VOLUME 1

MAJOR RESEARCH PROJECT

THE IMPACT OF SOCIAL SUPPORT AND COPING STYLE ON POST-TRAUMA SYMPTOMS IN CHILDREN FOLLOWING TRAUMATIC EVENTS

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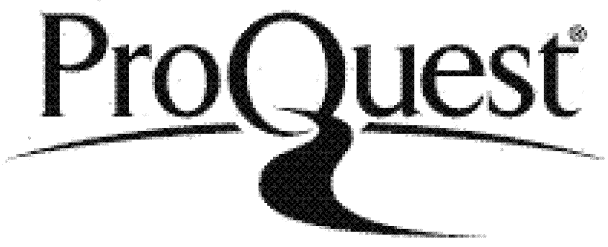

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OVERVIEW

Post-trauma adjustment in children and adolescents has attracted increasing research and clinical interest in recent years and workers have been particularly interested in identifying the risk and protective factors influencing trauma outcome. These issues form the focus of this research thesis, which will be presented in three parts. (1) The literature review examines current evidence on children's psychosocial functioning following trauma, and the risk and protective factors influencing outcome, with particular emphasis on coping style and social support. The review highlights the complexity of this area, reflected in multifactorial models of children's post-trauma adjustment and suggests that coping and social support may be particularly important. However few childhood trauma studies have directly examined these factors and future directions are suggested for addressing these issues in childhood trauma research. (2) The empirical paper therefore examines the influence of coping style and social support on children's post-trauma adjustment. Fifty-six children aged 7-14 years, and their main caregiver, completed a battery of measures 3-4 weeks after a traumatic event and again 3 months later. Children frequently experienced post-traumatic stress, anxiety and depressive symptoms, and these symptoms were associated with reduced social support and increased use of coping strategies, the latter finding indicating a bi-directional relationship between distress and coping. The findings are discussed in relation to multifactorial models of children's post-trauma adjustment, and recommendations made for further research. (3) The critical appraisal discusses the methodological and theoretical issues, which emerged during the course of the study and considers implications for future research and clinical practice with children exposed to traumatic events.

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CHAPTER 1

LITERATURE REVIEW

THE IMPACT OF SOCIAL SUPPORT AND COPING STYLE ON CHILDREN'S POST-TRAUMA ADJUSTMENT: A REVIEW OF THE LITERATURE

1.1 ABSTRACT

This paper reviews the literature on post-trauma adjustment in children and adolescents. Published studies on children's reactions to trauma are reviewed including research on post-traumatic stress disorder and other psychosocial consequences of trauma. Research evidence on the risk and protective factors in post-trauma outcome is reviewed, with particular emphasis given to theory and research on coping style and social support, identifying their links to children's mental health and coping with stress. What clearly emerges is the complexity of children's reactions to trauma, and this is reflected in the recent shift towards multifactorial models of post-trauma adjustment in children and adolescents. Evidence indicates that coping and social support may be of particular importance in understanding children's response to trauma, however few childhood trauma studies have directly examined these factors. Future directions are therefore suggested for addressing these issues in research with children and adolescents exposed to trauma.

THE IMPACT OF SOCIAL SUPPORT AND COPING STYLE ON CHILDREN'S POST-TRAUMA ADJUSTMENT: A REVIEW OF THE LITERATURE

In recent years, there has been increasing interest in the impact of trauma on the psychosocial functioning of children and adolescents. Various types of trauma have been studied including natural disasters, war, child abuse, burns, violence, and accidents (McNally, 1996). Early literature emphasised children's resilience to trauma with workers suggesting that children's psychological reactions to trauma were not as serious as those experienced by adults (Garmezy & Rutter, 1985) However recent studies indicate that children can experience significant and long-lasting effects of trauma, including posttraumatic stress symptoms, emotional difficulties and behavioural problems (Stallard, Velleman, & Baldwin, 1999; Yule, Bolton, Udwin, Boyle, O'Ryan, & Nurrish, 2000).

Research has found that individuals respond to traumatic events in various ways and while some individuals experience significant short or long-term problems, others recover from the experience fully with no lasting psychological, biological or behavioural effects (Resick, 2001). This huge variation in symptom development following exposure to trauma has fuelled research interest in identifying individual differences and contextual factors that influence symptom development (Johnsen, Eid, Laberg, & Thayer, 2002). A number of recent studies have attempted to identify the factors influencing the outcome of trauma in children (Gill, 2002). Such work is critical in helping to identify high-risk individuals so that monitoring and intervention efforts can be targeted most appropriately (Udwin, Boyle, Yule, Bolton, & O'Ryan, 2000).

Many factors have been identified as influencing the nature, severity and duration of post-trauma reactions in children including aspects of the trauma itself, child-related characteristics, and post-trauma factors such as the child's recovery environment and family characteristics (Udwin et al., 2000). How children cope following trauma has been identified as crucial, with approach-type coping strategies reportedly associated with better outcome than avoidant-type coping (Stallard, Velleman, Langsford, & Baldwin, 2001). Various influences on children's coping have been reported, and parental factors including parents' own coping strategies, have been identified as playing an important role (Hardy, Power, & Jaedicke, 1993). Wider contextual factors have also been identified, with social support frequently cited as influencing psychosocial functioning following trauma (Tremblay, Hebert, & Piche, 1999).

This literature review will aim to provide an overview of current understanding in the field of childhood trauma, and some of the risk and protective factors identified. Particular emphasis will be given to literature focusing on the role of coping and social support, and their influence on children's post-trauma adjustment.

1.3 TRAUMA IN CHILDREN

A traumatic event can been defined as an event in which an individual subjectively experiences a threat to life, bodily integrity, or sanity (Pearlman & Saakvitne, 1995). Exposure to trauma in childhood and adolescence is fairly common (Kassam-Adams & Koplin, 2004) with 25-40% of children reporting at least one traumatic event in their life (Beony-McCoy & Finkelhor, 1995; Costello, Erkanli, Fairbank, & Angold, 2002). Research has covered a huge variety of different types of trauma experienced by children, varying with regards to the source of trauma, severity, chronicity, and

level of exposure. Studies have been conducted into the impact of natural disasters including bushfires, earthquakes and hurricanes (McDermott & Palmer, 2002; Pynoos, Steinberg, & Wraith, 1995; Vernberg, La Greca, Silverman, & Prinstein, 1996), man-made disasters such as terrorist attacks (Nader, Pynoos, Fairbanks, & Frederick, 1990), and catastrophic accidents including a dam collapse and shipping disaster (Green et al., 1991; Yule, Udwin, & Murdoch, 1990). More chronic sources of trauma such as childhood abuse (Burgess, Hartman, & Baker, 1995; Ezzell, Swenson, & Brondino, 2000), and war (Smith, Perrin, Yule, & Rabe-Hesketh, 2001; Thabet, Abed, & Vostanis, 2004) have also been studied. However, these events, while clearly traumatic, are relatively uncommon and unlikely to be experienced by many children, therefore other researchers have focused on more common sources of trauma, one such area being childhood accidents.

Accidents are reported to be the leading cause of childhood and adolescent morbidity and mortality (Danesco, Miller, & Spicer, 2000; Lalloo, Sheiham, & Nazroo, 2003) with an estimated 20% of children attending hospital every year following an accident (Roberts, DiGuiseppe, & Ward, 1998). Accidents therefore provide a valuable source of data for research into childhood trauma, and one area that has attracted particular interest among researchers is that of road traffic accidents (Mirza, Bhadrinath, Goodyer, & Gilmour, 1998).

Research indicates that motor vehicle accidents often fulfil DSM-IV criterion A for PTSD, causing actual or threatened death or threat to physical integrity, with victims experiencing intense fear, helplessness or horror (McDermott & Cvitanovich, 2000). Indeed, epidemiological studies have identified motor vehicle accidents (MVAs) as

the single most significant stressor in terms of frequency and severity of post trauma symptoms (Norris, 1992). Following motor vehicle accidents, adults often experience post trauma symptoms, mood disturbance, anxiety, depression, somatisation, and impaired social and work-related functioning (Andersson, Dahlback, & Allebeck, 1994; Blanchard, Hickling, Taylor, & Loos, 1995), and similar findings have been reported in children following transport accidents (Tyano et al., 1996).

Research studies have also identified post trauma difficulties in children following other childhood accidents including burns (LeDoux, Meyer, Blakeney, & Herndon, 1998), and other injuries (Landolt, Boehler, Schwager, Schallberger, & Nuessli, 1998).

Reactions to Traumatic Events in Children

Traumatic events elicit a range of reactions in individuals, and researchers have attempted to distinguish between normal and abnormal reactions to trauma. One clear finding to emerge is that reactions to traumatic events change over time. For example, Resick (2001) suggests that at the point of trauma, individuals shift into survival mode, an alarm reaction triggering biological, cognitive and emotional responses to prepare the body for fight or flight. After the event, most people experience intrusive memories, images and emotions, and may attempt to cope by shutting these off, however too much avoidance can lead to prolonged reactions that evolve into psychological disorders (Resick, 2001). Kassam-Adams & Fein (2003) observe that in first few days and weeks following trauma, it is common for children and adults to have unwanted and upsetting thoughts or feelings, to feel more jumpy or on edge, and to want to avoid reminders of the trauma. Research has found such

reactions to be normative with more than four-fifths of injured children and their parents reporting at least one of these symptoms in the first month post trauma (Winston et al., 2003), however in some individuals these symptoms persist and impair their functioning (Kassam-Adams & Fein, 2003). Research indicates that failure to resolve traumatic reactions may result in long-term consequences that interfere with a child's ability to engage in productive behaviours and to function adequately socially, academically, professionally and personally (Nader, 1997; Wilson & Raphael, 1993)

Research into the impact of traumatic events in children initially placed greater emphasis on children's resilience rather than psychopathology following trauma (Garmezy & Rutter, 1985). However, more recent research has demonstrated that children do experience adverse effects of trauma (Yule et al., 2000) and there is now considerable evidence to suggest that young people can suffer significant and long-lasting psychological distress following traumatic events (Stallard et al., 1999)

Post Traumatic Stress Symptoms following Traumatic Events

Post Traumatic Stress Disorder (PTSD) in children has received much attention in recent years, particularly with observations that PTSD symptoms are the most common type of psychological distress in children following trauma (Vernberg et al., 1996). According to DSM-IV (American Psychiatric Association, 1994), a diagnosis of PTSD requires that an individual has experienced, witnessed or learned about an event involving actual or threatened death, serious injury or other threat to physical integrity, to themselves, a family member or other close associate, responding with intense fear, helplessness, or horror. In addition, they must experience characteristic

symptoms of trauma re-experiencing, avoidance, and increased arousal, persisting for more than 1 month and causing clinically significant distress or impairment in social, occupational, or other important areas of functioning. Some differences have been identified in childhood PTSD and these are recognised in DSM-IV which states for example that intense fear, helplessness or horror may be expressed in children by disorganised or agitated behaviour (American Psychiatric Association, 1994).

Similar to other mental disorders, the recognition of PTSD in children has lagged behind its recognition in adults (Davis & Siegel, 2000) and there has been some debate within the literature about whether the PTSD diagnostic criteria are applicable to children (Salmon & Bryant, 2002). Overall evidence indicates that children do experience many of the same post-traumatic stress symptoms as adults (Fletcher, 1996; Yule et al., 2000), with clusters of intrusion, avoidance and arousal having been repeatedly found in young people following trauma (Perrin, Smith, & Yule, 2000).

Prevalence of Post Traumatic Stress Symptoms

The reported incidence of PTSD following trauma varies considerably, ranging from no PTSD to 93% (Earls, Smith, Reich, & Jung, 1988, Goldstein, Wampler, & Wise, 1997). Epidemiological studies on the prevalence of PTSD in young people are relatively lacking in comparison with adult research (Davis & Siegel, 2000), however childhood trauma studies are increasing, providing some insight into rates of childhood PTSD. A metaanalysis of 34 research samples covering 2697 children exposed to various types of trauma, found 36% of children (compared to a rate of 24% in adults) met criteria for PTSD (Fletcher, 1996). However, this masks the wide

variation in PTSD rates reported by different studies. One relatively large-scale, longitudinal follow-up study of 217 child survivors of a shipping disaster (Yule et al., 2000) found that 51.5% of children developed PTSD at some time over the follow-up period, with 30% recovering within a year of onset, 26% recovering in the next 3-4 years but 34% still having PTSD at time of follow-up, 5-8 years after the event.

Research indicates that PTSD is also common in children who have sustained injuries in more common everyday occurrences such as motor vehicle accidents (Gill, 2002). McDermott & Cvitanovich (2000) investigated the prevalence of PTSD and general psychopathology after a motor vehicle accident, in 26 children aged 8-13-years old. The study, which used both parent and child reports, found that 22% of children experienced moderate or severe PTSD symptoms 3-months later while 35% had mild symptoms. Other studies of motor vehicle accidents have reported 35% of young people meeting criteria for PTSD 6-weeks after the event (Stallard, Velleman, Baldwin, 1998) while longer-term follow-ups indicate continued PTSD symptoms with reported rates of 20% at 9-months post-accident (Miligram, Toubiana, Klingman, Raviv, & Goldstein, 1988) and 25% at 7-12 months post-accident (De Vries et al., 1999). Another study recently assessed children who had experienced an acute physical injury and found that 1-month after the event, 22.5% of children met full criteria for PTSD, 47.3% met criteria for 2-3 clusters of PTSD and 72.5% met criteria for at least one symptom cluster (Aaron, Zaglul, & Emery, 1999)

The current literature thus emphasises the fact that much like adults, children experience different levels of distress following traumatic events (Saigh, Green, & Korol, 1996) and not all children develop PTSD following trauma (Keppell-Benson,

Ollendick, & Benson, 2002). In addition, it highlights the great variation in reported rates of PTSD. A number of factors may be contributing to this variability including differences in the type, intensity and duration of traumatic event, time of follow-up, sampling technique, and assessment methods (Saigh et al., 1996).

Other Psychosocial Difficulties following Traumatic Events

Research has found that individuals exposed to trauma can suffer from a range of difficulties other than PTSD. Anxiety and mood disturbances, sleep difficulties, anger and aggressive behaviour, and cognitive and school performance problems have all been reported (Vogel & Vernberg, 1993; Winje & Ulvik, 1998; Yule & Cantebury, 1994), as have communication and relationship difficulties, avoidance of social activities and social withdrawal (Lubit, Rovine, Defrancisci, & Spencer, 2003). Studies suggest that children frequently receive additional diagnoses to PTSD, including specific and social phobias, generalised anxiety disorder, panic disorder, depressive disorders and behaviour disorders (Perrin et al., 2000). A metaanalytic study (Fletcher, 1996) found 36% of children had diminished participation in activities, 41% had concentration difficulties, while other common symptoms included depression (25%), separation anxiety (23%), and generalised anxiety symptoms (39%).

Such repercussions have been reported following road traffic accidents and physical injuries (Basson et al., 1991; De Vries et al., 1999), even those involving more minor incidents (Trickey & Black, 2000). One study by McDermott and Cvitanovich (2000) reported that compared with community controls, children had significantly

higher prevalence of mental health problems (22.7%) following motor vehicle accidents, including anxiety and depressive symptoms and disruptive behaviour.

Research indicates that these psychological and behavioural difficulties can continue for prolonged periods following exposure to trauma. McDermott & Palmer (2002) carried out an extensive study of 2379 children (age 8-19 years), 6-months after a bushfire disaster and, using a battery of self-report measures, found elevated rates of depressive symptoms and emotional distress, particularly in the younger children aged 9-11 years. Di Gallo, Barton, & Parry-Jones (1997) assessed 57-children aged 5-18-years who had experienced road traffic accidents 18-months previously. Using both child and parent reports, they found that 39% of children had continued behavioural difficulties while 42% of children had adverse psychological reactions.

Bolton and colleagues (Bolton, O'Ryan, Udwin, Boyle, & Yule, 2000) had an even longer follow-up period of 5-8-years in their study of general psychopathology in 217 child survivors of the Jupiter shipping disaster. They found that compared to a matched control comparison group, the child survivors had significantly higher rates of diagnosis for specific phobia, panic disorder, separation anxiety, and major depression. In addition, they assessed 115 of the survivors for psychosocial functioning (Bolton et al., 2004) and found that survivors with psychopathology had poorer overall psychosocial functioning in domains of education/work, love relationships and non-specific social contacts. However, once psychopathology remitted, psychosocial functioning resumed, and survivors without PTSD or other psychopathology after the event showed no differences to controls. They therefore concluded that the effects of trauma on psychosocial functioning are mediated by

psychopathology but nevertheless emphasised the need to attend to social functioning as well as symptoms following trauma.

Other workers have found similar post-trauma cognition, attention and academic difficulties (Amaya-Jackson, & March, 1995; Nader et al., 1990). Lubit and colleagues (2003) suggested that impairments in social and emotional functioning might result from the trauma affecting the regulation of emotions and behaviour, thereby having negative effects on children's core identity and ability to relate to others.

It is clear therefore that traumatic events can have wide-ranging effects on children's psychosocial functioning. What is less clear is whether these difficulties are separate, or part and parcel of a syndrome of responses falling under the umbrella of PTSD. Following their recent review of the literature, Lubit et al. (2003) emphasised the need to consider whether symptoms indicate PTSD, other disorders or both.

A number of explanations have been put forth to explain the comorbidity of PTSD with other disorders. Soloman and Bliech (1998) suggested that pre-existing disorders might increase vulnerability to PTSD, that other disorders may be subsequent complications of PTSD, or that disorders may co-occur as a result of shared risk factors. Others have suggested that children with PTSD have a memory bias for negative information, leading to increased risk of emotional problems (Moradi et al., 2000) while Pynoos and colleagues (1995) have proposed several mechanisms for the PTSD-depression links. They suggested that PTSD symptoms may lead to secondary depression, that chronic PTSD may affect family resources, or

that the behavioural concomitants of PTSD may cause secondary adversity. Thabet and colleagues (2004) also offered explanations for the comorbidity between PTSD and depression found in their study of 403 Palestinian children living in refugee camps during war conflict. They suggested possible symptom overlap, both disorders being a response to trauma, or depression being a response to PTSD by mediating life events. They emphasised the need for further research into the association between PTSD and depressive disorders, with particular focus on the complex interplay between exposure to trauma, child-related and environmental-related factors, to help interpret underlying mechanisms and aetiological pathways, and the nature of comorbidity.

1.4 RISK AND PROTECTIVE FACTORS IN TRAUMA

Research findings on the development of post traumatic stress symptoms and other psychosocial difficulties in children following trauma indicates huge variation in outcome but one clear finding emerging from the literature is that not everybody exposed to a trauma develops psychological difficulties. For example, Perrin et al. (2000) state that 'trauma is necessary but not sufficient to cause PTSD' (p.277). This has led to a growth in research aimed at identifying what factors are important in determining the outcome of trauma. Information within the literature on these factors can be grouped into 3 main areas:

i) Factors associated with the traumatic experience

ii) Factors associated with the individual child

iii) Factors associated with the child's recovery environment and family

Factors Associated with the Traumatic Experience

Research findings are somewhat mixed on the extent to which trauma characteristics influence outcome for children, however various subjective and objective aspects of the trauma experience have been identified. Objective trauma characteristics include the type of trauma, for example motor vehicle accidents being more likely to result in PTSD than falls and sports accidents (Gill, 2002). Severity of trauma exposure has also been identified (Bradburn, 1991, Yule et al., 1990), and reported to be the most widely accepted aetiological factor predicting PTSD symptoms (Meiser-Stedman, 2002). One study investigating the impact of a sniper attack in a school (Pynoos, Frederick, Nader, Arroyo, & Steinberg, 1987) found that children in the highest exposure group (those who were in the playground at the time of the attack) had higher symptoms of PTSD than children who were not at school or who had already left school at the time of the attack. Lonigan and colleagues (Lonigan, Shannon, Finch, Daugherty, & Taylor, 1991) studied children who had experienced a hurricane and found that children with greatest exposure had higher anxiety and PTSD symptoms. In addition, severity of physical injury has been reported to predict post trauma symptoms (Keppel-Benson et al., 2002) although other studies have not found severity of injury to affect outcome (Martini, Ryan, Nakayama, & Ramenofsky, 1990).

The importance of subjective aspects of trauma has also been identified, particularly as research indicates poor correlation between objective measures of injury severity and perceived injury severity (Bryant & Harvey, 1995). Subjective factors are reported to be at least as important as any objective characteristic of the trauma (Perrin et al., 2000). For example, degree of fear and perceived loss of control are

both reported risk factors for PTSD (Maes, Mylle, Delmeire, & Janca, 2001). Indeed, Jeavons and colleagues (Jeavons, Greenwood, & Horne, 2000) studied 72 consecutive adult attendees to hospital following motor vehicle accidents and found that initial cognitions such as perceived life threat had stronger links to subsequent psychological trauma at 3 and 6 months post-trauma than demographic variables and details of the accident. Workers have suggested that subjective appraisal helps explain why some children can be significantly affected by objectively minor traumas (Joseph, Williams, & Yule, 1997; Stallard et al., 1999).

Factors Associated with the Individual Child

A number of child characteristics have been identified as influencing trauma outcome including demographic factors such as age, gender, ethnicity and socio-economic status, and intellectual and psychological functioning. However research findings have been extremely inconsistent (Winje & Ulvik, 1998).

A review of the literature on aetiological factors involved in the development of PTSD in children and adolescents revealed mixed findings on age with the majority of studies reporting non-significant findings (Foy, Madvig, Pynoos, & Camilleri, 1996). While some significant effects of age have been reported with studies finding older children to be more at risk of psychological difficulties such as PTSD, anxiety and depressive symptoms following trauma (De Vries et al., 1999; Keppel-Benson et al., 2002; Vogel & Vernberg, 1993), other studies have reported the opposite. For example, McDermott & Palmer (2002) assessed 2379 children, aged 8-19 years, 6-months after a bushfire disaster and found younger children to be more at risk with significantly higher rates of depressive symptoms and emotional distress in the

younger children (9-11 years) than the adolescents (>12 years). Other workers have offered explanations for the influence of age, for example Gill (2002) proposed that age has a significant impact on a child's perception and understanding of trauma while Vogel & Vernberg (1993) suggested that age differences in outcome are mediated by other factors including appraisal, coping style, and children's beliefs about control.

Research findings on the role of other demographic factors have also been inconclusive. With regards to gender, some studies indicate that girls are more at risk of psychological difficulties following trauma (Stallard et al., 1998; Yule et al., 2000), while others have reported that girls experience more internalising symptoms and boys more externalising symptoms (Winje & Ulvik, 1998). However, many studies have failed to find any significant effects of gender or other demographic factors such as socio-economic status or ethnicity (Aaron et al., 1999).

Research in adults has identified the influence of personality and psychiatric history on trauma outcome (Maes et al., 2001). However research on pre-trauma personality factors and adjustment to trauma in children is lacking (Udwin et al., 2000) although it has been suggested that individual differences in children's behavioural, emotional and physiological responsiveness can influence both their response to traumatic experiences and their use of coping strategies (Davis & Siegel, 1992). A number of studies have found pre-trauma psychological difficulties such as anxiety and other internalising behaviours to increase risk of adverse outcome following trauma (Aaron et al., 1999; La Greca, Silverman, Vernberg, & Roberts, 2002). Intellectual

functioning has also been identified as affecting trauma outcome, with high academic functioning associated with decreased risk of adverse outcome (Udwin et al., 2000).

Factors Associated with the Child's Recovery Environment

Various factors relating to the immediate and wider recovery environment appear to affect children's response to trauma (Keppel-Benson & Ollendick, 1993). Impoverished family climate and poor family functioning has been associated with adverse outcomes (Winje & Ulvik, 1998; Tiet et al., 1998) while family stability is linked to good outcome (Davis & Siegel, 2000). Indeed, LeDoux et al. (1998) assessed psychosocial adjustment of burns survivors and found family cohesion and support were crucial factors in the family's coping with trauma and the long-term psychosocial adjustment of the burned child.

Recent research has highlighted the impact that childhood trauma has on the family. One such study which prospectively assessed the effects of injuries on 92 children and their immediate families, found that mothers experienced significant levels of anxiety and depressive symptoms themselves (Wesson et al., 1992) while other studies have reported even higher rates of distress in parents than their children (Landolt et al., 1998). The way in which parents respond to traumatic events is crucial, reportedly being the best predictor of child adjustment (McFarlane, 1987), with parental distress and psychopathology being consistently linked with PTSD in children (Davis et al., 2000; Tiet et al., 1998). Although not all studies report significant associations between parent and child trauma symptoms (McDermott & Cvitanovich, 2000; Parker, Watts, & Allsopp, 1995), many studies have produced significant findings (Foy et al., 1996; Smith et al., 2001; Winje & Ulvik, 1998) and

several explanations have been offered for these findings. It has been suggested that parental over-reaction may raise child anxiety (Pynoos, Steinberg, & Piacentini, 1999), particularly as children often rely on their parents' appraisals of threat, therefore parents showing emotional distress is likely to result in similar responses in their children (Sullivan, Saylor, & Foster, 1991). Other workers have proposed that psychological distress in parents may interfere with their capacity to be attentive to their child's needs or provide emotional support (Winje & Ulvik, 1998).

The wider environment has also been identified as playing a significant role in trauma outcome, with studies identifying the importance of sources of support available to the child and family after traumatic events (Amaya-Jackson & March, 1995; Yule, 1999). Children with higher levels of social support from parents, teachers and peers have been found to report fewer symptoms of PTSD (La Greca et al., 2002). Indeed, the importance of social support has been well documented in the literature and will be discussed in greater detail later in this review.

Interaction between Risk and Protective Factors

Current evidence highlights the complexity of trauma experiences with numerous risk and protective factors influencing outcome. It is widely recognised that risk factors interact (Davis & Siegel, 2000), and Jones & Barlow (1992) highlighted this complexity proposing that PTSD develops out of a complex interaction between biological and psychological predispositions, stressful events, the development of anxiety and the adequacy of coping strategies and social support. Coping strategies and social support have been identified repeatedly in the literature (Keane, 1996;

Vernberg et al., 1996) as important areas for further study and will be the focus of the next two sections of this review.

1.5 COPING

The importance of coping strategies in mediating the effects of stress have been well documented with research indicating that it is not stressors alone that have an impact on outcome but the way individuals perceive and respond to them (Horesh et al., 1996). A number of studies have explored the use of coping strategies following traumatic events (Stallard et al., 2001; Vernberg et al., 1996), and findings suggest that coping efforts play an important role in the onset and maintenance of a wide range of psychological distress and psychopathology during childhood and adolescence (Compas, Orosan, & Grant, 1993).

