS					
Were reasons explained for those declining to participate in the study?					
Were the study attrition rates explicitly reported?					

Was data from dropouts appropriately excluded from the study?					
OUTCOME BIAS					
Was the outcome measured in a correct way?					
Were the measures valid and reliable for the intended population?					
STATISTICS					
Was the statistical analysis used correctly?					
Were there statistical attempts to deal with missing data?					
RESULTS					
Are the results free from bias?					
Are the results clearly reported?					
Are the results significant?					
Is the effect size reasonable?					
Are the methods and design reliable?					
Have the limitations been discussed?					
APPLICABILITY OF FINDINGS					
Are the participants representative of a UK sample population?					
Can the results be applied to the UK population?					
Can the results be applied to a population sample irrespective of culture and size?					
Do the results of this study fit with the other available literature?					

Appendix 4. Data Extraction Form

Author

Article Title

Source

Identification of the reviewer

Notes

Re-verification of study eligibility

Population:	Adolescents or young adults (aged 12-25 years)	Y	N	?
Exposure:	Multiple traumatisation	Y	N	?
Comparator:	Recurrent maltreatment only	Y	N	?
	No exposure to either recurrent maltreatment or multiple traumatisation	Y	N	?
Outcome:	The effects of recurrent maltreatment	Y	N	?
	The effects of multiple traumatisation	Y	N	?
	Diagnosis of mental illness or mental disorder	Y	N	?
	Trauma symptoms	Y	N	?
	Psychological distress	Y	N	?
	Substance use	Y	N	?
	Educational achievement	Y	N	?
	Employment	Y	N	?
	Offending	Y	N	?
	Delinquent behaviour	Y	N	?
	Physical health	Y	N	?

Study Design: Cohort Case control Cross-sectional

Specific Information

Population

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

Number of participants:

Male: Female:

Age range:

Ethnicity:

Other information:

Exposure

- a) Use of structured assessment?
- b) Which assessment tool was used?
- c) Who facilitated the assessment?
- d) Was the assessment conducted in a suitable environment?

Outcome

1. What was measure at baseline?
 - a)

- b)
- c)
- 2. What was measured after exposure?
 - a)
 - b)
 - c)
- 3. What outcomes were found?
 - a)
 - b)
 - c)
- 4. How was the outcome measured?
- 5. Was self-report used? If so, to what extent?
- 6. Was there a follow-up period? If so, how long was the follow-up period?
- 7. Drop out rates?
- 8. Reason for drop outs?
- 9. Was the study clearly reported?
- 10. Limitations?
 - a)
 - b)
 - c)
- 11. Notes

Analysis

- 1. Which statistical tests were used?
- 2. Were confounding variables assessed?
- 3. Was attrition dealt with appropriately?
- 4. Were the statistics and results clearly reported?

5. Overall study quality? **Good** **Reasonable** **Poor**
6. Number of unclear / unanswered assessment items?
7. Notes

Appendix 5. Synthesised evidence from the included studies

Outcome Variable	Evidence for significant association	Percentage of sample showing problem	Summary of evidence
Internalising Disorders / Behaviours:			
PTSD or PTSS	Ford et al (2010)	Any trauma history: 9.8% Sexual abuse poly-victimisation: 31.5% Physical abuse poly-victimisation: 34.7% Witness to violent trauma: 5.2% Disaster or Accident: 4.7% Community violence poly-victimisation: 14% Assault poly-victimisation: 23.2%	Subjects in the poly-victimisation subgroups were 3 times more likely to meet criteria for PTSD compared to those with trauma histories who were not poly-victimised.
	Soler et al (2012)	Mean PTSS: Non-Victim males: 5 Non-Victim females: 7 Victim males: 7 Victim females: 9 Poly-victim males: 11 Poly-victim females: 13	In males, the poly-victim group had significantly more PTSS than did both the victim and non-victim groups. In females, the poly-victim group had significantly higher levels of PTSS than the non-victim group, however the victim group also had significantly higher levels than the non-victim group.
TSCC score	Gustafsson et al (2009)	Beta values from hierarchical regression (single forms of interpersonal trauma / polytraumatisation): Witnessed someone else get hurt: 0.26/0.49 Exposure to parental IPV: 0.29/0.34 Physical abuse / assault: 0.37/0.35 Kidnapped / taken hostage: 0.12/0.45 Sexual abuse / assault: 0.32/0.41 Threats of violence: 0.35/0.36 Robbed: -0.08/0.49	Polytraumatisation was highly predictive of psychological symptoms in all subgroups. Interpersonal events were more strongly related to psychological symptoms than were non-interpersonal events. The number of reported potentially traumatic events i.e. polytraumatisation had a greater impact than did most individual traumatic events.
Panic	Romito & Grassi (2007)	Percentages not reported, only odds ratios, for males: No violence: 1 (not sig) Physical, psychological or sexual abuse: 2.40	For both genders, the more types of violence subjects had been exposed to, the higher the risk of experiencing panic. For males, exposure to physical, psychological or sexual abuse was

