

**STRESS AND TRAUMA IN INFANCY AND
EARLY CHILDHOOD: IMPLICATIONS FOR
LATER MENTAL HEALTH**

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ABSTRACT

One of the challenges for clinicians is to identify those infants who are at risk of later psychopathology and to intervene at an early stage. The study of negative life events for children from birth to three years of age has been comparatively neglected despite the fact that the fields of psychoanalysis, forensic psychology, developmental psychopathology and neuro-psychology all emphasise the importance of the early years. **Aim:** Drawing from the literature, this study examined life events that disrupt the first attachment relationship and proposed that early behavioural difficulties in children are the result of the stress and trauma consequently experienced. **Method:** A Life Events Checklist was designed and used as a measure in two cross sectional studies that examined the nature and incidence of life events occurring to children between birth and three years [a] in a clinical sample [N = 123] and [b] in a community sample [N = 193]. Events occurring in the three year period prior to referral were also recorded in the clinical study. **Results** showed that children in the clinical study experienced a high number of life events across time although more events were experienced in the first three years than in the three years prior to referral. Logistic regression analysis applied to both sets of data indicated an event of loss, a disturbed relationship and/or a trauma in the first 18 months of life could predict later mental health problems. The data showed that Health Visitors were less likely to express concerns at this early stage. The implications of the study for early assessment and intervention are discussed. Clinical interventions with children referred to child mental health services need to address symptoms of stress and trauma through the limbic system rather than through cognitive and behavioural approaches alone.

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CHAPTER 1: STRESS AND TRAUMA IN INFANCY AND EARLY CHILDHOOD

INTRODUCTION

The term 'stress' is used widely and is a concept familiar to both lay person and professional alike. Stress has been identified as a precipitating factor for physical illness [Holmes & Rahe, 1967; Mrazek & Klinnert, 1996], depression [Brown & Harris, 1978], schizophrenia [Leff & Vaughn, 1985; McKenzie & Wright, 1996], suicide [Paykel, 1975; Pfeffer, 1996], offending behaviour [Godsi, 1999; Robins, 2001], personality disorders [Millon, 1996], eating disorders [Strober, 1984] and alcohol and substance misuse [Cicchetti & Luthar, 1999]. Stress has typically been measured by the presence of events or circumstances that infer the strong involvement of [negative] emotions and cognitions.

The research literature is consistent about what early events or circumstances in childhood constitute a risk for later mental health difficulties. These are separation and loss [Bowlby, 1980; McKenzie & Wright, 1996; Pagani, 1997; Rutter, 2001], hospitalisation [Quinton & Rutter, 1976], maltreatment [Brown & Finklehor, 1986; Falkov, 1996; Perry, 1995; Reder & Duncan, 2000; Zeanah, 1994], neglect [Field & Reite, 1984; Glaser & Prior, 1997], and parental mental health problems [Cassell & Coleman, 1995; Dawson, 1997; Glaser, 1995; Rutter & Quinton, 1984].

Studies of adverse life events [Coddington, 1972; Zeitlin, 1986] have rarely included infants and young children in the data. Studies that do include children below three years of age have typically focussed on one clinical group or one particular event such as the birth of a sibling [Dunn & Kendrick, 1982], divorce [Pagani, 1997], adoption [Hodges & Tizard, 1989] hospitalisation [Quinton & Rutter, 1976, Robertson & Robertson, 1971] or trauma [Terr, 1994].

There was no research identified from literature searches [Med Line, Psych INFO, Psych LIT] that had [a] explored the general nature and incidence of adverse life events in infancy and early childhood [0 – 3 years] or [b] examined the possible cumulative impact of early stress and trauma on later mental health, as measured by these adverse life events. Yet the fields of psychoanalysis, neuro-psychology, developmental psychopathology and forensic psychology all emphasise the importance of the early years as the foundation for later mental health or later mental disorder. The reality of multiple losses, moves, disappointments, betrayals, physical

traumas and relationship disruptions is often missing from a child's recorded or narrated history and often remains unavailable at a conscious level if these occurred early in life.

"The developmental stresses of human infancy and the durability of the young child in the presence of those stresses, have never been widely celebrated. Indeed, there has not been much research attention to the earliest stages of life that one might expect, given the prominence that the infantile stages have in the major theories of human development, such as those of Freud, Erickson and Piaget"

[Lipsitt, 1988 page 187].

Research in this area is important to inform parents and professionals alike of children at risk of experiencing later mental health problems. More importantly, early identification enables timely intervention, amelioration and prevention of later problems, thus enhancing the quality of family life and reducing the cost of clinical services.

The Aim of this Thesis

This thesis reports an investigation that has sought to clarify the nature and incidence of adverse life events that induce stress and/or trauma in early childhood both in a community and a clinical sample. Comparisons are made between the two samples. In addition, within the clinical sample, the potential links between early events and the problems children present are explored.

The first two chapters review the literature on which the hypotheses of the research are founded. Firstly, the definitions, concepts and models of stress and trauma are explored in the context of the initial attachment relationship. Secondly, early adverse life events that impact upon the attachment relationship are related to later psychopathology. Chapter Three identifies the research questions, the hypotheses, the research design and the stages of implementation. A pilot investigation undertaken as a local clinical survey together with an outline of the adverse life events measure designed for the study forms the basis of Chapter Four. Chapters Five and Six outline the methodology and the results for the two distinct pieces of research undertaken. A discussion of the results is given in Chapter Seven.

General Definitions and Concepts

The word 'stress' has several rather different meanings. It is a term that applies equally to a form of stimulus [stressor], a force requiring adaptation [strain], a mental state [distress], a form of bodily reaction or response, and an emphasis by accentuation or repetition [Oxford English Dictionary]. Whilst these definitions may appear diverse, they can all equally apply to the human condition.

Behaviourally, stress has been regarded as any stimulus that threatens homeostasis or equilibrium [Diorio, Viau & Meaney, 1993]. That is, stress is something in the environment [an encounter or event] that might disrupt or change *the normal functioning* [my italics] of an individual, including his or her very assumptions about the nature of the world. Stress might evoke positive or negative results. Sapolsky [1992] defined stress as any perturbation in the outside world that disrupts homeostasis, while the stress response is the set of neural and endocrine adaptations that help re-establish homeostasis.

Lazarus and Folkman [1984] defined psychological stress as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her own resources and endangering his or her well being. The physiological reactions evoked act as a signal or warning.

'Trauma' is often defined loosely as distress or disturbance that disrupts an individual's ability to function normally.

"Trauma can be conceptualised usefully as extreme stress – lying at the end of a continuum with no bright line demarcating trauma from non-traumatic stress".

"The essence of trauma is feeling terrified and alone"

[Allen, 2001 page 4].

Trauma is not an event. It is the enduring adverse impact of one or more extremely stressful events. The *Diagnostic and Statistical Manual of Mental Disorders* [DSM-IV] [APA, 1994] defines trauma in the context of post-traumatic stress disorder [PTSD]. To qualify for the diagnosis of PTSD an individual must have experienced an event defined by Criterion A:

“The person has been exposed to a traumatic event in which both of the following are present: [1] the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others; [2] the person’s response involved intense fear, helplessness, or horror”

[DSM IV, pages 427-428].

The Difficulties Inherent in General Definitions

There are difficulties with these definitions when the person involved is an infant or young child. Firstly, ‘normal functioning’ is difficult to assess within this age group. Secondly, whilst there is an active relationship between the infant and the environment, the child will be unable developmentally to assess situations independently. The young child relies on signals [facial, vocal and physical] provided by the main carer to interpret both the internal and external world [Aitken & Trevarthen, 1997]. Thirdly, any new situation may be assessed as overwhelming when the main carer is absent [Ainsworth, Blehar, Waters & Wall, 1978]. Without the mother’s active presence, the physiological reactions and arousal evoked by an event are not readily reduced [van der Kolk & Fislser, 1994]. Fourthly, it can be argued that infants and young children are largely helpless in all situations that involve actual or threatened death or serious injury, or a threat to the physical integrity of self or others.

Given the dependent nature of infants and young children, there are strong reasons to consider this age group separately when discussing the impact of adverse life events. Firstly, the early years of life are a time of rapid development. Secondly, these years span a wide range of developmental capacities. Thirdly, the perception, impact and response to negative events will vary with these developmental capacities. Fourthly, extreme stress is at least as common in this age group as in later childhood. For example, one of the most common forms of trauma is intra-familial violence. For half the children who are abused, the abuse started before the child was five years old (Daro, 1988).

Links between Infant and Adult Trauma

Dependency or helplessness has long been considered a significant feature in the onset of mental dysfunction.

"As soon as he started work at the hospital, he [W.H.R.Rivers] became.....fascinated by the differences in severity of breakdown between the different branches of the RFC. Pilots, though they did indeed break down, did so less frequently and usually less severely than the men who manned observation balloons. They, floating helplessly above the battle-fields, unable either to avoid attack or to defend themselves effectively against it, showed the highest incidence of breakdown of any service"

[Barker, 1991, in *Regeneration*. Penguin: p.222].

Infants lack the cognitive and physical ability to neutralise the threats they experience. They remain dependent on the actions of others to protect them.

"The healthy reaction to fear in a normal human being is the undertaking of some manipulative activity designed to avoid or neutralize the danger. Provided such activity is available, the individual ought to be unaware of feeling fear. But no such activity was available.....He [W.H.R. Rivers] had long believed that the essential factor in the production of war neurosis... was the peculiarly passive, dependent and immobile nature of their experience"

[Barker, 1993 in *The Eye in the Door*. Penguin: p.63].

The resulting adverse [trauma] symptoms for children and adults alike include the persistent re-experiencing of the event by nightmares; intense distress in situations that resemble aspects of the traumatic event; persistent avoidance of stimuli associated with the trauma; and persistent symptoms of increased arousal [DSM-IV].

The age of the child, however, determines the nature of the symptoms observed. For example, the capacity for storing and expressing memories of events, and therefore the capacity to re-experience the event through play, may be profoundly different in children depending on whether they possess symbolic capacity [Schoore, 1994; Siegel, 1999; Stern, 1985]. At 18 months of age a qualitative reorganisation in development takes place when the full capacity for symbolic representation and imaginative play become dramatically apparent [Stern, 1985]. Prior to 18 months, infants may demonstrate stress and trauma simply by persistent states of high arousal [Perry, Pollard, Blakley, Baker and Vigilante, 1995; Schoore, 1994].

Revised PTSD Criteria for Infants and Young Children

Scheeringa, Zeanah, Drell and Larrieu [1995] suggested that the DSM-IV criteria for PTSD were inadequate for diagnosing a posttraumatic stress disorder in very young children. No account had been taken of the preverbal or barely verbal capacities of such young children. Whilst young children are generally good at reporting what they see, hear, and touch, they have some difficulty reporting their own reactions or behaviours in a sequence of events [Neal, 1983; Siegel, 1999]. Fear or trauma itself closes down unnecessary information and the shock inhibits linguistic encoding and verbal skills. Scheeringa et al. [1995] subsequently demonstrated that an alternative set of criteria for infants and young children was more reliable and more valid. **Appendix 1.**

Scheeringa and Zeanah [1995] in an empirical study of the patterns of PTSD symptoms in children [N = 41] under 48 months and using the adapted criteria found

- a. PTSD was diagnosed more often when the experienced event involved a threat to the caregiver. The best predictor of ongoing infant distress was whether or not the caregiver had been threatened by the traumatic event or circumstance. This factor was even more powerful than whether or not the infant was injured.
- b. Cluster symptoms were expressed differentially when the trauma involved threats to the caregivers versus no threats to the caregivers. Threat to caregiver traumas produced more hyper arousal symptoms, more fears and aggression symptoms, and fewer numbing symptoms than traumas that did not involve threats to caregivers.
- c. Children older than 18 months of age at the time of the trauma developed more re-experiencing symptoms than children younger than 18 months of age [Stern, 1985].

Operational Definition of Stress and Trauma

For the purposes of this study, stress and trauma will be defined as 'a continuing emotional response resulting from an event or events that disrupt the relationship

with the primary carer'. The behaviour that follows is the coping response [Higley & Suomi, 1996].

With this operational definition, it is now necessary to explore the process linking the occurrence of adverse life events [antecedents] to the resulting behavioural symptoms [consequences] in the infant and young child. Models of stress and trauma provide the theoretical explanations for these processes.

MODELS OF STRESS AND TRAUMA

Three process models will be outlined: a neuropsychological model [Perry, Pollard, Blakley, Baker and Vigilante, 1995], a social adaptation model [McKenzie & Wright, 1996, Sroufe, 1997] and a social construct model [Allen, 2001, Sewell, 2001].

A Neuropsychological Model

Our understanding of the mechanisms inherent in the stress response has progressed rapidly over recent years with advances in neuro-imaging techniques.

Anatomically, the brain can be divided into four basic parts: the brainstem, the midbrain, the limbic system and the cortex. These parts develop in a hierarchical progression starting with simple and gradually moving to more complex functions. The brain develops from back to front, from inside to outside and from bottom to top.

The brainstem controls the basic and essential functions necessary to sustain life, for example blood pressure, heart rate and body temperature. The midbrain controls functions such as appetite and sleep; the limbic brain is the centre for emotion and regulation of impulse. Finally, the cortex, the last to mature, is the centre for logic, planning, cognition and all other executive function [Schoore, 1994]. **Appendix 2** provides a summary table of these developmental processes.

Each part of the brain is responsive to the environment. In infancy and early childhood the brain is developing very rapidly. Perry, Pollard, Blakley, Baker and Vigilante [1995] outlined the relationships identified between stress and trauma and the behavioural responses that can be observed in young children [See Table 1.1].

Table 1.1: The acute response to threat [Perry, Pollard, Blakley, Baker & Vigilante, 1995].

Adaptive Response	REST	VIGILANCE	FREEZE	FLIGHT	FIGHT
Hyperarousal Continuum	Rest [Male]	Vigilance [Crying]	Resistance	Defiance Posturing'	Aggression
Dissociative Continuum	Rest [Female]	Avoidance (Crying)	Compliance Freeze	Dissociation Numbing'	Fainting
PRIMARY Secondary Brain Areas	Neocortex Subcortex	Subcortex Limbic	Limbic Midbrain	Midbrain Brainstem	Brainstem
Cognition	Abstract	Concrete	Emotional	Reactive	Reflexive
Mental State	CALM	AROUSAL	ALARM	FEAR	TERROR

“When threatened, a human will engage specific adaptive mental and physical responses. Increasing threat alters mental state, style of thinking [cognition] and physiology [increased heart rate, muscle tone, rate of respiration]. As the individual moves along the continuum – from calm to arousal to alarm, fear and terror – different areas of the brain control and orchestrate mental and physical functioning. The more threatened an individual, the more ‘primitive’ [or regressed] becomes the style of thinking and behaving. When a traumatised child is in a state of alarm [because they are thinking about the trauma, for example] they will be less capable of concentrating, they will be more anxious and they will pay more attention to ‘nonverbal’ cues such as tone of voice, body posture and facial expressions. This has important implications for understanding the way the child is processing, learning and reacting in a given situation. A traumatised child is often, at baseline, in a state of low-level fear – responding by using either a hyper-arousal or a dissociative adaptation – the child’s emotional, behavioural and cognitive functioning will reflect this [often regressed] state” [Perry, Pollard, Blakley, Baker & Vigilante, 1995, page 274].