The definition and conceptualisation of children's coping was initially derived from the adult coping literature with one of the most commonly used definitions of coping being that of Lazarus & Folkman (1984) who defined coping as the "continually changing behavioural and cognitive efforts to manage external and/or internal demands that are appraised as exceeding the individual's resources" (p.141). However this definition was recently criticised by Compas and colleagues (2001) for overlooking the contextual factors in childhood coping. They proposed instead that coping be defined as:

> "Volitional efforts to regulate emotion, cognition, behaviour, physiology and the environment in response to stressful events or circumstances. These regulatory processes both draw on and are constrained by the biological, cognitive, social

and emotional development of the individual. An individual's developmental level both contributes to the resources that are available for coping and limits the types of coping responses the individual can enact" (p. 89).

The Conceptualisation of Coping

There is an extensive literature on coping within clinical psychology, encompassing theory, research and clinical practice, however the conceptualisation of coping remains highly complex. Many different types of coping have been identified in children and adolescents including: problem-solving, information-seeking, cognitive restructuring, catastrophising, acceptance, distraction, avoidance, self-criticism, wishful thinking, humour, social withdrawal, denial, substance use, seeking social support, and use of religion (Compas et al., 2001). Such diversity has led to various attempts at grouping these coping strategies, resulting in numerous models and theoretical frameworks of coping, and numerous measures to assess the various categories of coping (Fields & Prinz, 1997). The main categories of coping include the following:

Problem/Emotion-Focused Coping which classifies coping according to function with problem-focused efforts aimed at modifying the stressor, and emotion-focused efforts aimed at addressing the resulting emotional states (Compas et al., 2001).

Primary/Secondary Control Coping which classifies coping according to underlying goals, primary control being aimed at altering the situation or one's emotions, while secondary control is aimed at altering oneself to fit the situation (e.g. acceptance).

Approach/avoidance coping is another commonly used conceptualisation (Roth & Cohen, 1986), approach-type coping strategies including attempts to resolve a situation or think about it differently, while avoidance-type strategies include cognitive or behavioural attempts to escape or minimise a situation. Other similar dichotomies include monitoring/blunting (Miller, 1987), active/passive coping (Ebata & Moos, 1991), and engagement/disengagement coping (Compas et al., 2001).

An alternative approach to conceptualising coping has been the dimensional approach, involving even broader dimensions of coping, although there is again lack of consensus as to what these dimensions should be. Compas and colleagues (Compas, Banez, Malcarne, & Worsham, 1991) proposed two dimensions, the first encompassing strategies to manage the stressful event, and the second including strategies to manage the negative emotions associated with the stressful event. However these dimensions were criticised by Fields & Prinz (1997) for being too broad and blurring the boundaries between approach/avoidance, and problem/emotion focused coping. They suggested alternative dimensions: an emotion/problem focused dimension encompassing primary/secondary strategies and specific types of coping strategies, and an approach/avoidance dimension encompassing monitoring/blunting, active/passive and other similar categories of coping strategy. More recently, Compas et al. (2001) have proposed an alternative model distinguishing between voluntary and involuntary control coping, with a third dimension of engagement/disengagement coping.

In contrast to the largely theoretically driven approach above, other workers have developed empirically derived categories of coping based on factor analysis of

coping data (Walker, Smith, Garber, & Van Slyke, 1997). Such methods are recommended even when using well-validated measures such as the COPE (Carver, Scheier, & Weintraub, 1989) and are reported to provide information more specific to the target population and stressor being investigated (Fields & Prinz, 1997). One such study used confirmatory data analysis of 10 coping scales administered to children (Ayers, Sandler, West, & Roosa, 1996) and identified 4 factors: active coping, social support, distraction and avoidance. These factors have been found to more adequately reflect the structure of coping in young people than the traditional distinctions of coping (Ayers et al., 1996; Sandler, Tein, & West, 1994).

It is clear therefore that there is lack of clarity and consensus in the conceptualisation of coping, and this has led to confusion in measurement and difficulties comparing findings across studies, preventing the development of a cohesive picture of coping in childhood and adolescence (Compas et al., 2001).

Coping Style and Adjustment to Trauma

Coping style has been documented in the literature as being central to adjustment following exposure to trauma (Amir et al., 1997). Research findings indicate that coping style can influence the transition from distress to disorder, and the maintenance of psychological difficulties (Dalgleish, Joseph, Tranah, & Yule, 1996).

A number of coping styles have been identified as being linked to better outcome following trauma, including problem-focused coping and engagement styles of coping (Compas et al., 2001). Other studies have found all coping styles except avoidant coping to be helpful in reducing post trauma symptoms (Johnsen et al.,

2002). Indeed avoidant coping has been repeatedly linked to PTSD (Eid, Johnsen, & Thayer, 2001), and other psychological difficulties such as depressive symptoms (Reynolds & Brewin, 1998). One study compared coping styles in adult patients with PTSD, anxious patients, and healthy controls, and found that those with PTSD scored significantly higher on suppression coping (cognitive or behavioural avoidance) and that this type of coping was positively correlated with core PTSD symptoms of intrusion and avoidance (Amir et al., 1997). Similarly, Bryant & Harvey (1995) found avoidant coping to be the main predictor of post-traumatic intrusive symptoms in adults, 12 months after a motor vehicle accident. They offered a number of possible reasons for this, suggesting that avoidance prevents identification of PTSD, is associated with poor help-seeking behaviour, and prevents habituation to trauma-related material.

A number of trauma studies in children have also reported negative effects of avoidance coping in preventing habituation of fears (Gillies, Barton, & Di Gallo, 2003; Ollendick, Langley, Jones, & Kephart, 2001). One study of children who had experienced acute physical injury (Aaron et al., 1999) found that some children allowed themselves to think about the event while others coped by trying to suppress thoughts and feelings about the event, this latter group appearing to be at increased risk for subsequent PTSD and negative outcome. Seiffge-Krenke (2000) reported that avoidant coping in adolescents leads to emotional and behavioural problems, which then cause increased withdrawal and so forth, creating a vicious cycle. However, other workers have found coping styles to have more limited predictive power for PTSD (Spurrel & MacFarlane, 1993), and some have suggested that the significant associations between coping strategies and PTSD symptoms may simply reflect

confounds in the measures of coping type and symptoms, for example distraction coping representing the avoidance cluster of PTSD (Stallard et al., 2001).

Recent literature has also highlighted important differences between adult and child coping, suggesting the need for caution when generalising from adults to children (Resick, 2001). For example, Chaffin, Wherry and Dickman (1997) studied the impact of children's coping following sexual abuse, using the Kidcope (Spirito, Stark, & Williams, 1988), and found some benefits of avoidant-coping. The authors suggested however that while avoidance may buffer initial stress, it might prevent later cognitive processing required for long-term trauma resolution. Supporting this, Gillies and colleagues (2003) followed up a cohort of children aged 5-18-years old who had experienced an RTA (Di Gallo et al., 1997) and found that some children were symptomatic 18-months later who had not been previously. The authors suggested this may be due to previous post-trauma avoidance of questions producing asymptomatic false negative results, and once the avoidance has resolved, participants were able to report post-trauma symptoms. They proposed that avoidance may hinder recovery by preventing participants from confronting feared situations and addressing associated anxiety.

Vernberg and colleagues (1996) also used the Kidcope in their study of 568 children following Hurricane Andrew. They identified 4 coping factors: wishful thinking, positive coping, social withdrawal and blame/anger, and reported that blame and anger although used least frequently were linked with highest PTSD symptoms. The study found a strong relationship between greater use of coping efforts and psychological distress, and supported a bi-directional relationship indicating that

high levels of distress following trauma may elicit a variety of positive and negative coping strategies. However, the follow-up period of 3-months in this study was relatively short and as recognised by the authors, differences in coping may emerge later in the course of the children's adjustment.

Stallard and colleagues (2001) employed a longer follow-up period in their assessment of 97 children, 6 weeks after an RTA, and again 8-months later for a subgroup of 36 children. They found that children used a range of coping strategies, those with PTSD using more strategies, particularly distraction, social withdrawal, emotional regulation and blaming others. They concluded that distress elicits increased use of coping strategies even if these only bring temporary relief.

A recent literature review highlighted the variation in findings on the relationship between coping strategies and psychological adjustment in young people (Compas et al., 2001). Nevertheless, some overall patterns were reported including an association between engagement and problem-focused coping, and better psychological adjustment, while disengagement and emotion-focused coping were generally associated with poorer adjustment. In addition, the authors emphasised the need to consider contextual factors, observing that stressor controllability affected which coping strategies were helpful. The importance of contextual factors has also been highlighted by Field & Prinz (1997) who report that "aspects of development and environment may limit the coping responses children are capable of making and the coping strategies promoting adjustment in children may differ from those promoting adjustment in adults" (p 938). Indeed, research indicates that contextual factors may be of particular significance in children's post-trauma coping (Vernberg et al., 1996).

Trauma-related Contextual Factors and Post-trauma Coping in Children

Post-trauma coping in children has been found to be related to a number of trauma-related contextual factors. Workers have linked coping to prior experience of stressful events, indicating that previous experiences can provide coping strategies for future events (Martini et al., 1990). One explanation given for this is that individuals gain a greater feeling of control over the event and confidence in their ability to cope (Hardy et al., 1993). Indeed, as already reported, controllability of the traumatic event has been found to have a significant impact on the effectiveness of coping strategies (Field & Prinz, 1997). While approach-coping and problem-focused coping strategies are generally considered effective, studies have found that when events are uncontrollable, emotion-focused coping and even avoidant coping strategies may be more helpful (Hardy et al., 1993)

Other workers have identified the role of event characteristics. Compas & Epping (1993) suggest children might cope with different types of disasters in qualitatively different ways, and that children's coping varies over time. Such findings were highlighted in a study of children's coping with planned medical procedures (Peterson, 1989). The study found that at appraisal stage when children learned about the need for the procedure, those who used active coping such as asking questions, were more likely to use proactive encounter coping such as sensory focus during the procedure (encounter stage) whereas children who avoided information at the appraisal stage were more likely to use reactive encounter coping (e.g. aggressive behaviour during the procedure). However, few studies have assessed the sequential pattern of children's coping over time, following traumatic unexpected events (Compas & Epping, 1993) therefore further research is needed in this area.

Child Factors and Post-trauma Coping in Children

Research suggests several child-related factors, including age, gender and temperament may contribute to differences in children's post-trauma coping. Indeed, the effect of age on children's coping styles has received considerable attention, although fewer studies have focused specifically on age-related differences in post-trauma coping. A recent study by Williams and McGillicuddy-de-Lisi (2000) investigated the factors influencing coping with daily hassles and major life events in 109 adolescents aged 10-20-years old. They found that older adolescents used a greater variety of coping strategies to directly reduce the impact of stress, and more cognitive strategies than younger adolescents. An earlier study (Compas, Worsham, & Ey, 1992) used a wider age range (6-35-years) to assess age-related differences in coping with parental cancer, and found that younger children used significantly less emotion-focused coping although no differences were found in problem-focused coping. However, other workers have failed to find significant effects of age and Fields & Printz (1997) observed that studies have found more similarities than differences across different age groups, although they did report overall shifts in coping as children get older, to more differentiation in coping style and specificity of strategies based on type of stressor.

Age-related differences in coping and the emergence of different coping strategies at different points in development have been attributed to variations in children's cognitive, social, emotional and biological development (Compas & Epping, 1993). They proposed that problem-focused skills appear earlier because they involve overt observable behaviours which are more readily acquired through modelling of adult behaviours whereas emotion-focused strategies emerge later because they are less

easily learned and because younger children have less access to internal emotional states and don't recognise they can self-regulate their emotions.

Gender differences in post-trauma coping have also been identified (Stallard et al., 2001). For example, Curle and Williams (1996) assessed psychological functioning and coping in young people following a near-fatal bus accident, and found that girls had higher scores on measures of anxiety, depression and symptoms of intrusion, and used more coping strategies than boys but that boys rated their coping strategies as more effective. Other workers report that boys and girls differ in which coping strategies they find most useful, with girls finding emotional expression more helpful and boys finding resignation more useful (Spirito et al., 1988). However, research findings have again been mixed and some studies have found no effect of gender on coping (Landolt, Vollrath, & Ribi, 2002). Williams and McGillicuddy-de-Lisi, (2000) also failed to find any significant gender differences and questioned previous findings from studies using hypothetical situations arguing that such findings may simply reflect the fact that boys and girls have been socialised to perceive stress differently. Stallard and colleagues (2001) made similar criticisms, questioning the generalisability of such studies to children involved in significant traumatic events.

Finally, post-trauma coping styles in children have also been linked to personality factors. Kardum and Krapic (2001) assessed adolescent coping with stressful life events and found extraversion had a direct positive effect on problem-focused and emotion-focused coping styles, whereas neuroticism and psychoticism had direct positive effects on avoidance coping. Aspects of temperament including reactivity to stress, and behavioural and emotional regulation have also been identified, regulation

skills reportedly providing an important set of resources for children to draw upon when having to cope with stress (Compas et al., 2001). However, no studies have measured these factors in children exposed to trauma and further research is needed.

Wider Contextual Factors and Post-trauma Coping in Children

Coping with traumatic events occurs in a social context and contextual factors in children's environments are reported to serve both as resources and blocks to effective coping (Compas & Epping, 1993). For example it has been noted that children have personal and financial dependence on their parents, less control over their circumstances, and are less able to avoid certain situations (Resick, 2001). The social environment and resources have also been identified as playing a role in predicting children's coping style. For example, lower social economic status has been linked to increased use of religious coping (Landolt et al., 2002).

One of the most important aspects of children's environments is their family and several family-related factors have been reported to influence post-trauma coping. The importance of family response following trauma has been highlighted (Compas & Epping, 1993) and it has been suggested that children may have to cope not only with the trauma but additional stressors such as parental distress (Curle & Williams, 1996). A recent study comparing coping and anxiety in children of anxious and non-anxious parents, found that anxious parents engaged in significantly less adaptive coping and greater maladaptive coping than non-anxious parents, and that parental anxiety significantly predicted child problem-solving, although children did not differ significantly in their coping styles (Buckley, 2004). Other workers have identified the role of parenting in the development of children's coping styles (Hardy

et al., 1993) while Salmon and Bryant (2002) assert the importance of children having an adult to support them in processing and coping adaptively with trauma. However, very few studies have compared parent and child coping style following trauma or investigated the link between coping and family support, and further research is needed

Limitations of Coping Research

Much research has been conducted into child and adolescent coping, and recent years have seen great advances in understanding, however the limitations of the research to date must be considered. Many studies have been cross-sectional and retrospective, making it difficult to infer causality or identify the direction of the relationship between coping and adjustment. The timing of research has also been problematic, some studies assessing participants too late to capture immediate symptoms and coping strategies, and even fewer studies having sufficient duration to track longer-term coping and adjustment. Many studies have used hypothetical stressors rather than actual events thereby preventing assessment of contextual influences (Compas et al., 2001) and limiting their generalisability to trauma. In addition, heterogeneous research samples, different time-points in assessment, and different approaches to defining and categorising children's coping have made it difficult to compare study findings (Landolt et al., 2002).

Further research is needed that addresses these limitations, including specific studies of coping in children following trauma. Such studies need to consider the contextual factors influencing children's post-trauma coping, including the wider social environment. Social support is one such area that has been highlighted in recent

years and the next section will review the literature on social support, in particular focusing on its role in children's mental health and coping following trauma.

1.6 SOCIAL SUPPORT

Social support has been well documented as having a major impact on mental health and has emerged consistently as an important factor moderating the effects of trauma (Stephens, Long, & Miller, 1997). It has been suggested that social support facilitates psychological well-being by preventing isolation and enabling individuals to feel valued, loved and understood, and aware that help is available if needed, thereby fostering self-esteem, self-assurance and feelings of security and control over oneself and the environment (Nestmann & Hurrelmann, 1994).

Many definitions of social support have been developed over the years and there remains a lack of consensus (Williams, Barclay, & Schmied, 2004), however a widely accepted definition of social support is that of House and Kahn (1985), who assert that social support is emotional, instrumental, informational and appraisal assistance.

The Conceptualisation of Social Support

One of the main challenges for research into social support has been the vast conceptual range of the term social support (Weber, 1998). Some workers have defined social support in structural terms, such as Cohen (1988) who distinguished between social networks (size, dispersion and frequency of contacts), social relationships (existence, type and quantity of relationships), and functional aspects of

social support (type, quantity and quality of support). Others have used conceptual definitions of social support (Barrera, 1986) distinguishing between social embeddedness (connections to others in social environment), perceived support (knowing that support is available if needed), and enacted support (provision of support by others). A more commonly used approach is the functional approach, which describes social support by function (House & Kahn, 1985; Quick, Nelson, Matuszek, Whittington, & Quick, 1996).

Current social support literature differentiates between perceived and received support, and it is claimed that perceived support (belief that help is available if needed) is the most important aspect of social support (Sarason, Sarason, & Pierce, 1990). This view was supported by Norris and Kaniasty (1996), who found perceived support had beneficial effects on well-being whereas received support had negative effects, the authors suggesting that this may be because received support turned out to be inappropriate or inept. Sarason and colleagues (1990) state that perceived support (a sense of social acceptance) remains quite stable over time, is characterised by a strong sense of self-efficacy, and leads to adaptive behaviour under stress, low levels of anxiety, positive self-image, and positive expectation of interactions with others. It has been questioned whether measures of perceived social support reflect actual availability of support but evidence indicates that self-reports of perceived social support are generally accurate (Schwarzer & Leppin, 1991)

Social Support and Child Adjustment following Trauma

There is general agreement in the literature that individuals with strong social support are able to cope more effectively with life stresses than those lacking such

resources (Cohen & Wills, 1985). Social support has been repeatedly identified as a critical component of recovery after trauma (Bloom, 1999), lack of post-trauma social support reportedly increasing the risk of PTSD (Perry, Difede, Musngi, Frances, & Jacobsberg, 1992), psychological distress (Landsman et al., 1990), and problems in behavioural and academic adjustment (Dubow et al., 1991).

Buckley, Blanchard and Hickling (1996) assessed adult victims of motor vehicle accidents (MVA) and found that those who developed PTSD had significantly poorer social support prior to and after the MVA than those who did not develop PTSD. They suggested that social support might be a connecting point for post-trauma physical and psychological problems. Studies of childhood trauma have reported similar findings. For example, availability of social support following the Jupiter shipping disaster was significantly related to severity and chronicity of PTSD in children (Udwin et al., 2000). This study highlighted the particular importance of school support although information was lacking on the nature of this support.

Research has also been conducted into the different types and functions of social support for children exposed to stressors. Family support has been identified as vital in facilitating child adjustment (Vogel & Vernberg, 1993), peer support has been found to facilitate adjustment through companionship, intimacy and feelings of acceptance (La Greca et al., 1995; Parker & Asher, 1993), and teacher support has been reported as helpful in providing information and enabling children to re-establish familiar roles and routines (Klingman, 1993; Vogel & Vernberg, 1993). Vernberg and colleagues (1996) compared different types of social support available to children following a hurricane and found that different people (parents, peers,

teachers) offered different types of support, filling different needs. They concluded that access to multiple sources of support seems preferable. Similarly, a more recent study of social support following physical abuse found that both family and peer support were important for children's psychological functioning (Ezzell et al., 2000). However, research indicates that social support may not always be helpful, for example a recent review of research on stress, coping and adjustment in children with chronic illness found that adult's attempts to provide support to children can sometimes be more interfering than supportive (Boekaerts & Roder, 1999).

Workers have identified various other factors that may influence the effectiveness of social support. Wilcox and Vernberg (1985) observed that the usefulness of supportive relationships varies according to the type of stressor, and type of support. Others have reported differences according to child age and gender (Kager & Holden, 1992). For example, it has been reported that during adolescence, the salience of the peer group increases and the importance of family support decreases (Laursen, 1996; Rudolph & Hammen, 1999). However other workers argue that family support assumes greatest importance again at times of high stress (Weigel, Devereux, Leigh, & Ballard-Reisch, 1998).

Social Support: Mechanisms of Action

Recent years have seen efforts directed toward understanding how social support mediates the effects of stress (Chou, 2000). Cohen and Wills (1985) have suggested two possible ways in which social support affects coping with stressful events. Their main-effect hypothesis proposes that social support has a direct effect on mental health (independent of stress) with social networks providing regular positive

experiences, socially rewarding roles, and feelings of being cared for. Their stress-buffering hypothesis proposes however that social support has an indirect effect, buffering the negative consequences of stressful events, by acting as a coping resource and influencing coping strategies used.

The main effect hypothesis has been well supported by research linking social support with psychological functioning in children and adolescents (Tremblay, Hebert, & Piche, 1999). The buffering role of social support in post-trauma coping has been less extensively studied, although Llabre and Hadi (1997) found that social support buffered the effects of war-related trauma in adolescents by allowing them to express their emotions and confront unpleasant thoughts and remnants of the event. Both hypotheses were tested in a more recent study of social support in adolescent well-being and coping with stress (Bal et al., 2003). The main-effect hypothesis was supported with higher social support being significantly associated with fewer trauma-related symptoms. The buffer hypothesis was less well sustained, as social support did not moderate the relationship between stressful events and coping, however some trends were found. For example, in non-sexually abusive events, high family support was associated with less avoidance coping and more support seeking. Further studies using a longitudinal design are needed to help clarify the effects of social support on the post-trauma adjustment of young people.

Social Support and Coping Style

A common theme emerging from the literature is the close relationship between social support and coping style. This has been reported in many areas of physical and mental health. For example workers reporting on adjustment to schizophrenia have

proposed that social support may contribute to better adjustment through its impact on coping processes whereas maladaptive coping may contribute to ineffective use of support (Hultman, Wieselgren, & Ohman, 1997). In their review of research on adjustment to chronic illness, Boekaerts and Roder (1999) assert that children's coping strategies (personal resources) and borrowed resources (social support) shared adaptational outcomes and therefore need to be studied in combination.

Trauma studies have frequently reported a relationship between social support and post-trauma coping in young people. However, less is known about how social support interacts with coping following a stressful event (Bal et al., 2003), although some workers have developed models attempting to explain the nature of this relationship (La Greca et al., 2002). One study found that that avoidant coping in adolescents following stressful events was determined in part by their perception of the availability of social support (Spaccarelli, 1994). Others have identified the family as the logical starting point for understanding how social support affects coping (Bal et al., 2003). Indeed Compas and Epping (1993) describe the family as "pre-eminent in understanding coping processes in response to disasters" (p. 96), and proposed several ways in which family processes may be related to child coping:

1. Family members can serve as resources for children by providing social support and information, or they can interrupt or constrain child coping
2. Disasters may impede a family's ability to aid coping if there is separation or loss of family members after the event
3. Family members especially parents can serve as models for coping strategies
4. Families can generate rules and enact regulatory processes that influence coping strategies used by individual family members

5. Families operate as systems in which coping efforts of individual family members may affect and be affected by coping efforts of other members

Limitations of Social Support Research

There is an extensive evidence base on social support and its influence on mental health. However, the role of social support on post-trauma coping in children is less well researched, and many studies in this area share some common weaknesses, limiting the conclusions that can be drawn. The first limitation relates to a fundamental issue surrounding the conceptualisation of social support and lack of consensus over its definition. Williams, Barclay and Schmied (2004) reported that this often results in studies using social support definitions, which lack contextual sensitivity, undermining the validity of their results. In addition, they observed that studies have adopted very different methodological approaches, making it difficult to compare findings across studies. Other workers have identified limitations in design with social support studies frequently using cross-sectional designs, which are not ideal to examine the buffering effect of social support (Bal et al., 2003) and limit the conclusions that can be drawn about causal effects (Weber, 1998).

The measurement of social support is another area that has attracted much criticism, particularly as no gold-standard measure has yet been developed (Barrera, 1986). Studies have therefore utilised a vast range of different instruments, measuring different aspects of social support obtained from a range of different perspectives (e.g. self-report, parent report, and observation). Studies have also varied in the samples they use, which is of particular relevance for trauma research as stressor-type is likely to have a significant impact on the role and effectiveness of social

support in mediating outcome (Dubow, Tisak, Cause, Hryshko, & Reid, 1991), therefore affecting the generalisability of findings.

1.7 MODELS OF POST-TRAUMA ADJUSTMENT

Various models have been developed to help explain post-trauma adjustment including information-processing models (Horowitz, 1986), models emphasising the neurophysiological effects of trauma on brain development (Schwartz & Perry, 1994), cognitive models (Brewin, Daldgleish, & Joseph, 1996; Ehlers & Clark, 2000), and multifactorial models (Fletcher, 1996; Pynoos et al., 1995; Vernberg et al., 1996). Many models have tended to focus on PTSD, to the neglect of the other psychological and behavioural difficulties frequently experienced following trauma. In addition, most models have been adult-based although recent years have seen increasing attempts to adapt these models to children and adolescents. Full discussion of the models of post-trauma adjustment is beyond the scope of this literature review, however recent influential cognitive behavioural models will be summarised, with a focus on the extension of models to children through multifactorial models of post-trauma adjustment.

One model, which has contributed to recent understanding of post-trauma adjustment, is Elhers and Clark's (2000) cognitive model of PTSD. This model draws heavily on the dual representation model of Brewin and colleagues (see Brewin et al., 1996), and highlights two processes leading to the development of PTSD symptoms. Firstly, the individual negatively appraises the trauma (e.g. "nowhere is safe") and/or its sequelae (e.g. "I'll never get over this"), and secondly, the memory of the trauma is inadequately integrated with other autobiographical

memory leading to poor intentional recall of the trauma, involuntary re-experiencing and an activated sense of current threat. This results in dysfunctional coping strategies (e.g. thought suppression, rumination) intended to reduce the perceived threat but which maintain the disorder by preventing cognitive change. Although this model was developed in the context of adult reactions to trauma, it was recently found to predict PTSD chronicity and severity in children and adolescents following road traffic accidents (Ehlers, Mayou, & Bryant, 2003).