		<p>Witnessed family violence: 1.51 (not sig) 1 form of violence: 1.16 (not sig) 2 forms of violence: 3.13 3 forms of violence: 5.20 4 or 5 forms of violence: 8.83</p> <p>Percentages not reported, only odds ratios, for females: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.44 (not sig) Witnessed family violence: 1.49 (not sig) 1 form of violence: 1.76 (not sig) 2 forms of violence: 2.63 3 forms of violence: 4.94 4 or 5 forms of violence: 8.23</p>	<p>associated with increased risk of panic, however this was not observed in females. Witnessing family violence alone was not associated with increased risk of panic.</p>
Eating Problems	Romito & Grassi (2007)	<p>Percentages not reported, only odds ratios, for males: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.81 (not sig) Witnessed family violence: 1.80 (not sig) 1 form of violence: 1.20 (not sig) 2 forms of violence: 2.64 (not sig) 3 forms of violence: 3.13 4 or 5 forms of violence: 3.18 (not sig)</p> <p>Percentages not reported, only odds ratios, for females: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.02 (not sig) Witnessed family violence: 1.40 (not sig) 1 form of violence: 1.21 (not sig) 2 forms of violence: 2.23</p>	<p>For both genders, exposure to physical, psychological or sexual abuse or witnessed family violence alone was not associated with increased risk of eating problems. In males, exposure to 3 forms of violence was associated with increased risk of eating problems. In females, exposure to 4 or 5 types of violence was associated with significant increased risk of eating problems.</p>

		3 forms of violence: 1.85 (not sig) 4 or 5 forms of violence: 7.34	
Affect Dysregulation	Richmond et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment; Study 1: 1% Poly-victimisation ; Study 1: 10% R ² values with poly-victimisation entered first: Child Maltreatment; Study 1: 0% Poly-victimisation ; Study 1: 11%	When poly-victimisation was added into the regression model by itself, it was significantly predictive of affect dysregulation (11%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
Self-injurious behaviour	Annerbäck et al (2012)	Percentages not reported, only odds ratios: Physical abuse only: 2.4 Physical abuse + 1 other type of abuse: 8.1 Physical abuse + 2 other types of abuse: 10.3 Physical abuse + 3 other types of abuse: 132.1	Although physical abuse was significantly associated with self-injurious behaviour, the association between self-injurious behaviour and exposure to multiple forms of trauma (bullying/IPV/forced sex) was much stronger.
Suicide Ideation	Elliot et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment 3% Poly-victimisation 5% R ² values with poly-victimisation entered first: Child Maltreatment 0% Poly-victimisation 8%	When poly-victimisation was added into the regression model by itself, it was significantly predictive of suicide ideation (8%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
	Jirapramukpitak et al (2011)	Percentages not reported, only odds ratios: Exposure to domestic violence: 2.1 Physical abuse only: 3.8 IPV only: 6.3 No violence: 1 1 form of violence: 3.1 2 forms of violence: 2.5 3 forms of violence: 17.3	Those exposed to 3 forms of violence were at much higher risk of experiencing suicide ideation than those exposed to physical abuse or exposure to domestic violence alone.
	Romito & Grassi (2007)	Percentages not reported, only odds ratios, for males: No violence: 1 (not sig) Physical, psychological or sexual abuse: 2.45 Witnessed family violence: 1.50 (not sig)	For both males and females, exposure to physical, psychological or sexual abuse was associated with increased risk of suicide attempt or ideation. This risk increased as exposure to number of types of violence increased. For