Perry et al. [1995] made a clear differentiation between male and female responses suggesting that males become hyper-aroused while females become dissociated [See Table 1 above].

They argued that experience during infancy and early childhood can actually determine the structure and organisation of the developing brain. In addition, repeated experiences will 'hardwire' neural and behavioural responses.

"Any factors which increase the activity or reactivity of the brainstem (e.g. chronic stress) or decrease the moderating capacity of the limbic or cortical areas (e.g. neglect) will increase an individual's aggressivity, impulsivity and capacity to display violence"

[Perry, 1997 cited in Karr-Morse & Wiley, 1997].

Continuing stressful events in a child's life can impair brain development in two ways: by the 'use dependent' organisation of brain structures and by the overdosing effect of stress hormones [e.g. cortisol] that can damage the growth and efficiency of neural connections [Schoore, 1994].

"The patterns of particular states of mind in an infant can be seen as encoded as an implicit form of memory. Repeated experiences of terror and fear can be engrained within the circuits of the brain as states of mind. With chronic occurrence, these states can become more readily activated [retrieved] in the future, such that they become characteristic traits of the individual. In this way, our lives can become shaped by reactivations of implicit memory, which lack a sense that something is being recalled. We simply enter these engrained states and experience them as the reality of our present experience"

[Siegel, 1999, page 33].

A Social Adaptation Model

Behaviour is not simply the interaction of genes and environment. It is the interaction of genes, environment *and* the history of adaptation to that point.

"When maladaptation is viewed as development rather than a disease, a transformed understanding results and a fundamentally different research agenda emerges. Within a developmental perspective, maladaptation is viewed as evolving through the successive adaptations of persons in their environments. It is not something a person 'has' or an ineluctable expression of an endogenous pathogen. It is the complex result of a myriad of risk and protective factors operating over time"

[Sroufe, 1997, page 251].

Lipsitt [1988], expanding upon an argument by Woodson [1988], asserted that behaviour, like biological characteristics, is a product of an evolutionary process. The need to cope with the task of surviving hazards is one of the strongest selective pressures shaping infant behaviour. Early behavioural problems can be regarded as responses to the environment. Just as an infant may become active and cry when the temperature falls, an infant might develop defensive behaviours to stress.

McKenzie and Wright [1996] have suggested that mental health problems appearing in adulthood are, in reality, a result of adverse life events evoking a trauma in infancy.

The mechanism of the shift from a perceived trauma in the present to a similar perceived trauma in the past is thought to be a survival mechanism that has gone awry or, more accurately, is maladaptive

[McKenzie & Wright, 1996, page 26].

They outlined a 'two trauma' mechanism. The initial trauma is highly charged emotionally, stirring the infant's fears of abandonment and death, along with feelings of pain and sadness, overwhelming anxiety and despair. The precipitating trauma later in life is similar to the original trauma in that it is usually a separation or rejection from an important person or group, whether it is real, imagined, anticipated or implied.

Working retrospectively, they found that in a group of six thousand adult patients diagnosed with schizophrenia, 30% of the histories revealed an event [the birth of a sibling, adoption or death in the family] had caused the infant's physical separation from the mother before 18 months of age. They claimed that it was possible to identify the age at which the initial event occurred by focussing on the behaviours presented. "Developmental stages may change after trauma but the trauma fixes the original developmental stage and the site in the brain" [page 44].

Parker, Gladstone, Mitchell and Wilhelm [2000] have suggested that vulnerability to depression operates in a similar way - through a 'lock and key' mechanism. The first event is the foundation engraved by early adversity [the lock] and the second threat acts as the key.

A Social Construct Model

What experiences come to mean is a fundamental issue in determining whether an individual will develop a stress reaction or 'maladaptive' behaviour.

"Early adverse life events have profound consequences for later development, be it in health or illness. But this refers to the inner life of the child. It refers to felt needs and impulses; to perceptions and sensations that impinge from within and without; to the meanings that experiences acquire for him or her and on the symbolic elaborations that lend coherence to ongoing experience"

[Escalona, 1986, page 149].

Sewell [2001] described the need for an individual to construct a meaning for an event. He distinguished two relevant domains of experience; the event – the world of happenings [anticipations and memories] and the social construction – how the individual sees himself in comparison to others. He argued that what is paramount in the therapy of traumatised [adult] individuals is [1] the role of an audience for the expression of fear and [2] interpersonal reflection to 'hold the story' and negotiate a new form of the relationship with self – to construct a bridge between past and future selves.

In infancy, it is the role of the primary carer to provide both the 'audience' and the 'interpersonal reflection' [Aitken & Trevarthen, 1997; Schore, 1994]. What an event comes to mean will be dependent on the child's ability to memorise [either by recognition or recall] the experience; the mother's expressed emotion at the time of the event and her later narrative of it [both verbal and non-verbal]; the associated emotions experienced by both the child and the mother at the time of the event and with each repeated telling and the communication of those emotions within the dyad. When the parent is unavailable for whatever reason, or the parent provides a disintegrated or distorted reflection, the child will continue to experience high levels of stress [James, 1994].

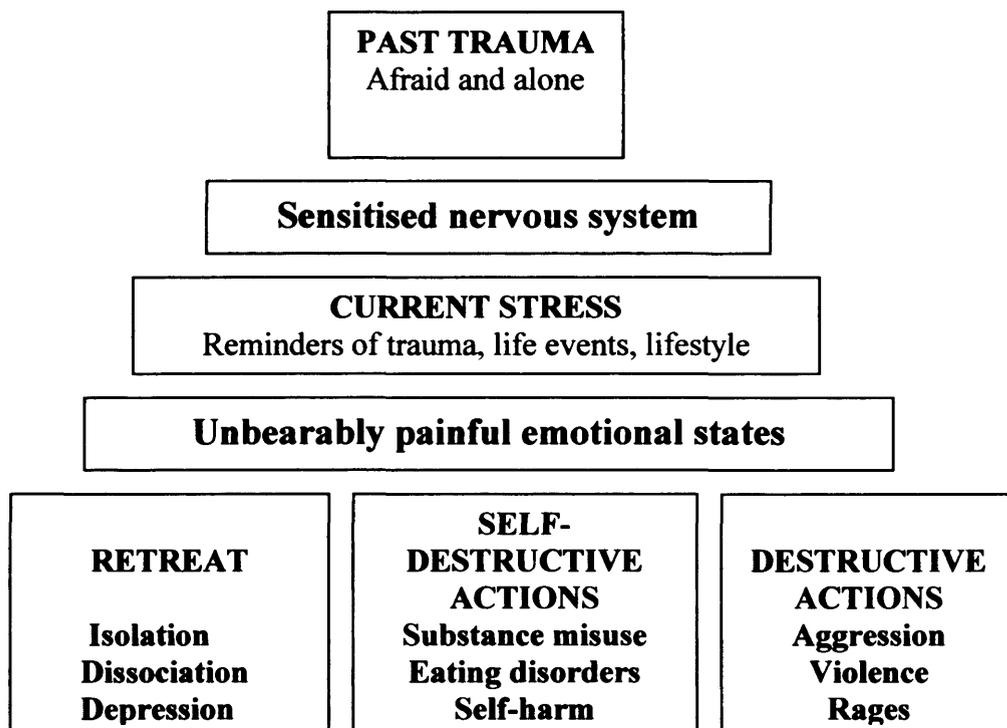
"The severest trauma comes down to being frightened, hurt and neglected in close relationships"

[Allen, 2001, page 21].

Summary

Three models of stress and trauma demonstrate the significance and importance of early relationships with important others. Threatening events in infancy or early childhood can sensitise an individual to stress either by 'hardwiring' neurological and physiological responses [Perry et al, 1995; Siegel, 1999] or by predisposing the individual to a negative view of himself in relation to others [Sewell, 2001]. The individual then becomes more reactive to stress than without such a history and may respond to perceived threat with either passivity or aggression [dissociation or hyper arousal]. This negative response style may evoke further negative experiences with others. It is the mother's role to provide an audience for and to construct meaning for the child's fears. Without this mediation from the mother or primary carer recent stressors will reverberate with past trauma to create symptoms of mental disorder [McKenzie and Wright, 1996] as demonstrated by a child's emotional, behavioural and cognitive functioning. A combination of these three models can be expressed figuratively in the concept of stress pile-up used by Allen [2001] to create a single pathway for the development of mental health problems [Figure 1.1].

Figure 1.1: Stress pile-up, unbearable states and vicious circles [Allen, 2001].



Connections between models of childhood stress and trauma and early attachment are now explored.

The Connection between Early Stress and Trauma and Insecure Attachment

Attachment theory [Bowlby, 1969, 1973, 1980] assumes that the developing infant's early attachment related experiences are in time represented cognitively in the form of internal working models of self and other, which in turn affect personality functioning and relationships throughout life.

"To say of a child that he is attached to, or has an attachment to, someone means that he is strongly disposed to seek proximity to and contact with a specific figure and to do so in certain situations, notably when he is frightened, tired or ill"

[Bowlby 1969 in *Attachment*, Pelican edition, 1984 page 371].

The main purpose of attachment is 'the provision of emotional security and protection against stress' [Rutter & O'Connor, 1999, page 824].

Internal Working Models

The child stores representational memories of the mother or primary caregiver that will inform all future contacts with others. Saradjian [1996] gave a clear illustration. In two scenarios, a toddler has been dressed to go out. He has on a clean pair of white socks. He is left to play while his mother performs other tasks. He falls and grazes his knee resulting in a trickle of blood reaching the clean white socks. The mother hears the cry. In scenario one, the child is picked up, comforted and placed in a position so that the source of pain can be identified, bathed and attended. The mother soothes her child and gives comforting reassurances. In scenario two, the mother, somewhat harried becomes frustrated that yet another job needs to be done. She angrily points out the bloodied sock as she pulls it off. She leaves him while she finds another pair. The knee is arbitrarily wiped, an action not differentiated from replacing the sock.

With repeated and continuing experiences of this nature, the child is imprinted accordingly. Child one develops a self-regulatory response that produces internalised comforting and kindness when he is in pain. Child two develops a

response that produces internalised dismissal of pain with associated aggression and hostility.

Infants as young as 3 to 4 months of age have both the capacity and willingness to schematise the basic elements of an experience as well as a strong bias toward linking schemas together [Field, 1992; Morrell & Murray, 2001].

By the second half of the first year of life, 'working models' of implicit-procedural memories underlying attachment patterns serve not only to anticipate reality but also to cope with the expectations generalised from the aggregate of multiple interactions with a caregiver

[Bleiberg, 2001 page 48].

Insecure Attachment

Children with an anxious/avoidant attachment develop a coping strategy that involves an active shift of attention away from their caregivers – and also away from these infants' own dependency and desire for a response. This coping pattern appears to result from the expectation that any bid for access will be ignored [Bleiberg, 2001; Crittenden, 1992; Main and Weston, 1982].

In contrast, the anxious/resistant pattern is a coping strategy that overemphasises the caregiver's and the infant's dependency on the expectations of interaction between them at the expense of the infant's sense of autonomy [Bleiberg, 2001; Crittenden, 1992; Main & Weston, 1982].

Main and Solomon (1986) described a further classification of attachment, the 'disorganised/disoriented' type. The child demonstrates interrupted, confused or incomplete strategies for obtaining comfort from the caregiver. The classification is more prevalent in infants whose parents have not resolved losses or traumatic experiences themselves, parents who have bipolar affective disorder, parents who are alcoholics and parents who are maltreating.

Regulation of Emotion

The ability to regulate the intensity of feelings, learned from the mother, is of critical importance. The absence of this ability is the most far-reaching effect of early trauma and neglect [van der Kolk & Fislser, 1994]. All forms of

psychopathology have symptoms of emotional dysregulation [Bleiberg, 2001; Cole, Michel & O'Donnell Teti, 1994; Schore, 1994].

Ladnier and Massanari [2000], intrigued by the realization that three children who appeared to have so little in common could each meet the diagnostic criteria for Attention Deficit Hyperactivity Disorder [ADHD], decided to look more closely at the family histories. They learned that each child had failed to form an adequate bond with their caregivers, or with anyone else. The two main areas of deficit in the children [self-regulation and relating skills] were consistent with the classic symptoms of an attachment-disordered child – impulsivity, hyperactivity and impaired social functioning [Cline, 1979 cited in Ladnier & Massanari, 2000]. They concluded that difficulties within the early attachment relationship could account for an extensive list of later clinical symptoms including impulsivity, hyperactivity, poor concentration, oppositional / defiant behaviour and lying [page 36].

Morrell and Murray [2001] have demonstrated evidence for these conclusions using video recordings of infants from 2 to 9 months with their mothers to rate patterns of mothering. They identified two particular patterns of mothering – intrusive [when mothers insisted on the infant's attention at times when the infant had clearly turned away], and rejecting [when mothers failed to reflect the infants attempts at communication]. In a prospective longitudinal study they assessed the children again at 5 years and 8 years of age. Their findings demonstrated the impact on children of repeated interactions of a similar nature. Children who experienced intrusive mothering were assessed as distractible at 9 months and hyperactive at five years. Those with rejecting mothering showed dysregulation of affect at 9 months and showed conduct problems at 5 and 8 years.

The question then to be addressed is what are the barriers to attachment between a mother and her child? Although there may be many situational difficulties, the literature is consistent. The overriding problem is the mother's inability to reflect upon her own or her infant's behaviour [Crittenden, 1992; Fonagy, Steele, Steele, Moran & Higgitt, 1991; Hughes, 1997; Sewell, 2001].

The Mother's Ability to Reflect upon her own and her Infant's Behaviour

Fonagy, Steele and Steele [1991] argued that it was the capacity of the parent to accurately reflect on his or her own history that was a prime factor in establishing infant security as measured by infant attachment patterns in the Strange Situation [Ainsworth et al., 1978]. The stronger the parental defensive stance, the more likely generational patterns were to repeat themselves through the presence of 'ghosts in the nursery' [Fraiberg, Adelson & Shapiro, 1975].

Briggs [1997] developed the theme of the mother's capacity for reflection and linked this with the concept of the mother's containing 'shape'. The 'shape' of the mother's response can have a different impact on the infant through the capacity to transform emotional communications in different ways. In general terms:

- The concave – identifies and mediates the emotion ['attunes']
- The flat – ignores and diffuses the emotion [flattens the affect]
- The convex – adds the mother's unconscious projections, perverting meaning and conflicting with the infant's states of mind.

Thus the parental response to the infant and young child determines the nature of the child's psychological and behavioural defenses.

"The infant who experiences a lack of attunement perceives the preverbal self as being basically flawed, and thus he feels empty, helpless and hopeless. Without having the mirroring mother to regulate and integrate his emerging affective self, he is left the victim of his own poorly regulated impulses, affects and psychological-behavioural-biological states. The infant in the practising phase who experiences the stress of mis-attunement without sufficient maternal availability to reduce the inner turmoil through a reunion with the mother is left without little internal resources to cope with stress"

[Allan Schore, 1994, page 384].

The mother's defenses become imprinted or 'hardwired' within the child in the following ways.