This cognitive model has received some support in the literature, a recent review examining the theoretical understanding of children's reactions to trauma (Meiser-Stedman, 2002) finding evidence that cognitive processes (e.g. thought suppression, distraction and rumination) are involved in the maintenance of PTSD in children and adolescents (Aaron et al., 1999; Ehlers et al., 2003; Stallard et al., 2001). However Meiser-Stedman (2002) also identified the need to consider such models in the context of other factors such as pre-traumatic psychological disorders and emotional disorders after the trauma, and the family's role in facilitating emotional processing, enabling the child to verbalise the traumatic event, and influencing the child's appraisals and coping styles. This was further supported by Salmon and Bryant (2002) who criticised existing cognitive theories for not giving adequate attention to the role of social and developmental-contextual factors. They again highlighted the role of the family in helping children to talk about and appraise their difficult experiences, regulate their emotions, and adopt helpful coping strategies, but also the role of developmental issues (e.g. language development) affecting how children encode and resolve trauma.

Recognition of these contextual factors has led several workers to develop multifactorial models of post-trauma adjustment. Joseph et al. (1997) reported that the chronicity and severity of reactions to traumatic events are related not only to the event itself but also a function of other psychosocial factors. They stated that "the individual's appraisal of the experience, the support received from others and the life-events subsequent to disaster may all exacerbate symptoms" (p.145), and developed an integrative model of adaptation to traumatic stressors encompassing these psychosocial factors. Focusing on children's reactions to trauma, Pynoos and colleagues (Pynoos et al., 1995) developed a developmental life-trajectory model, proposing that children's reactions are influenced by the nature of the traumatic experience, subsequent trauma reminders and secondary stressors (e.g. changes to family), factors intrinsic to the child (e.g. genetic disposition and developmental competencies), and the ecology of the child (parent, school and peer factors).

Vernberg and colleagues (1996) developed a similar integrative conceptual model guided by previous theory and research, and based on 568 children exposed to a hurricane. Their model identifies 4 primary factors: exposure to trauma, child characteristics, access to social support and coping style, and is explicit about the links between these factors. For example, it states that level of trauma exposure (perceived life threat, number of life-threatening experiences and number of loss-disruption experiences) is likely to influence children's access to social support and their use of coping strategies, that child characteristics (age, gender, ethnicity) may also influence access to social support and coping style, and that the social environment (social support) exerts effects on PTSD symptoms after the initial shock of trauma has occurred. Testing of this model found that the 4 factors accounted for

62% of variance in PTSD symptoms. The study had some limitations, only using child-report measures, and had a relatively short follow-up period of 3-months. However, follow-up of the same sample 7 and 10 months after the event (La Greca et al., 1996) found that the model accounted for less variance in PTSD symptomology. It has been suggested that the success of this model may have been due to the trauma being relatively moderate, and that social support and coping style have a more pronounced protective effect with less severe traumatic events (Meiser-Stedman, 2002). Further work is therefore needed, testing the model with a range of traumatic events, however it highlights some important areas of focus for future research and intervention with children exposed to trauma.

2.8 CONCLUSIONS

The literature on post-trauma adjustment in children is now fairly extensive as a result of the recent growth in research interest in this area. It is becoming increasingly apparent that a number of factors play a role in the development of posttraumatic stress symptoms and other psychosocial difficulties following exposure to trauma. Research indicates that contextual factors including coping style and social support may be of particular importance in post-trauma adjustment of children and adolescents.

Understanding of such factors is crucial, as unlike the trauma itself, these are often potentially modifiable and therefore possible targets for therapeutic intervention (Joseph et al., 1997). However, the evidence base remains inconclusive, with studies producing widely varying findings. This is not surprising given that research in this area has been extremely diverse with studies focusing on different samples (clinical

and non-clinical), different types of trauma, and different age groups. In addition, research methodology has varied greatly, with studies using different assessment measures, different informants (i.e. child, parent or other informants), and different follow-up periods. Such variations in research are likely to have contributed greatly to the lack of a coherent picture regarding childhood trauma.

It remains unclear whether risk factors reflect a specific predisposition to PTSD or a more general predisposition to mental illness (Weisaeth, 1998). This has not been helped by the fact that much of the work to date has focused on PTSD and neglected other potential consequences of trauma. Future research needs to consider other psychosocial outcomes including depression, other psychological difficulties, behavioural difficulties, and social and academic functioning (Meiser-Stedman, 2002). Indeed, a PTSD diagnosis (APA, 1994) itself requires that symptoms cause clinically significant impairment in social, occupational or other areas of functioning (Kuhn, Blanchard, & Hickling, 2003), emphasising the need to assess wider functioning. Going beyond this focus on PTSD, others have commented on the frequency of other comorbid disorders following trauma (McMillen, North, Mosley, & Smith, 2002) and the need to assess the wider ramifications of trauma on children's quality of everyday life (Lucas, 2003; Mayou et al., 2002).

The literature is also unclear on the mechanisms by which potential risk factors might contribute to trauma outcome although some explanations have been offered. For example, it has been proposed that traumatic events result in a cascade of secondary stresses in the child's recovery environment (e.g. physical injury preventing the child from attending school and accessing peer support) thereby

causing additional distress and complicating efforts to adjust (La Greca et al., 2002; Pynoos et al., 1999).

One clear finding to emerge from the literature is the complexity of trauma outcome and the interaction between the various risk and protective factors. Conceptualisations of post trauma adjustment need to reflect this and a number of potentially valuable models have been developed such as that of Vernberg and colleagues (1996). There is mounting evidence for these multifactorial models of post-trauma adjustment particularly in children and adolescents. Such evidence has significant implications for clinical intervention and future research. There is growing emphasis on the need for mental health professionals to consider the broad range of contextual factors influencing children's reactions to trauma (Compas & Epping, 1993; Vernberg et al., 1996).

Future research into childhood post-trauma adjustment needs to focus on the possible risk and protective factors, examining both their unique and combined effects, on children exposed to a range of different trauma types. This work will be vital in furthering current understanding of the complex nature of post-trauma adjustment in children and adolescents. Two areas that have clearly emerged from the literature are coping and social support. Current evidence on coping and social support suggests that these two factors may have particular influence on post-trauma adjustment, particularly among children and adolescents, and are therefore important areas for future research.

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CHAPTER 2

EMPIRICAL PAPER

THE IMPACT OF SOCIAL SUPPORT AND COPING STYLE ON POST-TRAUMA SYMPTOMS IN CHILDREN FOLLOWING TRAUMATIC EVENTS

2.1 ABSTRACT

This paper examines the influence of coping style and social support on children's psychosocial functioning following relatively common traumatic events (e.g. road traffic accidents, assaults, and falls). Fifty-six children aged 7-14 years, and their main care-giver, were recruited from Accident & Emergency departments, and assessed 3-4 weeks after the traumatic event and again 3 months later, using a battery of interview and questionnaire measures. Children frequently experienced post-traumatic stress, anxiety and depressive symptoms following the trauma. These symptoms were associated with reduced social support and increased use of both positive and negative coping strategies, the latter finding is argued to indicate a bi-directional relationship between distress and coping. These results build on previous theory and research, and illustrate the value of multifactorial models of children's post-trauma adjustment, which consider children's personal resources and wider contextual factors.

THE IMPACT OF SOCIAL SUPPORT AND COPING STYLE ON POST-TRAUMA SYMPTOMS IN CHILDREN FOLLOWING TRAUMATIC EVENTS

Recent years have seen increasing interest in trauma and its impact on the psychosocial functioning of children. Research indicates that 25-40% of children experience at least one traumatic event in their life (Beony-McCoy & Finkelhor, 1995; Costello, Erkanli, Fairbank, & Angold, 2002). Studies have been conducted into various types of trauma including natural disasters, terrorist attacks, war, child abuse, and catastrophic accidents (McNally, 1996; Vernberg, La Greca, Silverman, & Prinstein, 1996; Yule et al., 2000) while other workers have focused on more common types of childhood trauma such as physical injuries and road traffic accidents (Landolt, Boehler, Schwager, Schallberger, & Nuessli, 1998; Stallard, Velleman, & Baldwin, 1998). Indeed it is estimated that 20% of children attend hospital each year following an accident (Roberts, DiGuiseppe, & Ward, 1998).

Early literature emphasised children's resilience in the face of such trauma with workers suggesting that children's psychological reactions to trauma were not as serious as those experienced by adults (Garmezy & Rutter, 1985). However recent research demonstrates that children can experience significant and long-lasting adverse effects of trauma, including posttraumatic stress symptoms, emotional difficulties and behavioural problems (Stallard, Velleman & Baldwin, 1999; Yule et al., 2000).

Research indicates that posttraumatic stress symptoms are the most common type of psychological distress in children following trauma (Vernberg et al., 1996).

According to DSM-IV (American Psychiatric Association, 1994), a diagnosis of PTSD requires that an individual has experienced, witnessed or learned about an event involving actual or threatened death, serious injury, or other threat to physical integrity to themselves, a family member or other close associate, and that their response has involved intense fear, helplessness, or horror. In addition, the individual must experience characteristic symptoms of trauma re-experiencing, avoidance, and increased arousal, which persist for more than 1 month and cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. Some differences have been identified in childhood PTSD and these are recognised in DSM-IV which states for example that intense fear, helplessness or horror may be expressed in children by disorganised or agitated behaviour (American Psychiatric Association, 1994).

The recognition of PTSD in children has lagged behind its recognition in adults (Davis & Siegel, 2000), however research indicates that children experience many of the same symptoms as adults and often meet criteria for a PTSD diagnosis (Fletcher, 1996; Perrin, Smith, & Yule, 2000; Yule et al., 2000). A metaanalysis of 34 research samples covering 2697 children found that 36% of children (compared to a rate of 24% in adults) met criteria for PTSD following trauma (Fletcher, 1996). However this masks the variation in reported rates of PTSD following trauma, which range from 0% to 93% (Earls, Smith, Reich, & Jung, 1988; Goldstein, Wampler, & Wise, 1997).

Some workers have criticised recent studies for their focus on PTSD and failure to assess the full spectrum of children's psychosocial functioning and wider

ramifications of trauma on children's quality of life (Kuhn, Blanchard, & Hickling, 2003; Lucas, 2003; Mayou, Ehlers, & Bryant, 2002). Numerous other psychosocial difficulties have been observed in children following trauma include anxiety and mood disturbances, sleep difficulties, anger and aggressive behaviour, cognitive and school performance problems (Vogel & Vernberg, 1993; Winje & Ulvik, 1998; Yule & Cantebury, 1994), communication and relationship difficulties, and social withdrawal (Lubitt, Rovine, Defrancisci, & Spencer, 2003). Fletcher (1996) reported that 36% of children showed diminished participation in activities following trauma, 41% had concentration difficulties, and 39% had generalised anxiety symptoms while other common symptoms included depression (25%) and separation anxiety (23%). Other workers have found that children frequently receive other diagnoses including specific and social phobias, generalised anxiety disorder, panic disorder, depressive disorders and behaviour disorders (Perrin et al., 2000). Such repercussions have been reported following road traffic accidents and other physical injuries (Basson et al., 1991; De Vries et al., 1999), even those involving more minor incidents (Trickey & Black, 2000), and have been found to continue for prolonged periods following exposure to trauma (Bolton, O'Ryan, Udwin, Boyle, & Yule, 2000; McDermott & Palmer, 2002).

One clear finding to emerge from the literature is the variability in trauma outcome, with some individuals experiencing significant short or long-term problems while others recover fully with no lasting effects (Resick, 2001). This has fuelled research aimed at identifying which factors influence symptom development following trauma (Johnsen, Eid, Laberg, & Thayer, 2002) and studies have identified various factors including aspects of the trauma itself, child-related characteristics, and the child's

recovery environment (Udwin, Boyle, Yule, Bolton, & O'Ryan, 2000). A comprehensive review of the literature found several areas emerging as key factors influencing outcome following trauma, in particular children's coping style, and social support.

The influence of coping style on post-trauma outcome has been well documented in the literature with coping style described as "central to the adjustment of the person after exposure to severe psychological trauma" (p. 400, Amir et al., 1997). Coping strategies that have been identified as being most adaptive following trauma include problem-focused coping and engagement styles of coping (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). In contrast, avoidant-type coping has been repeatedly linked to PTSD (Bryant & Harvey, 1995) and other psychological difficulties such as depression (Reynolds & Brewin, 1998).

Several workers have assessed children's coping following trauma (Di Gallo, Barton, & Parry-Jones, 1997; Stallard, Velleman, Langsford, & Baldwin, 2001; Vernberg et al., 1996) and findings indicate that coping style plays an important role in the onset and maintenance of a wide range of psychological distress and psychopathology during childhood and adolescence (Compas, Orosan, & Grant, 1993). However research has highlighted the complexity of child coping. For example, Fields and Printz (1997) reported that the "coping strategies promoting adjustment in children may differ from those promoting adjustment in adults" (p.938), in particular emphasising the developmental and environmental factors influencing children's coping responses. Supporting this, a recent review of the literature (Compas et al.,

2001) found great variation in findings on child coping style and trauma outcome, and emphasised the need to consider contextual factors.

Indeed, various factors have been found to influence children's coping including aspects of the trauma such as controllability (Fields & Printz, 1997), and child-related characteristics such as age, gender and personality factors (Kardum & Krapic, 2001; Stallard et al., 2001; Worsham, Compas, & Ey, 1992). Wider contextual factors have also been identified, one of the most important aspects of children's environments being the family (Compas & Epping, 1993). Salmon and Bryant (2002) emphasised the importance of children having an adult to support them in processing and coping adaptively with trauma, and various other parental factors have been implicated such as parenting style, psychopathology and parents' own coping strategies (Hardy, Power, & Jaedicke, 1993; Salmon & Bryant, 2002). Other workers have looked beyond the family. For example, Chaffin and colleagues (Chaffin, Wherry, & Dykman, 1997) noted a relationship between social support and children's coping strategies following sexual abuse, and emphasised the need for further research on the influence of the social environment to increase understanding of how children's coping strategies are acquired.

Social support has emerged consistently as an important factor moderating the effects of trauma (Bloom, 1999; Stephens, Long, & Miller, 1997). Individuals with strong social support are reportedly able to cope more effectively with life stresses than those lacking such resources (Cohen & Wills, 1985). Research indicates that lack of post-trauma social support causes psychological distress (Landsman et al., 1990), and increases children's risk of PTSD, behavioural problems and poor academic adjustment (Dubow, Tisak, Cause, Hryshko, & Reid, 1991; Udwin et al., 2000).

Recent efforts have been directed toward understanding the role of social support in mediating the effects of stress (Chou, 2000). Early work by Cohen and Wills (1985) suggested two ways in which social support affects coping with stressful events. Firstly their main-effect hypothesis proposed that social support had a direct effect on mental health (providing regular positive experiences, socially rewarding roles, and feelings of being cared for), and has been well supported by studies linking social support with children's psychological functioning (Bal, Crombez, Van Oost, & Debourdeaudhuij, 2003; Tremblay, Herbert, & Piche, 1999). Their second stress-buffering hypothesis proposed that social support had an indirect effect, buffering the negative consequences of stressful events by acting as a coping resource and/or influencing coping strategies, and this too has received some support from research (Llabre & Hadl, 1997) although findings have been somewhat mixed (Bal et al., 2003).

Other workers have examined the differing functions of social support for children exposed to stressful events. Vernberg and colleagues (1996) investigating social support available to children following a hurricane, found different types of support (parent, peer, teacher) filled different support needs. Family support has been identified as a vital factor in facilitating child adjustment (Vernberg et al., 1996), peer support has been reported to facilitate adjustment through companionship, intimacy and feelings of acceptance (Parker & Asher, 1993), and teacher support has been found to help children re-establish familiar roles and routines (Vernberg & Vogel, 1993). A more recent study (Ezzell, Swenson, & Brondino, 2000) investigating different types of social support in adjustment following physical abuse found that family and peer support were particularly important for children's

psychological functioning, however, Vernberg and colleagues (1996) assert that access to multiple sources of support is preferable.

Although the importance of social support in trauma has been well documented, less is known about how social support interacts with coping following stressful events (Bal et al., 2003). Research findings indicate a close relationship between social support and coping style, and workers have emphasised the need to study children's coping strategies (personal resources) and their borrowed resources (social support) in combination (Boekaerts & Roder, 1999). One such study found that avoidant coping in adolescents following stressful events was determined in part by their perception of the availability of social support (Spaccarelli, 1994).

The emerging complexity of post-trauma adaptation in children has resulted in the development of various multifactorial models in recent years (Joseph, Williams, & Yule, 1997; Pynoos, Steinberg, & Wraith, 1995). These models give recognition to the role of individual differences and wider contextual factors. For example, Vernberg and colleagues (1996) developed a conceptual model of post-trauma adaptation in children, integrating 4 primary factors: exposure to trauma, child characteristics, access to social support and coping style. The model is explicit about the links between these factors, for example stating that level of trauma exposure, and child characteristics are likely to influence children's access to social support and their use of coping strategies, and that these factors are likely to influence PTSD symptoms. Although the model has received some support from research studies (La Greca, Silverman, Vernberg, & Prinstein, 1996), further work is needed to test and

clarify the various aspects of the model, and to assess its potential for predicting other psychosocial difficulties experienced by children following trauma.

In conclusion, the current literature suggests that children can experience a range of psychosocial difficulties following exposure to trauma, and that children's responses to trauma vary greatly. Many factors have been identified that influence trauma outcome and recent studies highlight the importance of coping style and social support. However there remains a lack of research in this area and further work is needed, in particular investigating the various influencing factors in combination. Such work is vital in facilitating the further development of multifactorial models that reflect the full picture of post-trauma adaptation in children and adolescents.

The current study sought to address some of these gaps in the literature by assessing psychosocial functioning in children following a frightening event (road traffic accident, assault, fall, burn, or other accident), and why some children recover with few problems while others experience continued difficulties. The study focused on the role of children's coping strategies and social support. In addition, the impact of parental coping and social support on children's post-trauma functioning were also assessed. The study therefore sought to examine the following hypotheses:

1. There will be high rates of psychosocial difficulties (post-traumatic stress, depression, and behavioural difficulties) in children, 1-month and 3-months following the frightening event.

2. There will be a relationship between children's coping style and psychosocial difficulties in children following trauma.

3. There will be a relationship between parental coping style and psychosocial difficulties in children following trauma.

4. Higher levels of children's perceived social support will be associated with lower rates of psychosocial difficulty in children following trauma.

5. Higher levels of parental perceived social support will be associated with lower rates of psychosocial difficulty in children following trauma.

6. Social support and coping style will be associated either additively or multiplicatively, with post-trauma psychosocial difficulties in children.

2.3 METHOD

Design

This study formed part of a larger prospective study involving 3 other researchers (all postgraduate trainee clinical psychologists). The current study sought to investigate the impact of traumatic events on children's psychosocial functioning, with particular emphasis on the role of coping style and social support. The participants included children who had experienced a traumatic event, and their main caregiver, as research indicates that multiple informants increase the reliability of findings (Piacentini, Cohen, & Cohen, 1992). Participants were assessed initially at 3-4 weeks after the trauma (time 1) and again approximately 3-4 months post-trauma (time 2). The assessment utilised a battery of interview and questionnaire measures to assess post-trauma psychosocial functioning, child and parent coping styles, and social support.

Participants

The participants in the study were children aged 7 to 14-years, who had experienced a traumatic event (road traffic accident, assault, fall, or other accident resulting in physical injury), and their main caregiver. Fifty-six families were recruited, giving a total of 112 participants (56 parents and 56 children). All 56 families were seen for a first assessment within 4-weeks of the traumatic event. Of these, 50 families (89%) were seen approximately 3-months later for a follow-up assessment. The 6 families who were lost at follow-up included 3 families who had moved and could not be contacted, and 3 families who declined to participate in the follow-up assessment. Forty-two families (75%) completed questionnaire measures on coping, social support and life events as these measures were introduced later in the study and were not therefore completed by the first 8 families recruited onto the study.

The children who participated in this study had a mean age of 10.23 years (SD 2.44), ranging from 7 to 14-years. There were 34 males with a mean age of 9.82 years (SD 2.37) and 22 females with a mean age of 10.86 (SD 2.48). With regards to ethnicity, 37 families described their ethnicity as 'White' (66%), 10 families as 'Black' (18%), 3 families as 'Asian' (5%) and 6 families (11%) identified themselves as being from another ethnic origin (see Table 1). Road traffic accidents were the most common traumatic event, experienced by 22 children (39%), followed by falls, which were experienced by 18 children (32%), while 10 children (18%) had been assaulted and 6 children (11%) had experienced another traumatic event such as animal bite or burns accident.

In the majority of cases, the child was alone at the time of the traumatic event with only 9 parents (16%) reporting that they had been present at the time. Wherever possible, mothers were asked to participate in the study, however fathers were identified as the main caregiver in 6 of the families (11%), and in such cases fathers were invited to participate.

Table 1. Demographic details of participants

	Traumatic Event				
Age	RTA	Fall	Assault	Other	Total
7	3	7	0	0	**10**
8	4	3	1	1	**9**
9	0	3	1	2	**6**
10	2	1	0	1	**4**
11	4	2	0	1	**7**
12	2	2	2	0	**6**
13	4	0	3	1	**8**
14	3	0	3	0	**6**
Gender					
Male	10	13	7	4	**34**
Female	12	5	3	2	**22**
Ethnicity					
White	11	14	8	4	**37**
Black	7	3	0	0	**10**
Asian	1	0	1	1	**3**
Other	3	1	1	1	**6**
Total					
	22	**18**	**10**	**6**	**56**

Statistical analyses were undertaken to assess for any demographic differences between the different types of trauma. Due to the small numbers in the 'other trauma' group (n=6), these cases were removed from this set of analyses. Chi-square analysis revealed no significant differences between the different types of trauma with regards to gender (χ^2 (2) = 1.961, p<0.375) or ethnicity (χ^2 (2) = 2.885, p<0.236). However, one-way analysis of variance (ANOVA) found significant age differences (F (2,49) = 10.082, p<0.001), with 'assaults' having the highest mean age (12.6 years), and 'falls' the youngest mean age (8.7 years). Differences in severity of the different trauma types (as measured by hospital triage scores[1]) were also approaching significance (F (2,49) = 2.715, p< 0.077), with road traffic accidents appearing more likely than the other types of trauma to receive the highest severity triage rating of 1, which indicates that immediate attention is required (see Table 2).

Table 2. Severity rating of traumatic events based on triage ratings

		Traumatic Event				
Severity		RTA	Fall	Assault	Other	Total
(1)	Immediate attention	11	1	1	1	14
(2)	Very urgent	2	5	1	1	9
(3)	Urgent	4	6	4	3	17
(4)	Standard	4	5	4	1	14
(5)	Non-urgent	1	1	0	0	2

[1] Ratings of injury severity given by triage nurse on admission to hospital, ranging from 1 (immediate attention required) to 5 (non-urgent). See p. 15 for further details

Recruitment

The participants were recruited from 4 London Accident & Emergency Departments, following recruitment protocols agreed by each hospital. In one hospital potential participants were identified by hospital staff and asked to sign 'consent to be contacted' forms while in the other 3 hospitals, the researchers identified potential participants from Accident & Emergency admission lists. The researchers contacted potential participants by telephone giving them information about the study and inviting them to participate if they met the following eligibility criteria:

- Child aged 7-14-years old.
- Child and parent both fluent in English (verbal and written).
- Child experienced extreme fear at the time of the frightening event.

A total of 85 families were identified who fulfilled the above eligibility criteria. Of these, 29 families declined to participate, giving a response rate of 66%. This is comparable with other child trauma studies, which report response rates ranging from 43% to 83% (Stallard et al., 1998; Vernberg et al., 1996). Statistical analysis using univariate ANOVAs found that older children were significantly less likely to agree to participate than younger children ($F(1,84) = 4.018$, $p < 0.048$). However no significant demographic differences were found between the participants who agreed to take part and those who declined with regards to gender ($F(1,84) = 0.718$, $p<0.401$), trauma severity ($F(4,84) = 1.447$, $p<0.235$) or trauma type ($F(3,84) = 0.087$, $p < 0.967$).

Procedures

Participants who agreed to participate were seen for the first assessment (time 1) within 3-4 weeks of the frightening event. Most of the assessments took place in the participants' own home although 3 families asked to be seen at the UCL Clinical & Health Psychology Department. The researchers had all received training in the interview and questionnaire measures (see Appendices 4 and 5) and where possible the assessments were conducted by two researchers. At the first assessment, the researchers initially met with the parent and child together, and further information was given about the research, including written parent and child information sheets (see Appendix 2). For younger children who were unable to read the information sheet, the researchers explained in simple language what was included on the information sheet, and parents were invited to clarify any of this information for their child as they thought necessary. Participants were able to ask questions at this point and informed consent was obtained from both the parent and child (see Appendix 3).

The parent and child were then seen separately for completion of the interview and questionnaire measures, to enable them to speak more freely. When only one researcher was present, the parent was interviewed first and then asked to complete the questionnaires while the researcher interviewed and administered the questionnaires to the child. The interview and questionnaire measures were administered in the same order for every assessment (see Appendices 4 and 5).

The researchers contacted families 3 months later to arrange the follow-up time 2 assessment, and again a similar procedure was followed although most of these assessments involved just one researcher.

Measures

Demographic Questionnaire

A short demographic questionnaire was developed asking key demographic questions about ethnicity, parental educational background and occupation, child developmental history, and any significant health or educational difficulties experienced by the child. The questionnaire was administered to the parent by the researcher during the first assessment.

Trauma Severity

Children were given triage ratings of trauma/injury severity on admission to hospital. These are scored on a scale of 1-5, with 1 being the most serious (urgent medical attention required) and 5 the least serious. These ratings are often used as an index measure of trauma severity (Stallard et al., 1998) and were used as an objective measure of trauma/injury severity in the current study.

Anxiety Disorders Interview Schedule for DSM-IV - PTSD section (ADIS C/P)

The ADIS is a semi-structured diagnostic interview, which has been found to be suitable for both clinical and research settings (Silverman & Nelles, 1988). The ADIS assesses a range of DSM-IV disorders, however for the purposes of this study only the PTSD interview was administered. This interview closely follows the DSM-IV criteria, grouping questions into the 3 PTSD clusters of re-experiencing, avoidance, and hyperarousal symptoms, and asking about clinically significant interference. The adult version rates responses on an 8-point scale with regards to

frequency and severity of symptoms, while the child interview requires simple yes/no responses. The ADIS has demonstrated good concurrent validity and good test-retest reliability with scores ranging from .78 to .95 for the child version (Silverman & Nelles, 1988) and .81 to .99 for the parent version (Silverman & Eisen, 1992). Both the parent and child versions of the ADIS were administered at the Time 1 and Time 2 assessments.