		<p>1 form of violence: 2.37 (not sig) 2 forms of violence: 3.33 3 forms of violence: 8.33 4 or 5 forms of violence: 3.27 (not sig)</p> <p>Percentages not reported, only odds ratios, for females: No violence: 1 (not sig) Physical, psychological or sexual abuse: 2.67 Witnessed family violence: 1.11 (not sig) 1 form of violence: 1.59 (not sig) 2 forms of violence: 5.75 3 forms of violence: 4.50 4 or 5 forms of violence: 20.91</p>	<p>females exposed to 4 or 5 types of violence, the risk increased dramatically.</p>
	Turner et al (2012)	<p>Peer victimisation: 8.1% yes, 2.9% no Maltreatment: 16.2 % yes, 2.7% no Sexual assault: 22.9% yes, 3.7% no Witness family violence: 11.4% yes, 3.5% no Exposed to community violence: 5% yes, 3.8% no Poly-victimisation: 15.6% yes, 3.3% no</p>	<p>Maltreatment (4.5), peer victimisation (2.5) and sexual assault (3.5) were all independently predictive of suicidal ideation (independent of other victimisation types, demographic factors and internalizing disorder diagnoses), but those exposed to poly-victimisation were almost 6 times more likely to report suicidal ideation. Poly-victimisation was therefore the most powerful predictor of suicidal ideation.</p>
Low Self-Esteem	Elliot et al (2009)	<p>R² values with Child Maltreatment entered first: Child Maltreatment 5% Poly-victimisation 7%</p> <p>R² values with poly-victimisation entered first: Child Maltreatment 0% Poly-victimisation 12%</p>	<p>When poly-victimisation was added into the regression model by itself, it was significantly predictive of self-esteem problems (12%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.</p>
	Soler et al (2012)	<p>Mean Self-Liking scores: Non-Victim males:16.14 Non-Victim females:14.67 Victim males: 16.48 Victim females: 14.39</p>	<p>Levels of self-liking were significantly lower in the poly-victim group than both the victim and non-victim groups. No significant differences were observed in relation to self-competence.</p>

		Poly-victim males: 13.30 Poly-victim females: 12.27	
Depression	Elliot et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment 7% Poly-victimisation 9% R ² values with poly-victimisation entered first: Child Maltreatment 0% Poly-victimisation 16%	When poly-victimisation was added into the regression model by itself, it was significantly predictive of depression (16%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
	Ford et al (2010)	No trauma history: 5.2% Any trauma history: 21.3% Sexual abuse poly-victimisation: 56.5% Physical abuse poly-victimisation: 48.4% Witness to violent trauma: 14.7% Disaster or Accident: 14.3% Community violence poly-victimisation: 28.6% Assault poly-victimisation: 38.6%	Subjects in the poly-victimisation subgroups were twice as likely to meet criteria for depression compared to those with trauma histories who were not poly-victimised.
	Richmond et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment; Study 1: 4% Poly-victimisation ; Study 1: 6% Child Maltreatment; Study 2: 5% Poly-victimisation ; Study 2: 8% R ² values with poly-victimisation entered first: Child Maltreatment; Study 1: 0% Poly-victimisation ; Study 1: 9% Child Maltreatment; Study 2: 0% Poly-victimisation; Study 2: 12%	In both studies, when poly-victimisation was added into the regression model by itself, it was significantly predictive of depression (9%, 12% respectively). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
	Romito & Grassi (2007)	Percentages not reported, only odds ratios, for males: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.01 (not sig)	For both genders, the more types of violence subjects had been exposed to, the higher the risk of experiencing depression. Exposure to child maltreatment alone was not associated with increased risk of depression.