A 'flat' responding style in the first year of life will not demonstrate for the child, the range of emotional expression available in the human face. The child will not 'practise' different expressions nor be mirrored and encouraged to respond [Briggs, 1997]. The child will not be shown how to respond to aspects of the environment. In the second year, this responding shape will not 'attune' to the child's growing excitability and the child will not be shown how to regulate his arousal. Rather, the child will be seen in a negative way as over active, demanding and troublesome. The child may feel rejected, 'bad' and invalidated [Hughes, 1997].

In contrast, a 'convex' shape of response will succeed in demonstrating a range of emotion during the first year and the child will be shown different reactions to the environment. However, during the second year, when the child's own emotions are so highly aroused, the mother's over expressed emotion will serve only to exacerbate high levels of arousal in the child [Briggs, 1997]. Rather than develop a sense of shame that would serve to modulate arousal, the child persists in competition with the mother [Schorer, 1994] or attunes to the mother's emotions thus establishing a 'false self' [Winnicott, 1958].

It is reasonable to assume that the characteristics of a mental disorder may be established before observable symptoms are available – as in physical disorder. It is also reasonable to assume that the characteristics of a particular disorder are laid down at the stage of development when infant/child characteristics most resemble those within the disorder [McKenzie & Wright, 1996]. Thus, in the first months of life, the infant is comparatively passive, dependent and helpless with a very limited range of emotional responsiveness [Sroufe, 1996]. This period may be a sensitive one for the development of depression if the mother's responses are 'flat' as in maternal depressive disorders. Schorer [1994] traces the development of the borderline personality disorder to disorders of attachment linked to maltreatment in the first year of life when the infant's emotional states are volatile. As the child reaches the end of the second year, there is a developing mastery over the environment that elicits high states of arousal – excitement, frustration and rage. This may be a sensitive period for the development of conduct disorders characterised by poor affect regulation and aggression [Hewitt, 1990; Schorer, 1994].

Summary

Attachment theory offers the bedrock on which to build a model of stress and trauma in infancy and early childhood. Internal working models of mothers begin to be formed within the context of early infant gestures, emotions and contact seeking behaviour. Children form models or templates of themselves and their relationships with others based on their experiences with their first caregivers. These templates form the organisational core of children's beliefs, expectations and motivations that continue to guide and shape the child's sense of self and of his role in subsequent relationships.

The literature demonstrates the importance of the caregiver's ability to reflect on her own behaviour and to offer the infant a 'shape' of response that will facilitate emotional, social and psychological development. When a parent is unable or unwilling to offer an appropriate response, the child experiences stress and trauma and becomes distressed. When this distress is not mediated, the child develops behaviours that will either attempt to gain an appropriate response [by crying, fussing or acting out] or seeks to reduce the intensity of emotion experienced [by withdrawing].

Adverse life events impact upon the attachment relationship by evoking stress and trauma in the ways described above.

Adverse Life Events as a Measure of Stress and Trauma

Adverse life events, whether negative or positive, influence the mechanisms involved in the attachment relationship. Ongoing events compound and exacerbate earlier adaptations into exaggerated, habituated and more severe and observable reactions [Schoore, 1994]. Life-span developmental theorists have argued the need to establish a database of events that characterise various phases of the life span [Compas, 1987; Rutter, 2001]. Experiences of early childhood need to be identified and recorded to provide a context for a child's behaviour [Hughes, 1997].

Within the literature, stress and trauma have typically been assumed [a] to follow the occurrence of adverse life events that have been rated by adults [Holmes & Rahe, 1967], adolescents [Compas, Davis, Forsythe & Wagner, 1986] and less often, children [Coddington, 1972] as aversive on self-report questionnaires [Berden, Althaus & Verhulst, 1990], checklists [Johnson & McCutcheon, 1980], in

semi-structured interviews [Quinton & Rutter, 1984] and by tallies of recent life changes [Newcomb, Huba and Bentler, 1981 cited in Compas, 1987] or [b] to be precursors of later psychopathology as determined from cross sectional studies exploring adverse life events retrospectively from a single point in time [McKenzie & Wright, 1996; Rutter, 2001].

Thus, measures have typically focussed on the nature of adverse life events [a] in the period leading up to the onset of symptoms or [b] retrospectively across the life span within a defined clinical sample. If it is assumed that the underlying difficulties inherent in mental disorder exist prior to observable symptoms appearing, then clinicians need to identify potential risks at the earliest possible stage – in infancy and within the attachment relationship.

The next chapter demonstrates how early behaviour problems can be viewed as a child's distressed response to adverse life events and how these difficulties are perpetuated across the life span.

CHAPTER TWO: EARLY LIFE EVENTS AND LATER PSYCHOPATHOLOGY

This chapter will explore the early life events [risk factors] that impact upon the attachment relationship and the evidence available for linking the presence of these to later psychopathology.

Studies of life events during childhood and adolescence have generally focussed on the relationship between multiple [adverse] life events and psychological and/or physical dysfunction [Robins & Rutter, 1990; Rutter, 1999]. These have included cross sectional studies of [a] retrospective reports of life events and symptoms collected at a single point in time or [b] prospective studies used to identify the role of adverse life events in the aetiology of emerging symptoms. In these studies, a significant relationship between adverse life events and disorder is frequently reported [Goodyer, 1990; Rutter, 2001].

One of the inherent difficulties in life events research has been the fact that single events are described when in reality the 'single' event comprises multiple events over time. For example, the birth of a sibling may include separations from the mother because of hospitalisation during pregnancy as well as for the birth itself; the child's first staying visit with grandparents; starting playgroup; and the introduction of a step-parent and/or step siblings. Separation/divorce may include paternal, maternal or sibling absences; change of address; change of playgroup; as well as the emotional unavailability and/or over expressed emotion of the remaining parent. These cumulative events impact upon the attachment relationship and are often underrepresented in the research literature. Too little attention has been paid to the factors involved in individual differences in environmental risk exposure [Rutter, 2001].

Numerous studies have examined the relationship between a single unexpected 'traumatic' event and later symptoms of disorder with groups of children who all experienced the event together [Fornari, Fuss, Hickey & Packman, 1996; Terr, 1991]. However, the ongoing events that characterise daily life may be of greater long-term significance [Compas, 1987] particularly in the early years [Perry et al., 1995]. Exposure to hazards [day to day problems] increase in linear fashion with age [summed] [Berden, Althaus & Verhulst, 1990], but behaviour problems associated with hazard exposure increase geometrically [multiplied] [Sroufe & Rutter, 1984; Rutter, 1979]. The extent to which a person's own actions

determine this is often unclear [Champion, Goodall & Rutter, 1995 cited in Rutter 2001].

Studies on adults suggest that stressful life events have an important role in provoking the onset of psychiatric disorder - usually in the weeks prior to referral [Brown & Harris, 1978]. Sandberg and colleagues [2001] suggested there is a need for within-subject comparison over time as life events for children [aged 8 to 16 years in their study] who present to clinic are often raised over all time periods and not just in the period leading up to referral.

Retrospective and Prospective Studies

Studies reporting the longer-term consequences of early stress in humans have relied for the most part on retrospective self-reporting of early life events by individuals, usually within a narrowly defined clinical or forensic sample. Such studies suffer from the vagaries of individual memory for recall and often lack chronological specificity. However, general characteristics can be identified. For example, Waterhouse, Dobash and Carnie (1994, cited in Clarke & Clarke, 2000) considered the histories of 53 known perpetrators of child sexual abuse. Offences were either classified as 'familial' (48%) or 'extra-familial' (52%). The childhood backgrounds of each group were generally quite different. Those abusing within the family were more likely to have grown up in disrupted families in which significant parental violence towards them was reported, or where a parental mental health problem existed. Those who abused from outside the victim's family were more likely to have experienced prolonged separations or to have grown up in institutions.

Prospective studies are expensive, subject to 'selective attrition' [Clarke & Clarke, 2000] and may not offer clinicians the information needed to prevent maladaptation according to individual need [Kagan, 1988]. However, important features, particularly related to age at the time of an event, have been identified in this way.

In three studies, Ramey [Ramey & Campbell, 1981; 1987; Ramey & Ramey, 1992] demonstrated that the timing and targeting of early intervention makes all the difference. Concerned about the lack of sustained gains in follow up studies on children in Head Start, where gains in IQ tend to fade after about three years, he made a strong case for beginning earlier, in the first months of life. Ramey

began the Abecedarian project in 1972 as an experiment to test whether mental retardation coming from inadequate environments could be prevented. Children from 120 impoverished families were assigned to one of four groups: intensive early education in a day care centre from age four months to eight years; from four months to five years; from five to eight years and none [control]. Findings of later development and particularly IQ showed that interventions that begin at birth and are provided during pre-school years, but not later, have a measurable impact on children's development that is sustained to age 15 years. Laucht, Esser and Schmidt [1994, cited in Clarke & Clarke, 2000] reported similar findings.

Behaviour as an expression of stress and trauma in the attachment relationship

The way in which a young child demonstrates his/her anxieties and fears can offer important information about how the child is reacting to and making sense of both the world around him and within. In infants, high levels of continuing arousal may be described as a difficult temperament or difficult behaviour [See below, page 37]. Crittenden [2002] has argued that infants are not temperamental. They respond directly to the interaction pattern they experience. The physically observable signs of the infant's resistance or inhibition [coping strategies] disappear at around 6 months of age. Thereafter, strategies to inhibit the mother's behaviour become psychological [e.g. compulsive compliant behaviour].

When considered in the context of neurobiological development and the structural organisation of the brain, the age at which stress and trauma are first experienced should be a critical factor in the prediction of persistent psychopathology [Schoore, 1994]. For example, if the mother of an infant is depressed, there are inherent difficulties for the child that may be practical [e.g. multiple carers] or psychological. Field [1992] has shown that infants of depressed mothers develop a depressed mood style as early as 3 months; that this mood style generalises to interactions with non-depressed women; it persists over the first year if the mother's depression persists and it affects growth and developmental scores on the Bayley Scales by the end of the first year.

Hence, the age and stage of development at which events first occur becomes an important consideration. Terr [1994] studied children under five years of age who had experienced a serious trauma from birth to 34 months. She collected a considerable amount of corroborating evidence of the traumas from photographs, police records, medical records of injuries and witness statements. In observation, the children showed that they had retained behavioural memories of their trauma that they re-enacted in play. Terr [1994] concluded that traumatic events – especially those experienced early – create ‘burned in’ images that could last a lifetime [McKenzie & Wright, 1996; Perry et al., 1995].

Particular combinations of events may also be important. Some events taken together may indicate a potential risk [e.g. paternal separation and maternal depression], whilst other combinations may not [e.g. hospital admission and change of address]. Some events taken together [e.g. maternal separation and hospital admission] may only indicate a potential risk within certain developmental parameters [e.g. during critical or sensitive periods of brain development, Schore, 1994].

What appears to be most important in the certain development of psychopathology is that exposure to stress and trauma is ongoing [Rutter, 2001]. Any single event or adversity would be unlikely, in itself to lead to child mental health problems in the long term [Rutter, 2000]. Environmental stresses tend to impinge most on those who have already exhibited psychological vulnerability and that the tendency is to accentuate pre-existing psychological characteristics, rather than change them [Rutter, 1995].

However, predictable stressors can be mediated. Rheingold and Eckerman [1973] had strangers approach infants between 6 and 15 months gradually, and talk to them softly. They observed no signs of fear and suggested that stranger anxiety, usually attributed to infants of this age, might not exist if the stranger allows the child to control the adult's behaviour. Gunnar [1980] showed that if one year olds can act in a way to control an unexpected reaction of a toy, signs of anxiety are not manifested. Whilst these findings were reported to support the notion of helplessness as an integral component of early stress and trauma, the findings also support the importance of adult ‘attunement’ in the alleviation of infant stress.

The nature of the care-giving relationship is thus extremely important in determining whether the development of traumatic symptoms in infants and toddlers will occur. It is the care-giving relationship that determines what events come to mean [the associations made between arousal and event] and how the child will respond at both a behavioural and physiological level. For example, drawing on the work of Scheeringa and Zeanah [1995] a child who has witnessed domestic violence would be more likely to present to clinical services with hyperactivity and/or behavioural problems [Schwartz & Kowalski, 1991] than a child who had witnessed fights between strangers [Amayala-Jackson, 1994]. The young child might experience stress/trauma in both situations. However, in situations of domestic violence, there is usually an inherent and continuing pattern of parental responding and when the mother is hurt she is unavailable to regulate the child's emotion.

The most obvious indicator of early stress and trauma is a child's behaviour. The clinician needs to act as an audience for the child's fears and facilitate an understanding of the child's experience for the parents. The meaning of behaviour is provided in the context of the attachment relationship where emotions and behaviours are first experienced.

Early behaviour problems and later psychopathology

Behaviour problems are identifiable in very young infants [Hewitt, 1988]. These are usually related to early self-regulatory mechanisms namely disrupted sleep patterns, feeding difficulties or persistent crying. After the first year, over activity, problems with toileting and aggressiveness are often reported. The presence of behaviour problems may, in turn, affect the nature of the parent-child relationship and may lead to long-term psychological difficulties.

Numerous community based epidemiological surveys have resulted in very similar findings. Some 20% of pre-school children are rated as having behaviour problems with 7% being rated as severe [Richman et al. 1982]. In four year olds, temper tantrums are found in 6%, eating problems in 24%, sleep problems in 15%, worries and fears in 12%, relationship problems in 15% and soiling or wetting in 20% [*Bright Futures*, Mental Health Foundation, 1999].

Early behaviour problems of this nature are rarely considered in the literature as direct consequences of a child's distress within the attachment relationship.

Rather, difficulties are seen as behavioural problems that challenge parental management. The behaviours are treated accordingly. However, as the evidence described in chapter one demonstrates, all these behaviours can be symptomatic of early and continuing stress and trauma and will themselves contribute to ongoing negative experiences for the child.

Continuities of Childhood Disorder into Adulthood

There have been many studies, both retrospective and prospective, that have shown continuities of childhood disorders into adulthood [Clarke & Clarke, 2000]. It is clear, for example, that there are links across the lifespan between childhood depression and depression in adult life [Zeitlin, 1986 and 2000], adult suicidal behaviour [Pfeffer, 1996] and low self esteem [Harrington et al. 1994]. There are clearer links between child conduct disorder and later offending behaviour [Godsi, 1999; Robins, 2001], difficulties in social functioning [Zoccolillo, Pickles, Quinton & Rutter, 1992] substance misuse [Myers, Stewart & Brown, 1998] and personality disorders [Bleiberg, 2001; Robins, 2001].

With increasing evidence for these continuities, the question 'What will happen to this child if nothing is done?' becomes paramount. Will the child's problems resolve and/or does the childhood disorder untreated or treated, have any implication for adult mental health? As Zeitlin (2000) has observed, psychiatric disorder in adulthood is often not preceded by childhood disturbance. However, since up to 15% of children will show significant disturbance [Children in Mind, 1999], it is essential to have some idea of the long term outcome in terms of risk for adult morbidity.

If the 'lock and key' or two trauma model of later disorder is accepted [McKenzie & Wright, 1996; Parker et al., 2000], it may be the case that trauma in the first years of life could lie dormant until triggered in adulthood if not detected at the time of the initial difficulty. For this reason early identification of stress and trauma as identified by adverse life events and as seen in a child's behaviour, is important for later prevention.