Impact of Events Scale (IES-15)

The IES is a questionnaire measure, which was developed to measure the severity of PTSD symptoms in adults following a specific stressful event (Horowitz, Wilner, & Alvarez, 1979). It consists of 15 items including 7 intrusion and 8 avoidance symptoms, with responses rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (often), giving a total score range of 0 to 75. Reports on the psychometric properties of the IES-15 demonstrate good reliability and validity (Horowitz et al., 1979), and while it was originally developed for adults, the measure has been used in research with children from the age of 6-years (Vila, Porche, & Mouren-Simeoni, 1999). Horowitz and colleagues (1979) recommend that scores below 8 are sub-clinical, while scores from 9 to 25 are mild to moderate, and scores above 26 indicate moderate to severe impact. More recently, a cut-off score of 35 has been suggested, reportedly achieving a sensitivity of .89 and specificity of .88 (Neal et al., 1994). However Stallard and colleagues (1999) who used the scale with children, recommend using a cut-off of 30. In the current study, the IES-15 was administered to children at both the Time 1 and Time 2 assessments. In addition, a revised version was administered to parents asking them to comment on how they felt their child had been affected by the frightening event.

Revised Children's Manifest Anxiety Scale (R-CMAS)

This 37-item questionnaire is used to measure anxiety in children for clinical and research purposes (Reynolds & Richmond, 1978). It consists of 28 Anxiety items and 9 Lie (social desirability) items. The R-CMAS originates from the Children's Manifest Anxiety Scale (Casteneda, McCandless, & Palermo, 1956) and was revised by Reynolds and Richmond (1978) to meet psychometric standards. It has been validated on children aged 6-19 (Reynolds & Paget, 1981), across gender, ethnicity and intelligence (Gerard and Reynolds, 1999), and studies demonstrate good internal consistency and test-retest reliability (Reynolds & Richmond, 1978; Wisniewski, Mulick, Genshaft, & Coury, 1987). The R-CMAS has a recommended cut-off point of 19 to identify children experiencing clinically significant levels of anxiety (Stallard et al., 2001). In the current study, the measure was administered to children at both the Time 1 and Time 2 assessments, and a revised version was given to parents at each assessment asking them to comment on how they thought their child was feeling.

Birleson Depression Scale (BDS)

This self-report inventory (Birleson, 1981) assesses symptoms of depression and has been found to differentiate between depressed and non-depressed children and adolescents (Stallard et al., 1998). It includes 18-items and children are asked to rate the frequency of symptoms experienced in the past week, on a 3-point Likert scale (never, sometimes or most of the time). A cut-off score of 15 has been recommended, achieving acceptable specificity and sensitivity and reportedly being six times more likely to be associated with a diagnosis of depression (Birleson,

Hudson, Buchanan, & Wolf, 1987). The authors report normative data from 250 children aged 11-15-years, however, the BDS has been found to be reliable and valid with children ranging in age from 7-18-years (Stallard et al., 1998; Ivarsson & Gillberg, 1997). In the current study, the BDS was administered to children at both assessments and parents were asked to report on their child's mood using a revised version of the questionnaire.

The Strengths and Difficulties Questionnaire (SDQ)

The SDQ is a 25-item questionnaire, which assesses emotional, behavioural and social functioning in children aged 3-16-years (Goodman, 1997; Goodman, Meltzer, & Bailey, 1998). Child, parent and teacher versions are available and the scale provides a total score and 4 subscales: pro-social behaviour, hyperactivity, emotional symptoms, and conduct/peer problems. It compares favourably to other child assessment measures, including the child behaviour checklist (CBCL), and Rutter behavioural questionnaires in terms of validity and reliability, and its ability to discriminate between psychiatric and non-psychiatric samples (Goodman & Scott, 1999; Goodman, 1997; Goodman, 1994). The SDQ was recently used in the Office of National Statistics community survey of child and adolescent mental health in Great Britain, providing normative data from 10,438 individuals aged between 5 and 15-years (Meltzer, Gatward, Goodman, & Ford, 2000). In the current study, parents were asked at initial assessment to complete the SDQ on their child's behaviour in the 6-months prior to the traumatic event in order to derive an estimate of prior functioning. At 3-month follow-up parents were asked to report on their child's behaviour over the past month.

The COPE

Parent coping was assessed using the situational version of the COPE self-report questionnaire (Carver, Scheier, & Weintraub, 1989). This is a multidimensional coping inventory, incorporating 13 distinct scales derived from theory and previous research (active coping, planning, seeking instrumental social support, seeking emotional social support, suppression of competing activities, turning to religion, positive reinterpretation and growth, restraint coping, acceptance, focus on and venting of emotions, denial, mental disengagement and behavioural disengagement). The COPE has 60-items and is rated on a 4-point Likert scale (I didn't do this at all, I did this a little bit, I did this a medium amount, I did this a lot). The internal consistency scores of the COPE scales were all (with the exception of the mental disengagement scale) greater than 0.6 (Cronbach's alpha), and the test-retest reliability of the dispositional version over 6- and 8-week periods ranged from 0.42 to 0.89 (Carver et al., 1989).

The Kidcope

The Kidcope was developed as a brief screening instrument to identify coping behaviours in children and adolescents (Spirito, Stark, & Williams, 1988). There are 2 versions of the scale, one for younger children, aged 7-12, and one for adolescents, aged 13-18. Both versions comprise two-parts, the first determining level of distress experienced during a specific difficult situation, and the second part determining frequency and efficacy of a range of different coping strategies. Although the two versions differ slightly in number of items and response categories (see Appendix 5), both elicit scores on the same 10 coping scales, derived from a review of the

literature: distraction, social withdrawal, cognitive restructuring, self-criticism, blaming others, problem-solving, emotional regulation, wishful thinking, social support and resignation. Spirito et al. (1988) found the Kidcope had moderate to high correlation with the coping strategies inventory (Tobin, Holroyd, Reynolds, & Wigal, 1984) and the Adolescent-Coping Orientation for Problem Experiences (ACOPE) (Patterson & McCubbin, 1983). They reported acceptable test-retest reliability across 3-7 days, ranging from 0.41 to 0.83. In the current study, the anglicised version of the Kidcope was administered to children at the 3-month follow-up. The researcher completed the questionnaire, asking children to rate how they had coped with the frightening event over the past 3-months.

Social Support Questionnaire Short Form (SSQ6)

The SSQ6 is a self-report questionnaire measuring perceived social support and satisfaction with social support (Sarason, Shearin, Pierce, & Sarason, 1987). It is a short form of the original 27-item Social Support Questionnaire. Respondents are asked to list the people they can count on for support in 6 situations (e.g. 'who can you really count on to console you when you are very upset?'), and to rate how satisfied they are with the support on a 6-point Likert scale (from 'very dissatisfied' to 'very satisfied'). Mean scores are obtained for network size and satisfaction with support. Both dimensions have been reported to have good internal reliability with Cronbach alpha ranging from .90 to .93 (Sarason et al., 1987).

The Social support Scale for Children (SSSC)

The SSSC (also called the "People in My Life" questionnare) is a child self-report measure assessing children's perceptions of support from four sources: parents,

teachers, classmates and close friends (Harter, 1985). The internal consistency for each of the subscales ranges from .72 to .82 (Harter, 1985). The scale has 24 items, each item consisting of 2 statements (e.g. "Some children have a teacher who really cares about them" but "Other children don't have a teacher who really cares about them". The child is asked to state which statement is most like them, then asked to rate the degree to which that statement is like them ("sort of true" or "really true").

Ethics

The original study had full ethical approval from Royal London Hospital Ethics Committee and University College London Hospital (UCLH) Ethics Committee. Families participating in the current extended study were all recruited from hospitals covered by UCLH Ethics Committee. Further approval was therefore obtained from UCLH Ethics Committee for the addition of questionnaires on coping and social support (see Appendices 1).

Statistical Analysis

All data collected for the current study was quantitative. A series of analyses were performed on the data looking at the effect of coping style and social support on post trauma symptoms three-months after the frightening event.

2.4 RESULTS

The study sought to assess the impact of traumatic events on children's psychosocial functioning, and to investigate the factors influencing trauma outcome with a particular focus on the role of coping style and social support. This results chapter will be presented in 5 sections:

- Post-trauma Outcome
- Factors Influencing Post-trauma Outcome
- Coping Style and Trauma
- Social Support and Trauma
- The Relationship between Post-trauma Coping Style and Social Support

Post-trauma Outcome

Various aspects of post-trauma outcome in children were assessed including post-traumatic stress symptoms, anxiety, depression and behavioural difficulties. Multi-informants (children and their main-caregiver) were used for all areas of psychosocial functioning with the exception of behavioural difficulties, which were rated by parents only.

Children's post-traumatic stress symptoms were assessed using the Anxiety Disorders Interview (ADIS) and the Impact of Events Scale (IES). At 4-weeks post-trauma, the ADIS found that 22 children (39.3%) had all 3 PTSD clusters: re-experiencing, avoidance and hyperarousal, while 15 children (26.8%) had two clusters, 11 children (19.6%) had one cluster, and 8 children (14.3%) had few or no

symptoms of PTSD. At follow-up (3-4-months post event), 18.8% (n=9) had few or no symptoms, 15 children (31.3%) had one cluster, 11 children (22.9%) had two clusters and 13 children (27.1%) had all 3 clusters, meeting full diagnostic criteria for PTSD. The mean severity level of symptoms assessed by the IES was in the moderate to severe range at time 1, and in the mild to moderate range at follow-up, with 19 children (33.9%) at time 1, and 9 children (18.8%) at follow-up scoring above the cut-off of 35 (see Table 3). Parent ratings of the children's PTSD symptoms on the IES were slightly less severe, with mean levels reported within the mild to moderate range at both time-points (see table 3).

Table 3. Child PTSD Scores (Child and Parent Rated)

	PTSD Symptoms (ADIS)		**PTSD Severity (IES)**	
	Mean total score (sd)	**No. meeting diagnosis (%)**	**Mean total score (sd)**	**Number >30 (%)**
Child-rating				
Time 1	7.39 (4.08)	22 (39.3%)	29.34 (19.24)	26 (46.4%)
Time 2	5.0 (3.69)	13 (27.1%)	16.94 (17.18)	19 (33.9%)
Parent-rating				
Time 1	-	-	17.91 (16.36)	27 (48.2%)
Time 2	-	-	12.67 (16.01)	17 (34.7%)

A series of paired-samples t-tests were conducted to assess whether children's PTSD symptoms reduced significantly from initial assessment to 3-month follow-up. Child-rated symptoms reduced significantly on both the ADIS measure of PTSD symptoms (t (47), = 4.013, $p<0.001$), and the IES measure of PTSD severity (t (47) =4.926,

p<0.001). Child PTSD symptoms reported by parents on the IES also decreased significantly from initial assessment to follow-up (t (48) = 2.295, p <0.026.

Assessment of other psychological difficulties found that 14 children (25%) had clinically significant levels of anxiety at initial assessment (scoring over 19 on the RCMAS) while 9 children (18.8%) had significant anxiety at follow-up. In addition, 25 children (44.6%) were found to be 'at risk' of depression (scoring >15 on the BDS) at initial assessment, while 15 children (31.9%) were 'at risk' at follow-up (see Table 4). Paired-samples t-tests found that anxiety symptoms reduced significantly from initial assessment to follow-up (t (47) = 2.323, p<0.025), and the reduction in depressive symptoms was also approaching significance (t (46) = 1.825), p<0.74.

Table 4. Child Depression and Anxiety Scores (Child and Parent Rated)

	Depression (BDS Score)	**Depression (BDS >15)**	**Anxiety score (RCMAS)**	**Anxiety Score RCMAS (>19)**
Child-rating				
Time 1	12.27 (sd 6.08)	25 (44.6%)	12.63 (sd 8.08)	14 (25%)
Time 2	10.53 (sd 5.58)	15 (31.9%)	10.67 (sd 7.69)	9 (18.8%)
Parent-rating				
Time 1	10.38 (sd 5.84)	19 (35.8%)	8.52 (sd6.35)	8 (14.8%)
Time 2	9.69 (sd 5.69)	14 (29.2%)	7.28 (sd6.26)	8 (17%)

Parent-ratings of children's anxiety and depression symptoms were again less severe than child reports, although similar patterns emerged (see Table 4). Parents reported significantly lower levels of anxiety in their children at follow-up compared to initial

assessment, (t (44) = 2.074, p<0.044), and while depressive symptoms also reduced at follow-up, this was not significant (t (45) = 1.595, p<0.118).

A final measure of trauma outcome was assessment of children's behaviour through the parent-rated Strengths and Difficulties Questionnaire (SDQ). This differed slightly compared to the other measures of psychosocial functioning in that parents were asked at initial assessment to complete the questionnaire reporting on their child's behaviour in the month prior to the traumatic event. However, at follow-up, the SDQ was administered similarly to the other measures asking parents to report on their children's recent behaviour, providing a measure of current behavioural functioning at follow-up. Paired-samples t-tests found no significant change in behavioural functioning at follow-up compared to pre-trauma behaviour (t (45) = 0.470, P<0.641), although the pro-social subscale revealed a significant deterioration in behaviour at follow-up (t (46) = 2.195, p<0.033).

Table 5. Child Behavioural Outcome Scores (Parent Rated)

	SDQ total problems score	**SDQ pro-social score**
Month prior to trauma	10.49 (sd 7.02)	8.30 (sd 1.70)
Time 2 follow-up	10.53 (sd 6.94	7.98 (sd 2.02)

Associations among Child Outcome Measures

Children and parents in the study completed a number of the same outcome measures. The outcome scores obtained were analysed using pair-by-pair correlations to assess the degree of overlap between parent and child scores (inter-

informant agreement), and overlap within parents' and within children's scores (intra-informant agreement). The aim of this was to assess reliability of findings but also to identify potential scope for data-reduction through merging of variables.

Table 6. Correlation Matrix of inter- and within-informant agreement: Time 1.

	Child-ADIS	Child-IES	Child-RCMAS	Child-BDS	Parent-IES	Parent-RCMAS	Parent-BDS
Child ADIS	1	.696**	.696**	.394**	-.021	.302*	.217
Child IES	.696**	1	.749**	.274	.127	.378**	-.100
Child RCMAS	.696**	.749**	1	.381**	.023	.416**	.129
Child BDS	.394**	.274	.381**	1	.042	.074	.588**
Parent IES	-.021	.127	.023	.042	1	.233	-.045
Parent RCMAS	.302*	.378**	.416**	.074	.233	1	.386**
Parent BDS	.217	-.100	.129	.588**	-.045	.386**	1

** Correlation significant at 0.01 level, * Correlation significant at 0.05 level.

Table 7. Correlation Matrix of inter- and within-informant agreement: Time 2.

	Child-ADIS	Child-IES	Child-RCMAS	Child-BDS	Parent-IES	Parent-RCMAS	Parent-BDS
Child ADIS	1	.818**	.639**	.034	.389**	.381**	-.202
Child IES	.818**	1	.684**	.138	.386**	.389**	-.069
Child RCMAS	.639**	.684**	1	.314*	.261	.361*	.005
Child BDS	.034	.138	.314*	1	-.158	.109	.502**
Parent- IES	.389**	.386**	.261	-.158	1	.351*	.153
Parent- RCMAS	.381**	.389**	.361*	.109	.351*	1	.363*
Parent- BDS	-.202	-.069	.005	.502**	.153	.363*	1

** Correlation significant at 0.01 level, * Correlation significant at 0.05 level.

Inter-informant comparisons

A number of significant associations were found between parent and child scores on the outcome measures (see Tables 6 and 7). Parent-ratings on the child anxiety measure (RCMAS) correlated significantly with all the child anxiety and PTSD measures (ADIS, IES, RCMAS) at both time 1 and time 2. Parent-ratings of child PTSD symptoms (IES) correlated significantly with both child-rated PTSD measures (ADIS and IES) at time 2 but no significant associations were found at time 1. Finally, the Birleson Depression Scale (BDS) showed highly significant correlations between parent and child ratings at time 1 and time 2.

Intra-informant comparisons

Analysis of within-informant agreement included comparison of the different subscales of the ADIS and IES measures. The ADIS subscale and total scores all showed correlations of 0.813 or above, while the IES subscale and total scores showed correlations of at least 0.927. Comparison of within-informant scores across the different outcome measures found that a number of the child-rated measures correlated significantly including the IES, ADIS and RCMAS measures (see Tables 6 and 7). However, the adult measures showed only weak to moderate correlations with each other (see Tables 6 and 7).

Final Outcome Measures

The outcome scores were merged where possible to reduce the total number of final outcome variables, therefore reducing the risk of Type I errors in subsequent analyses. Where outcome scores correlated at greater than 0.5, these were

standardised and averaged to provide an overall outcome score. There was some remaining duplication in the parent and child outcome measures (e.g. child and parent-ratings of children's PTS scores), therefore it was decided that all parent outcome measures would be removed with the exception of parent-reported behavioural difficulties (SDQ). The final outcome measures therefore included the following:

1. Child-rated post-traumatic stress score (ADIS total, IES total, and RCMAS)
2. Child-rated depression score (BDS score)
3. Parent-rated child behavioural problems score (SDQ total problems score)

These variables were all assessed for normality of distribution including skewness and kurtosis, using a significance level of $p<0.05$. The child-rated time 2 post-traumatic stress score, and the parent-rated SDQ were found to have significant skewness or kurtosis. However after square-root transformations all variables reached non-significant levels for normal distribution. The measures were also assessed for outliers and none were found.

Factors Influencing Outcome

The main areas of focus in the following sections relate to the study's hypotheses that coping and social support would influence children's post-trauma adjustment. However, findings on the influence of child demographic factors and trauma characteristics are also presented as these were analysed to assess whether they needed to be controlled for when assessing the influence of coping and social support.

Child-related characteristics

Several key demographic factors were analysed to assess the extent to which they influence trauma outcome. This was done through a series of repeated-measures ANOVAs, with the time 1 and time 2 outcome measures as the within-subjects variable, and the demographic factors of gender, ethnicity (between-subjects factors), and age (covariate) analysed in separate ANOVAs.

Table 8. Demographic Factors and Child Trauma Outcome: ANOVA Results

	PTS Symptoms	Depression Symptoms	Behavioural Problems
Age			
Main effect	F (1,46)= 4.346, p<0.043	F (1,45) = .406, p<0.527	F (1,44)=2.325, p<0.134
Interaction	F (1,46)=0.769, p<0.385	F (1,45)= 0.510, p<0.479	F (1,44)=0.023, p<0.879
Gender			
Main effect	F (1,46)=0.702, p<0.406	F (1,45 = 1.172. p<0.955	F (1,44)=1.879, p<0.177
Interaction	F (1,46)=0.462, p<0.500	F (1,45)=8.820, p<0.005	F (1,44)=0.041, p<0.841)
Ethnicity			
Main effect	F (1,46)=2.658, p<0.110	F (1,45)=1.163, p<0.287	F (1,44)=0.354, p<0.555
Interaction	F (1,46)=0.032, p<0.860	F (1,45)=1.028, p<0.316	F (1,44)=0.827, p<0.368

As shown in Table 8, a significant main-effect of age was found (F (1,46) = 4.346, p<0.043) for the child PTS variable, with younger children reporting higher post-traumatic stress scores than older children following the frightening event. However no significant main effects or interactions involving age were found for the other outcome measures. With regards to gender, a significant interaction was found between time and gender (F (1,45) = 8.255, p<0.006) for child depression. Girls reported higher initial depressive symptoms with a mean score of 13.9 (sd 6.24) compared to the boys mean depression score of 11.2 (sd 5.85), however at follow-up

the girls' depressive symptoms had dropped to a mean of 9.1 (sd 4.71) which was lower than the boys' symptoms at follow-up, with a mean score of 11.4 (sd 5.96). No other significant main effects or interactions were found involving gender.

The influence of ethnicity on outcome was also analysed but due to relatively small numbers in the non-white ethnic groups, comparisons were restricted to 'white' vs. 'non-white' ethnic group. No significant main effects or interactions were found for any of the outcome measures.

Trauma-related characteristics

Trauma type and trauma severity were also analysed to assess whether these trauma-related factors influenced outcome. For trauma type, the frightening events were grouped into four main categories: 'RTA', 'assault', 'fall', and 'other accident', while trauma severity was measured using the hospital triage ratings described earlier. Again a series of repeated measures ANOVAs were performed with trauma type and trauma severity as the between-subjects factor and the Time 1 and Time 2 outcome measures as the within-subjects variable.

Table 9. Trauma Characteristics and Child Trauma Outcome: ANOVA Results

	PTS Symptoms	Depression Symptoms	Behavioural Problems
Trauma Type			
Main effect	F (3,44)=0.509, p<0.678	F (3,43)=0.672, p<0.574	F (3,42)=1.287, p<0.291
Interaction	F (3,44)=1.158, p<0.336	F (3,43)=0.144, p<0.933	F (3,42)=0.558, p<0.645
Trauma Severity			
Main effect	F (4,43)=0.741, p<0.569	F (4,42)=1.145, p<0.349	F (4,41)=0.736, p<0.573
Interaction	F (4,43)=0.553, p<0.698	F (4,42)=1.455, p<0.233	F (4,41)=0.339, p<0.850

As shown in Table 9, no significant main effects or interactions were found involving trauma severity or trauma type for any of the outcome measures.

Coping Style and Trauma

Child Coping Strategies

Children reported using several types of coping following the traumatic event (see Table 10). The number of coping strategies used by each child ranged from 3 to 9 strategies, the average number being 6.2 (sd 1.88).

Wishful thinking was the most frequently reported strategy, followed by cognitive restructuring, distraction, problem solving, social support, and emotional regulation. Less frequently reported were self-criticism, blaming others, resignation, and social withdrawal. Of the strategies used, children reported problem solving, distraction, social support and cognitive restructuring to be the most effective strategies, while emotional regulation, blaming others and resignation were considered less effective, and wishful thinking, social withdrawal, and self-criticism the least effective strategies.

Table 10. Children's Coping Strategies: Frequency and Efficacy of Use

	Frequency of Use (%)	Efficacy		
		Not Helpful	A little Helpful	Very Helpful
Wishful thinking	90%	30.6%	22.2%	47.2%
Cognitive Restructuring	80%	3.1%	40.62%	56.3%
Distraction	70%	10.7%	20.8%	83.3%
Problem solving	70%	7.1%	21.4%	71.4%
Social support	70%	0%	42.9%	57.1%
Emotional regulation	67.5%	14.8%	22.2%	44.4%
Self criticism	40.5%	41.2%	35.3%	23.5%
Blaming others	38.1%	25%	37.5%	37.5%
Resignation	37.5%	13.3%	33.3%	53.3%
Social Withdrawal	35%	28.6%	57.1%	14.3%

The above 10 coping strategies were entered into a principal components analysis (PCA) with varimax rotation, revealing 4 factors with eigenvalues greater than 1.0. Two strategies crossloaded on two factors (emotional regulation and social withdrawal) and were deleted from further analyses. A second PCA with the remaining 8 strategies resulted in each strategy loading cleanly onto one of 3 factors. These 3 factors accounted for 64.1% of the total variance in the Kidcope. The first factor accounted for 30% of variance and was labelled 'Active Coping' (comprising distraction, problem-solving, social support and cognitive restructuring). The second factor, accounting for 19.5% of variance was labelled 'Self-Blame' and included 2 strategies: self-criticism and blaming others (reversed). The third factor accounting for 14.7% of variance comprised resignation (reversed) and wishful thinking, and was labelled 'Wishful Thinking'. The factor loadings for the items comprising each of these 3 factors were high with mean loadings of 0.83 for 'active coping', 0.82 for 'self-blame' and 0.72 for 'wishful thinking'.

Parent Coping Strategies

Parents also reported using a variety of different coping strategies to help them deal with their child's traumatic event (see Table 11). The most frequently reported strategies among parents were acceptance and the more active coping strategies such as seeking social support, planning and acting, and emotional coping. Parents rarely reported using the more passive and avoidant type strategies such as denial, behavioural disengagement, use of humour and alcohol or drug use

Table 11. Parental Coping Scales

	Mean score	SD
Acceptance	9.63	2.97
Seeking emotional social support	9.00	3.67
Active coping	8.35	3.63
Planning	8.28	3.58
Positive reinterpretation and growth	8.63	3.39
Focus on and venting of emotions	8.00	2.84
Turning to religion	7.78	4.01
Seeking instrumental social support	7.45	3.22
Suppression of competing activities	7.00	2.62
Restraint coping	6.65	2.90
Mental disengagement	5.93	2.40
Denial	5.50	2.58
Behavioural disengagement	4.75	1.56
Humour	4.75	1.56
Alcohol /Drug use	4.45	1.60

The above 15 coping scales were entered into a principal components analysis (PCA) with varimax rotation, which produced 4 factors with eigenvalues greater than 1.0. Four coping scales crossloaded on two or more factors and were deleted from further

analyses. A second PCA with the remaining 11 strategies produced 3 components although another 4 coping scales crossloaded onto 2 or more factors. These were also removed and the PCA repeated with the remaining 7 coping scales, which loaded cleanly onto 2 factors. These 2 factors accounted for 62.6% of the total variance in parental coping. The first factor accounted for 46.3% of variance and was labelled 'active coping'. It comprised 5 coping scales (active, planning, restraint, positive reinterpretation and growth, and denial), while the second factor, labelled 'avoidant coping' included humour and alcohol/drug use, and accounted for 16.3% of variance in parental coping. The factor loadings for the items comprising each factor were high with mean loadings of 0.78 for 'active coping', 0.75 for 'avoidant coping'.

Factors influencing children's coping style

The influence of demographic factors (age, gender, and ethnicity) and trauma factors (type and severity) on children's coping were analysed using a series of univariate ANOVAs with coping style as the dependent variable, age as covariate and the other demographic and trauma characteristics as fixed factors.

Table 12. Demographic/Trauma Factors and Child Coping: ANOVA Results

	Child Active Coping	**Child Self-blame Coping**	**Child Wishful-Thinking Coping**
Age	F (1,40)=0.137, p<0.714	F (1,40)=0.015, p<0.903	F (1,40)=0.199, p<0.658
Gender	F (1,40)=0.053, p< 0.819	F (1,40)=1.690, p<0.201	F (1,40)=0.315, p<0.578
Ethnicity	F (1,40)=0.979, p<0.329	F (1,40)=7.412, p<0.010	F (1,40)=0.386, p< 0.538
Trauma Type	F (3,40)=1.163, p< 0.337	F (3,40)=0.032, p<0.992	F (3,40)=0.199, p<0.658
Severity	F (4,40)=0.137, p<0.409	F (4,40)=0.864, p<0.495	F (4,40)=0.230, p<0.875

As shown in Table 12, no significant main effects were found for any of the demographic factors except for ethnicity and 'self-blame' where a significant main effect of ethnicity was found ($F(1,40) = 7.412$, $p<0.010$), 'white' children reporting less 'self-blame' than 'non-white' children.