		<p>Witnessed family violence: 2.44 (not sig) 1 form of violence: 2.10 (not sig) 2 forms of violence: 3.83 3 forms of violence: 4.55 4 or 5 forms of violence: 1.20 (not sig)</p> <p>Percentages not reported, only odds ratios, for females: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.18 (not sig) Witnessed family violence: 1.09 (not sig) 1 form of violence: 2.88 2 forms of violence: 3.19 3 forms of violence: 2.20 (not sig) 4 or 5 forms of violence: 10.11</p>	
Anxiety	Elliot et al (2009)	<p>R² values with Child Maltreatment entered first: Child Maltreatment 8% Poly-victimisation 9%</p> <p>R² values with poly-victimisation entered first: Child Maltreatment 0% Poly-victimisation 17%</p>	When poly-victimisation was added into the regression model by itself, it was significantly predictive of anxiety (17%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
	Richmond et al (2009)	<p>R² values with Child Maltreatment entered first: Child Maltreatment; Study 1: 4% Poly-victimisation ; Study 1: 5% Child Maltreatment; Study 2: 4% Poly-victimisation ; Study 2: 7%</p> <p>R² values with poly-victimisation entered first: Child Maltreatment; Study 1: 0% Poly-victimisation ; Study 1: 9% Child Maltreatment; Study 2: 0% Poly-victimisation; Study 2: 12%</p>	In both studies, when poly-victimisation was added into the regression model by itself, it was significantly predictive of anxiety (9%, 12% respectively). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
Anxiety and/or Depression	Jirapramukpitak et al	Percentages not reported, only odds ratios:	Those exposed to 3 forms of violence were at

	(2011)	Exposure to domestic violence: 2.0 Physical abuse only: 2.0 IPV only: 1.9 No violence: 1 1 form of violence: 1.8 2 forms of violence: 2.2 3 forms of violence: 4.6	higher risk of fulfilling criteria for common mental disorders such as anxiety or depression than those exposed to physical abuse or exposure to domestic violence alone.
Insomnia/Anxiety/Depression	Annerbäck et al (2012)	Percentages not reported, only odds ratios: Physical abuse only: 2.0 Physical abuse + 1 other type of abuse: 3.5 Physical abuse + 2 other types of abuse: 5.0 Physical abuse + 3 other types of abuse: 9.1	Although physical abuse was significantly associated with mental health problems, the association between mental health problems and exposure to multiple forms of trauma (bullying/IPV/forced sex) was much stronger.
Obsessive Compulsive	Richmond et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment; Study 1: 4% Poly-victimisation ; Study 1: 9% Child Maltreatment; Study 2: 6% Poly-victimisation ; Study 2: 11% R ² values with poly-victimisation entered first: Child Maltreatment; Study 1: 0% Poly-victimisation ; Study 1: 13% Child Maltreatment; Study 2: 0% Poly-victimisation; Study 2: 17%	In both studies, when poly-victimisation was added into the regression model by itself, it was significantly predictive of obsessive compulsive symptoms (11%, 17% respectively). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
Paranoid Ideation	Richmond et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment; Study 1: 6% Poly-victimisation ; Study 1: 8% Child Maltreatment; Study 2: 6% Poly-victimisation ; Study 2: 12% R ² values with poly-victimisation entered first: Child Maltreatment; Study 1: 0% Poly-victimisation ; Study 1: 14% Child Maltreatment; Study 2: 0% Poly-victimisation; Study 2: 18%	In both studies, when poly-victimisation was added into the regression model by itself, it was significantly predictive of paranoid ideation (14%, 18% respectively). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
Externalising Disorders /			