To investigate these ideas further, two clinical outcomes, conduct disorder and childhood depression were explored within the literature and chosen for study. Life events research has been particularly linked to later criminality [Robins, 2001] and to depression [Brown & Harris, 1978].

Conduct Disorder

Conduct disorders have a prevalence of between 6.2 to 10.8% among 10 year olds - 33 to 50% among clinic attenders [Health of the Nation, 1995]. Behaviours include aggression [bullying, fighting, robbery, physical cruelty], vandalism [destruction of property, setting fires], deceit or theft, violation of rules, substance misuse, poor socialisation and verbal aggression [DSM-IV, 1994]. Robins [2001] suggests an increasing prevalence of conduct disorders before the age of 15 years over recent generations; from 2% to 13% in men and 0.5% to 5% in women.

Numerous studies have confirmed that children with early disruptive behaviours – oppositional and conduct disorders – are more likely to show poor educational attainments, leave school early, have poor early work histories, leave home early, enter romantic and sexual relationships at a younger age, experience more difficulties and breakdown in those relationships, show an increased prevalence of alcohol and substance misuse, be involved in crime and have poorer general health in adult life [Maughan, 2001, has reviewed these studies].

Predictors of conduct disorder include parental psychiatric disorder, parental discord and poor child-care [Rutter, & O'Connor, 1999]. This raises issues for assessment. As Herbert and Harper-Dorton [2002] point out “the definition of problematic behavior is a difficult one because it is largely a relative judgement, and a social, subjective one at that” [page, 130]. If a child’s behaviour is viewed as an adaptive coping response to the stressors presented by these parental problems, then assessment needs to be both objective and supportive. A measure of adverse life events might offer this. It is important to identify risk indicators in infancy and to support children and their parents through the early years.

“The quest for explanations in the aftermath of violence often delves into childhood experience. But one chapter is nearly always missing – the first – encompassing gestation, birth and infancy. And because it goes unseen and unacknowledged, it repeats itself over and over at a rate growing in geometric proportions”

[Karr-Morse & Wiley, 1997, page 4].

Depression

Childhood emotional disorders, including major depression have a prevalence of between 2.5 to 9.9% (Health of the Nation, 1995). Depression has been found to be relatively rare in childhood, with prevalence rates below 4% in children below 12 years of age, becoming more prevalent in adolescence (Harrington, 1994). Somewhere between 5 and 15% of adolescents show moderate to severe depressive disorder [Meltzer & Gatward, 1999].

Sadowski, Ugarte, Kolvin, Kaplan & Barnes [1999] have shown that multiple, ongoing family disadvantages in childhood substantially increase the risk of suffering a major depressive disorder in adulthood. Disadvantages include parental divorce [O'Connor, Thorpe, Dunn & Golding, 1999], parental psychiatric disorders [Hall, 1996], maltreatment [Toth & Cicchetti, 1996], poor parent-child relationship [Toth, Manly & Cicchetti, 1992], maternal depression [Klimes-Dougan & Slattery, 2000] and maternal stress [Duggal, Carlson, Sroufe & Egeland, 2001]. Duggal et al. reported differences in patterns of predictors of depressive symptoms in childhood and in adolescence. They suggested that pre-pubertal onset depressive disorders are more likely to be associated with adverse [early] family environments [maternal depression, family stressors, abuse and poor physical care] than post-pubertal onset depressive disorders.

As for conduct disorders, early intervention for depression is thus appropriate.

Summary

Early behaviour problems can be considered as the young child's expression of distress. They create continuing difficulties in other relationships. In retrospective studies with adults, continuities exist between early behaviour problems and adult pathology. Two clinical presentations, conduct disorder and depression, were used to illustrate these continuities. The presence of adverse early relationships [parental psychiatric disorder, poor child care and parental discord] is a common feature for both mental health outcomes.

To explore the nature of adverse early relationships in more detail, it is necessary to specify the individual [risk] factors that disrupt the early attachment relationship. The literature in this area is vast. Hence, a review will be managed by categorising risk factors under five main headings: separation and loss;

chronically disturbed family relationships; change of family structure; social adaptation and physical trauma.

Identified Risk Factors

Separation and Loss: Early separation from the mother may occur because of hospitalisation of the mother for the birth of a sibling [Dunn & Kendrick, 1982; Field and Reite, 1984; Mahler, 1979; McKenzie & Wright, 1996]; the death of a parent [Kaffman & Elizur, 1996]; hospitalisation of the child [Quinton & Rutter, 1976] or a trauma to the mother that results in the mother's sudden emotional withdrawal e.g. death of a sibling or grandparent [McKenzie & Wright, 1996]. Bowlby [1980] suggested that the death of a parent is most likely to be associated with depression in later life as the child becomes hopeless when events seem uncontrollable. Loss by early separation from the parent [other than by death] was associated with less severe, but angrier forms of depression.

Chronically Disturbed Relationships: Having a psychologically unavailable parent may be similar to the experience of actually losing a caregiver in that the child experiences frequent or even chronic losses of the parent [Cummings & Cicchetti, 1990]. It has long been known that children born to parents with mental illness are at increased risk themselves for a variety of disorders [Garmezy & Streitman, 1974]. It has been suggested that 60 % of chronic, severely ill female patients have a child below 16 years of age and 25% have a child below 3 years of age. Approximately 2/1000 births are to women suffering from chronic schizophrenia [Oates, 1997].

In addition to familial clustering of mental disorder, there is general increase in incidence throughout the adult world [Rutter & Smith, 1995]. A recent report from the World Health Organization [2000] has forecast that depression will be the leading cause of disability in the developing world by 2020. Antidepressant prescriptions have rocketed, increasing by 700% in the past decade.

The difficulties for the child when a parent has a mental illness have been summarised by Glaser [1995] as a premature imposition of physical and psychological responsibility on the child; inappropriate or inconsistent expectations of a young child in terms of understanding, behaviour and internal controls; failure to protect the child from inappropriate experiences; confusing communication and distortions of 'objective truth'; overprotection and failure to

provide age-appropriate opportunities for cognitive and emotional learning experiences. These factors lead to mis-socialisation from the outset and are more likely to lead to insecure attachment of the 'disorganised' type [Main & Solomon, 1986]. The parent of the disorganised child is presumed to be characterised by unresolved trauma and thus may be inadvertently frightened and frightening in his/her behaviour towards the child [Main & Hesse, 1990].

Parental Depression: Depressed mothers and their infants spend more time in matched negative behaviour [attunement], and less time in matched positive behaviour states compared with dyads where the mothers were not depressed [Bettes, 1988; Cohn, Campbell, Matias and Hopkins, 1990; Field, 1992]. Studies using physiological rather than observational measures have confirmed these differential findings [Dawson, Frey, Panagiotides, Osterling & Hessl, 1997]. By the time the infant begins to demonstrate an emotional attachment between 6 to 8 months of age, there are already clear differences in physiological regulation determined by the nature of the mother-child interaction. Maternal depression has been related to higher rates of insecure attachment [DeMulder & Radke-Yarrow, 1991].

Parental Alcohol and Substance Misuse: More conflicts and dysfunction occur in alcoholic families and marital disturbances and instability are more frequent. The child rearing practices of alcoholic fathers are more likely to be rejecting, harsh and neglecting and alcoholic mothers tend to show similar patterns of being less accepting, more rejecting, more disciplinarian and more overprotective [Krauthammer, 1979]. Children of alcoholics report a greater frequency of family violence [Holden, Geffner & Jouriles, 1998], are at risk of greater risk physical harm through maltreatment and neglect [Famularo, Kinscherff & Fenton, 1992], experience poor supervision leading to more accidents during infancy and early childhood [Chafetz, Blane & Hill, 1971], have a higher frequency of poor emotional control and higher rates of hyperactivity [Cantwell, 1975], poor attention span, management problems and temper tantrums [von Knorring, 1991]. They are also vulnerable to the inconsistent ability of the parent to provide appropriately attuned responses within the attachment process. Clinical studies have continued to demonstrate substantial substance misuse amongst maltreating parents [Osofsky, 1998].

Abusive relationships: How mothers respond to infant emotion signals is clearly significant in facilitating positive social interaction. A parent who misreads emotion signals for whatever reason, is likely to respond inappropriately to the infant. A care-taking response based on a false reading of the infant's signal [e.g. feeding an infant who is actually in pain], is likely to meet with failure in that the child will continue to cry. The more such a transaction is repeated, the more the prospect of interacting with the child becomes aversive to the parent and likely to elicit parental aggression towards the child. Abusive mothers are more likely than a comparison group to incorrectly identify specific emotion signals and to label negative affect as positive [Kropp & Haynes, 1987].

There is a high rate of parental mental illness in child homicide and fatal child abuse [Falkov, 1996]. Where sexual abuse is prevalent, a mental disorder may not be observable in the parent[s]. However, it is probable that, here too, the child's negative affect [distress] will be misinterpreted as positive affect in order to match the distorted perception of the adult [James, 1994].

James [1994] makes the distinction between attachment and a trauma bond.

"There is a tendency to see attachment and trauma bonding as extremes of an attachment continuum rather than as the two distinct processes they really are, each with its own specific etiology and outcomes"

[James, 1994, page 6].

A trauma bond has the following characteristics:

- There is a power differential i.e. the parent-child relationship.
- The parent provides inconsistent good/bad treatment of the child.
- There are cognitive distortions within the relationship; the parent interprets the child's emotion signals according to the parent's own needs.
- There are high arousal and bonding periods followed by periods of non-stimulation.
- The child learns to identify with the aggressor i.e. the parent.

Physiological regulation and re-attunement may not be possible for the infant in this context. Maltreated infants often form insecure attachments characterized either by avoidance of the caregiver, resistance to the caregiver [fussing and

crying], or a pattern of disorganization and disorientation, characterized by a combination of avoidance, resistance, apprehension, aggression, apathy, freezing and stilling [Main & Solomon, 1990]. In a study of the relationship between child maltreatment and attachment over 80% of the maltreated infants showed disorganized attachment patterns. [Carlson, Cicchetti, Barnett & Braunwald, 1989]. Widom [1991] emphasized that early abusive and neglectful experiences may not lead directly to increased aggression and violence. The outcome is likely to depend on a variety of factors, including the age at which the trauma occurred, the characteristics of the child and the supports in the environment.

Parental overdose/self harm: Hawton, Roberts and Goodwin [1985] reported an increased risk of child abuse in mothers who attempted suicide compared to controls. Oliver [1985] investigating a sample of abusing parents, found nearly a third had made at least one suicide attempt or had died from self-harming acts. There was a history of overdose in over half of the families. Bools, Neale and Meadow [1994] found a history of self harm in over half the mothers in their sample and a relationship between self harm, violent behaviour and maltreatment was also found by Bland and Orne [1986]. Very few studies have examined the impact of attempted suicides on children [Clark & Goebel, 1996].

Witnessing or Experiencing Domestic Violence: The ways in which children witness violence range widely. They may listen to the violence from their bedrooms, at one extreme, to being forced to watch the mother being assaulted, raped or even killed by the father at the other. One survey suggests that in 90 percent of wife abuse situations, children are in the same or an adjacent room [NCH, 1994]. Witnessing parental violence affects a child's behaviour, cognitive and social problem solving ability and emotional functioning [Moore & Pepler, 1998]. Infants who witness domestic violence are characterized by poor health, poor sleeping habits, excessive screaming and attachment disorders [Zeanah, 1994]. Cummings, Zahn-Waxler & Radke-Yarrow, [1981] found toddlers exposed to domestic violence were frequently ill, suffered from acute shyness, had low self-esteem, experienced adaptation and relationship difficulties in day-care and, by hitting, biting or being disobedient and argumentative, indicated they had social problems.

Even in the earliest phases of infant and toddler development, clear associations have been found between exposure to violence and post-traumatic symptoms and disorders [Drell et al., 1993; Zeanah, 1994]. Infants show increased irritability and sleep disturbances as well as fears of being alone. Toddlers become 'clingy' and regress in developmental achievements such as toileting and language skills. These behaviours in turn can often be 'misunderstood' by parents who may erroneously believe that the child is too young to know or remember what has happened or who may not make the association at all between the child's exposure to violence and ongoing symptomatic behaviours.

Where violent incidents are domestic in nature, the young child will be traumatised by any injury or hurt that the caregiver has sustained [Scheeringa & Zeanah, 1995]. In turn, the caregiver will become emotionally less available to soothe the child. The generation of intense negative emotions interferes with the usual course of development of emotional regulation [Osofsky, 1995]. Cummings, Hennessy, Rabideau & Cicchetti [1994] conducted a series of experimental studies with preschool and school age children to determine the various responses of children to angry parental behaviours such as arguments and fights. Boys exhibited more externalising responses, [aggression, oppositional behaviour and hyperactivity] whereas girls demonstrated more internalising responses [depression, withdrawal and anxiety]. A dosage effect seemed to occur, with children who were exposed to more anger and who had a history of previous abuse showing more negative outcomes.

Change of Family Structure

Birth of a sibling: In studies of resilient children, most infants considered to be significantly better adjusted, were aged 20 months or more before the birth of a younger sibling. They were reported to have a positive temperament and an ability to elicit positive attention. They had a close bond with at least one caregiver throughout the first year of life and were identified as having a secure attachment at 24 months of age [McKenzie & Wright, 1996].

Separation and Divorce: It is estimated that about a third of all marriages in the U.K. will end in divorce. Approximately, 165,000 couples divorce each year and about half of these individuals marry again within four years. The rate of divorce for a second marriage is somewhat higher than for a first. It is estimated that one in five children in the U.K. will experience parental divorce before the age of 16

years. Hence, each year, 170,000 children are affected, two-thirds are under the age of 11, and 25% are below 5 years. Public statistics greatly underestimate the reality of parental separation since many couples with children have never married and those that do may never divorce following separation.

Higher rates of behavioural and emotional problems are reported for children of single parents [Blum, Boyle & Offord, 1988], and following the divorce or separation of a child's parents [Hodges, Tierny & Buchsbaum, 1984] and for children from chronically disharmonious partnerships [Jenkins & Smith, 1991].

Pagani and her colleagues [1997] using data from a longitudinal study, and controlling for individual and parental characteristics and antecedent family events, showed that children who experienced parental divorce before age 6 years exhibited comparatively more behavioural disturbance in adolescence than their peers whose parents divorced later. Compared to other points in development, early childhood divorce was associated with long-term increases in anxious, hyperactive and oppositional behaviour during later childhood.

The National Survey of Health and Development [NSHD], reported on the pathways between parental divorce and adult depression. Findings from a follow-up at age 43 included (i) the risk of adult depression associated with parental divorce was greater in women than men; (ii) there was no effect of remarriage of custodial parents on their offspring's mental health; (iii) parental death in later childhood was not associated with later depression; (iv) women who were young adults when their parents separated also showed increased risk of depression; and (v) the increased risk of depression in women who experienced childhood parental divorce was restricted to those who were never married, divorced or remarried at age 43 [Rodgers, 1994].