The relationship between parent and child coping was also analysed through pair-by-pair correlations (see Table 13). Avoidant-coping in parents was negatively correlated with 'self-blame' in children ($r(38) = -.368$, $p<0.023$), greater use of avoidant coping by parents being associated with less 'self-blame' in children. However, no other significant associations were found.

Table 13. Parent and Child Coping: Correlation Results

	Child Active Coping	**Child Self-blame Coping**	**Child Wishful-Thinking Coping**
Parent Coping:			
Active	$r(38)=-0.193$, $p<0.246$	$r(38) = -0.150$, $p<0.367$	$r(38) = -0.093$, $p<0.581$
Avoidant	$r(38) = 0.052$, $p<0.755$	$r(38) = -0.368$, $p<0.023$	$r(38) = 0.007$, $p<0.969$

Coping Style and Post-trauma Outcome

The impact of children and parents' coping style on children's post-trauma psychological functioning was assessed using a series of repeated-measures ANOVAs, with the Time 1 and Time 2 outcome measures as within-subjects variables, and coping variables as covariate (see Table 14).

Table 14. Coping Style and Child Post-Trauma Outcome: ANOVA Results

	PTS Symptoms	Depression Symptoms	Behavioural Problems
Child Coping Style			
Active			
Main effect	F (1,37)=5.157, p<0.029	F (1,36)=3.713, p<0.062	F (1,35)=0.008, p<0.931
Interaction	F (1,37)=0.000, p<0.999	F (1,36)=0.308, p<0.582	F (1,35)=1.591, p<0.216
Self-Blame			
Main effect	F (1,37)=0.161, p<0.690	F (1,36)=0.592, p<0.447	F (1,35)=2.482, p<0.124
Interaction	F (1,37)=2.503, p<0.122	F (1,36)=0.281, p<0.600	F (1,35)=3.838, p<0.058
Wishful Thinking			
Main effect	F (1,37)=1.396, p<0.245	F (1,36)=0.500, p<0.484	F (1,35)=0.539, p<0.468
Interaction	F (1,37)=0.195, p<0.661	F (1,36)=0.016, p<0.899	F (1,35)=0.003, p<0.954
Parent Coping Style			
Active			
Main effect	F (1,36)=0.917, p<0.345	F (1,35)=0.082, p<0.776	F (1,36)=0.169, p<0.684
Interaction	F (1,36)=0.724, p<0.401	F (1,35)=0.698, p<0.409	F (1,36)=0.328, p<0.571
Avoidant			
Main effect	F (1,36)=0.280, p<0.600	F (1,35)=0.222, p<0.640	F (1,36)=0.140, p<0.711
Interaction	F (1,36)=0.260, p<0.613	F (1,35)=0.886, p<0.353	F (1,36)=1.385, p<0.247

With regard to children's coping styles, a significant main effect of 'active coping' was found for children's PTS symptoms (F (1,37) = 5.157, p<0.029) with higher 'active coping' associated with higher PTS symptoms. Higher child 'active coping' was also associated with increased child depression, with a main effect approaching significance (F (1,36) = 3.713, p<0.062). However, no main effects or interactions were found involving 'active coping' for children's behavioural problems (SDQ) (see Table 14). With regards to children's 'wishful thinking' and 'self-blame' coping, no significant main effects or interactions were found for any of the outcome measures.

Finally, neither of the parent coping styles ('active coping' or 'avoidant coping') were found to have any significant main effects or interactions with any of the outcome measures (see Table 14).

Social Support and Trauma

Child Social Support

Assessment of children's perceived social support elicited an overall social support score and subscale scores for the source of this support (parents, teachers, close friends and peers). Children reported highest levels of support as coming from parents, followed by close friends, and teachers, with peer support receiving the lowest score (see Table 15).

Table 15. Child Social Support

Source of Support	**Range**	**Female** Mean (*SD*)	**Male** Mean (*SD*)	**Total** Mean (*SD*)
Parents	0-18	15.6 (3.07)	15.4 (3.48)	21.5 (3.29)
Close Friends	0-18	15.5 (4.27)	14.5 (3.87)	20.9 (4.00)
Teacher	0-18	14.1 (2.47)	13.5 (3.34)	19.8 (3.03)
Peers	0-18	13.5 (3.48)	12.9 (4.19)	19.1 (3.90)
Total	0 - 72	58.7 (8.76)	56.4 (11.30)	57.3 (10.37)

Pair-by-pair correlations of the social support scores revealed that all sources of social support correlated strongly with the overall social support score, correlations ranging from 0.615 to .822. Subsequent analyses were therefore restricted to the overall social support score only.

Parent Social Support

Two aspects of parents' perceived social support were assessed: network size and satisfaction with support received (see Table 16). Parents reported an average of 2.9 people providing them with social support. Their mean satisfaction score was 5.34, indicating moderate to high levels of satisfaction overall. Subsequent analyses were restricted to parents' social support satisfaction scores.

Table 16. Parent Perceptions of Social Support

Support	**Range**	**Mean Score** (*SD*)
Network Size (n)	0-9	2.94 (1.6)
Satisfaction Score	1-6	5.34 (0.78)

Factors influencing children's perceptions of social support

The influence of child demographic factors on children's social support ratings were analysed using univariate ANOVAs with social support as the dependent variable, gender and ethnicity as fixed factors, and age as a covariate. Although girls appeared to report slightly higher levels of social support than boys (see Table 15), there was no significant main effect of gender ($F(1,40) = 0.485$, $p < 0.491$) on children's social support ratings, and likewise there were no significant main effects of age ($F(1,40) = 1.094$, $p<0.302$) or ethnicity ($F(1,40) = 1.289$. $p<0.263$).

The relationship between parents' social support ratings and children's ratings of social support was assessed using correlational analysis. The children's overall social

support score was not significantly associated with their parent's level of satisfaction with social support (r (37) = .012, p<0.943).

Social Support and Post-trauma Outcome

The impact of perceived social support on children's post-trauma functioning was assessed using repeated-measures ANOVAs, with Time 1 and Time 2 outcome measures as within-subjects variables, and social support scores as a between-subjects covariates (see Table 17).

Table 17. Social Support Ratings and Child Outcome: ANOVA results

	PTS Symptoms	Depression Symptoms	Behavioural Problems
Child Social Support			
Main effect	F (1,37)=3.951, p<0.054	F (1,36)=3.864, p<0.057	F (1,35 = 0.159, p<0.693
Interaction	F (1,37)=0.076, p<0.784	F (1,36)=0.312, p<0.580	F (1,35)=0.200, p<0.657
Parent Social Support			
Main effect	F (1,35)=1.148, p<0.291	F (1,35)=0.179, p<0.179	F(1,35)=11.034,p<0.002
Interaction	F (1,35)=0.463, p<0.501	F (1,35)=0.095,p<0.760	F (1,35)=0.158,p<0.693

Higher levels of child-rated social support were associated with lower child-rated PTS symptoms, the main effect of social support approaching significance at F (1,37) = 3.951, p<0.054. Higher child-rated social support was also associated with lower child-rated BDS symptoms, the main effect of social support again approaching significance at F (1,37) = 3.864, p<0.057. However, there was no significant main effect of child-rated social support on children's behavioural problems, and no significant interactions (see Table 17).

As shown in Table 17, parental satisfaction with social support was not related to either of the child-rated outcome measures. However, higher levels of parent-rated social support were associated with lower parent ratings of behavioural problems in their children, a significant main effect being identified ($F(1,35) = 11.034$, $p<0.002$). Again no significant interactions were found.

Coping and Social Support following Trauma

One of the hypotheses in this study was that there would be a relationship between social support and coping. This was assessed using a series of repeated-measures ANOVAs, testing for 2 and 3-way interactions between coping, social support and outcome, with time 1 and time 2 outcome measures as dependent variables, and social support scores and coping variables as covariates.

Table 18. Coping, Social Support (SS) and Child Outcome: ANOVA results

Interactions:	**PTS Symptoms**	**Depression Symptoms**	**Behavioural Problems**
Active Coping	(df 1/37)	(df 1/36)	(df 1/35)
2-way: coping/SS	$F = 5.140$, $p<0.029$	$F = 4.954$, $p<0.032$	$F = 0.069$, $p<0.794$
3-way: coping/SS/outcome	$F = 0.001$, $p<0.974$	$F = 0.616$, $p<0.437$	$F = 1.829$, $p<0.185$
Self-Blame	(df 1/37)	(df 1/36)	(df 1/35)
2-way: coping/SS	$F = 0.014$, $p<0.907$	$F = 0.729$, $p<0.399$	$F = 2.427$, $p<0.128$
3-way: coping/SS/outcome	$F = 2.267$, $p<0.141$	$F = 0.227$, $p<0.636$	$F = 2.665$, $p<0.164$
Wishful-Thinking	(df 1/37)	(df 1/36)	(df 1/35)
2-way: coping/SS	$F = 1.125$, $p<0.296$	$F = 0.631$, $p<0.432$	$F = 1.010$, $p<0.479$
3-way: coping/SS/outcome	$F = 0.251$, $p<0.620$	$F = 0.000$, $p<0.990$	$F = 0.021$, $p<0.885$

The only significant interactions to emerge for the child coping and social support measures were significant 2-way interactions between 'active coping' and children's social support (see Table 18). These were found for both the child-rated PTS symptoms ($F(1,37) = 5.140$, $p<0.029$), and child-rated depression symptoms ($F(1,36) = 4.954$, $p< 0.032$, with poorest outcome being associated with low social support and high active coping, and best outcome being associated with high social support and low active coping (see Table 19 below). No such interactions were found for the children's behavioural problems, nor were any significant interactions found involving the other children's coping variables ('wishful thinking' and 'self-blame').

Table 19: High and Low Social Support and Coping: Mean Outcome Scores

	High Social Support		**Low Social Support**	
	High Active Coping	Low Active Coping	High Active Coping	Low Active Coping
PTS Symptoms				
Time 1	10.30	10.22	10.35	10.28
Time 2	10.21	10.13	10.28	10.24
Depression Symptoms				
Time 1	12.88	8.44	11.58	11.45
Time 2	9.88	8.11	10.55	10.4

2.5 DISCUSSION

This study sought to investigate the impact of relatively common traumatic events experienced by children including road traffic accidents, assaults, falls and other accidents. Particular emphasis was given to coping style and social support as possible factors influencing post-trauma psychosocial outcome. These factors have been widely linked to many aspects of psychological functioning, and while their impact on post-trauma functioning has been less extensively investigated, recent studies have produced some promising results, indicating the need for further research. The study's specific hypotheses were that some children would experience psychosocial difficulties following the trauma, that coping style and social support would influence children's post-trauma symptoms, and that there would be an interaction between coping style and social support.

The study found that the vast majority of children reported at least mild post-traumatic stress (PTS) symptoms in the first month post-trauma, with 46% of children reporting severe symptoms and 39% of children meeting diagnostic criteria for PTSD. At the 3-month follow-up, 34% of children reported severe symptoms and over one-quarter (27%) fulfilled a PTSD diagnosis. These rates were closely corroborated by the parents' reports of their children's PTS symptoms, with 48% of parents reporting severe symptoms in their children at initial assessment and 35% at 3-4-month follow-up. These findings are consistent with other studies using comparable traumatic events, follow-up times and age of children (McDermott & Cvitanovich, 2000; Stallard et al., 1998).

Although post-traumatic stress symptoms were the most frequently reported psychological difficulty, the study's findings lend support to previous research highlighting the wider impact of trauma on children's psychosocial functioning (Fletcher, 1996). Significant anxiety levels were reported by 25% of children 2-4-weeks following the trauma and 19% of children 3-4-months post-trauma, and depressive symptoms were even more common, with 45% of children 'at risk' of depression at initial follow-up, and 32% of children at the 3-4-month follow-up. Parents reported less severe symptoms in their children, a pattern observed by other workers who have found that parents often under-report psychological symptoms in their children (Schreier, Ladakakos, Morabito, Chapman, & Knudson, 2005). The study also provides some tentative evidence of behavioural change in children at 3-months post-trauma compared to pre-trauma behavioural functioning. While no significant increase was found in behavioural problems reported by parents, a significant deterioration was found in pro-social behaviours, which is again consistent with reports of behavioural consequences of trauma (Perrin et al., 2000).

There remains a lack of consensus in the literature regarding the extent to which child demographic factors and trauma-characteristics influence post-trauma outcome and the current study also produced mixed findings on these factors. With regard to demographic factors, younger children were found to report significantly higher PTS symptoms than older children but this effect of age was not repeated in any of the other outcome measures. Similarly only one outcome measure was significantly affected by gender, this being child-rated depression which itself presented a complicated picture with females reporting most symptoms initially but fewer symptoms than males at 3-month follow-up. While this does raise questions as to

why such a pattern might occur, it is possible that this finding was simply a type-1 error (particularly as none of the other outcome measures were affected by gender).

The study found no association between severity of injury and post-trauma outcome, supporting findings of other studies (Martini, Ryan, Nakayama, & Ramenofsky, 1990). Similarly, trauma type was found to have little effect on children's PTS and depression symptoms with few differences seen in children who had experienced an assault or road traffic accident, compared to those who had suffered a fall. This contrasts with previous findings that motor vehicle accidents are more likely to result in PTSD than falls or sports accidents (Gill, 2002; Stallard et al., 1998). One possible explanation for this may come from the study's method of recruitment as children were only asked to participate if they had experienced extreme fear during the event. As a result, all types of trauma had elicited some degree of fear, and this may not have been controlled for by previous studies. An alternative explanation is that some children (particularly those who experienced assaults and tended to be older children in the study) may have been denying symptoms. Indeed this was evident during some of the assessments with the older males who had been assaulted denying symptoms (e.g. nightmares), which had been reported by their parents.

A key focus of this study was the way in which children coped with the traumatic event. Although there has been relatively little research into children's post-trauma coping styles, the few studies that have been published, report a number of very similar findings to those of the current study. Indeed, comparison of findings was facilitated by the fact that this study used the same child coping measure (Kidcope:

Spirito et al, 1988) as that used by two of the main previous studies of post-trauma coping in children (Stallard et al., 2001; Vernberg et al., 1996).

Children were found to use multiple strategies to help them cope with the traumatic event, reporting an average of 6-strategies, similar to the findings of Stallard and colleagues (2001) who found children used an average of 5 to 7 strategies following motor vehicle accidents. Such findings support long-standing beliefs that individuals typically use several types of coping when confronted with specific stressful events (Compas, Forsythe, & Wagner, 1988). The current study also found very similar trends to those reported by Stallard and colleagues (2001) with regard to the type and frequency of strategy used. Indeed both studies found 'wishful thinking' was the most frequently reported strategy, and the studies identified the same four least frequently reported strategies (self-criticism, blaming others, resignation, social withdrawal). In addition, neither study found any significant age or gender differences in coping.

As multiple factors were being examined in this study (various outcome measures, coping style and social support, with parents and children as informants), it was necessary to reduce the data wherever possible. Therefore principal components analysis (PCA) was conducted with the Kidcope, producing 3 coping variables ('active coping', 'self-blame', 'wishful thinking'). These variables made logical sense in terms of their make-up, and are further validated by the findings of Vernberg and colleagues (1996) who using the same analytic technique, produced very similar coping variables (positive coping, blame-anger, wishful thinking, social withdrawal).

The study found that 'active coping' was significantly associated with increased PTS and depressive symptoms. Although no other significant findings emerged, all other coping variables showed a similar trend with higher coping scores (indicating increased use) being associated with increased scores on post-trauma symptoms (PTS and depressive symptoms, and behavioural problems). Such findings may appear counter to current literature emphasising the positive effects of more active coping strategies (Compas et al., 2001). However, these findings mirror those reported in other recent studies (Stallard et al., 2001). Indeed, Vernberg and colleagues (1996) observed that distress elicits a range of positive and negative coping strategies, and others have also proposed a bi-directional relationship between coping and distress (Compas et al., 1992). This was supported in the current study, the researcher observing that children with few post-trauma difficulties reported not using the coping strategies, as they did not feel the need to. Vernberg and colleagues (1996) suggested that clearer differences between various coping strategies and outcome might emerge later.

This study appears to be one of the first child-trauma studies to have examined parent coping style. This is somewhat surprising given that workers have highlighted the importance of parental response to traumatic events (Compas & Epping, 1993; McFarlane, 1987), with parents reportedly having a vital role in helping children cope adaptively (Hardy et al., 1993; Salmon & Bryant, 2002). The study found that parents also reported using a variety of coping strategies in response to the trauma. However, a clearer pattern emerged with parents' reporting high levels of acceptance and frequent use of active problem- and emotion-focused coping strategies. Less frequently reported were the more passive coping strategies (e.g. denial, behavioural

disengagement) indicating that parents tend to take an active approach, dealing with the practical and emotional ramifications of children's traumatic events. Two main parent coping variables emerged from principal components analysis: 'active coping' and 'passive coping'. However, parents' coping appeared to have little in common with their children's coping style, and was not related to child outcome. As with child coping, assessment of parent-coping may require longer-term following up with clearer differences in outcome possibly emerging later in the course of children's recovery.

Children and parents both reported high levels of satisfaction with social support received. As might be expected, children reported receiving highest levels of support from parents, followed by close friends and teachers, with peers providing least support. No significant differences in perceived social support were found with regard to age, gender or ethnicity. Children who reported higher levels of social support, had significantly lower PTS and depressive symptoms although no differences were seen in their parent-rated behavioural scores. With regards to parent social support, this was not significantly associated any of the child-rated symptoms, however parents who were less satisfied with their social support rated their children as having higher behavioural problems. This finding indicates that lack of parental social support may have a negative effect on their children's behaviour or alternately that it may affect parents' perceptions of their children's behaviour.

The relationship between coping and social support was of interest in this study, to enable investigation of the possible mechanisms by which social support and coping may exert their effects. The finding that social support was associated with reduced

child-rated symptoms suggests that social support may play a role in post-trauma recovery. However, the design of the current study limits the conclusions that can be drawn about the nature of this relationship between social support and outcome. Cohen and Wills' (1985) hypothesised that social support may have a direct effect on mental health ('main effect hypothesis') or that it may indirectly buffer the negative effects of stress, for example by influencing coping strategies used ('stress-buffering' hypothesis). As all the children in the current study had experienced a traumatic event, it is not possible to distinguish between the 'main effect' and 'stress-buffering' hypotheses. Indeed this would be a useful area for further research.

This study did not find that social support and coping were associated with each other, as one would predict if social support influenced coping. Furthermore, where social support and coping were linked, it was interactive, in that children were particularly likely to have high PTS symptoms when both low social support and high rates of coping strategies were endorsed. However, it is likely that the results were complicated by the apparent emergence of a bi-directional relationship between distress and coping. What did appear to be evident from the study's findings was that the children who were struggling most were those that were more isolated. These children appeared to be trying to use lots of different coping strategies to help manage their difficulties. It may even be that these children's reliance on personal coping strategies interfered with, or at least reflected a lack of availability of social support as an alternative means of coping. Clearly, such findings are tentative and further research is needed, particularly studies using a prospective design, to clarify the roles played by coping and social support in children's post-trauma adjustment.

A number of issues need to be considered when evaluating the findings of this research and the conclusions that can be drawn. Firstly, recruitment difficulties and time constraints resulted in a moderate sample size, which has clear implications in terms of power, reducing the chance of identifying significant effects. Although some significant findings did emerge, it is possible that more subtle effects were missed. In addition, the study had a relatively short follow-up period of 3-months, reducing the generalisability of the study's findings to this time frame. As previously discussed, it is conceivable that the effects of the two main independent variables in this study (coping and social support) may become more evident over the longer course of children's recovery from trauma. Indeed workers have observed that children spend the first few months using various strategies, learning how best to deal with the event (Vernberg et al., 1996).

Another possible limitation of the study was the use of the Kidcope (Spirito et al., 1988) to assess child coping. Although this measure provides a broad range of possible coping strategies, each strategy comprises only 1 or 2 items, increasing the likelihood that some strategies were not identified. However, the Kidcope is one of the most widely used coping measure, and its brevity was crucial in the current study for practical reasons, given the extensive battery of interview and questionnaire measures being administered.

Both parent and child-rated outcome measures were obtained during the study and differences in their ratings on the outcome measures raised questions about which informants were providing the most reliable information. For the purposes of this study, where outcome measures were duplicated for parents and children, the child-

measures were used. This decision was taken on statistical grounds to reduce the risk of type I errors resulting from multiple analyses. Reliance on child-reports has been questioned by some workers, suggesting that that children under-report their symptoms (Perrin et al., 2000). However, this was not found in the current study with children tending to rate their symptoms more highly than their parents, and is supported by other research findings that children are the most reliable informants of their emotional states (Silverman & Eisen, 1992), and that parents own difficulties may influence their ratings of child symptoms (Landolt, Vollrath, Ribi, Gnehm, & Sennhauser, 2003).

Although the use of multi-informants increased the complexity to the study, it was one of the study's strengths, enabling a more complete picture of children's post-trauma coping, particularly given the significant role parents play in children's lives. Another strength of the study was its broader focus on children's wider psychological and behavioural functioning, as many trauma studies tend to focus solely on PTS symptoms.

This study reflects an increasing shift within the field of childhood trauma research to consider the multifactorial nature of children's response to trauma. Recent models of post-trauma adjustment in children have begun to incorporate various contextual and developmental factors (Pynoos et al., 1995). The influences of coping style and social support on mental wellbeing have been well documented for many years but only recently have workers begun to consider their specific role in post-trauma adjustment. In a conceptual model of post-traumatic stress following disaster, Vernberg and colleagues (1996) have integrated coping style and social support with

the more widely reported factors of trauma exposure and child characteristics. The current study provides some support for this model having found some significant associations between coping, social support and post-trauma outcome. In addition, these findings extend the generalisability of Vernberg's model to more common everyday traumatic events experienced by children. Clearly further research is needed, using larger multi-informant samples and prospective longitudinal design. Improved understanding about the role of coping style and social support in children's post-trauma adjustment could have important implications for the development of post-trauma assessment and interventions, targeted not only at children but also their parents and wider social network.

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CHAPTER 3

CRITICAL APPRAISAL

3. CRITICAL APPRAISAL

Childhood trauma has attracted much research interest in recent years, as workers have sought to improve understanding of post-trauma adjustment in children. Such work is vital for the continued development of post-trauma assessment and intervention approaches. This study sought to assess the impact of traumatic events on children's psychosocial functioning, and to investigate the factors influencing trauma outcome, with a particular focus on the role of coping style and social support. The study raised a number of methodological and theoretical issues, which merit further consideration. These will be discussed in this critical appraisal together with consideration of the study's implications for future research and clinical practice.

3.1 METHODOLOGICAL ISSUES

Research Design

The study formed part of a larger on-going prospective study, investigating post-trauma adjustment in children who had experienced a traumatic event. The participants (children and their main caregiver) were followed up approximately 4-weeks after the trauma (time 1) and again 3-months later (time 2). The focus of the current study was on the role of coping style and social support in post-trauma outcome. It was initially planned that the current study's follow-up would take place one-year post-trauma, providing longer-term assessment of families recruited onto the original study and collecting retrospective data on coping and social support. However, during the planning stages of the current study, it became clear that the original study was having recruitment difficulties (to be discussed later) and that

sufficient participant numbers would not be obtained in time for a one-year follow-up to take place. It was decided therefore that the one-year follow-up should be abandoned and that the coping and social support measures of the current study be incorporated into the original 3-month follow-up assessments.

Although the design of this study was restricted by the practical difficulties described above, it did raise a number of methodological issues that require further consideration. Firstly, the study's follow-up period of 3-months has important implications for conclusions that can be drawn. Workers have reported that such short follow-up periods restrict the generalisability of findings to this time frame (Vernberg, La Greca, Silverman, & Prinstein, 1996), while others report that longer-term follow-up is necessary as symptoms such as PTSD may emerge at a later point in time (Mayou, Ehlers & Bryant, 2002). Indeed, one study of childhood trauma reported delayed onset PTSD (occurring later than 6-months post-trauma) in 10% of cases (Yule et al., 2000). The length of follow-up also has implications when investigating the role of certain risk and resiliency factors. For example, the current study sought to investigate the role of coping style, however, other workers who have conducted similar studies suggest that differences in outcome as a function of coping style may not emerge until later in the course of children's recovery (Vernberg et al., 1996).

Another methodological design issue to emerge from the study was the limitations of retrospective research. As the study was joining an on-going study, the measures on coping and social support had to be administered at the 3-month follow-up (time 2). While this provided a retrospective measure of coping and social support in the past 3-months, it would have been useful to also administer these measures at initial

assessment. This would have allowed investigation of changes in coping over time, which workers observe is lacking in research (Compas and Epping, 1993) and would also have enabled investigation of the effect of coping and social support on later psychosocial functioning. Indeed, Compas and colleagues (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001) have argued that cross-sectional studies prevent identification of the efficacy of coping, as the direction of the relationship between coping and distress cannot be determined. Similar comments have been made by Bal and colleagues (Bal, Crombez, Van Oost, & Debourdeaudhuij, 2003) regarding research into the effect of social support on mental health.

A final design issue to be addressed was the lack of a control or comparison group in this study. Aaron and colleagues (Aaron, Zadlul, & Emery, 1999) note that studies of PTSD frequently omit a comparison group because of the nature of PTSD, being inextricably linked to a specific event, making it difficult to enquire about many symptoms in the absence of a specific stressor. Other studies have however used control groups, for example Yule and colleagues (2000) obtained a matched control group by asking trauma survivors to nominate a friend of the same age and sex. Despite the limitations of not having a control group, the current study was able to compare rates of PTSD and other psychosocial difficulties to those reported by other studies, including norms from non-traumatised populations. In addition, the study was able to investigate the relationship between coping style, social support, and post-trauma adjustment by comparing participants within the study. Indeed, Weisaeth (1998) suggests that factors influencing outcome are best determined by studying participants who have been exposed to and coped with trauma experiences without developing PTSD.