Behaviours:			
Substance Misuse	Annerbäck et al. (2012)	Percentages not reported, only odds ratios: Physical abuse only: 2.7 Physical abuse + 1 other type of abuse: 3.5 Physical abuse + 2 other types of abuse: 5.7 Physical abuse + 3 other types of abuse: 25.6	Although physical abuse was significantly associated with substance misuse, the association between substance misuse and exposure to multiple forms of trauma (bullying/IPV/forced sex) was much stronger.
	Elliot et al (2009)	R ² values with Child Maltreatment entered first: Child Maltreatment 2% Poly-victimisation 9% R ² values with poly-victimisation entered first: Child Maltreatment 0% Poly-victimisation 10%	When poly-victimisation was added into the regression model by itself, it was significantly predictive of substance misuse (11%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
	Ford et al (2010)	No trauma history: 0% Any trauma history: 1.5% Sexual abuse poly-victimisation: 7.3 % Physical abuse poly-victimisation: 10.9% Witness to violent trauma: 0.2% Disaster or Accident: 0.5 % Community violence poly-victimisation: 2.3% Assault poly-victimisation: 2.3%	Subjects in the poly-victimisation subgroups were significantly more likely to meet criteria for substance misuse compared to those with trauma histories who were not poly-victimised.
	Jirapramukpitak et al (2011)	Percentages not reported, only odds ratios: Exposure to domestic violence: 3.4 Physical abuse only: 2.3 IPV only: 4.2 No violence: 1 1 form of violence: 3.6 2 forms of violence: 2.3 3 forms of violence: 12.3	Those exposed to 3 forms of violence were at much higher risk of experiencing substance misuse than those exposed to physical abuse or exposure to domestic violence alone.
Alcohol Misuse	Annerbäck et al. (2012)	Percentages not reported, only odds ratios: Physical abuse only: 1.6 Physical abuse + 1 other type of abuse: 2.1 Physical abuse + 2 other types of abuse: 1.2 (not sig.)	Although physical abuse was significantly associated with alcohol misuse, the association between alcohol misuse and exposure to physical abuse + 3 other types of abuse (bullying/IPV/forced sex) was stronger.

		Physical abuse + 3 other types of abuse: 6.5	
	Ford et al (2010)	No trauma history: 0.7% Any trauma history: 7% Sexual abuse poly-victimisation: 15% Physical abuse poly-victimisation: 26.6% Witness to violent trauma: 3.7% Disaster or Accident: 3.7% Community violence poly-victimisation: 12.3% Assault poly-victimisation: 12.7%	Subjects in the poly-victimisation subgroups were significantly more likely to meet criteria for alcohol misuse compared to those with trauma histories who were not poly-victimised.
	Jirapramukpitak et al (2011)	Percentages not reported, only odds ratios: Exposure to domestic violence: 2.1 Physical abuse only: 1.8 IPV only: 3.4 No violence: 1 1 form of violence: 2.0 2 forms of violence: 2.5 3 forms of violence: 4.3	Those exposed to 3 forms of violence were at a higher risk of experiencing alcohol misuse than those exposed to physical abuse or exposure to domestic violence alone.
	Romito & Grassi (2007)	Percentages not reported, only odds ratios, for males: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.90 (not sig) Witnessed family violence: 0.84 (not sig) 1 form of violence: 1.27 (not sig) 2 forms of violence: 3.55 3 forms of violence: 1.47 (not sig) 4 or 5 forms of violence: 1.96 (not sig) Percentages not reported, only odds ratios, for females: No violence: 1 (not sig) Physical, psychological or sexual abuse: 2.54 Witnessed family violence: 1.23 (not sig) 1 form of violence: 3.76 (not sig)	For males, exposure to 2 forms of violence was associated with increased risk of alcohol misuse. Exposure to physical, psychological or sexual abuse or witnessed family violence alone, were not associated with increased risk of alcohol misuse in men. For females, exposure to physical, psychological or sexual abuse was associated with increased risk of alcohol misuse. Moreover, this risk increased steadily as exposure to number of forms of violence increased, with 4 or 5 types of violence representing the most elevated risk.