Introduction of a step parent(s): About one in 14 children in the U.K. live with a step-parent. In most cases it is the mother who brings children into the new marriage, so there are more step-fathers than step-mothers. Hobart [1987] collected information on parents' relationships with their children and step-children and suggested that there are 'first-class' children - those who are shared; 'second-class' children - the wife's unshared children [who often live with the couple]; and 'third-class' children - the husband's unshared children [who usually do not live with the family]. The introduction of a step-parent to the home is a

highly significant event in a child's life. The radical change in day to day routines may prove disruptive and lead to a prolonged period of stress. Douglas [1970] found that divorce increased the rate of enuresis in children, but that while the incidence of this symptom returned to normal levels for children whose mothers remained unmarried, it remained comparatively high [even at age 15] for those whose mothers remarried. Wadsworth, Burnell, Taylor and Butler [1983] showed that 5 year old children in stepfamilies had more accidents and higher rates of behavioural disturbance than those who remained with a single divorced parent.

Social Adaptation

Adoption: There have been many studies tracking the development of children who have been adopted from severely deprived or adverse circumstances [Barth & Berry, 1988; Chisholm, 1998; Rutter, 1998, Tizard & Hodges, 1978]. The nature of the studies has been to monitor the impact of early adversity on later development, behaviour and social functioning. One of the difficulties for these studies has been the lack of detailed early histories for each of the children. In many cases, children had been institutionalised from birth and had not had a primary carer until adoption. Their adversity lacked the emotional reflection usually offered by a mother and their own emotional expression may have been ignored or deflected [Brodzinsky, Smith & Brodzinsky, 1998].

Adoption is not one event. The process involves many different separations and losses including maternal [and often paternal] separation and loss of the natural parents - for reasons that might include maltreatment, domestic violence, exposure to drugs and alcohol, multiple foster carers, changes of family members and routines, and possible hospital admissions. It is only in recent years that some of these changes have been recorded for 'looked after' children [Rutter & O'Connor, 1999].

Tizard [1977, cited in Clarke & Clarke, 2000] followed children taken into care early in life who remained in an institution for between 2 and 7 years. Some children were returned to their families whilst others were adopted. Follow up studies were reported for ages four and a half and eight years. Hodges and Tizard [1989] made a further study when the children were 16 years old. On all measures, intellectual, scholastic and emotional, the children who returned to their families were disadvantaged compared with the adoptees. They and their

parents were less often attached to each other. Where there were siblings who had remained within the family, these were preferred by the parents.

Research has consistently shown that adopted children are over represented in both outpatient and inpatient mental health settings [Wierzbicki, 1993 cited by Brodzinsky, Smith & Brodinsky, 1998]. Several reasons have been postulated; adoptive parents' demonstrate greater anxiety or insecurity [Hartman & Laird, 1990], they demonstrate referral bias [Warren, 1992], and professionals' demonstrate greater concern, tending to diagnose more severe problems [Kojis, 1990].

Changes of Address: Over past decades, families have become more mobile and more likely to move away from the extended family and the localities in which parents were raised. Children, as a result, need to adapt to different home environments. They often attend more schools and need to socially adapt to different teachers and peers. Although these changes may be mediated by the consistency and stability of the family unit, they often occur concurrently with other stressors and are often the result of more significant events for the child such as parental divorce/separation, physical/sexual harm, parental death/hospitalisation and parental mental health problems. Families living in poverty tend to move from home to home, as do families where there is known domestic violence, parental substance misuse and/or where there is a single parent [Cummings, 1998].

Physical Trauma, Illness and Impairment

Children born prematurely and who experience serious medical illness during the peri- and neonatal period have long been considered at risk of later impaired mental health [Quinton & Rutter, 1976]. Triggered by the enormous progress made in modern neonatal intensive care that has dramatically increased the survival rates of newborns following severe complications, recent research has focused on how risk at delivery and intensive care affect the further development of the child [Wolke, 1991]. Numerous features of a child's constitution and behaviour may contribute to developmental problems of increased gaze avoidance, intense crying and perceived differences in physical attractiveness [where there is a physical disability]. These increase the risk of parental rejection or neglect [Aylward, 1992] and may lead to a breakdown of attunement or reciprocal expressive behaviour [Aitken & Trevarthen, 1997].

Physical problems at later stages of infancy, particularly after the infant is able to engage in extended social exchanges from 2 months of age, disrupt the infant-child relationship either in environmental terms by admission to hospital and/or by the 'mis-attunement' experienced by the infant if the mother's face cannot or does not reflect his internal discomfort and/or if her physical comforting does not remove the distress [Schoore, 1994]. Quinton & Rutter [1976] studied behavioural outcomes of children who were repeatedly hospitalised during their first 3 years of life. Investigations revealed that a single hospital admission of less than 1 week did not lead to later difficulties in children. However, multiple admissions of more than 3 days, at least one of which had taken place between 6 and 60 months of age were associated with a very significant increase in both psychiatric disorder and delinquency at ages 12 to 14 years. These findings are corroborated throughout the literature despite the significant changes in parental involvement in paediatric care over recent years [Stuber & Houskamp, 1996].

Within a model of stress and trauma, each medical intervention provides a reminder of the original illness or treatment even if, in itself, it is not life threatening. Stoddard, Norman and Murphy [1989] followed a group of children treated for severe burns. Approximately 15 were aged two years or below at the time of first admission. At follow up [aged seven years] they demonstrated 30% had symptoms of PTSD, 30% experienced extreme anxiety, 47% had fears and phobias and 3% depression. Similar findings have been published for childhood cancer [Kazak, Stuber & Torchinsky, 1992] and liver transplants [Zitelli, Miller & Gartner, 1988]. Children may have constant parental and medical reminders of the life threatening dangers they face if they do not take medication and adolescent non-compliance may be an attempt to regain control.

Summary

Indices of risk provided by the literature have been identified in the context of factors that threaten the stability of the attachment relationship and thereby evoke distressed responses in the child. Many of these variables are interdependent. For example, domestic violence may lead to parental hospitalisation, separation and divorce, paternal absence, fostering and adoption, change of address, and/or step-parenting and the introduction of step siblings. Studies of adverse life events and later mental health problems in children have typically: [a] focussed only on the immediate period leading up to the onset of

clinical symptoms that might result in biases that bring the two closer together than they were in reality [Rutter 2001]; [b] neglected the factors involved in individual differences in environmental risk exposure and [c] not included younger children or infants. Little is known about the general nature and frequency of adverse life events in the lives of infants and young children. "We know a good deal about psychosocial risk indicators, but much less about the actual environmental mechanisms or processes", [Rutter, 2001, page 142].

Whilst early aversive life events are precursors for later mental health problems, not all children develop later difficulties. It is thus necessary to explore the variables that characterise vulnerability and resilience in the aetiology of disorders.

VULNERABILITY AND RESILIENCE

Vulnerability

There is an assumption that some individuals have a predisposition towards developing later mental health problems. These individuals may be identified by biological markers [Stevenson, 2001], personality or behavioural attributes [Garmezy, 1981], parental criminality or psychiatric disorder [Rutter, 1975], or some experience of damaging circumstances or socio-demographic characteristics [Rodgers, 1994]. Dohrenwend & Dohrenwend [1981] proposed that life stressors [change] and vulnerability [circumstance] have independent additive effects on outcome. An example to support this 'additive model' has been the study of infant temperament.

Life Stressors [change]: Research on primates indicates that parental stress is likely to predispose children to a 'difficult temperament' [Ikeda, Hood, Granger & Gottlieb, 1996], attention disorders and increased separation anxiety [Powell & Emory, 1996]. There is support for the notion that that there are temperamental differences in young children of ill parents. Studies examining schizophrenic and depressed mothers' reports of their children's temperament have consistently found that ill mothers rate their children as more difficult than well mothers [Greenberg, 1999].

Vulnerability [circumstance]: Thomas and Chess [1982] described the 'difficult' infant as irregular, unadaptable, withdrawing, mild in intensity and negative in mood [irritable and difficult to comfort]. In a study of infants all weighing less than 1500 grams at birth, Minde and colleagues [1989] found 43% of the children at age 4 years were reported to have a difficult temperament by their mothers. The most frequently appearing problems [i.e. those occurring in more than 40% of all children] were associated with eating difficulties, settling, and over-activity as well as with temper tantrums, demanding attention and general difficulties of control. All these problems can result from a difficulty in establishing early emotional/biological regulation [Vaughn & Bost, 1999], to the early separation from the mother [Bowlby, 1980], patterns of mother/infant interaction [Crittenden, 1992] and/or to stress and trauma resulting from disruptions in the attachment relationship [Schore, 1994]. Interventions designed to enhance maternal sensitivity and response can increase the likelihood of a secure attachment compared to non-intervention with infants [N = 100] selected for high irritability as newborns [Crittenden, 2002; van den Boom, 1995].

Few researchers dispute that temperament is an important developmental variable. However, there is little consensus regarding its meaning and measurement [Zeanah et al., 1993] or how it can be distinguished from stress and trauma of some kind. Barr [1998] has suggested that 'temperamental' behaviour may be a form of overt but undifferentiated 'signalling' of discomfort with a lower energy cost than crying.

It is often difficult to establish differences between life stressors and vulnerability in terms of cause and effect. For this reason, an additive model of vulnerability has been accepted in this study.

Resilience

However, there is a consistent pattern to the main factors that have been found to provide an individual with 'resilience' against life stressors. Resilience has been described as 'the individual's capacity for adapting successfully and functioning competently despite experiencing chronic adversity, or following exposure to prolonged or severe trauma' [Masten, Best & Garmezy, 1990 cited in Cicchetti, 2001]. Factors providing resilience include positive personality characteristics – the child is socially responsive and flexible [Garmezy & Rutter, 1988], has a high IQ and good problem solving ability [Werner, 1990], parental

warmth and support [Werner & Smith, 1982] and general community support – particularly through school [Rutter, 1975; Davies & Cummings, 1994]. Longitudinal studies examining the sequelae of the quality of attachment in infancy have shown that security of attachment during the first two years predicts many of the attributes in preschool and subsequent stages of development that have been shown to be the characteristics of the resilient child. These have included advantages in social behaviour [Egeland & Sroufe, 1991], affect regulation [Sroufe & Egeland, 1991], endurance in challenging task situations and cognitive resourcefulness [Grossman & Grossman, 1991]. These factors are all promoted within a secure attachment.

Summary

Vulnerability and resilience to early adversity may be explained within the context of the early attachment style. Attachment security in the early years is consistently demonstrated within children who are resilient. It is reasonable to suggest then that resilient individuals will *not* have experienced life events that significantly disrupt early attachment development in the first months of life.

Conclusions

The literature presented in Chapters 1 and 2 provides the background to this study. To integrate the issues that have arisen within the review, a process model was compiled showing how stress and trauma are precursors of psychopathology. This is shown in Figure 2.1. Borrowing from Rahe's pathway between exposure to recent life change and near-future illness reports [Rahe, 1974], this process model can be explained thus:

Life events, whether negative or positive, impact upon the infant and young child causing an increase in arousal [stress/excitement]. The mother provides a 'shaped' response that influences the directional impact of the event for the child. A mother might 'attune' to her infant and mediate the emotion; she may ignore and diffuse the emotion without providing her child with a sense of what the event means; or she may exacerbate and heighten her infant's emotions by imposing her own fears or criticisms, giving the child a distorted or exaggerated meaning for the event. If patterns of responding remain consistent over time for certain events, then the structure of the child's neurological and behavioural responses is 'hardwired' [Morrell & Murray, 2001; Perry et al., 1995]. The child's emerging

sense of what his experience has come to mean is observed in the nature of the child's behavioural responses to the external world.

The literature review identified five main indices of stress and trauma within the context of the attachment relationship: loss and separation, disturbance in the parent-child relationship (parental psychiatric disorder, alcohol and substance misuse), a change in the family structure, change of family, and physical trauma. These indices exist primarily within the context of the attachment relationship.

Literature searches [Med Line; Psych INFO; Psych LIT] identified no studies that had applied models of stress and trauma to a tally of general life events in infants and young children within clinical or community populations. There were also no specific studies that explored the relationship between an individual tally of life events across the age range 0 to 3 years and later mental health problems. This study sought to fill this gap.

The remaining chapters outline the execution of this research.

PATHWAY BETWEEN EXPOSURE TO ADVERSE LIFE EVENTS/CHANGE AND FUTURE MENTAL HEALTH PROBLEMS

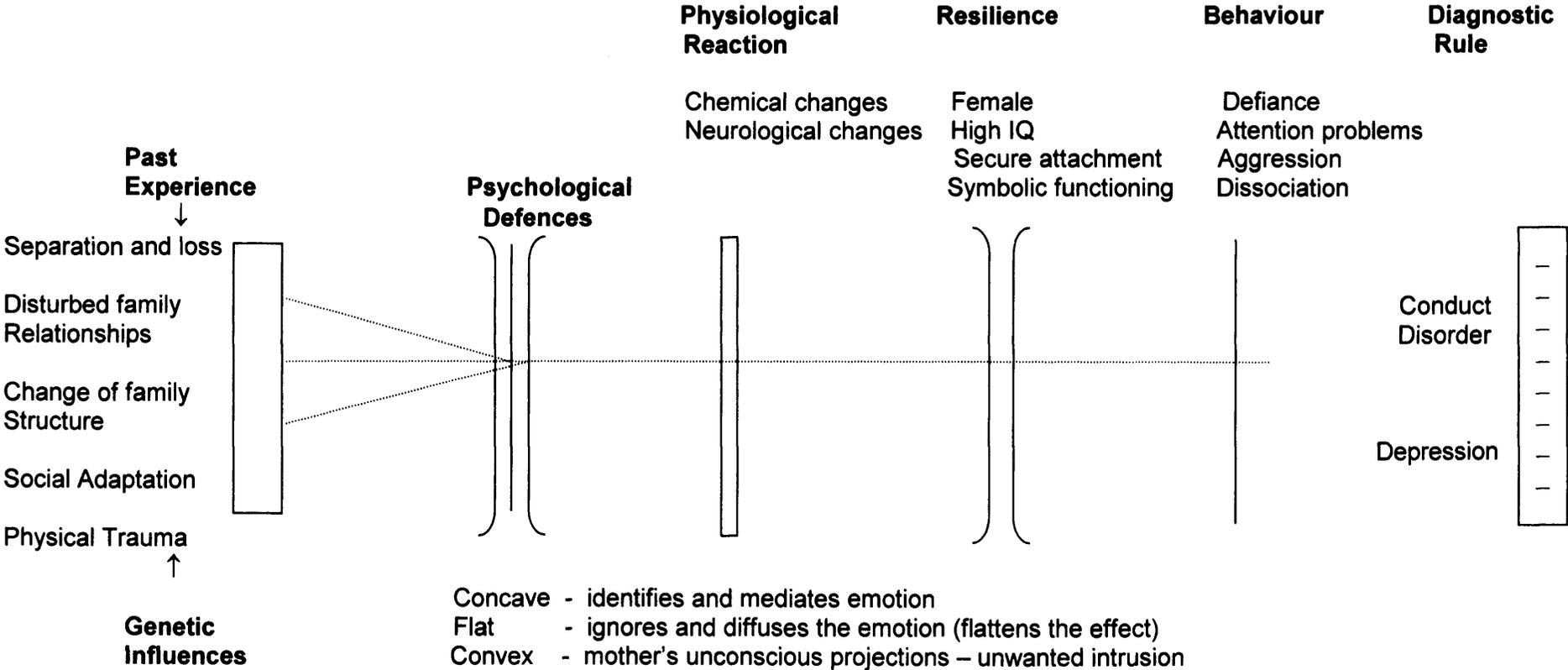


Figure 2.1: Dower [2001, Adapted from Rahe, 1974]

CHAPTER THREE: RESEARCH QUESTIONS AND HYPOTHESES

This chapter draws together the salient points from the literature reviewed in Chapters 1 and 2. Questions arising from the review are then formulated into the experimental hypotheses of the study.