Research Informants

As previously reported, the study participants included children who had experienced a frightening event and their main caregiver. There were several reasons for this, the first being that multi-informant methods are generally considered to increase reliability of findings (Landolt, Vollrath, Ribi, Gnehm, & Sennhauser, 2003). Indeed, some workers have noted a tendency for children to under-report symptoms and therefore recommend the use of parent reports (Perrin, Smith, & Yule, 2000). However, others have suggested the opposite, stating that parents often under-report as they are not aware of the full extent of their children's symptoms (Schreier, Ladakakos, Morabito, Chapman, & Knudson, 2005).

Another reason for the studying including both parent and child-reports was its focus on coping and social support which was not restricted to the child but also interested in the role of parent coping style and social support. This broader approach has been recommended by Vernberg and colleagues (1996) who incorporated social support and coping into their model of PTSD following trauma, and emphasised the need for future studies to include measures from other sources such as parents and teachers when assessing such factors in children's post-trauma adjustment.

Wherever possible, the mother was asked to participate in the study as research indicates that mothers and fathers are assigned different roles when confronted with distressing events (Winje & Ulvik, 1998). In a small number of cases however, this was not possible for example when the father was the main-caregiver, and in such cases children's fathers participated instead.

Recruitment and Sample Size

A number of recruitment difficulties emerged during the course of this study and as a result, the study was unable to reach its desired sample size. This has important implications for its findings, in particular the increased likelihood of obtaining type II errors, also known as false negative results where the null hypothesis is falsely accepted. Indeed, sample size problems are a well-known difficulty in this area of research, many studies reportedly having limited ability to detect all but the largest effects due to small sample sizes (Compas et al., 2001).

Workers have reported various difficulties with recruitment in childhood trauma studies (Aaron et al., 1999), many of which were mirrored in the current study. The first recruitment issue was related to the appropriateness of the traumatic event. The study's selection criteria required that children had experienced extreme fear, helplessness or a sense of horror at the time of the event, as specified in the DSM-IV criteria for PTSD (APA, 1994). The vast majority of families contacted did not meet this criterion, and were not therefore eligible to take part.

Among the families who did meet all eligibility criteria (n=85), 29 families declined to participate, giving the study a response rate of 66%. This is comparable with other recent studies, which have reported response rates ranging from 43% to 83% (Stallard, Velleman, & Baldwin, 1998; Vernberg et al., 1996).

One reason parents gave when declining was concern about the possible impact on their child of participating in the study and talking about what happened, although some parents agreed to participate because of their concern about how their children

were coping following the trauma. Parents who felt their children had suffered no continued difficulties following the traumatic event frequently questioned whether it was appropriate for them to participate in the study. Such parents were given reassurance that the study was interested in children who had not experienced any further difficulties as well as those who had. Previous studies have reported similar difficulties conducting research with children exposed to trauma with a tendency for adults to be highly protective toward such children or deny that children can suffer psychiatric disturbance following trauma (Yule & Williams, 1990). Indeed, McDermott and Cvitanovich (2000) observed that parents were reticent about allowing psychological assessment of their child, feeling that they were unaffected or would get over it. Such factors may well have influenced which parents agreed to participate in the study and it is worth considering the possible implications of this for the generalisability of the research, as highlighted by Resick (2001) who suggested that participants in studies of trauma may not be representative of all trauma survivors.

The recruitment and sample size requirements of the study also raised important practical issues, in particular with recruitment and data collection being extremely lengthy processes. Recruitment initially involved searching A&E records for possible cases based on child age and crude accident information. All possible cases then had to be contacted by telephone to assess whether they met selection criteria and if so to invite them to participate in the study. Each family who agreed was seen for a first assessment within 4-weeks of the accident (normally in the family's home), lasting approximately 60-80 minutes. The family were then contacted by telephone 3-months later to arrange the follow-up appointment, and were visited for this second

appointment, lasting approximately 45-60-minutes. This procedure, which was already very time-consuming, was often lengthened further by difficulties contacting families to arrange appointments and once appointments had been made, families often cancelling or being unavailable when visited, therefore having to be rearranged.

Research Measures

The choice of research measures for the study raised several important methodological questions. A number of outcome measures were used in order to provide a broad assessment of children's psychosocial functioning. The importance of using appropriate measures has been well documented, as discussed by Meiser-Steadman (2002) who observed how the Impact of Events Scale (IES) has improved detection of PTSD in children. Although the IES was used in this study, continuous scores indicating severity rather than diagnostic cut-off points were used in the study's statistical analyses. Indeed such an approach has been recommended by Resick (2001) who identified the limitations of dichotomous thinking in research which assumes individuals are either recovered or have full-blown disorder, when individuals may be partially recovered, having fewer symptoms or less severe symptoms.

The study assessed other emotional and behavioural difficulties in addition to PTSD and there were several reasons for this approach. Firstly, it has been observed that post-trauma symptoms are less clear in children than adults and may be exhibited in different ways (McNally, 1996). Secondly, assessing wider functioning is important as PTSD diagnostic criterion F requires that symptoms cause clinically significant impairment in social, occupational or other areas of functioning (Kuhn, Blanchard, &

Hickling, 2003). Furthermore, many workers have commented on the frequency of other comorbid disorders following trauma (McMillen, North, Mosley, & Smith, 2002) and the need to assess the wider ramifications of trauma on children's quality of everyday life (Lucas, 2003; Mayou et al., 2002).

With regards to the assessment of coping, a range of possible coping tools are available and careful consideration was given to the choice of measures for the study. The Kidcope (Spirito, Stark, & Williams, 1988) was chosen to assess children's coping, however this measure does have a number of limitations, which must be considered. Firstly, the Kidcope has been criticised for lack of clarity, its items often combining more than one strategy (Compas et al., 2001). Other workers have raised concerns that each coping strategy in the Kidcope comprises only 1 or 2 items. Indeed this lead Vernberg and colleagues (1996) to suggest that some forms of coping used by the children in their study may have been under-reported. Nevertheless, the Kidcope is one of the most widely used coping measures and does provide a broad range of possible coping strategies (Stallard, Velleman, Langsford, & Baldwin, 2001). In addition the Kidcope has been validated for use with children aged 7-18 (Pretzlik & Sylva, 1999), and has adequate psychometric properties (Spirito et al., 1988). One of its major strengths is its brevity and this was a crucial factor behind its choice in the current study, given the extensive battery of interview and questionnaire measures being administered.

The choice of social support questionnaires in the study also raised questions particularly regarding the assessment of parent coping. It was decided that the short-form of the Social Support Questionnaire (SSQ6) would be used (Sarason, Shearin,

Pierce, & Sarason, 1987). This questionnaire provides information about the amount of support available to an individual, and level of satisfaction with this support. It is reported to have good psychometric properties (Sarason et al., 1987), and another strength was its brevity, which was again an important factor behind the choice of this questionnaire. However workers have highlighted some important limitations with this measure. For example, Bal and colleagues (2003) observe that the SSQ6 does not capture all dimensions of the complex construct of social support. The authors also acknowledge that the SSQ6 does not distinguish between different functions of social support (Sarason et al., 1987) however they state that this ma sufficient in studies investigating stressor-health relations as a general measure of buffer or protective effects of social support. As these were the main requirements of the current study it was decided that this would be an appropriate measure.

3.2 THEORETICAL AND RESEARCH IMPLICATIONS

The findings of this study have a number of important implications for theory and future research. The main theoretical issues to emerge relate to the development of models of PTSD in children, and the conceptualisation and assessment of coping styles in children exposed to trauma.

Models of Childhood PTSD

The study's findings regarding the role of social support and coping style on post-trauma adjustment in children has significant implications for models of childhood PTSD. Increased symptoms were found to be associated with reduced social support and increased use of all types of coping strategies ('active coping', 'self-blame' and 'wishful-thinking).

Children's coping style and level of social support may therefore be important mediating factors in models of childhood PTSD. For example, Ehlers and Clark's (2000) cognitive model of PTSD emphasises the appraisal of trauma, and the processing of it to integrate it with other autobiographical memory. Social support may have an important role to play in both of these processes. For example, the availability of parents and significant others, may help children to appraise the trauma as less threatening bearing in mind they have support to help them deal with it. Secondly, supportive significant others in children's lives may help them to process the trauma, for example by giving them an opportunity to talk about the event. The role of coping is already identified by Ehlers and Clark's cognitive model, which proposes that certain coping strategies are dysfunctional and prevent cognitive change. However this is not entirely consistent with the study's findings (as will be discussed in the next section) with increased PTSD symptoms being associated with an increase in all coping strategies not just the dysfunctional type strategies. Nevertheless, the study does support workers who have emphasised the need for such cognitive models to consider contextual factors such as the support received from others (Joseph, Williams, & Yule, 1997), social and developmental factors and the family's role in enabling the child to verbalise the traumatic event, facilitating emotional processing, and influencing the child's appraisals and coping styles (Meiser-Steadman, 2002; Salmon & Bryant, 2002). Indeed the findings lend support to the integrative conceptual model developed by Vernberg and colleagues (1996), in particular supporting the links it makes between factors, for example that the social environment (social support) exerts effects on PTSD symptoms after initial shock of trauma has occurred.

Theoretical Issues in Coping

The study produced some interesting findings with regards to the coping style of children and parents following traumatic events. Three main categories of child coping-style emerged and these were labelled 'active coping', 'self-blame', and 'wishful-thinking. The most robust category was 'active coping' and this combined several of the categories described in the Kidcope including cognitive restructuring, social support, problem solving, and distraction. This 'active coping' style does not appear to fit with most of the previous systems of categorising coping, for example it includes both problem-focused and emotion-focused strategies, approach and avoidant strategies, and primary and secondary control strategies. Indeed, other workers have found similar results in studies of children's coping (Ayers, Sandler, West, & Roosa, 1996; Walker, Smith, Garber, & Van Slyke, 1997).

Vernberg and colleagues (1996) raised similar concerns in their study of children's post-disaster, finding a very similar coping category, which they labelled 'positive coping'. They suggested that the common thread was that all strategies involve intentional non-hostile non-destructive action. Such findings may fit better with the more recent dimensional approach proposed by Compas and colleagues (2001) which distinguishes stress response along a broad dimension of voluntary versus involuntary responses. They suggest that coping strategies are voluntary responses involving conscious volitional efforts to regulate emotion, cognition, behaviour, physiology and the environment. These efforts can therefore include all manner of strategies (e.g. problem/emotion-focused, primary/secondary control, and approach/avoidance strategies). The 'active coping' style identified in the current

study appears to fit well as a voluntary response, whereas the other types of coping to emerge ('self-blame' and 'wishful-thinking) appear to fit more with the involuntary responses.

The study's findings also raised a number of questions regarding the assessment of coping and its influence on mental health. The fact that cross-sectional studies are unable to determine the direction of the relationship between coping and emotional distress and adjustment has been discussed earlier in this critical appraisal. However, the bi-directional nature of this relationship with distress leading to increased use of coping raises an additional problem highlighted in the study's findings. The study found that children with few adjustment difficulties were less likely to report use of coping strategies with children often stating that they had not needed to use the strategies, as they had not felt distressed. Therefore it is not surprising that increased symptoms are associated with increased use of all strategies, both positive and negative. Indeed, these findings have been replicated in other studies of post-trauma coping (Stallard et al., 2001; Vernberg et al., 1996). Nevertheless, the question remains as to how to assess the influence of coping strategies on children's adjustment. Vernberg and colleagues (1996) suggest that longer follow-up periods may be necessary to assess the impact of coping style on children's long-term recovery.

Another issue to consider in the assessment of coping is the overlap between diagnostic criteria and certain coping strategies. For example, in this study the avoidant-type strategies may have been confounded by avoidance symptoms of PTSD. Similar concerns were raised by Compas and colleagues (2001) who observed

that some subtypes of coping reported (eg internalising coping or aggressive coping) are potentially confounded with measures of symptoms.

Implications for Future Research

The methodological and theoretical issues discussed in this critical appraisal highlight some important implications for future research. Further research is clearly needed into children's post-trauma adjustment with particular emphasis on the factors influencing post-trauma outcome in children. The current study indicates that further investigation into the role of coping and social support would be warranted. Such studies would benefit from using a prospective, longitudinal design, with good sample size and use of control groups where appropriate. In addition, workers need to carefully consider any measures used, taking into account the benefits and limitations of such measures, and possible conclusions that can be drawn.

3.3 CLINICAL IMPLICATIONS

The findings of this study have a number of implications for the future assessment and treatment of children who have been exposed to traumatic events. Recent years have seen significant advances in the assessment and recognition of childhood PTSD, and a range of different treatment approaches have emerged including cognitive behavioural therapy, other psychosocial treatments such as eye movement desensitisation and reprocessing (EMDR), psychodynamic and family therapies, and pharmacological treatments (Cohena, Mannarino, & Rogal, 2001; Perrin et al., 2000). Although full consideration of these treatment approaches is beyond the scope of this critical appraisal, the following sections will summarise the key aspects of

clinical intervention in childhood PTSD giving particular consideration to how the study's findings on coping and social support might inform clinical practice.

Assessment of Post-Trauma Difficulties in Children

The current literature makes a number of recommendations regarding the assessment of children's difficulties following traumatic events. Perrin and colleagues (2000) recommend that the assessment include face-to-face interviewing of the child and their parent separately, self-report instruments, and other sources of information such as medical records, school reports. They suggest that information should be obtained on the child and parent's account of the trauma and its aftermath, the child's current functioning (including PTSD symptoms or other difficulties), the child's developmental history, family history (including psychiatric history, conflict, separations, etc), parental reactions to the trauma, and parental expectations about how the child should be reacting. Other workers such as Carr (2004) have recommended the monitoring of current symptoms and attempts to manage these symptoms (e.g. coping strategies used) so that treatment can be tailored to the individual child and family.

The current study found evidence that some children (particularly older children), initially denied symptoms that their parents had observed (e.g. nightmares), indicating the need to consider possible under-reporting of symptoms by children during assessment. When assessing children's post-trauma coping style, it would also be worth bearing in mind the study's findings on children's coping style following trauma. It emerged that children initially use a lot of coping strategies including positive as well as negative strategies following trauma, a finding supported by

previous studies (Stallard et al., 1998; Vernberg et al., 1996). Furthermore, the study found that increased use of coping (even positive coping strategies) was not necessarily associated with better functioning, as there appeared to be a bi-directional relationship between coping and distress, with children who were the most distressed trying more strategies that those who were not distressed. These findings therefore suggest that when assessing children's post-trauma coping, it is important not to assume that children are functioning well because they are using positive styles of coping, and to consider not only the types of strategies used but how effective children are finding these strategies.

The study found clear evidence of an association between lower levels of social support and increased post-trauma difficulties (PTSD and depressive symptoms). This highlights the need to consider social support available to children during assessment, which may help identify children at risk of post-trauma difficulties but also identify potential areas to target in treatment. Specific aspects of support that could be considered include the child's general home situation, communication and conflict in the family, and parental responses to the trauma including whether parents are supportive, acknowledge the child's concerns and allow them to discuss the event and their emotions. Wider social support factors could also be considered, for example support available from teachers, peers and close friends.

Treatment of Post-Trauma Difficulties in Children

As previously noted, the current literature reports a number of different approaches for treating children with post-trauma adjustment problems. A recent review of PTSD treatment in children and adolescents found a dearth of childhood treatment

studies compared with the amount of research that has been conducted into the treatment of PTSD in adults (Perrin et al., 2000). Nevertheless, the authors reported good evidence for cognitive behavioural programmes (CBT) incorporating education, imaginal or in-vivo trauma exposure, and coping skills development aimed at reducing children's symptoms and increasing their sense of control and wellbeing. Other treatment approaches, which have been identified, include EMDR (Shapiro, 1989), where the patient is required to make rapid eye movements during imaginal trauma exposure until the memory produces less distress, group treatments and crisis intervention, providing individuals with support and an opportunity for debriefing (Stallard & Law, 1993), and non-exposure based approaches such as psychodynamic and family therapies (Brom, Kleber, & Defres, 1989). However, these latter therapeutic approaches are reported tohave less consistent evidence than that found for CBT (Perrin et al., 2000).

Further research is clearly required to assess the effectiveness of current treatment approaches in childhood PTSD and to help develop and refine current practice. The current study's findings regarding children's post-trauma coping and social support provide some support for the consideration of these factors in treatment planning, and as described above, coping skills training is already included as a key element of many treatment programmes (Carr, 2004). However the current study's findings of an association between active coping and distress suggest that the picture may be somewhat more complex, at least in the initial weeks and months following trauma. Indeed it is possible that coping skills training may be of more benefit later on in the course of children's recovery.

The study's findings on the role of social support were more clear-cut with higher children's social support being significantly associated with better post-trauma outcome. These findings indicate that efforts directed at increasing children's social support would be a useful adjunct to treatment programmes. Indeed, workers have highlighted the need for treatment approaches to enhance family, school and peer group support (Carr, 2004; Joseph, Williams, & Yule, 1997). As reported by Carr (2004), traumatic events undermine children's beliefs about the safety of the world, their evaluation of themselves as competent, and their capacity to control their environment and live a full and satisfying life. Social support may therefore help address some of these difficulties, providing children with a more stable and predictable environment, fostering in them a sense of self-efficacy and control over events (Joseph, Williams, & Yule, 1997). Similarly, a study of paediatric burns survivors (LeDoux, Meyer, Blakeney, & Herndon, 1998) identified the family system as a valuable resource for ensuring children's recovery, and highlighted the need to work with families to promote cohesion, reduce conflict, enhance stability.

Workers have identified a number of ways in which this may be achieved. Carr (2004) suggested educating parents about how to be supportive, for example providing boundaries by re-establishing routines, engaging in pleasant activities with the children, and encouraging contact with friends. Similar guidelines were offered by Gurwitch and colleagues (Gurwitch, Silovsky, Schultz, Kees, & Burlingame, 2001) who also recommended that parents anticipate temporary behaviour problems but address it with firm limit setting, provide soothing activities, and give time and patience for the family and child to adjust. Recommendations have not been limited to the child's immediate family environment, some workers also offering guidelines

to teachers. Gurwitch et al. (2001) suggested a number of ways in which teachers could provide support, for example, recommending that teachers provide a predictable class routine, encourage discussion of emotions, tailor school work to the child's current level of functioning, provide information, anticipate and support anger outbursts, build sense of mastery and self-esteem, and communicate with other teachers and the child's parents.

The current study's findings therefore indicate that assessment of children's coping and social support may provide important information for treatment planning ensuring clinical interventions are tailored to the needs of the child. In addition, strategies aimed at improving coping style and improving children's social support networks may provide a useful adjunct to current treatment approaches.

3.3 CONCLUSIONS

In conclusion, the current study raised a number of important methodological issues and highlighted the complexity of childhood trauma research. It also raised some significant theoretical questions and further research is needed to help clarify some of these issues. Despite its limitations, the study has provided some interesting findings on the role of coping and social support in children's post-trauma adjustment and has a number of implications for clinical practice. While the conclusions of this study can only be tentative at this stage, they suggest that further research would be warranted, in particular focusing on the role of coping and social support in children's adjustment following traumatic events.

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APPENDIX 1

ETHICS APPROVAL LETTERS

Our ref: RM/cw/04A437

The Joint UCL/UCLH Committees on the Ethics of Human Research (Committee A)
Research & Development Directorate
1st Floor, Maple House
149 Tottenham Court Road
London
W1P 9LL

Ph: 0207 380 6977
Fax: 0207 380 9937

29th November 2004

Dr. Pasco Fearon
Lecturer in Psychology
Sub-Department of Clinical Health Psychology
University College London
Gower Street
London
WC1E 6BT

Dear Dr. Fearon,

Study title: *A prospective study of the development of posttraumatic stress reactions in children after frightening events*
REC reference: *03/0081*

Amendment date: *19th November 2004*

Thank you for your letter of 19th November 2004, notifying the Committee of the above amendment.

The amendment has been considered and approved by the Chair of Committee A.

The Committee does not consider this to be a "substantial amendment" as defined in the Standard Operating Procedures for Research Ethics Committees. The amendment does not therefore require ethical review by the Committee and may be implemented immediately, provided that it does not affect the management approval for the research given by the R&D Department for the relevant NHS care organisation.

Approved documents

The documents approved are as follows:

1. Covering Letter proposing study closes in June 2005. Dated 19th November 2004.
2. Additional Questionnaire to be used:
   - The Holmes-Rahe Scale for adults
   - The Children's Life Events Schedule CLES-C (1999)
   - The Social Support Questionnaire (SSQ6). Nfer-Nelson. (Separate versions for Adults & Children). (Sarason et al, 1983).
   - The COPE (Separate versions for Adults & Children). (1989; 1988)

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

REC reference number: 03/0081	Please quote this number on all correspondence

Yours sincerely,

University College London Hospitals NHS
NHS Trust

Co- Chairs
Mr M Harrison and Dr R MacAllister

The Joint UCL/UCLH Ethics Committee: Committee A
Research & Development
1st Floor, Vezey Strong Wing
112 Hampstead Road
London NW1 2LT
Tel: 020 7380 9579
Fax: 020 7380 9937
Website: www.uclh.org

1 April 2003

Our Ref: RM/sb/03A243

Dr Pasco Fearon
Lecturer in Psychology
Sub Department of Clinical Health Psychology
Gower Street
UCL

Dear Dr Fearon

REC Ref No: 03/0081 ***(please quote in all correspondence)***
REC Name: Committee A ***(please quote in all correspondence***
Study Title: A prospective study of the development of posttraumatic stress reactions in children after frightening events

Thank you for attending the ethics committee meeting on the 20 March 2003 to discuss your proposal.

The Joint UCL/UCLH Committee for Ethics on Human Research reviewed your application and the documents reviewed were as follows:

- REC application form
- Patient information sheet
- Patient consent form
- Research Protocol

Your application was approved in principle, however before final approval can be granted, the committee would like you to respond to the following concerns, which are detailed below:

- The Committee was uncertain about the scientific rigor of your approach. They thought that the hypothesis lacked specificity and they could not see how the endpoints that the investigator plans to measure could be used to test your hypothesis. The committee thought that the lead investigator 's inclusion criteria were too broad, given the wide range of traumatic experiences that children may have experienced. The committee felt that a control group was necessary.
- The PTSD questionnaire was extremely intrusive. The committees do not understand why it was necessary to ask children about other traumatic events in this way. The information leaflet does not warn parents that these questions will be asked.
- The information leaflet does not mention that one aim is to assess if the parent contributes to the development of PTSD by having poor parenting skills (to be assessed in the video session). This lack of transparency is close to deception and needs to be justified.

- The data protection questionnaire was not answered.
- Given recent studies indicating that the best way to avoid PTSD is not to talk about it should this study be allowed?

The Committee decided that it would be helpful for the lead investigator to attend the next meeting (24th April) to discuss these issues Please could you contact Sabrina Balendra on the above number so she can arrange this for you.

When submitting the response to the committee, please send revised documentation where appropriate **highlighting the changes** that you have made and **give revised version numbers and dates.**

Your application has been given a unique reference number please use it on all correspondence with the REC

Yours sincerely

Dr Pasco Fearon
Sub-Department of Clinical Health Psychology
University College London
Gower Street
London WC1E 6BT

26th September 2003

Our ref: BT/SG/N/03/106

Dear Dr Fearon

Re: N/03/106 - A prospective study of the development of posttraumatic stress reactions in children after frightening events.

Thank you for your letter of 8th September 2003 addressing the points of the Committee's earlier letter. I am happy to tell you that I am now able to approve this study on Chairman's action to be noted at future meeting of the Committee.

Please note the following conditions to the approval:

1. The Committee's approval is for the length of time specified in your application. If you expect your project to take longer to complete (i.e. collection of data), a letter from the principal investigator to the Chairman will be required to further extend the research. This will help the Committee to maintain comprehensive records.

2. Any changes to the protocol must be notified to the Committee. Such changes may not be implemented without the Committee or Chairman's approval.

3. The Committee should be notified immediately of any serious adverse events or if the study is terminated prematurely.

4. You are responsible for consulting with colleagues and/or other groups who may be involved or affected by the research, such as extra work for laboratories.

5. You must ensure that, where appropriate, nursing and other staff are made aware that research in progress on patients with whom they are concerned has been approved by the Committee.

6. The Committee should be sent one copy of any publication arising from your study, or a summary if there is to be no publication.

I should be grateful if you would inform all concerned with the study of the above decision.

Your application has been approved on the understanding that you comply with Good Clinical Practice and that all raw data is retained and available for inspection for 15 years.

Please quote the above study number in any future related correspondence.

APPENDIX 2

PARTICIPANT INFORMATION SHEETS

Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

How children and parents cope after a frightening event

You and your child are invited to take part in a research study looking at how children cope after experiencing a frightening event and how parents support their child during this time.

This information sheet tells you about why the research is being done and what you would be asked to do. Please take a few minutes to read it. We will contact you in the next 2 weeks to ask whether you would be interested in taking part.

Parent Information Sheet

What is the purpose of the study?

We hope that you and your child's views and experiences will help us understand more about how children cope after a frightening event. In the future, we hope this information will help us to advise and support families who experience such events, particularly the minority who experience longer-term problems.

We are interested in all children, so you and your child's views will be helpful to us even if you feel that he or she has *not* been affected by the event.

Why have I been chosen?

We are interesting in meeting all children between the ages of 7 and 12 who attended either UCLH or the Whittington Accident & Emergency departments following a frightening event. We would like to meet with at least 100 children and their parents.

Do I have to take part?

It should be emphasised that you do not have to take part in this study if you do not want to. If you decide to take part, you may withdraw at any time without giving a reason. Your decision to take part or withdraw will not affect your medical care and management in any way. When we first meet, we will make sure you have a copy of this information sheet and ask you to sign a consent form.

What would I have to do?

If you and your child do choose to take part in the study then we will arrange to meet with you either in central London or in your home (whichever you prefer) on two occasions.

First, we will ask you and your child to tell us briefly about the accident, do a tricky puzzle together in front of a video camera and complete a few simple questionnaires

that ask your ideas about the accident and your health before and after the accident. This meeting will take no more than 50 minutes.

We would like to meet again 3 months later to ask you both to complete the questionnaires again to see whether things have changed or stayed the same over time. This meeting will take about 30 minutes.

Are there any risks to us if we take part in the study?

We do not expect there to be any risks to taking part in the study. We ask you to tell us about the accident and some people may find talking about it upsetting. If you and your child have concerns, we will be happy to discuss these with you. If you feel it would be helpful, we can put you in touch with sources of support.

What are the benefits of taking part?