		2 forms of violence: 6.37 3 forms of violence: 5.88 4 or 5 forms of violence: 7.25	
Violence	Annerbäck et al. (2012)	Percentages not reported, only odds ratios: Physical abuse only: 3.2 Physical abuse + 1 other type of abuse: 4.2 Physical abuse + 2 other types of abuse: 4.9 Physical abuse + 3 other types of abuse: 29.9	Although physical abuse was significantly associated with violent acts, the association between violent acts and exposure to multiple forms of trauma (bullying/IPV/forced sex) was much stronger.
Shoplifting	Annerbäck et al. (2012)	Percentages not reported, only odds ratios: Physical abuse only: 3.3 Physical abuse + 1 other type of abuse: 4.2 Physical abuse + 2 other types of abuse: 4.0 Physical abuse + 3 other types of abuse: 14.8	Although physical abuse was significantly associated with shoplifting, the association between shoplifting and exposure to multiple forms of trauma (bullying/IPV/forced sex) was much stronger.
Risky sexual behaviour	Annerbäck et al. (2012)	Percentages not reported, only odds ratios: Physical abuse only: 1.5 (not sig.) Physical abuse + 1 other type of abuse: 2.6 Physical abuse + 2 other types of abuse: 4.6 Physical abuse + 3 other types of abuse: 8.0	Physical abuse alone was not significantly associated with risky sexual behaviour. Exposure to multiple forms of trauma (bullying/IPV/forced sex) demonstrated a significant and stronger association with poor risky sexual behaviour.
Delinquency	Ford et al (2010)	Percentages not reported, only odds ratios: Personal delinquency: 2.74 Peers delinquency: 1.57	Poly-victimised youth reported more delinquent acts by self and peers than other trauma-exposed youth.
Physical Health Problems:			
Poor general health	Annerbäck et al. (2012)	Percentages not reported, only odds ratios: Physical abuse only: 1.5 (not sig.) Physical abuse + 1 other type of abuse: 6.7 Physical abuse + 2 other types of abuse: 11.6 Physical abuse + 3 other types of abuse: 12.4	Physical abuse alone was not significantly associated with poor general health. Exposure to multiple forms of trauma (bullying/IPV/ forced sex) demonstrated a significant and much stronger association with poor general health outcomes.
	Romito & Grassi (2007)	Percentages not reported, only odds ratios, for males: No violence: 1 (not sig) Physical, psychological or sexual abuse: 0.47 (not sig) Witnessed family violence: 2.39 1 form of violence: 1.30 (not sig)	For males and females, witnessing family violence was associated with an increased risk of poor general health. For females, this risk increased with exposure to more types of violence, with 4 or 5 representing the most elevated risk of poor general health.

		<p>2 forms of violence: 2.19 (not sig) 3 forms of violence: 1.68 (not sig) 4 or 5 forms of violence: 2.71 (not sig)</p> <p>Percentages not reported, only odds ratios, for females: No violence: 1 (not sig) Physical, psychological or sexual abuse: 1.25 Witnessed family violence: 2.03 1 form of violence: 1.36 (not sig) 2 forms of violence: 2.49 3 forms of violence: 3.12 4 or 5 forms of violence: 4.59</p>	
Academic Outcomes:			
Academic Problems + Career Problems	Elliot et al (2009)	<p>R² values with Child Maltreatment entered first: Academic Problems: Child Maltreatment 5% Poly-victimisation 7% Career Problems: Child Maltreatment 1% (ns) Poly-victimisation 4%</p> <p>R² values with poly-victimisation entered first: Academic Problems: Child Maltreatment 0% Poly-victimisation 12% Career Problems: Child Maltreatment 0% Poly-victimisation 4%</p>	When poly-victimisation was added into the regression model by itself, it was significantly predictive of academic problems (12%) and career problems (4%). When child maltreatment was entered into the model second, it contributed no variability beyond that accounted for by PV.
Attention and Behaviour problems in school; Suspension and Expulsion rates	Kennedy & Bennett (2006)	<p>R² values for cumulative lifetime violence exposure: Attention problems: 0.10 Behaviour problems: 0.19 Suspension/expulsion history: 0.16</p>	Cumulative violence exposure was linked to both attention and behaviour problems in school and school suspension and expulsion rates. Community violence was the only independent predictor of these outcomes. Exposure to parental violence, physical abuse or parental violence were not predictive of school outcomes on their own.
	Strøm et al (2013)	<p>Adjusted R² values: Exposure to sexual abuse: 12%</p>	Regardless of the type of violence, all categories of violence showed a significant association with