STRESS AND TRAUMA and MENTAL HEALTH PROBLEMS

From Chapters 1 and 2 it can be said that:

- Infants and young children experience stress and trauma primarily within the context of the attachment relationship. Negative experiences can result in insecurity [Scheeringa & Zeanah, 1995]. Insecure attachments typically predict later occurring mental health problems for children [Hughes, 1997; McKenzie & Wright, 1996; Schore, 1994]. However, intervention can enhance the probability of secure attachment formation [van der Boom, 1995, cited in Goldberg, 2000, page 74].
- Studies of attachment interactions between a mother and child have shown that infants can demonstrate a depressed mood as early as 3 months of age [Field, 1992] in response to a 'flat' response style from a depressed mother. Similarly, infants experiencing intrusive and rejecting maternal responses demonstrate later hyperactivity [emotional dysregulation] and conduct disorders respectively [Morrell & Murray, 2001].
- The age at which early stress and trauma is first experienced may determine the nature of later difficulties depending on the stage of development. Depression may be an outcome of stress and trauma poorly mediated in the first year of life when emotional expression is limited. Conduct disorder may be an outcome of stress and trauma in the second year when young children experience high levels of excitement and frustration that is not contained and modulated. Trauma before 18 months of age may lead to more serious outcomes [McKenzie & Wright, 1996; Schore, 1994, 1997; Stern, 1985].
- The occurrence of adverse life events has typically been used as the measure of stress and trauma in adults and older children. Life events shown to influence the nature of the attachment relationship were separation and

loss, chronically disturbed relationships, change of family structure, social adaptation and physical trauma.

- In clinical samples, children have a greater tally of adverse life events than controls. This has been shown for every stage of development [Sandberg et al., 2001]. No research has been identified that examines the general tally of adverse life events during the first three years of life.
- Adverse life events increase in a linear fashion with age but behaviour problems associated with hazard exposure increase geometrically. That is, problem behaviours themselves evoke further negative experiences for the child [Sroufe & Rutter, 1984]. Any single event or adversity would be unlikely, in itself to lead to child mental health problems in the long term [Rutter, 1995].
- There are continuities between child and adult disorders for depression and conduct disorders. However, many adults who present with mental health problems have no history of childhood disorder. A 'lock and key' mechanism may be the process to explain this in many cases.

RESEARCH QUESTIONS

These findings illustrate how three areas of knowledge – models of stress and trauma, attachment theory and life events research – combine to produce explanations for the aetiology of mental health problems. However, there has been no research identified that clarifies [i] the exact nature and duration of adverse life events from 0 to 3 years of age in a clinic population [ii] whether differences exist in the nature of life events that may lead to separate outcomes [iii] the frequency and severity of those events that may lead to a separate outcome, [iv] whether the time at which they occur is important or not [v] whether different events do in fact lead to the same outcome and/or [vi] whether there are differences between clinic and community populations in the nature and incidence of adverse life events experienced from birth to three years of age.

Life event studies have not focussed on those events that impact upon the attachment relationship. Could these events in early childhood be used to predict risk for later mental health problems? Could a Life Events measure identify infants and young children who are at risk? Could Health Visitors or other

professionals use a Life Events measure as a screening procedure? Are early events more or less significant than later events in determining which children develop mental health problems? Is the occurrence of a specific event at a particular age significant?

The aims of this study sought to answer these questions. To do this, research hypotheses were formulated in the light of the literature reviewed.

RESEARCH HYPOTHESES

Outcomes for Children of early adverse life events:

If mental health problems have their aetiology in infancy, there are likely to be a high number of adverse life events recorded during the first three years that would disrupt the formation of a secure attachment. The number of these adverse life events experienced would remain predictably constant across the age range [Sandberg et al., 2001]. However, if a 'lock and key' or two trauma hypothesis is accepted, then later triggering events may not need to be numerous. Hence,

Hypothesis One:

Children referred to child and adolescent mental health services will have a higher number of adverse life events in the first three years of life than in the three years prior to referral.

Events occurring in the first 18 months of life may lead to later depression. Events that disrupt the attachment relationship and occur after the age of 18 months may lead to later conduct disorder [See page 17].

Hypothesis Two:

Children presenting to clinical services with depressive symptoms will have a greater number of adverse life events within the period 0 – 18 months of age than within the period 19 – 36 months.

Hypothesis Three

Children presenting to clinical services with conduct disorders will have a greater number of adverse life events within the period 19 – 36 months of age than within the period 0 – 18 months.

Incidence of Adverse Life Events

Children within clinical samples have experienced a higher number of adverse life events than controls [Coddington, 1972; Sandberg et al., 1993].

Hypothesis Four

Children presenting to child and adolescent mental health services will experience a greater number of adverse life events in the first three years of life than children within the community at large.

Nature of Adverse Life Events

Events that specifically disrupt the early attachment relationship have a greater impact on later mental health problems [Field, 1992; Glaser, 1995; Moore & Pepler, 1998; Schore, 1997].

Hypothesis Five

Children presenting to child and adolescent mental health services will have a greater number of adverse life events that denote disturbed or disrupted relationships within the first three years of life than children within the community at large.

The study to test these hypotheses began in 1997 and was designed in an exploratory way across four phases.

Phase 1: involved a survey of clinical notes held on children referred to the Child, Adolescent and Family Services between 1st January 1995 and 31st December 1996. This was made [a] to match known risk factors [life events] from the literature with the developmental histories of children referred and [b] to develop a Life Events measure. Whilst a survey did not constitute research that could be generalised, it provided a description of specific information within a specific time frame that was useful for producing a research measure.

Phase 2: involved designing an Adverse Life Events measure to identify young children at risk of later mental health problems. The measure needed to be feasible for use by Health Visitors, Clinical Psychologists and others in the course of their work. This measure was used to collect research data.

Phase 3: tested the above hypotheses [1,2 & 3] in a clinical setting using a comparison of Adverse Life Events counted in [a] each of two age bands: 0 – 18 months and 19 – 36 months for two clinical outcomes depression and conduct disorder and [b] each of two time periods: 0 –3 years and the three years preceding referral. Data for this clinical study was collected between February and December 1998 and analysed in 1999.

Phase 4: Finally, Health Visitors volunteered to complete the Adverse Life Events measure following Developmental Screening of young children at age 42 months within the community between April and September 2001. Adverse Life Events counts were compared to those produced within the clinical sample. Could the Adverse Life Events checklist be used to identify those children and families who would benefit most from specialist intervention?

The following chapters provide details of these phases.

CHAPTER FOUR: THE CLINICAL SURVEY

A Survey was made of health files held on children referred to the child, adolescent and family services within the Lincoln District Healthcare Trust between 1st January 1995 and 31st December 1996. This was made [a] to match known risk factors [adverse life events] from the literature with the developmental histories of children referred and [b] to develop an Adverse Life Events measure by listing events experienced by each child.

Demographic Information

Lincolnshire is a large rural county with unemployment rates historically higher than average. The 'catchment' of the Lincoln District Healthcare Trust was 277,100 [OPCS, 1990] and covered approximately 1,000 square miles. There were 68,400 children and young people within the age range 0-19 years – 24.7% of the total population. The District was divided into three geographical areas centred around the towns of Louth [population circa 25,000], Gainsborough [population circa 18,000] and Lincoln city [population circa 83,000].

The Clinical Psychology Service was one of four teams that comprised the integrated, district wide specialist service for children, young people and their families. The four teams [The Community Paediatric Service, The Child and Adolescent Psychiatry team and The Child Protection Service, together with The Clinical Psychology Service] were housed in one building.

Participants

In the period 1st January 1995 to 31st December 1996, 688 children and young people [405 (58.9%) males; 283 (41.1%) females] were referred into the clinical psychology service [circa 1% of total child population] from across the District. General Practitioners made 61% of referrals to clinical psychology. Consultant Medical Staff [Paediatricians, Child Psychiatrists, other Paediatric Specialists] referred a further 33% and 6% of referrals were made by social workers and others.

The geographical spread of the referrals was proportional to the population spread across the three areas: Lincoln 62%, Louth, 21.7% and Gainsborough 16.3%. Of these 688 referrals, 43 [6.3%] either cancelled or failed to attend for appointments offered and were subsequently excluded from the data.

Within the sample [N = 645], ages ranged between 11 months and 18 years 1 month [Mean Age = 111.17 months (9 years 3 months); S.D. = 53.06 months]. There were 379 or 58.8% males and 266 or 41.2% females. The gender split was close to the national average of 59.9% males presenting to child mental health services [National Audit Commission, 1999]. The sample was divided into four separate age groups to better examine the distribution. Table 4.1 shows the sample distribution by age group and gender.

Table 4.1: Distribution of the Survey Sample [N = 645] by Age Group x Gender.

Age Group [in months]	Number of		Number of	
	Males in Sample	% age total	Females in Sample	% age total
0 – 60	103	16.0	37	5.8
61-120	131	20.3	88	13.6
121-180	123	19.1	86	13.3
181+	22	3.4	55	8.5
Total	379	58.8	266	41.2

The distribution of referrals by age and gender followed a national pattern when compared to the Audit Commission findings [1999].

Ethical issues

Direct participant consent was not sought as this was a clinical survey. Most families had been discharged from the service at the time of the survey. Since there could be no possibility of any individual being identified within the data, it was considered that to seek specific consent might raise unnecessary anxiety. Consultation with the Manager of the Medical Audit Advisory Group at Lincolnshire Health ratified this view.

Procedure

Clinical case files were retrospectively reviewed and Adverse Life Events as they appeared were recorded. In particular, three events were sought within the sample: [1] the birth of a younger sibling and the age of the referred child when the younger sibling was born, [2] parental separation/divorce and [3] maltreatment. It was considered that these might constitute a 'minimum data set'.

A data sheet was prepared and data were entered onto an SPSS 8.0 [1997] spreadsheet.

Results

Clinical records contained comparatively little information that could be chronologically specified. For example, dates of birth for siblings were usually absent from the record although sibling ages were recorded. Where there was information about family events, events were often not dated. There were references to parental mental health problems, but these were rarely detailed enough to provide diagnostic descriptions - if available - or chronological specificity of episodes. In general, although there were consistently detailed descriptions of a child's emotional and/or behavioural problem, the survey demonstrated that very little reliance could be placed upon clinical records to provide a detailed chronology of a child's life history even when a developmental history had been taken. There was a need for a systematic and standardised pattern of recording.

An attempt was made to acquire missing data [e.g. sibling dates of birth] from the Community Child Health records held centrally within the Integrated Child Service. However, difficulties arose for several reasons. Children in the same sibship often did not have the same surname; sibling dates of birth do not appear on an individual child's record; where parental separation had occurred, there was no way of establishing whether a child lived with the mother or father or indeed if the parental separation was between natural parents or not.

It became clear that whilst individual, infant physical health records kept by health visitors, paediatricians and parents were chronologically robust, there were no equivalent records for infant/child mental health. Part of this difficulty may relate to issues about keeping third party information on health files.

With regard to the three identified events, the following results were found.

Birth of a Younger Sibling

Within the sample [N=645], a total of 62 files held no record of whether the child referred had or did not have a younger sib. Of the remainder [N = 583; 90.4 % of the sample], 44.4 % had no younger sib. This figure is close to that expected when the generally accepted norm of 2.4 children per family is used [41.6 %].

A total of 63 children [10.8 %] experienced the introduction of a younger sibling to the family before 18 months of age with 17 [2.9 %] before the age of 12 months. A total of 163 children [28 %] had a younger brother or sister born between 18 and 36 months of age.

Incidence of parental separation and divorce

A total of 291 [45 %] children referred were recorded as having had experience of parental separation and/or divorce. This was considered an under-estimate as a family history was often not taken for many children referred for psychological assessment alone. Of the children who had experienced parental separation/divorce, 165 [57 %] were male; 126 [43 %] were female.

Table 4.2: The incidence [with percentages of the total] of parental separation by sex by age group [in months].

	0-60 mths [0 to 5 yrs.]	61-120 mths. [5 to 10 yrs.]	121-180 mths. [10 to 15 yrs.]	>180 mths. [over 15 yrs.]
Male	25 [8.6%]	60 [20.6%]	63 [21.7%]	17 [5.8%]
Female	15 [5.2%]	37 [12.7%]	48 [16.5%]	26 [8.9%]

Incidence of child protection issues

A total of 152 [24 %] children referred had been subjects of child protection case conference and/or review. Specific concerns were not recorded at survey. Of these 85 [56 %] were male; 67 [44 %] were female.

These three indices were later compared to the clinical sample distribution within the clinical study.

Summary

Three events were specifically recorded during the Survey: birth of a sibling [10.8% of the sample prior to 18 months of age], parental separation/divorce [45% of the sample] and maltreatment [24% of the sample] as measured by the inclusion of the child's name on the Child Protection Register. Percentages obtained probably under represented the actual occurrence of an event, as information was not always available. However, the Survey gave an indication that the frequency of these events seemed high in a clinical population compared

to national statistics [OPCS, 1990]. It also demonstrated that case files were not a reliable source of information. Clinical records need to be far more robust if clinicians are to piece together a meaningful narrative of the child's life experience. Sibling dates of birth and dates of parental separation/divorce were rarely recorded even when these events were recorded as stressful episodes for the child. There were occasional references to parental mental health problems but these were rarely specified. There were also references to domestic violence, substance misuse and paternal separation due to imprisonment or the nature of employment but again there was little specificity. These findings mirrored the concerns voiced by child protection specialists in respect of adult mental health records [Oates, 1998]. For example, although it is accepted that childcare can be particularly stressful for parents, very few adult mental health records actually record whether a psychiatric patient has children [Oates, 1998].

Since an infant's mental health is dependent on those who provide care and protection, and on the contextual environment, the lack of information in health records was considered to be a significant gap in community child health services that needed to be addressed.

One of the difficulties in promoting good infant/parent relationships is the lack of early identification of need. Health Visitors have an important role within early screening of infant health yet their skills have been under-utilised in screening for mental health problems.

The importance of Health Visitors in the promotion of mental health

Since Health Visiting began in 1867 in Manchester and Salford [Hale, Loveland and Owen, 1968 cited in Dent & McIntyre, 2000] the role of Health Visitors has been to offer unsolicited home visits to families with young children. The Community Practitioners and Health Visitors Association [CPHVA, 1997] report four principles underpinning good practice. These are – the search for health needs; the stimulation of awareness of health needs; the influence on policies affecting health and the facilitation of health enhancing activities. Health visiting had reduced physical neglect and malnutrition suffered by children in the UK [Browne, 1995] and is ideally placed to identify early difficulties in the parent/child relationship. For example, Health Visitors within the Riverside Community Healthcare Trust, identified many parents affected by mental health problems - 2% of an original sample of 10,800 families studied [Dent & McIntyre, 2000].

Depression was considered to be by far the most common problem identified by both Health Visitors and mental health specialists and domestic violence was strongly featured within these families.

DESIGNING AN ADVERSE LIFE EVENTS MEASURE

The next stage of the study focussed on the development of a measure that would facilitate early identification of stress and trauma in an infant population and be feasible for use by Health Visitors and other professionals.