We hope that the information that we gather in this study will help us in the future to treat children who experience difficulties following a frightening event. On finishing the study, we will send you a summary of our findings.

What happens to the information collected?

All the information you provide will be kept completely confidential. Instead of using your name, we use a code to label the questionnaires and videotapes. A list of names and their codes will be kept separately and securely so that only the named researchers below can access it. In addition to using the information for this study, we may wish to use it to answer other questions in the future. We will therefore continue to keep the information securely so that only the researchers named below can access it. We will ask your permission to contact you again about future research.

What if something goes wrong?

We are obliged to inform all participants that whilst we do not anticipate any problems, if something goes wrong there are no special compensation arrangements available. In the event of negligence, you may have grounds for a legal action but you may have to pay for it. Regardless of this, if you wish to complain, or have concerns of this study, the normal National Health Service complaints mechanisms should be available to you.

Ethical review

University College London Hospital NHS Trust Ethics Committee has reviewed this study.

Thank you in advance for your help, please feel free to telephone or email us if you have any questions

Richard Bailie
Wendy Isenwater
Sarah Kee
Julia Ward
Telephone

Principle investigators: Dr. Pasco Fearon and Dr. Cathy Creswell, UCL.
Clinical Lead: Mr. M. Gavalas, UCLH

Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

Child Information Sheet

How children and parents cope after a frightening event

You are invited to take part in a project about children who have had a frightening experience. Please read this information sheet because it tells you why we are doing this project and what we will ask you to do if you say yes.

Why are we doing this project?

Lots of children have a frightening experience like a car accident so we need to understand more about how children cope and manage afterwards. We hope that what you tell us will help us understand how to look after children who are still upset a long time after the frightening event happened. We are interested to hear what every child and their parent has to say even if you are not upset.

Why have I been chosen?

We are inviting all children aged 7 – 14 who have been in a frightening event and had to go to hospital afterwards. We would like to see at least 100 children and their mum or dad.

Do I have to do it?

You do *not* have to take part in the project if you do not want to. If you decide to take part and then change your mind, that is OK and you won't have to tell us why you wanted to stop. If you decide to take part it will not change anything that happens to you in hospital. When we meet for the first time, we will ask you to sign a form to say that you will take part.

What will I have to do?

If you decide to take part in the project you and your mum or dad will meet us twice, either at home or in the centre of London. The first time will be in about 2 weeks. We will ask you to tell us a little bit about the accident, do a tricky puzzle together in front of a video camera and fill in a questionnaire about your ideas about the accident and your health. It will take about 50 minutes (about the same amount of time as a class at school). The second time we meet will be after 3 months and we will ask you to fill in the questionnaire again to see if you have changed or stayed the same. This time it will take about 30 minutes (about half the length of a class).

Are there any risks?
We don't think there are any risks, but there might be a small chance that some children may get a bit upset when talking about the accident or when doing the tricky puzzle. If this happens, we will try and help you to feel better by the time you leave. If you don't feel better, we will tell you about somewhere that you could go to talk to someone who can help.

Why will it be good to take part?
The things that you and the other children (and parents) tell us will be very useful and will help us find out how to help other children who have a frightening event in the future and stay upset for long time.

What happens to the questionnaires and videotapes?
Whatever you tell us will be kept confidential; that means that it will be a bit like secret and no one will see the questionnaires or videotapes except for the people doing the project (the names below). Your name will *not* be on the questionnaires or tapes.

What if something goes wrong?
We do not expect anything to go wrong, but if it does we will talk to your mum or dad about what they can do.

What will happen to the results of the project?
We hope to write a report for other people to see so that they can help other children who are upset by a frightening event. Your names will *not* be in the report.

Thank you for helping us. If you have any questions or worries about the study you can telephone or email any of us.

Telephone **020 7679 5955**

Richard Bailie
Wendy Isenwater
Sarah Kee
Julia Ward

Principle investigators: Dr. Pasco Fearon and Dr. Cathy Creswell, UCL
Clinical lead: Mr. M. Gavalas, UCLH

University College London Hospital NHS Trust Ethics Committee has reviewed this study.

APPENDIX 3

PARTICIPANT CONSENT FORMS

Sub-Department of Clinical Health Psychology

UNIVERSITY COLLEGE LONDON

GOWER STREET LONDON WC1E 6BT

ADULT CONSENT FORM

Title of project: **How children and parents cope after a frightening event**

Participant ID Number: _____

Date: _____

UCLH Project ID number: **03 / 0081**
Form version: **2**
CONFIDENTIAL

Please initial box

1. I confirm that I have read and understood the information sheet dated 9 April (version 2) for the above study and have had the opportunity to ask questions. ☐

2. I confirm that I have had sufficient time to consider whether or not want to be included in the study ☐

3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. ☐

4. I understand that sections of any of my child's medical notes may be looked at by Dr. Pasco Fearon, Dr. Cathy Creswell, Richard Bailie, Wendy Isenwater, Sarah Kee or Julia Ward. I give permission for these individuals to have access to my child's records. ☐

5. I agree to take part in the above study. ☐

Name of participant	Date	Signature
Name of Person taking consent	Date	Signature

Comments or concerns during the study

If you have any comments or concerns you may discuss these with the principle investigator **Pasco Fearon -** If you wish to go further and complain about any aspect of the way you have been approached or treated during the course of the study, you should write or get in touch with the Complaints Manager, UCL hospitals. Please quote the UCLH project number at the top this consent form.

1 form for Patient;
1 to be kept as part of the study documentation,
1 to be kept with hospital notes

Sub-Department of Clinical Health Psychology

UNIVERSITY COLLEGE LONDON

GOWER STREET LONDON WC1E 6BT

CHILD CONSENT FORM

Title of project: **How children and parents cope after a frightening event**

Participant ID Number: _____

Date: _____

UCLH Project ID number: **03 / 0081**
Form version: **2**
CONFIDENTIAL

Please put your initials in the boxes if you agree

1. I have read and understood the information sheet dated 9 April (version 2) and have asked any questions that I wanted to. ☐
2. I have had enough time to decide if I want to take part in the project. ☐
3. I understand that I only need to take part if I want to and that I am free to stop doing the project at any time, without giving any reason. ☐
4. I understand that the people doing the research project (Dr. Pasco Fearon, Dr. Cathy Creswell, Richard Bailie, Wendy Isenwater, Sarah Kee or Julia Ward) may look at my hospital notes if they need to. This is OK if my parent lets them. ☐
5. I agree to take part in this project. ☐

Name of participant	Date	Signature
Name of Person taking consent	Date	Signature

Comments or concerns during the study

If you have any comments or concerns you may discuss these with the principle investigator **Pasco Fearon** - If you wish to go further and complain about any aspect of the way you have been approached or treated during the course of the study, you should write or get in touch with the Complaints Manager, UCL hospitals. Please quote the UCLH project number at the top this consent form.

1 form for Patient;
1 to be kept as part of the study documentation,
1 to be kept with hospital notes

Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

ADULT CONSENT to be contacted in the future

Title of project: **How children and parents cope after a frightening event**

Participant ID Number: _____

Date: _____

UCLH Project ID number: **03 / 0081**
Form version: **2**
CONFIDENTIAL

Please initial box

1. I agree to you contacting me about future research ☐

Name of participant	Date	Signature
Name of Person taking consent	Date	Signature

Comments or concerns during the study

If you have anv comments or concerns you may discuss these with the principle investigator **Pasco Fearon -** If you wish to go further and complain about any aspect of the way you have been approached or treated during the course of the study, you should write or get in touch with the Complaints Manager, UCL hospitals. Please quote the UCLH project number at the top this consent form.

1 form for Patient;
1 to be kept as part of the study documentation,
1 to be kept with hospital notes

APPENDIX 4

PARENT RESEARCH MEASURES

CONFIDENTIAL

Participant number_____

Demographics and Child Medical History

We would like to find out a little about you as a family.

1. Are you working? If YES what is your occupation? _____

2. At what point did you finish your education? (circle)

   Vocational CSE O Level GCSE

   A Level Degree Other (specify) _____

3. How would you describe your ethnicity? (*prompts – white, black, Asian, African)*

   _____

We would now like to find out a little about your child's health.

4. Did you or your child have any health problems during the pregnancy of your child? *(prompts – for example did you experience hypertension, have a fall, or did you take medication?)*

   _____

5. Did you or your child have health problems during the birth of your child? *(prompts – did you have a caesarean section, was the child in intensive care, did the child breathe at first?)*

   _____

6. What was the birth weight of your child?

   _____

7. Has your child ever been admitted to a hospital? *(prompts – for example for an accident, operation, or if they had been knocked unconscious)*

   _____

8. Has your child ever had prolonged ill health requiring regular treatment by a Doctor? *(prompt – do they take any medication on an ongoing basis, e.g. for asthma?)*

   _____

9. Does your child receive Special Educational Needs support at school? (*prompt – have they had a statement of SENs? Literacy or numeracy difficulties?)*

   _____

CONFIDENTIAL

Participant number _____

Anxiety Disorder Interview Schedule for DSM-IV
ADULT VERSION - Brown, DiNardo and Barlow
Posttraumatic stress disorder

I. INITIAL ENQUIRY

1a. **What was the frightening event?** _____

			Tick
1b.	**Who experienced the frightening event?**	**Child**	☐
		Parent	☐

If child and parent
Talking about the frightening event that you and your child experienced...

OR if child only, read out instructions in italics
Talking about the frightening event that your child experienced and that you heard about

1c. **What was your emotional response while the event was occurring? *I when you heard about the event?***

_____

_____

If uncertain, **While the event was occurring *I when you heard about the event*, did you experience intense fear, helplessness, or horror?**
(Were you really scared, did you think you could nothing about it?)

YES _____ NO _____

1d. **Currently are you being bothered by such things as recurrent memories, thoughts, or dreams about the event, or distress when you hear or see things that remind you of the event?**

YES _____ NO _____

If YES, **How soon after the event occurred / began did you begin having these symptoms?**

_____

Skip to 2

If NO,

1e. **Since the event occurred, *have you ever* been bothered by such things as recurrent and distressed memories, dreams, or thoughts about the event?**

YES _____ NO _____

If NO, skip to 2

If YES, **After the event occurred, how soon did you begin to experience these distressing thoughts / memories / dreams? When did these symptoms stop?**

_____

_____

2. Re-experiencing symptoms

Use the space below each symptom to record the specific nature of that symptom (e.g., cues that elicit distress associated with the trauma). Use the comment section to record clinically useful information (e.g., duration of symptom).

For each re-experiencing symptom, make rating of Recurrence / Distress (i.e. frequency and intensity) using the scale and suggested queries below.

RECURRENCE / DISTRESS:

Inquiry for patients who respond **YES** to **either** items **1d or 1e**:

How often do you experience _____ ?;
If YES **How much distress does / did this produce?**

Inquiry for patients who respond NO to **both** Items 1d. and 1e.:

Since the event, did you experience _____?;

Then if YES **Currently, how often do you experience _____?;**
And **How much distress does this produce?**

0 - - - - - - 1 - - - - - - 2 - - - - - - 3 - - - - - - 4 - - - - - - 5 - - - - - - 6 - - - - - - 7 - - - - - - 8

No	Rarely	Occasionally	Frequently	Constantly
No distress	Mild distress	Moderate distress	Severe distress	Extreme distress

a. Intrusive recollections of the event (including images, thoughts, perceptions)
(= unbidden thoughts, as opposed to thoughts they have chosen to think about. Patient knows that they refer to something in the past, but relive it while thinking about it).

frequency _____ distress _____

comments _____

b. dreams of the event
(has to be dreams of the actual event, i.e. in case of parents hearing about it on the phone, would have to be dreams of receiving the phone call).

frequency _____ distress _____

comments _____

c. acting or feeling as if the event were recurring (e.g. flashbacks, hallucinations, illusions reliving the trauma)
(patient must think that this is in the present when they experience it, often occurs when falling asleep or waking).

frequency _____ distress _____

comments _____

d. emotional distress at exposure to internal or external cues that are reminders of the event
(how do you feel when you are reminded of the event?)

frequency _____ distress _____

comments _____

e. Physical response at exposure to internal or external cues that are reminders of the event
(how does your body feel? Are there features of panic?)

frequency _____ distress _____

comments _____

IF NO EVIDENCE of current or past re-experiencing symptoms STOP

II. CURRENT EPISODE

Now I want to ask you a series of questions about this current period when you have been experiencing recurrent and distressing memories / dreams / thoughts of the event.

1. Since the event occurred how often have you experienced _____ ?

To what degree have you experienced _____ ?

Have you had this symptom only since the event occurred?

(Do not record symptoms that are associated with other conditions such as panic, depression, generalised anxiety etc.)

0 - - - - - -	1 - - - - - -	2 - - - - - -	3 - - - - - -	4 - - - - - -	5 - - - - - -	6 - - - - - -	7 - - - - - -	8
Never		Rarely		Occasionally		Frequently		Constantly
None		Mild		Moderate		Severe		Very severe

a. avoidance of thoughts, feelings, or conversations associated with the event

frequency _____ severity _____ (no need to check if only since event)

b. avoidance of activities, situations or people that are reminders of the event

frequency _____ severity_____ (no need to check if only since event)

c. inability to recall important aspects of the event

frequency _____ severity _____ (no need to check if only since event)

d. loss of interest and / or decreased participation in significant activities

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

e. **feeling detached or emotionally distant from others**
(perhaps feeling not as close to others as used to, like there is a glass wall between selves and others)

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

f. **restricted emotions (e.g. unable to have pleasant loving feelings)**
(think of Kerry's wavelength picture, and not feeling both positive and negative feelings as much, more numb and flattened wavelength)

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

g. **sense of foreshortened future (e.g. does not expect career, marriage, normal life span)**
(Kerry said this was unusual to find people saying that they thought their future was cut short in some way)

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

2. **Since the event occurred how often have you experienced _____?**

To what degree have you experienced _____?

Have you had this symptom only since the event occurred?
(do not record symptoms that are associated with other conditions such as panic, depression, generalised anxiety etc.)

0	1	2	3	4	5	6	7	8
Never		Rarely		Occasionally		Frequently		Constantly
None		Mild		Moderate		Severe		Very severe

a. **difficulty falling or staying asleep**

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

b. **irritability or outbursts of anger**

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

c. **difficulty concentrating**

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

d. **hypervigilance (always on the look out for danger around you)**
(perhaps checking behind you when walking down the street, feel that you need to take precautions to stop bad things happening to you)

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

e. **exaggerated startle response (jumpy, e.g. jump when hear a bang)**

frequency _____ severity _____ Onset since trauma? YES ____ NO _____

3. **In what ways have these recurrent and distressing memories / thoughts / dreams and the symptoms associated with them interfered with your life (E.g. daily routine, job, social activities)? How much are you bothered by these symptoms?**

_____

_____

_____

Researcher to rate level of interference _____ and distress _____
Use scale below

0	1	2	3	4	5	6	7	8
Never		Rarely		Occasionally		Frequently		Constantly
None		Mild		Moderate		Severe		Very severe

4. **When did the frightening event occur?**

DATE _____ / _____ / _____

If there is any *uncertainty* about the *onset* of the disorder ask:

5a. **When did these recurrent and distressing memories / thoughts / dreams and the symptoms associated with them become a problem in that they occurred persistently, you were bothered by the symptoms and they interfered with your life in some way?** (note if patient is vague about date of onset, attempt to gain more specific information, e.g. by linking onset to objective life events).

_____

DATE of ONSET _____ Month _____ Year

b. **How soon after the event occurred did you begin having the recurrent and distressing memories / thoughts / dream as well as the other symptoms associated with them?**

_____

NOTE: assign PTSD with delayed onset if syndrome began at least 6 months after the stressor. If symptoms occurred within four weeks of the event and lasted no longer than four weeks, consider Acute Stress Disorder

6. **Besides this current period of time when you've been having these recurrent and distressing memories / thoughts / dreams, have there been other, separate periods of time before this when you have had the same problems?**

YES _____ NO _____

If YES when? DATES of prior episodes _____

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Participant number _____

Parent Report: The Revised Children's Manifest Anxiety Scale (R-CMAS)

Read each question carefully. Think about how your child has been **in the last week**.

Put a circle around the word YES if you think it is true about your child. Put a circle around the word NO if you think it is not true about your child.

1. My child has trouble making up his/her mind	YES	NO
2. My child gets nervous when things do not go the right way for him/her.	YES	NO
3. Other children seem to do things easier than my child can.	YES	NO
4. My child likes everyone s/he knows	YES	NO
5. My child often has trouble getting his/her breath	YES	NO
6. My child worries a lot of the time	YES	NO
7. My child is afraid of a lot of things	YES	NO
8. My child is always kind	YES	NO
9. My child gets mad easily	YES	NO
10. My child worries about what I (or my partner) will say to him/her	YES	NO
11. My child feels that others do not like the way s/he does things	YES	NO
12. My child always has good manners	YES	NO
13. It is hard for my child to get to sleep at night	YES	NO
14. My child worries about what other people think about him/her	YES	NO
15. My child feels alone even when there are people with him/her	YES	NO
16. My child is always good	YES	NO
17. My child often feels sick in his/her stomach	YES	NO

18. My child's feelings get hurt easily	YES	NO
19. My child's hands feel sweaty	YES	NO
20. My child is nice to everyone	YES	NO
21. My child is tired a lot	YES	NO
22. My child worries about what is going to happen	YES	NO
23. Other children are happier than my child	YES	NO
24. My child tells the truth every single time	YES	NO
25. My child has bad dreams	YES	NO
26. My child's feelings get hurt easily when s/he is told off	YES	NO
27. My child feels someone will tell him/her s/he does things the wrong way	YES	NO
28. My child never gets angry	YES	NO
29. My child wakes up scared some of the time	YES	NO
30. My child worries when s/he goes to bed at night	YES	NO
31. It is hard for my child to keep his/her mind on schoolwork	YES	NO
32. My child never says things/he shouldn't	YES	NO
33. My child wiggles in his/her seat a lot	YES	NO
34. My child is nervous	YES	NO
35. My child thinks a lot of people are against him/her	YES	NO
36. My child never lies	YES	NO
37. My child often worries about something bad happening to him/her	YES	NO

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Participant number _____

Parent Report Impact of Events Scale

On (date)_____

Your child experienced (life event)_____

Below is a list of comments made by people after stressful life events. Please check each item, indicating how frequently you believe these comments were true for your child **during the past seven days**. If you think they did not occur during that time, please tick the 'not at all' column.

	Frequency			
	Not at all	**Rarely**	**Sometimes**	**Often**
1. My child thought about it when s/he didn't mean to				
2. My child tried not to get upset when s/he thought about it or was reminded about it.				
3. My child tried to remove it from memory				
4. My child had trouble falling asleep or staying asleep, because of the pictures or thoughts about it that came into his/her mind				
5. My child had waves of strong feelings about it				
6. My child had dreams about it				
7. My child stayed away from reminders of it.				
8. My child felt as if it hadn't happened or it wasn't real				
9. My child tried not to talk about it				
10. Pictures about it popped into his/her mind				
11. Other things kept making my child think about it				
12. My child was aware that s/he had a lot of feelings about it, but didn't deal with them				
13. My child tried not to think about it				
14. Any reminder brought back feelings about it for him/her				
15. My child's feelings about it were kind of numb				

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Participant number _____

Birleson Depression Scale – Questionnaire
REVISED PARENT VERSION

Directions: The statements below refer to how your child has felt **over the past week**. There are no right or wrong answers. Please answer with your best estimate of how they have felt. Put a tick in the appropriate box. Thank you.

	Most	**Sometimes**	**Never**
1. My child looks forward to things as much as s/he used to			
2. My child sleeps very well			
3. My child feels like crying			
4. My child likes going out to play			
5. My child feels like running away			
6. My child gets tummy aches			
7. My child has lots of energy			
8. My child enjoys their food			
9. My child can stick up for themselves			
10. My child thinks that life isn't worth living			
11. My child thinks they are good at what they do			
12. My child enjoys the things they do as much as they used to			
13. My child likes talking to their family			
14. My child has horrible dreams			
15. My child feels very lonely			
16. My child is easily cheered up			
17. My child feels so sad that they can hardly stand it			
18. My child feels very bored			

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Participant number _____

Strengths and Difficulties Questionnaire

To be completed by a main carer of a child aged between 4 and 16

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all the items as best you can even if you are not absolutely certain, or the items seem daft! Please give your answers on the basis of the child's behaviour **over the last six months *before* the frightening event.** *For Time 2 assessments wording changed to* ***over the last month.***

	Not true	**Somewhat true**	**Certainly true**
1. Considerate of other people's feelings			
2. Restless, overactive, cannot sit still for long			
3. Often complains of headaches, stomach aches or sickness			
4. Shares readily with the other children (treats, toys, pencils etc.)			
5. Often has temper tantrums or hot tempers			
6. Rather solitary, tends to play alone			
7. Generally obedient, usually does what adults request			
8. Many worries, often seems worried			
9. Helpful is someone is hurt, upset or feeling ill			
10. Constantly fidgeting or squirming			
11. Has at least one good friend			

	Not true	Somewhat true	Certainly true
12. Often fights with other children or bullies them			
13. Often unhappy, downhearted or tearful			
14. Generally liked by other children			
15. Easily distracted, concentration wanders			
16. Nervous or clingy in new situations, easily loses confidence			
17. Kind to younger children			
18. Often lies or cheats			
19. Picked on or bullied by other children			
20. Often volunteers to help others (parents, teachers, other children)			
21. Thinks things out before acting			
22. Steals from home, school or elsewhere			
23. Gets on better with adults than with other children			
24. Many fears, easily scared			
25. Sees tasks through to the end, good attention span			

Overall, do you think that your child has difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No difficulties	Yes - minor difficulties	Yes - more serious difficulties	Yes - severe difficulties
☐	☐	☐	☐

If you have answered **'Yes',** please answer the following questions about these difficulties:

- **How long have these difficulties been present?**

Less than a month	1 – 5 months	5 –12 months	Over a year
☐	☐	☐	☐

- **Do the difficulties upset or distress your child?**

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

- **Do the difficulties interfere with you child's everyday life in the following areas?**

Home life

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Friendships

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Classroom learning

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Leisure activities

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

- **Do the difficulties put a burden on you or your family as a whole?**

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

STRESSFUL LIFE EVENTS SCALE:

Please read each of the events listed below.
In the first column tick the items, which have occurred in your life in the year prior to the frightening event. In the second column tick the column if the event has occurred in the period since the frightening event. There are no right or wrong answers. The aim is just to identify which of these events you have experienced lately. *NB. Please remember to complete BOTH columns.*

	Life Events:	**In the 12 months before the frightening event**	**Since the frightening event**
1	Death of spouse		
2	Divorce		
3	Marital separation		
4	Jail term		
5	Death of close family member		
6	Personal injury of illness		
7	Marriage		
8	Fired at work		
9	Martial reconciliation		
10	Retirement		
11	Change in health of a family member		
12	Pregnancy		
13	Sexual difficulties		
14	Gain of new family member		
15	Business readjustment		
16	Change in financial state		
17	Death of close friend		
18	Change to different line of work		
19	Change in number of arguments with spouse		
20	Major mortgage or loan		
21	Foreclosure of mortgage or loan		
22	Change in responsibilities at work		
23	Son or daughter leaving home		
24	Trouble with in-laws		
25	Outstanding personal achievement		
26	Spouse begins or stops work		
27	Begin or end school		
28	Change in living conditions		
29	Revision in personal habits		
30	Trouble with boss		
31	Change in work hours or conditions		
32	Change in residence		
33	Change in schools		
34	Change in recreation		
35	Change in church activities		
36	Change in social activities		
37	Minor mortgage or loan		
38	Change in sleeping habits		
39	Change in number of family get-togethers		
40	Change in eating habits		
41	Holiday		
42	Christmas alone		
43	Minor violations of the law		

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COPE

Name: _____ Date: _____

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. Obviously different events bring out somewhat different responses. This questionnaire asks you to indicate what you did and how you felt following the recent frightening event involving your child.

What was the frightening event: _____

Think about the frightening event you have just described and how you reacted to it. Then indicate the extent to which you did whatever each following statement says:

Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully and make your answers as true FOR YOU as you can. Please answer every item. There are no right or wrong answers, so choose the most accurate answer for YOU – not what you think most people would say or do.

		I didn't do this at all	**I did this a little bit**	**I did this a medium amount**	**I did this a lot**
1	I tried to grow as a person as a result of the experience				
2	I turned to work or other substitute activities to take my mind off things				
3	I got upset and let my emotions out				
4	I tried to get advice from someone about what to do				
5	I concentrated my efforts on doing something about it				
6	I said to myself "this isn't real"				
7	I put my trust in God				
8	I laughed about the situation				
9	I admitted to myself that I couldn't deal with it, and gave up trying				
10	I restrained myself from doing anything too quickly				
11	I discussed my feelings with someone				
12	I used alcohol or drugs to make myself feel better				
13	I got used to the idea that it had happened				
14	I talked to someone to find out more about the situation				
15	I kept myself from getting distracted by other thoughts or activities				
16	I daydreamed about things other than this				

COPE		I didn't do this at all	I did this a little bit	I did this a medium amount	I did this a lot
17	I got upset, and was really aware of it				
18	I sought God's help				
19	I made a plan of action				
20	I made jokes about it				
21	I accepted that this had happened and that it couldn't be changed				
22	I held off doing anything about it until the situation permitted				
23	I tried to get emotional support from friends and relatives				
24	I just gave up trying to reach my goal				
25	I took additional action to try to get rid of the problem				
26	I tried to lose myself for a while by drinking alcohol or taking drugs				
27	I refused to believe that it had happened				
28	I let my feelings out				
29	I tried to see it in a different light to make it seem more positive				
30	I talked to someone who could do something about the problem				
31	I slept more than usual				
32	I tried to come up with a strategy about what to do				
33	I focused on dealing with this problem and if necessary let other things slide a little				
34	I got sympathy and understanding from someone				
35	I drank alcohol or took drugs in order to think about it less				
36	I kidded around about it				
37	I gave up the attempt to get what I wanted				
38	I looked for something good in what was happening				
39	I thought about how I might best handle the problem				
40	I pretended that it hadn't really happened				
41	I made sure not to make matters worse by acting too soon				
42	I tried hard to prevent other things from interfering with my efforts at dealing with this				

COPE		I didn't do this at all	I did this a little bit	I did this a medium amount	I did this a lot
43	I went to the cinema or watched television to think about it less				
44	I accepted the reality of the fact that it happened				
45	I asked people who have had similar experiences what they did				
46	I felt a lot of emotional distress and found myself expressing those feelings a lot				
47	I took direct action to get around the problem				
48	I tried to find comfort in my religion				
49	I forced myself to wait for the right time to do something				
50	I made fun of the situation				
51	I reduced the amount of effort I put into solving the problem				
52	I talked to someone about how I felt				
53	I used alcohol or drugs to help me get through it				
54	I learned to live with it				
55	I put aside other activities in order to concentrate on this				
56	I thought hard about what steps to take				
57	I acted as thought it hadn't even happened				
58	I did what had to be done, one step a time				
59	I learned something useful from the experience				
60	I prayed more than usual				

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SOCIAL SUPPORT QUESTIONNAIRE (SSQ)

Name: _____ Date: _____

Instructions:

The following questions ask about people in your environment who provide you with help or support. Each question has two parts:

For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give each person's initials and their relationship to you (see example). Do not list more than one person next to each of the numbers beneath each question. Do not list more than nine people per question.