		<p>Exposure to violence from adults: 21%</p> <p>Exposed to violence from youths + sexual abuse: 33%</p> <p>Exposed to violence from adults + sexual abuse: 78%</p> <p>Exposed to violence from both youths + adults: 49%</p> <p>Exposed to violence from both youths + adults + sexual abuse:44%</p>	<p>reduced grades. Those exposed to two or three types of violence had poorer grades than those exposed to only one type of violence. Whilst it was not clear what perpetrator-victim relationships were covered by 'sexual abuse' variable, exposure to violence from adults in addition to previous year sexual abuse was the strongest predictor of poor academic achievement.</p>
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Appendix 6. Recruitment Advertisement Text for Students

“Emotion Regulation in the Face of Adversity”

We are conducting a study regarding students’ emotion regulation following adversity. We will ask you about your adverse experiences in detail – **therefore if you choose to participate in this study, you will be asked to provide information about violent and sexual acts that may have been happened to you or someone that you know.** Specifically, the questionnaire will ask about childhood experiences of neglect, abuse, bullying, and witnessing violence and abuse towards others’. The study will be completed online and you will not be asked to disclose your name or the name of anyone else that may have been involved in these experiences. In addition, you will be required to complete several questionnaire measures that will ask about the ways in which you cope with stress, how you deal with your emotions, and your experiences of violent behaviour across the lifespan.

The questionnaires will take no longer than 60 minutes to complete and you will receive 1 credit for your participation.

To participate in this study, you must be at least 18 years old.

Due to the sensitive nature of the topic, please think carefully about whether you would like to participate. If you would like to ask any questions about the study prior to taking part, please contact the researcher, Lucy Pomroy at [REDACTED] or 07xxxxxxxx or Dr. Catherine Hamilton-Giachritsis at [REDACTED].

Appendix 7. Text for Information/Consent pages for Students

Screen 1:

Who are we?

This study is being conducted by Lucy Pomroy (Forensic Psychologist in Training) along with Dr. Catherine Hamilton-Giachritsis (Forensic and Clinical Psychologist).

What is the purpose of the study?

The purpose of the study is to better understand student's experiences of adversity and the factors that might help to protect our wellbeing following these experiences.

What does the study involve?

Your participation will last no longer than 60 minutes and you will be granted 1 course credit for your time. The study will involve completing 6 short questionnaires online. You will also be asked to provide demographic information about yourself. If you do choose to end your participation before completing the full study, you will receive course credit in accordance with the length of time you have participated (0.1 credits per 5 minutes participation).

Are you eligible to participate?

You must be at least 18 years old to participate in this study. This is due to the sensitive nature of the topic you will be asked about.

Please click on the left button below to confirm that you are at least 18 years old, or the right button to exit the study.

Screen 2:

What else do you need to know?

- Risks associated with participation: Participation in this study will require you to answer questions about your own adverse experiences that may have occurred in your lifetime, from childhood to the present day. This will involve answering questions about violent and sexual acts that may have been perpetrated against you or someone you know. Specifically, the questionnaire will ask about your childhood experiences of neglect, abuse, bullying, and witnessing violence and abuse towards others'. In addition, the questionnaire will ask about negative ways in which you may have acted towards someone else.
- Understandably, you may feel upset or experience some distress thinking about previous experiences of this nature and so we would urge you to think carefully about whether you still want to participate in this study. If you do participate in the study and would like to talk to someone afterwards, you can talk to a trained person using one of the contact numbers below:
 - The University of Birmingham Counselling and Guidance Service: 0121 414 5130

○ The Samaritans: 08457 909090

- **Withdrawal from the study:** You may choose to withdraw your participation from the study at any point. If you stop participating before completion of the study, your data will be destroyed and you will be awarded course credit according to the amount of minutes you have spent participating (0.1 credits per 5 minutes participation). If you wish to withdraw from the study following your completion of the study, you may contact the researchers and your data will be destroyed. Please note – following completion of the study, you are able to withdraw your data up to one month after taking part. Course credit will not be revoked if you choose to withdraw from the study at a later date.