The design of a measure that could be used quickly and effectively to provide basic information salient to child mental health formed the second stage of the study. The measure needed to identify children [and their parents] who would benefit from intervention during the first three years of life. That is, to identify infants who were experiencing stress and trauma within the context of the attachment relationship.

Self-report ratings could not be used with infants, therefore information needed to be collected from parents either in a semi-structured interview or through questionnaires. Health Visitors, however, would find this method of data collection time consuming. Hence, a measure was needed that could be [a] easily and quickly completed, [b] provide information about the intensity and duration of events for the infant, and [c] identify difficulties in the attachment relationship.

There are often difficulties in determining the exact frequency and nature of life events; what a child has *actually* experienced. For example, if a child is exposed to domestic violence, it may be known that domestic violence exists within the home but not what the child has witnessed or suffered. It is possible that in such circumstances, parents themselves might not know. However, without the means to record events, relevant questions may not be asked at a later date whether explicitly or implicitly.

Life events can be counted and can provide independent ratings of contextual threat. Events most likely to create stress and trauma for the child can be identified. For example, Sandberg et al. [1993] found in a combined clinical and control sample [n = 106], that family relationship difficulties accounted for 24% of

total occurrences; chronic ill health, 21%; and lack of care or inappropriate parenting, 8%. The simplest way to record events was on a life chart, divided into discrete time frames along one axis and identified events denoting risk on the other, following the format of the Life History Calendar [Caspi, Moffitt, Thornton, Freedman, Amell, Harrington, Smeijers & Silva, 1996].

Scoring an Adverse Life Events Measure

A scoring system to record life events needed to fulfil the following criteria:

- Information collected needed to be easily located and understood. There would be no judgement(s) made regarding the impact upon the child. Simply, the event happened or did not happen; the circumstance was present or was not present.
- Given the dependency of infants and young children, items recorded would be independent of the child's actions or choices.
- Specific dates of events were needed in order to know the age of the child at the time of the event.
- There needed to be a way of counting the number of events occurring within the same period of time in order to establish the intensity of stress experience (contextual threat for the child).
- It was also important to count events across time to establish duration effects and
- Events needed to be grouped into discrete categories to make scoring easier.

Using information from the Survey and from the Literature Review, an Adverse Life Events recording sheet was compiled [**Appendix 3**].

Scoring criteria were originally established on the general principle that each separate event would be given a score of 1. However, within the context of clinical interviews leading up to the period of research, this did not seem feasible. For example, in family situations where there was known domestic violence, it would have been extremely difficult if not intrusive and clinically inappropriate at

first interview, to elicit the exact number of times the child may have witnessed violence within a certain time span.

Other scoring considerations required discussion with colleagues. For example, where a child had been adopted, and clearly remained within the adoptive family, should the natural maternal and paternal separation continue to be scored over time? If so, for how long? Where several maternal partners had been successively introduced to the child, should scores accumulate to record each 'paternal' separation?

Essentially these questions were resolved by asking for each time band of 6 months whether the circumstance rather than a specific incident applied. Hence, for each time span in which domestic violence in front of the child occurred, a score of 1 was given. Maternal and paternal separation would only relate to the natural parent; however, step-parent departures would be scored in respect of parental separation/divorce if the departing step-parent had been a member of the family for 3 months or more. It was considered important to record whether one or both parents had a mental health problem at any particular time. A score of 1 or 2 respectively was deemed appropriate.

With these criteria, a score sheet [Appendix 4] was drawn up. Four independent raters [2 clinical psychologists; 2 social workers] 'tested out' the scoring system using their professional knowledge of known families on their own caseload and facilitated improvements.

Test-retest reliability: A simple test-retest comparison was made using four raters and four clinical case files. Each rater completed a Adverse Life Events record sheet/checklist for each case file. Four weeks later, raters were asked to complete the Adverse Life Events checklist again for each of the files. There were no differences between the two sets of scores indicating that the scoring criteria were reliable across time. See Table 4.3.

Table 4.3: Raw scores for test – retest reliability [4 week interval] using four raters for each of four case histories using the Adverse Life Events Measure.

	Rater 1		Rater 2		Rater 3		Rater 4	
	Test	Retest	Test	Retest	Test	Retest	Test	Retest
Case 1	6	6	7	7	7	7	6	6
Case 2	0	0	0	0	0	0	0	0
Case 3	9	9	9	9	8	8	8	8
Case 4	3	3	4	4	3	3	3	3

The measure was reliable and was incorporated into the study.

CHAPTER FIVE: THE CLINICAL STUDY

The clinical study was conducted to test the first three hypotheses formulated from the literature review.

Hypothesis One:

Children referred to child and adolescent mental health services will have a higher number of Adverse Life Events in the first three years of life than in the three years prior to referral.

Hypothesis Two:

Children presenting to clinical services with depressive symptoms will have a greater number of Adverse Life Events within the period 0 – 18 months of age than within the period 19 – 36 months.

Hypothesis Three

Children presenting to clinical services with conduct disorders will have a greater number of Adverse Life Events within the period 19 – 36 months of age than within the period 0 – 18 months.

METHODOLOGY

DESIGN

The main aim of the study was to investigate, in a clinical sample, the relationship between negative life events, occurring to children between 0 to 3 years, and later mental health problems, as reported by their parents. This cross-sectional survey design allowed a comparison of adverse life events counted in three time periods: 0 to 18 months, 19 to 36 months and during the three years prior to referral. A minimum sample size of at least 100 was required to avoid a minimalist approach to sample size determination [Dunn, 2000].

PARTICIPANTS

Recruitment – Clinical (Case) Group

As part of the clinical practice arrangement at the time of the study, the Children's Services Manager in Lincoln allocated referrals for an initial assessment appointment to different experienced clinicians within the Child,

Adolescent and Family Mental Health Services. Professionals involved included child psychiatrists, clinical psychologists, senior social workers and community [child] psychiatric nurses. Screening clinics were held weekly. This was an experimental procedure within the Service designed to reduce waiting times. Although professionals from different disciplines were involved in the assessment clinics, referrals were assigned according to clinician availability.

Over a period of 11 months, 143 children and young people, 93 male [65%] and 50 female [35%], within the age range 22 to 204 months [Mean age = 119.0 months; S.D. = 45.07 months] were offered a first appointment with the author. These families were informed of the study in a letter sent with the initial appointment date [Appendix 5].

Of these, 20 families [14%] either cancelled the appointment, or did not attend [11 male referrals; Mean Age = 118.3 months (9.86 years); 9 female referrals; Mean Age = 157.2 months (13.1 years)]. Families that 'did not attend' did not respond to follow up by the Service. The median 'did not attend' [DNA] rate from the survey of Child, Adolescent and Family Mental Health Services [1999] with 79 [NHS] Trusts nationwide was 17%.

One hundred and twenty-three families attending for a first appointment consented to join the study. Consent forms were duplicated, one copy being returned to the parents and the second held on the child's file.

MEASURES

[a] Semi-structured Interview

The semi-structured interview was the same used for all initial appointments with a family in the clinical setting of the Child, Adolescent & Family clinical psychology services with some additional questions. The family was welcomed and the purpose and structure of the session was explained.

The history of the child, including an account of the pregnancy, birth, developmental milestones, attendances at playgroup and/or nursery, changes of address and schools and names and ages of siblings were all recorded in the usual way as well as the concerns of the parents about the referred child's current difficulties and other related family problems. However, attention was

given to ascertaining sibling birth dates, dates of hospital admissions, date of parental separation and other specific events within the history.

In addition, parents were asked to consider “what was happening for everyone in the family” during the first three years of the [referred] child’s life and over the three years prior to referral. Specific questions related to the five categories within the adverse life events checklist were:

Loss: “Thinking back from the time of [the child’s name]’s birth, have there been any family bereavements or periods of separation for either you or [the child’s name], particularly over the first few years? Were you [mother] or his dad away for any reason, perhaps in hospital, working away or overseas? Were there important people in the family who perhaps moved away?”

Disturbed Family Relationships: Were there any difficult times for you both [parents] either in those early years or later? Was there any depression, perhaps following the birth, or any other mental health problem for either of you? It would be helpful to know whether [child’s name] has ever been present when either of you has had perhaps a bit too much to drink or have been fighting? Has [child’s name] ever seen one of you really hurt or upset? Do either of you have physical health problems that might cause [child’s name] to worry?

Change of family structure: Can you tell me who is in your family? [Question to child first. If other children are present ask for corroboration]. I wonder whether you can remember everyone’s birthdays? Shall I ask Mum to help out? What are the dates of birth? If separation/divorce has not already been identified, ask, How long have you [parents] both been together? Did any one else live in the family in those early years – a grandparent, step-brother or sister, another partner?

Social Adaptation: I wonder how many times you have all moved house. How many people have looked after [child’s name]? If the child is fostered or adopted seek corroboration from Social Worker. Can you tell me all the schools you have been to?

Physical Trauma: I wonder how many times [child’s name] has needed to go to hospital? It may have been for an accident or because he/she was ill.

[b] Devereux Scales of Mental Disorders [DSMD]

The Devereux Scales of Mental Disorders [DSMD] were developed as an aid in the identification of individuals who demonstrated behaviours associated with psychopathology [Nagliere, LeBuffe & Pfeiffer, 1994]. The DSMD yields an

overall score and scores for several factorially derived scales that reflect major categories of symptoms. For example, for children aged 5-12 years, the DSMD yields scores for the specific behavioural areas of Conduct, Attention, Anxiety, Depression, Autism and Acute Problems and for three broad composites including Externalising, Internalising and Critical Pathology. Classification in this way was considered important. Descriptions of behaviour describe the *perceptions* of the raters rather than objective measures of pathology as is the case with all rating scales.

The Scales ask whether a particular behaviour occurred Never, Rarely, Occasionally, Frequently or Very Frequently [scored 0-4 respectively] over the previous four weeks. Scores for each clinical category are converted to T Scores. A T Score equal to or greater than 65 is considered to be clinically significant.

The DSMD was the behaviour questionnaire of choice for several reasons.

- It is the instrument used within the Lincoln clinical psychology service for the assessment of child behaviour. Therefore, other professionals were familiar with the results produced and were able to apply them.
- The content validity aligned the behaviours described with DSM-IV diagnostic criteria and had been subjected to rigorous construct-related validity analysis.
- The standardisation sample was large comprising 3,153 children and adolescents aged 5-18 years. The sample was drawn from 17 American States, different socio-economic groups and across different Ethnic categories.

Only two sub-scales Depression and Conduct Disorder were chosen for analysis [as outlined in the literature] although parents were asked to complete all questions.

[c] The Adverse Life Events Checklist described above [See page 52].

ETHICAL ISSUES

The North Lincolnshire Research Ethics Committee approved the research proposal for the clinical study in February 1998 [See **Appendix 6**] subject to amendments that were accepted later that month. Consent issues were discussed with the Committee and an information leaflet and Consent form were created to give to parents and young people over 16 years of age, [See **Appendix 5**]. A copy of the signed consent form was placed on the child's file. Parents held the originals.

PROCEDURE

At the first appointment, families were interviewed using the semi-structured interview as described below. The Adverse Life Events checklist was scored immediately following this first interview. Parents were given the Devereux Scales [DSMD] to complete and to return either on their next visit or by post. Stamped and addressed envelopes were supplied.

ANALYSIS OF DATA

Three hypotheses generated from the research literature aimed to examine the outcome of early stress and trauma for children between birth and three years of age. Table 5.1 shows the model and statistic for each Hypothesis in the study.

Table 5.1: The model and statistic utilised for each Hypothesis in the study.

Hypotheses	Participants	Design/Model	Statistical Analysis
H. 1. Events prior to referral	N = 99	Comparison of Mean Values	Paired samples t - test
H. 2. Depression	N = 39	Comparison of Mean Values	Paired samples t - test
H. 3. Conduct	N = 46	Comparison of Mean Values	Paired samples t - test

Methods of Analysis

Individual scores [N = 119] for the Adverse Life Events checklist were entered on to an SPSS 10.1 Spreadsheet. Variables included each of the 5 x 2 categories of Event [independent variables] x Age Band [0 to 18 months and 19 to 36 months] and Gender.

For children aged six years or above [N = 99], the 5 x 2 categories of event were also recorded for the 3 years preceding referral. Thus, a count of events 3 years prior to referral was available and separate from a count of adverse life events from 0 to 3 years.

T-Scores derived from the Devereux (DSMD) Checklist were entered for children aged 60 months or more [n= 113].

The Paired samples t-test was used to compare the mean values between adverse life events in the time periods 0 – 18 months, 19 – 36 months and preceding referral for those children within the clinical sample aged 72 months or above [n= 99]. The assumptions of the t-test are that

- i. Observations are independent within each period. That is, the number of observations is not finite.
- ii. Observations are drawn from normally distributed populations
- iii. Populations have the same variance
- iv. Variables are measured in interval scale

RESULTS

Sample Characteristics

A total of 123 new referrals [Mean Age = 116.27 months; S.D. = 43.87 months] were seen during the period of study; 82 [66.7%] males and 41 [33.3%] females. Of these, 4 were adolescents [aged 16+] who did not wish their parents to be involved and attended on their own. Early histories and questionnaire scores for these young people were not available. Of the 119 remaining, each child or young person attended for a first appointment with one or both parents and often with one or more siblings. Consent regarding participation in the study was given by all of these families. There were no refusals. Indeed, parents were very interested in the research. Early life event histories were therefore available for all 119 children where the author conducted the initial appointment. Unfortunately, the return of questionnaires was not so robust, particularly for

those who were referred to other members of the multidisciplinary team for further assessment or work. Only 60 [53.1%] behaviour questionnaires were returned.

A simple frequency analysis was conducted on the sample to establish the incidence of general characteristics. These are set out in Table 5.2. Nearly two-thirds [62.6%] of the sample had experience of parental separation and/or divorce up to the date of referral. [The incidence within the first 3 years of life was 33 or 26.8%]. One third [33.3%] had experienced known maltreatment and nearly a third [32.5%] had witnessed domestic violence within the first three years of life.

Comparison with the Survey

The characteristics of the clinical group sample were compared to the survey sample on the indices available – the birth of a younger sibling, parental separation/ divorce and child protection registration. Table 5.2 shows the number of occurrences together with percentages for these variables.

Table 5.2. The incidence of psychosocial factors within the clinical sample [N = 123] showing total number of events and percentages of the total events compared to percentages [where available] in the previous survey [Age range 0 – 18 years].

	Total Number of Events	% of total	Survey %
Existence of a younger sib.	84	68.3	55.6
Birth of younger sib by 18 months	16	13.0	10.8
Birth of younger sib by 12 months	4	3.3	2.9
Separation/Divorce	77	62.6	45.0
Child protection issue	41	33.3	24.0
Maternal M.H. problem	60	48.8	
Paternal M.H. problem	45	36.6	
Both parents with M.H. problem	23	18.7	
Domestic violence [known]	40	32.5	

The clinical group demonstrated a higher percentage of events for each of the three variables than at Survey. Results also showed that 78% of the sample

experienced a first event during the first 6 months of life and 91.5% before the age of 18 months.