For the second part, using the scale below, circle how satisfied you are with the overall support you have.

6 Very satisfied	5 Fairly satisfied	4 A little satisfied	3 A little dissatisfied	2 Fairly dissatisfied	1 Very dissatisfied

If you have no support for a question, tick the words 'No one', but still rate your level of satisfaction. The example below has been completed to help you.

Example:

Who do you know whom you can trust with information that could get you into trouble?

(a) No one
(1) TEN (brother)
(2) LM (friend)
(3) ASS (friend)
(4) PEN (father)
(5) LM (employer)
(6)
(7)
(8)
(9)

(b) How satisfied? 6 5 4 3 2 1

SSQ (CONT)

6 Very satisfied	5 Fairly satisfied	4 A little satisfied	3 A little dissatisfied	2 Fairly dissatisfied	1 Very dissatisfied

(1) Who can you really count on to distract you from your worries when you feel under stress?

(a) No one (3) (6) (9)
(1) (4) (7)
(2) (5) (8)

(b) How satisfied? 6 5 4 3 2 1

(2) Who can you really count on to help you feel more relaxed when you are under pressure or tense?

(a) No one (3) (6) (9)
(1) (4) (7)
(2) (5) (8)

(b) How satisfied? 6 5 4 3 2 1

(3) Who accepts you totally, including both your worst and best points?

(a) No one (3) (6) (9)
(1) (4) (7)
(2) (5) (8)

(b) How satisfied? 6 5 4 3 2 1

(4) Who can you really count on to care about you, regardless of what is happening o you?

(a) No one (3) (6) (9)
(1) (4) (7)
(2) (5) (8)

(b) How satisfied? 6 5 4 3 2 1

(5) Who can you really count on to help you feel better when you are feeling generally down-in-the dumps?

(a) No one (3) (6) (9)
(1) (4) (7)
(2) (5) (8)

(b) How satisfied? 6 5 4 3 2 1

(6) Who can you count on to console you when you are very upset?

(a) No one (3) (6) (9)
(1) (4) (7)
(2) (5) (8)

(b) How satisfied? 6 5 4 3 2 1

Information given to the participants at end of Time 2 assessment:

Thanks for helping us with this research. We are interested in looking at how children and their parents cope following a frightening event. You have helped us by telling us about how you and your child have been feeling and thinking since the frightening event happened. We spoke to you soon after the event and again now to see what you are doing to cope and how you are.

We will look at your responses and combine them with responses from other people to see what helps children to cope after something frightening happens. Currently we know very little about how children cope after a frightening event, we hope that this research will help us to understand what helps children adjust after something frightening happens to them. We hope that this information will be used to help treat those children who have difficulties after a frightening event. F

For example we might find that if the adult talks about the event with the child then this helps the family to understand what happened to them, and so feel less afraid of it occurring again.

If this was true, we could suggest this to the parents of children who do have problems, allowing them to help their child to get better.

If child still has PTSD and parents are worried,
As your child still seems to be experiencing some problems, you may wish to speak to your GP about these and seek additional support if they seem to be affected his/her life.

Here is the number and details of a psychological treatment research study that we are working with to offer children rapid access to treatment. If you would like an appointment you can complete this referral form, and we can send it to them for you.

Referral form to complete and be sent by researcher.

FUTURE CONTACT
To say thanks for all your help, we would like to offer you (CHILD) a book token.

At UCL we are continuing to do research about frightening events, we can't do this without your help.

If you would be willing to participate in future research, please sign this form giving your consent to be contacted in the future by UCL.

APPENDIX 5

CHILD RESEARCH MEASURES

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ADIS - child

TRAUMATIC EVENT? Yes ○

Please specify: .....

- Has something really terrible or upsetting happened, like being very sick or badly hurt?
- Have you seen anyone else get badly hurt or die?
- Have you been in a really bad accident or fire where you could have died?

LESS THAN 1 MONTH SINCE EVENT? Yes ○

Please specify: .....

RE-EXPERIENCING SYMPTOMS:

11.	Do you have a lot of thoughts that you don't want to have about [frightening event]?	Yes ☐	No ☐
12.	Do you ever play or draw pictures about [event]?	Yes ☐	No ☐
13.	Do you have a lot of bad dreams about [event]?	Yes ☐	No ☐
14.	Do you sometimes feel that [event] is about to happen again?	Yes ☐	No ☐
15.	When things remind you of [event], do you get uncomfortable feelings in your body? Eg, does your heart beat real fast? Do you sweat or shake?	Yes ☐	No ☐

➢ **STOP.** If "Yes" for **one** or more among 11-15 then tick ○

AVOIDANCE SYMPTOMS:

16. Do you try very hard not to think about [event]? Yes ☐ No ☐

17. Do you try to stay away from things that remind you of [event]? Yes ☐ No ☐

18. Are there some things about [event] that you don't remember? Yes ☐ No ☐

19. Since [event], have you stopped doing things that you used to enjoy?
Eg, playing games, going on outings, doing hobbies? Yes ☐ No ☐

20. Have you become less interested in seeing friends since [event]? Yes ☐ No ☐

21. Since [event], has it become difficult for you to show other people how you feel?
Eg, are you hiding your feelings and keeping them to yourself? Yes ☐ No ☐

22. Do you think that when you grow up, you will be able to do all of the things that you would like to do, such as going to college, getting married, getting a job, having children or things like that? Yes ☐ No ☐

23. Since [event], are you doing some things now that you haven't done since you were a little kid, like maybe wetting your pants/bed, sucking your thumb or always wanting to be with your mum or dad? Yes ☐ No ☐

➢ **STOP.** If "Yes" for **three** or more among 16-23 then tick ◯

HYPERAROUSAL SYMPTOMS:

Have you had any of these problems since [event]?

24a	Trouble sleeping	Yes ☐	No ☐
24b	Losing your temper	Yes ☐	No ☐
24c	Having a hard time paying attention	Yes ☐	No ☐
24d	Being on the "look out" so you will be ready if something bad happens	Yes ☐	No ☐
24e	When things happen by surprise or all of a sudden. Like hearing a loud noise that you didn't expect, does it make you "jump"? ➢ mime startle response	Yes ☐	No ☐

➢ **STOP.** If "Yes" for **two** or more among 24a-24e then tick ○

INTERFERENCE:

"Okay, I want to know how much you feel this problem has messed things up in your life. That is, how much has it messed things up for you with friends, in school, or at home? How much does it stop you from doing things you would like to do? Tell me how much by using the **Feeling Thermometer** we discussed earlier, ok?"

If clinical interference is indicated, tick ○

If all six criterion circles are ticked, then consider PTSD diagnosis.

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Impact of Events Scale (IES-15)

On_____ you experienced_____.

Below is a list of things some people say after frightening events. Please read each one carefully and put a tick in the box, showing how much it was true for you DURING THE PAST SEVEN DAYS. If it was not true during that time, please tick the "not at all" column.

	Not at all	Not very often	Sometimes	Often
I thought about it when I didn't mean to.				
I avoided letting myself get upset when I thought about it or was reminded of it.				
I tried to remove it from memory.				
I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind.				
I had waves of strong feelings about it.				
I had dreams about it.				
I stayed away from reminders of it.				
I felt as if it hadn't happened or it wasn't real.				
I tried not to talk about it.				
Pictures about it popped into my mind.				
Other things kept making me think about it.				
I was aware that I still had a lot of feeling about it, but I didn't deal with them.				
I tried not to think about it.				
Any reminder brought back feelings about it.				
My feelings about it were kind of numb.				

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Child Manifest Anxiety Scale (R-CMAS)

Below is a list of sentences. Please read each one carefully and put a tick in the box, showing if it is TRUE or FALSE for you. There are no right or wrong answers. Please answer as honestly as you can.

	True	False
I have trouble making up my mind		
I get nervous when things do not go the right way for me		
Others seem to do things easier than I can		
I like everyone I know		
Often I have trouble getting my breath		
I worry a lot of the time		
I am afraid of a lot of things		
I am always kind		
I get mad easily		
I worry about what my parents will say to me		
I feel that others do not like the way I do things		
I always have good manners		
It is hard for me to get to sleep at night		
I worry about what other people think about me		
I feel alone even when there are other people with me		
I am always good		
Often I feel sick in my stomach		
My feelings get hurt easily		
My hands feel sweaty		
I am always nice to everyone		
I am tired a lot		

Please turn over...

	True	False
I worry about what is going to happen		
Often other children are happier than I		
I tell the truth every single time		
I have bad dreams		
My feeling get hurt easily when I am told off		
I feel someone will tell me I do things the wrong way		
I never get angry		
I wake up scared some of the time		
I worry when I go to bed at night		
It is hard for me to keep my mind on my schoolwork		
I never say things I shouldn't		
I wiggle in my seat a lot		
I am nervous		
A lot of people are against me		
I never lie		
I often worry about something bad happening to me		

Thank you.

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Birleson Depression Inventory (BDI)

Below is a list of sentences. Please read each one carefully and put a tick in the box, showing how much it was true for you DURING THE PAST SEVEN DAYS.

There are no right or wrong answers but it is important to say how you have felt. Please answer as honestly as you can.

	Most of the time	Sometimes	Never
I look forward to things as much as I used to.			
I sleep very well.			
I feel like crying.			
I like to go out to play.			
I feel like running away.			
I get tummy aches.			
I have lots of energy.			
I enjoy my food.			
I can stick up for myself.			
I think life isn't worth living.			
I am good at things I do.			
I enjoy the things I do as much as I used to.			
I like talking with my family.			
I have horrible dreams.			
I feel very lonely.			
I am easily cheered up.			
I feel so sad I can hardly stand it.			
I feel very bored.			

PEOPLE IN MY LIFE (SSCS)

Name: _____ Date: _____

Instructions:
For each of the 24 items listed below, there are two statements. Read both statements and decide which statement is most like you. Once you have done this, tick the box next to that statement to show whether the statement is 'really true' for you or 'sort of true' for you.

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
Sample Item	☐	☐	Some kids like to do fun things with a lot of other people	**BUT**	Other kids like to do fun things with just a few people	☐	☐
1.	☐	☐	Some kids have parents who ***don't*** really ***understand*** them	**BUT**	Other kids have parents who really ***do understand*** them	☐	☐
2.	☐	☐	Some kids have class-mates who like them the way they are	**BUT**	Other kids have class-mates who wish they were ***different***	☐	☐
3.	☐	☐	Some kids have a teacher who ***helps*** them if they are ***upset*** and have a problem	**BUT**	Other kids ***don't*** have a teach who helps them if they are upset and have a problem	☐	☐
4.	☐	☐	Some kids have a close friend who they can tell their ***problems*** to	**BUT**	Other kids ***don't*** have a close friend who they can tell problems to	☐	☐
5.	☐	☐	Some kids have parents who ***don't*** seem to want to hear about their children's problems	**BUT**	Other kids have parents who ***do*** want to ***listen*** to their children's problems	☐	☐
6.	☐	☐	Some kids have class-mates that they can become friends with	**BUT**	Other kids ***don't*** have classmates that they can become friends with	☐	☐
7.	☐	☐	Some kids ***don't*** have a teacher who ***helps*** them to do their very best	**BUT**	Other kids ***do*** have a teacher who ***helps*** them do their very best	☐	☐
8.	☐	☐	Some kids have a close friend who really understands them	**BUT**	Other kids ***don't*** have a close friend who understands them	☐	☐
9.	☐	☐	Some kids have parents who ***care*** about their feelings	**BUT**	Other kids have parents who ***don't*** seem to care very much about their children's feelings	☐	☐
10.	☐	☐	Some kids have class-mates who sometimes make fun of them	**BUT**	Other kids ***don't*** have classmates who make fun of them	☐	☐

PEOPLE IN MY LIFE (SSCS) - continued

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
11.	☐	☐	Some kids ***do*** have a teacher who ***cares*** about them	**BUT**	Other kids ***don't*** have a teacher who cares about them	☐	☐
12.	☐	☐	Some kids have a close friend who they can talk to about things that bother them	**BUT**	Other kids ***don't*** have a close friend who they can talk to about things that bother them	☐	☐
13.	☐	☐	Some kids have parents who treat their children like a ***person*** who really matters	**BUT**	Other kids have parents who ***don't*** usually treat their children like a person who matters	☐	☐
14.	☐	☐	Some kids have class-mates who ***pay attention*** to what they say	**BUT**	Other kids have class-mates who usually ***don't*** pay attention to what they say	☐	☐
15.	☐	☐	Some kids ***don't*** have a teacher who is ***fair*** to them	**BUT**	Other kids ***do*** have a teacher who is fair to them	☐	☐
16.	☐	☐	Some kids ***don't*** have a close friend who they like to spend time with	**BUT**	Other kids ***do*** have a close friend who they like to spend time with	☐	☐
17.	☐	☐	Some kids have parents who like them the ***way they are***	**BUT**	Other kids have parents who wish their children were ***different***	☐	☐
18.	☐	☐	Some kids ***don't*** get asked to play in games with classmates very often	**BUT**	Other kids ***often*** get asked to play in games by their classmates	☐	☐
19.	☐	☐	Some kids ***don't*** have a teacher who carers if they feel bad	**BUT**	Other kids ***do*** have a teacher who cares if they feel bad	☐	☐
20.	☐	☐	Some kids ***don't*** have a close friend who really listens to what they say	**BUT**	Other kids ***do*** have a close friend who really listens to what they say	☐	☐
21.	☐	☐	Some kids have parents who ***don't*** act like what their children do is ***important***	**BUT**	Other kids have parents who ***do*** act like what their children do is important	☐	☐
22.	☐	☐	Some kids often spend play-time being ***alone***	**BUT**	Other kids spend play-time with their classmates	☐	☐
23.	☐	☐	Some kids have a teacher who treats them like a ***person***	**BUT**	Other kids ***don't*** have a teacher who treats them like a person	☐	☐
24.	☐	☐	Some kids ***don't*** have a close friend who cares about their feelings	**BUT**	Other kids ***do*** have a close friend who cares about their feelings	☐	☐

KIDCOPE (AGE 7-12)

Name: _____ Date: _____

Instructions:
We are trying to find out how children deal with frightening events. There are lots of ways to try to deal with frightening events. Some of these are listed below. Think of the frightening event you experienced recently and answer the following questions to show how you dealt with this. There are no right or wrong answers so choose the answer that was most true for you

How did it make you feel?		**Not at all**	**A little**	**Somewhat**	**A lot**	**Very much**
1	Did that time (the frightening event) make you feel **nervous** or **anxious?**	0	1	2	3	4
2	Did it make you feel **sad** or **unhappy?**	0	1	2	3	4
3	Did it make you feel **cross** or **angry?**	0	1	2	3	4

Did you...		**Did you...?**		**How much did it help?**		
		Yes	**No**	**Not a lot**	**A little**	**A lot**
1.	Try to forget it	Yes	No	0	1	2
2.	Do something like watch telly or play a game to forget it	Yes	No	0	1	2
3.	Stay on your own	Yes	No	0	1	2
4.	Keep quiet about the problem	Yes	No	0	1	2
5.	Try to see the good side of things	Yes	No	0	1	2
6.	Blame yourself for causing the problem	Yes	No	0	1	2
7.	Blame someone else for causing the problem	Yes	No	0	1	2
8.	Try to sort out the problem	Yes	No	0	1	2
9.	Try to sort out the problem by doing something or talking to someone about it	Yes	No	0	1	2
10.	Shout, scream or get angry	Yes	No	0	1	2
11.	Try to calm yourself down	Yes	No	0	1	2
12.	Wish the problem had never happened	Yes	No	0	1	2
13.	Wish you could make things different	Yes	No	0	1	2
14.	Try to feel better by spending time with others like family, grown-ups or friends	Yes	No	0	1	2
15.	Do nothing because the problem couldn't be solved	Yes	No	0	1	2

KIDCOPE (AGE 13-18)

Name: _____ Date: _____

Instructions:
We are trying to find out how young people deal with frightening events. There are lots of ways to try to deal with frightening events. Some of these are listed below. Think of the frightening event you experienced recently and answer the following questions to show how this made you feel, how you dealt with this situation and how helpful this was. There are no right or wrong answers so choose the answer that was most true for you

How did it make you feel?		Not at all	A little	Somewhat	A lot	Very much
1	Did that time (the frightening event) make you feel **nervous** or **anxious?**	0	1	2	3	4
2	Did it make you feel **sad** or **unhappy?**	0	1	2	3	4
3	Did it make you feel **cross** or **angry?**	0	1	2	3	4

		Yes	No
4.	Is there something you could change or do about it?	Yes	No
5.	Is this situation one that must be accepted or you must get used to?	Yes	No
6.	Is this situation one that you needed to know more about before you could act?	Yes	No
7.	Is this situation one in which you had to hold yourself back from doing what you wanted to do?	Yes	No

KIDCOPE (AGE 13-18) (CONT.)

Instructions:
Please read each item and circle any phrases that apply (if any). Next, answer both questions to the right of each item and circle the best answer.

	How often did you do this?				How much did it help?				
	Not at all	Some-times	A lot of the time	Almost all of the time	Not at all	A little	Some-what	Pretty much	Very much
1. I thought about something else, tried to forget it, and/or went and did something like watch the telly or play games to get it out of my mind	0	1	2	3	0	1	2	3	4
2. I stayed away from people, kept my feelings to myself, and handled that time on my own	0	1	2	3	0	1	2	3	4
3. I tried to see the good side of things and/or concentrated on something good that could come out of it	0	1	2	3	0	1	2	3	4
4. I realised I brought the problem on myself and blamed myself for causing it	0	1	2	3	0	1	2	3	4
5. I realised that someone else caused the problem and blamed them for making me go through this	0	1	2	3	0	1	2	3	4
6. I thought of ways to solve the problem, talked to others to get more facts and information about the problem and/or tried to solve the problem	0	1	2	3	0	1	2	3	4
7. I talked about how I was feeling, shouted, screamed or hit something	0	1	2	3	0	1	2	3	4
8. I tried to calm down by talking to myself, going for a walk and/or I just relaxed	0	1	2	3	0	1	2	3	4
9. I kept thinking and wishing that this had never happened and/or that I could change what had happened	0	1	2	3	0	1	2	3	4
10. I turned to my family, other adults or friends to help me feel better	0	1	2	3	0	1	2	3	4
11. I just accepted the problem because I knew I couldn't do anything about it	0	1	2	3	0	1	2	3	4

CHILD LIFE EVENTS SCALE (CLES-C) – AGE 6-10

Instructions:
For each event listed below, mark how often it occurred during the PAST 12 MONTHS. If the event occurred in the PAST 12 MONTHS, circle the number of times that the event happened **in each** time interval during the past 12 months. For example, if an event occurred only once 8 months ago, you would circle the "1" in the column labelled "7-9 months ago". If an event did not occur at all during the PAST 12 MONTHS, put an "X" over the word "No". Please make sure to also complete the events on both pages

Put an "X" over the word "NO" for any item you have not experienced at any time in the past year.		**0-3 Months Ago**			**4-6 Months Ago**			**7-9 Months Ago**			**10-12 Months Ago**		
In the PAST 12 MONTHS, have you experienced...		How many times?			How many times?			How many times?			How many times?		
1. Death of a parent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
2. Death of a brother or sister	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
3. Death of a grandparent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
4. Death of a close friend	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
5. Death of a pet	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
6. Hospitalisation of a parent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
7. Hospitalisation of a brother or sister	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
8. Being hospitalised for illness or injury	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
9. Divorce of your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
10. Marital separation of your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
11. Start of a new problem between your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
12. End of a problem between your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
13. Remarriage of a parent to a step-parent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
14. Birth of a brother or sister	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
15. Loss of a job by your father or mother	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
16. Major increase in your parents' income	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
17. Major decrease in your parents' income	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
18. Change in your mother or father's job so that (s)he has less time at home	NO	0	1	+	0	1	2+	0	1	2+	0	1	2+
19. Mother of father beginning work outside home	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
20. A new adult moving into your home	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
21. Beginning the first year at school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
22. Moving to a new school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+

CLES-C (AGE 6-10) cont.

Put an "X" over the word "NO" for any item you have not experienced at any time in the past year.		0-3 Months Ago			4-6 Months Ago			7-9 Months Ago			10-12 Months Ago		
In the PAST 12 MONTHS, have you experienced...		How many times?			How many times?			How many times?			How many times?		
23. Failing a test at school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
24. Suspension from school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
25. Start of a new problem between you and your parents	NO	0	1	+	0	1	2+	0	1	2+	0	1	2+
26. End of a problem between you and your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
27. Failing to achieve something you really wanted	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
28. Appearance in juvenile court	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
29. Becoming involved with drugs	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
30. Stopping the use of drugs	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
31. Finding an adult who really upsets you	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
32. Outstanding personal achievement (special prize)	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
33. Being invited to join a social organisation	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
34. Recognition for excelling in a sport or other activity	NO	0	1	+	0	1	2+	0	1	2+	0	1	2+
35. Becoming an adult member of a church	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
List any events that occurred in the PAST 12 MONTHS that were not included in the list above. Circle the number of times the events occurred in each time interval													
36.		0	1	2+	0	1	2+	0	1	2+	0	1	2+
37.		0	1	2+	0	1	2+	0	1	2+	0	1	2+
38.		0	1	2+	0	1	2+	0	1	2+	0	1	2+
39.		0	1	2+	0	1	2+	0	1	2+	0	1	2+
40.		0	1	2+	0	1	2+	0	1	2+	0	1	2+

CHILD LIFE EVENTS SCALE (CLES-A) – AGE 11-18

Instructions:

For each event listed below, mark how often it occurred during the PAST 12 MONTHS. If the event occurred in the PAST 12 MONTHS, circle the number of times that the event happened **in each** time interval during the past 12 months. For example, if an event occurred only once 8 months ago, you would circle the "1" in the column labelled "7-9 months ago". If an event did not occur at all during the PAST 12 MONTHS, put an "X" over the word "No". Please make sure to also complete the events on both pages

Put an "X" over the word "NO" for any item you have not experienced at any time in the past year.		**0-3 Months Ago**			**4-6 Months Ago**			**7-9 Months Ago**			**10-12 Months Ago**		
In the PAST 12 MONTHS, have you experienced...		How many times?			How many times?			How many times?			How many times?		
1. Death of a parent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
2. Death of a brother or sister	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
3. Death of a grandparent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
4. Death of a close friend	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
5. Hospitalisation of a parent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
6. Being hospitalised for illness or injury	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
7. Hospitalisation of a brother or sister	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
8. Birth of a brother or sister	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
9. Divorce of your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
10. Marital separation of your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
11. Remarriage of a parent to a step-parent	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
12. Start of a new problem between your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
13. End of a problem between your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
14. A new adult moving into your home	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
15. Loss of a job by your father or mother	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
16. Major increase in your parents' income	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
17. Major decrease in your parents' income	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
18. Change in your mother or father's job so that (s)he has less time at home	NO	0	1	+	0	1	2+	0	1	2+	0	1	2+
19. Mother of father beginning work outside the home	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
20. Being told you are very attractive by a friend	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
21. Going on the first date of your life	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
22. Finding a new dating partner	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
23. Breaking up with a boy/girlfriend	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+

CLES-A (age 11-18) cont..

Put an "X" over the word "NO" for any item you have not experienced at any time in the past year.		0-3 Months Ago			4-6 Months Ago			7-9 Months Ago			10-12 Months Ago		
In the PAST 12 MONTHS, have you experienced...		How many times?			How many times?			How many times?			How many times?		
24. Being told to break up with boy/girlfriend	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
25. Getting pregnant or fathering a pregnancy	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
26. Getting married	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
27. Start of a new problem between you and your parents	NO	0	1	+	0	1	2+	0	1	2+	0	1	2+
28. End of a problem between you and your parents	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
29. Becoming an adult member of a church	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
30. Being invited to join a social organisation	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
31. Finding an adult who really respects you	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
32. Beginning the first year of high school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
33. Moving to a new school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
34. Failing a test at school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
35. Being suspended from school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
36. Finishing high school	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
37. Being accepted at the college of your choice	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
38. Being recognised for excelling in a sport or other activity	NO	0	1	+	0	1	2+	0	1	2+	0	1	2+
39. Failing to achieve something you really wanted	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
40. Outstanding personal achievement (special prize)	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
41. Getting a summer job	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
42. Getting your first permanent job	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
43. Deciding to leave home	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
44. Being sent away from home	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
45. Getting your first drivers licence	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
46. Being responsible for a car accident	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
47. Being invited by a friend to break the law	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
48. Appearance in juvenile court	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
49. Becoming involved with drugs	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+
50. Stopping the use of drugs	NO	0	1	2+	0	1	2+	0	1	2+	0	1	2+

CLES-A (age 11-18) cont.

List any other events that occurred in the PAST 12 MONTHS that were not included in the list above. Circle the number of times the events occurred in each time interval

Put an "X" over the word "NO" for any item you have not experienced at any time in the past year.		0-3 Months Ago			4-6 Months Ago			7-9 Months Ago			10-12 Months Ago		
In the PAST 12 MONTHS, have you experienced...		How many times?			How many times?			How many times?			How many times?		
51.		0	1	2 +	0	1	2 +	0	1	2 +	0	1	2 +
52.		0	1	2 +	0	1	2 +	0	1	2 +	0	1	2 +
53.		0	1	2 +	0	1	2 +	0	1	2 +	0	1	2 +
54.		0	1	2 +	0	1	2 +	0	1	2 +	0	1	2 +
55.		0	1	2 +	0	1	2 +	0	1	2 +	0	1	2 +

Thank you for competing these questionnaires