Please click on the left button below to continue, or the right button to exit the study.

Screen 3:

Is your data confidential?

Data collection: The data collected in this study will include your responses to the questionnaires and your basic demographic information. The data will be used for a postgraduate thesis and will be written up into a paper for publication. The data will only be available to the principal investigator (Lucy Pomroy) and the other researcher (Dr. Hamilton-Giachritsis) involved in the study. Your data will be stored in password protected files and on an encrypted USB device.

Confidentiality: Participants' identities will be protected in this study at all times. No identifying information will be sought by the researchers of the study and no individual participant data will be revealed upon any publication that may result from the study.

Please click on the left button below to continue, or the right button to exit the study.

Screen 4:

Statement of Consent

- I have read and understood the above information about “Emotion Regulation in the face of adversity”.
- I have been given the opportunity to ask questions about the research and any questions I have asked have been answered in a satisfactory manner.
- I agree to participate in the on-line questionnaires.

Please click on the left button below to indicate that you agree with the statement above, or the right button to exit the study.

Screen 5:

Selection of Unique ID

Before beginning the questionnaires, we'd like you to choose a unique identification code. You will need to provide this code to the researcher should you wish to withdraw from the study, so please make it meaningful so that you can remember it, or record it somewhere for future reference. Your unique ID code should consist of 6 letters and/or numbers.

In the space below, please enter your personalised 6-digit code (composed of numbers and/or letters).

Appendix 8. Debriefing Text for Survey (for students)

Thank you for your participation in this study. Your responses have formed part of a research study looking at the development of resilience following adverse lifetime experiences.

If you would like to ask any further questions about the study, please contact Lucy Pomroy at: [REDACTED] or 07xxxxxxxx or Dr. Catherine Hamilton-Giachritsis at [REDACTED]

If you feel you have been affected in any way by the subject of this study, we would encourage you to talk to a trained person using one of the telephone numbers listed below:

- The University of Birmingham Counselling and Guidance Service:
0121 414 5130
- The Samaritans: 08457 909090

If you decide to withdraw your responses following the completion of the survey, please email Lucy Pomroy at the above address, or contact 07xxxxxxxx, quoting your unique ID number that you selected at the start of the study. There is no need to state your name, just your ID number. Withdrawing from the study will have no negative consequences and you will still receive course credit for your participation. Please note that we can only withdraw your responses up to one month after you have taken part.

Appendix 9. Demographics and Resilience Questions

What is your age?

Are you male or female?

What is your ethnicity?

If you are a student, what is your year of study?

Highest level of educational achievement:

Primary school

Secondary School, GCSE's

Secondary School, no GCSE's

Vocational qualifications (e.g. NVQ's)

A Levels

Undergraduate degree

Masters degree

PhD

If you are not currently studying, are you employed? Yes/No

In full time work?

In part time work?

Marital status:

Single

In a long-term relationship (1 year+)

Co-habiting

Married

Separated / Divorced

Widowed

Would you consider yourself to have:

Lots of close friends
A few close friends
Friends but no-one close
Largely acquaintances
Prefer your own company

Have you ever been convicted of a criminal offence?

If yes, was it a violent crime? Or, A non-violent crime?

** This does not include speeding and parking fines etc, but does include driving without a license or drink driving*

Have you ever been addicted to alcohol or drugs?

Have you ever self-harmed or attempted suicide?

Would you consider yourself to be currently experiencing:

Depression

Anxiety

Psychosis / Schizophrenia

An Eating Disorder

A Phobia

Obsessive Compulsive Disorder

Other _____

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