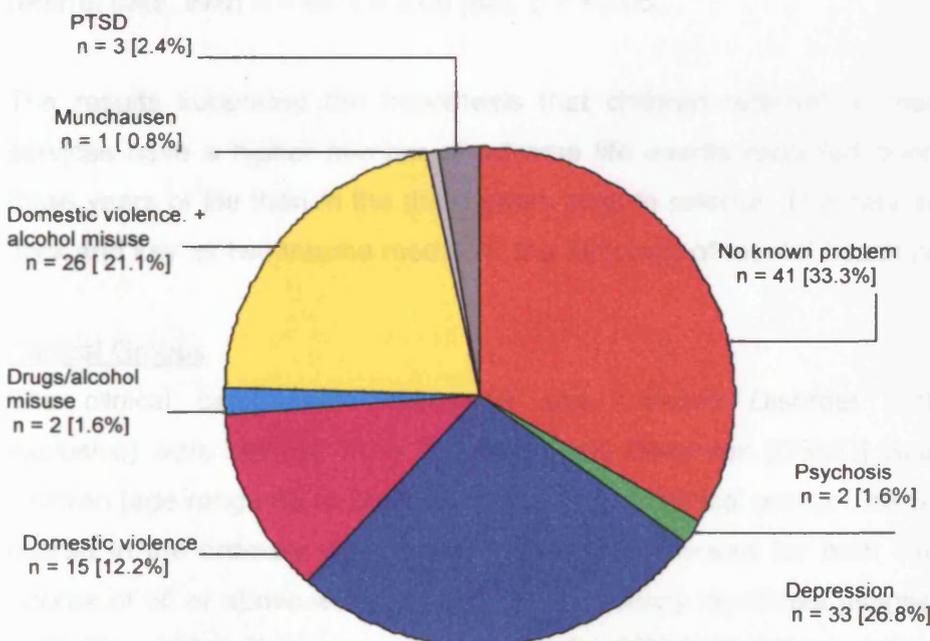
Incidence of Loss and Separation

The most frequent event recorded within the category of Loss was paternal separation that accounted for 253 [14.5%] of the total events in the first three years. Maternal separation accounted for 124 events [7.1%] of the total.

Incidence of Parental Problems

Figure 5.1 shows the incidence of parental difficulties within the clinical sample. There were no known parental problems for one third of the sample. Almost half [48.8%] of the children referred had experienced maternal mental health difficulties and over a third [36.6%] had experienced paternal problems, primarily of domestic violence with or without alcohol/substance related difficulties. Maternal mental health problems were primarily related to depression.

Figure 5.1: The incidence [% ages] and nature of parental mental health problems [during the child's lifetime] identified in the Clinical [Case] Sample for children 0 to 18 years of age.



Two thirds of the children referred to clinical services had experiences of disrupted or disturbed attachment relationships.

Hypothesis One:

Children referred to child and adolescent mental health services will have a higher number of adverse life events in the first three years of life than in the three years prior to referral.

The Adverse Life Events Checklist was scored for each child. A total number of 1741 events [Range 0-59; Mean = 14.3; SD = 11.04] were recorded across the sample [N = 119] to have occurred within the first 36 months of life. Since 20 children were under 6 years of age [Age range 22 – 71 months], these children were excluded from the analysis so that events between the two time periods would not be counted twice. Within this selected range [n = 99], a total number of 1305 events [Range = 0-59; Mean = 12.79; SD 9.92] were recorded for the first 36 months of life. For the three years prior to referral, a total of 1097 events [Range = 0-48; Mean = 11.08; SD = 8.58] were recorded.

A paired samples t-test was applied to the individual matched scores for adverse life events across the two time periods, 0 to 3 years and the 3-year period prior to referral date. With n = 99: t = 2.06 [98]; p = <0.05.

The results supported the hypothesis that children referred to mental health services have a higher number of adverse life events recorded during the first three years of life than in the three years prior to referral. The data supported a 'lock and key' or two trauma model for the aetiology of mental health problems.

Clinical Groups

The clinical categories, Depression and Conduct Disorder [not mutually exclusive] were derived from the completed Devereux [DSMD] Scales for 60 children [age range 69 to 204 months] within the clinical group. The Scales were scored in the ordinary way and T Scores were derived for both categories. T Scores of 65 or above were deemed to be clinically significant [Naglieri, LeBuffe & Pfeiffer, 1994]. Data was entered onto the SPSS 10.1 Spreadsheet in binary form. Depression or Conduct Disorder was either present [T Score equal to or greater than 65] or not [T Score equal to 60 or below]. Once the data was

collated, the extent of co-morbidity perceived by parents in their observations of their children became immediately apparent. Table 5.3 shows the incidence of adverse life events occurring in each of the two age bands [0 to 18 months and 19 to 36 months]. A third category of Co-morbid difficulties was added to the data presentation. Ten children presented with 'no problems'. Their total number of events [0 –36 months] was 123.

Table 5.3: The incidence of adverse life events occurring in each of the two age bands [0 to 18 months and 19 to 36 months] across three clinical groups Depression, Conduct Disorder and Co-morbidity [Depression + Conduct Disorder].

Age [months]	Depression n = 39			Conduct n = 46			Co-morbid n = 35		
	Total events	Mean	SD	Total events	Mean	SD	Total events	Mean	SD
0 - 18	288	7.38	6.1	345	7.50	6.2	262	7.49	6.4
19 - 36	252	6.46	3.8	324	7.04	4.2	230	6.57	4.0
Total	540	13.85	8.5	669	14.25	9.2	492	14.06	6.4

A series of paired sample t-tests were applied to the data. Results of the analyses are presented for Hypotheses 2 and 3.

Hypothesis Two:

Children presenting to clinical services with depressive symptoms will have a greater number of adverse life events within the period 0 – 18 months of age than within the period 18 – 36 months.

Thirty-nine children [24 males; 15 females] within the clinical sample [n = 60] presented with Depression as measured via parental report on the Devereux Scales. [Of these, 35 also presented with Conduct Disorder]. A paired samples t-test was applied to the individual matched scores for adverse life events across

both age bands for these 39 children: $t = 1.03$ [38], n.s. The hypothesis was not supported.

Children assessed by their parents to have depressive symptoms had experienced a high number of adverse life events across both age bands. A majority of these children [89.7%] also demonstrated conduct disorders.

Hypothesis Three

Children presenting to clinical services with conduct disorders will have a greater number of adverse life events within the period 19 – 36 months of age than within the period 0 – 18 months.

Forty-six children [34 males; 12 females] within the clinical sample [$n = 60$] presented with Conduct Disorder as measured on the Devereux Scales. [Of these, 35 also presented with Depression]. A paired samples T - test was applied to the individual matched scores for adverse life events across both age bands for these 46 children and confirmed this view: $t = 0.57$ [45], $p = >0.05$. The hypothesis was not supported.

Children assessed by their parents to have conduct disorders had experienced a high number of adverse life events across both age bands. A majority of these children [76.1%] were recorded as having depressive symptoms.

Additional Findings

Co-morbidity

Thirty-five children within the clinical sample [$N = 60$] presented with both Conduct Disorder and Depression as measured on the Devereux Scales. A paired samples T - test was applied to the adverse life events scores across the two age bands for these 35 children: $t = 0.93$ [34], $p = >0.05$. The analysis demonstrated that there were no significant differences between the number of adverse life events recorded for each of the two age bands.

To explore the data further, Means within each category of Event x Age band [0-18 months and 19 – 36 months] x Outcome were tabulated – Table 5.4. Outcome measures were only counted once. That is, Co-morbid outcomes were not included in counts of Depression or Conduct Disorder.

Children who scored for Depression alone [n = 4] experienced more Trauma events, particularly before 18 months of age than children in the other outcome groups.

Children who scored for Conduct Disorder [n = 11] alone experienced more events related to loss in the period 0-18 months of age and more events related to disturbed family relationships particularly in the period 19-36 months when compared to children in the other outcome groups.

Table 5.4: Mean number of adverse life events within each category of Event x Age band [a = 0-18months and b = 19 – 36 months] x Outcome.

N = 60	Loss		Disturbed Relationship		Family Structure		Social Change		Physical Trauma	
	a	b	a	b	a	b	a	b	a	b
Depression n = 4	1.0	1.3	2.3	1.3	0.3	1.8	0.8	0.8	2.0	0.8
Conduct Disorder n = 11	2.4	1.9	2.6	2.8	1.3	2.2	1.3	1.1	0.4	0.2
Co-morbid Problems n = 35	1.9	2.1	2.4	1.5	1.0	1.5	1.2	0.9	1.0	0.5
No Problems n = 10	0.8	0.8	0.9	0.7	0.5	0.7	0.6	0.8	0.7	0.6

Overall, children rated as Depressed [n = 4] had fewer adverse life events [Mean = 12] than those children perceived as having Conduct disorders [n = 11; Mean = 16.1]. The Mean number of adverse life events recorded for children with co-morbid problems [n = 35] was 14.09.

Gender

Gender did not account for a significant variance when considering the nature and/or frequency of adverse life events. Table 5.5 shows the distribution of males and females across the three clinical categories Depression, Conduct Disorder and Co-morbidity. A non-parametric binomial [z] test was applied to the frequency of males versus females for each category. This test was chosen

because the data were in two discrete categories from a one-sample design. If the null hypothesis assumes that boys and girls would be equally distributed in each clinical category, then this would only be rejected for probabilities equal to or less than 0.01. The data did not support any significant differences between male and female outcomes for children experiencing the same adverse life events.

Table 5:5 The distribution of boys and girls across the three clinical categories of Depression, Conduct Disorder and Co-morbidity with observed values of z and probabilities [Table A, Siegel, 1956].

	Depression		Conduct		Co-morbidity	
	male	female	male	female	male	female
Frequency	24	15	34	12	22	13
z score	-0.88		1.0		-1.35	
	n.s.		n.s.		n.s.	

Relationships between Variables

To explore relationships between the variables on the Adverse Life Events Checklist a series of Correlation Coefficients [linear associations] were obtained by applying the data to a Factor Analysis calculation on SPSS 10.1. Results are shown in Table 5.6 over page.

Table 5.6: Correlation Coefficients between variables in the Life Event Checklist where a = 0-18 months; b = 19 –36 months of age.

	Loss [1]		Disturbed Relationships [2]		Family Structure [3]		Social Adaptation[4]		Physical Trauma [5]	
	[1]a	[1]b	[2]a	[2]b	[3]a	[3]b	[4]a	[4]b	[5]a	[5]b
[1]a										
b	.696**									
[2]a	.173*	.255*								
b	.056	.071	.730**							
[3]a	.427**	.379**	.149	.173*						
b	.311**	.384**	.101	.134	.812**					
[4]a	.571**	.486**	.439**	.230*	.222	.118				
b	.090	.258*	.177*	.284**	.253*	.165*	.289**			
[5]a	.008	-.072	.096	.026	-.013	-.053	.082	.104		
b	-.074	-.068	.053	.063	-.069	-.087	.010	.137	.479**	

* $p \leq .05$; ** $p \leq .01$

There were significant correlations between the two age bands [0 – 18 months and 19 – 36 months] for each of the five categories of event measured [loss, disturbed relationships, family structure, social adaptation and physical trauma] indicating the continuing nature of events across infancy and early childhood.

DISCUSSION

Hypothesis One:

Children referred to child and adolescent mental health services will have a higher number of adverse life events in the first three years of life than in the three years prior to referral.

Children in a clinical sample, referred for both externalising and internalising problems, were shown to have a higher number of adverse life events as measured by the Life Events Checklist during the first three years of life than in the three years prior to referral. The correlations between variables indicated that

events were consistently experienced across the two age bands from birth to 18 months and from 19 months to three years of age. The results do not support findings that life events increase in a linear fashion with age [Sandberg et al., 2001; Sroufe & Rutter, 1984]. However, as stated above, previous research had not identified the frequency of adverse life events during the first three years.

Hypothesis Two:

Children presenting to clinical services with depressive symptoms will have a greater number of adverse life events within the period 0 – 18 months of age than within the period 19 – 36 months.

Hypothesis Three

Children presenting to clinical services with conduct disorders will have a greater number of adverse life events within the period 19 – 36 months of age than within the period 0 – 18 months.

Hypotheses Two and Three were not supported by the data. The most striking evidence from the data was the incidence of co-morbidity within the sample. This may have been due to a number of factors. Firstly, the Children's Services Manager selected the sample for allocation to the author. This may have elicited an unknown bias. Secondly, the low return rate for the DSMD may have been determined either by the severity/complexity of the child's difficulties or by the level of concern the parents were experiencing. Those children with less severe problems or parents who were not so concerned being the ones who failed to return completed questionnaires. Thirdly, parents who have difficulties themselves may over report criticisms of their children [Greenberg, 1999]. In nearly one half of the sample, there was a reported incidence of maternal mental health problems and over a third of the children had experienced paternal difficulties [domestic violence and/or substance misuse]. Finally, for a third of the sample, there were identified child protection issues. This may have been a factor in the sample bias [allocation of referrals] and would have increased the likelihood of a high number of adverse life events across the two age bands [0-18 months and 19-36 months] as well as on an ongoing basis. The issue of co-morbidity needed to be explored further.

Co-morbidity

To be co-morbid, two disorders should be mutually exclusive [Shaffer, 2001]. Having one condition should not increase the probability of having the other. However, within the literature [for example, Rutter, 1965] there is often a call for the re-examination of childhood classifications of mental disorder for the very reason that children often present with characteristics of two or more disorders [Audit Commission, 1999]. The DSMD is not a diagnostic tool but serves to highlight the various characteristics inherent in DSM-IV. Zeitlin [2000] described the poor prognosis for children presenting with co-morbid symptoms. Many children have difficulties characteristic of several disorders but do not reach diagnostic criteria for any. Within the Child, Adolescent and Family service within Lincolnshire, it is estimated that as many as 70% of children referred do not receive a psychiatric diagnosis, yet the quality of the child's life is seriously impaired because of the presenting difficulties. The data from this study highlights the difficulties of true co-morbidity and promotes the possibility of a single pathway for mental disorder.

The children within the sample were shown to be at risk from psychosocial adversity and were therefore susceptible to mental health problems in terms of vulnerability and adverse life events.

Although adverse life events were shown to be equally prevalent across the two age bands, 0-18 months and 19-36 months, there was a significant difference between adverse life events experienced to the age of three years and the three years prior to referral. The data upheld the hypothesis that the incidence of adverse life events experienced in the first three years was greater than in the three years prior to referral. It also supports the view of Rutter [2001] amongst others that adverse life events need to be considered across the life span rather than simply in the period leading up to onset.

It became important to establish a tally of adverse life events within a community sample

- a. To provide a standardisation of a adverse life events measure for children under three years of age; that is, what would we normally expect a young child's experience to be?
- b. To provide a 'control' sample for the study and

- c. To test the Adverse Life Events Checklist as a screening tool for the selection of early intervention strategies.

These were the aims of the Community study described in the next chapter.

CHAPTER SIX: THE COMMUNITY STUDY

Findings from the Clinical Study highlighted the need for an investigation to explore further the nature and incidence of adverse life events predicted to evoke stress and trauma in the infant and young child in a non-clinical sample.

The Adverse Life Events checklist had been designed, with Health Visitors in mind, as a quick but thorough tool for screening a child's experience and early mental health needs. Health visitors were asked to use the tool for research purposes. The study was thus extended into the community with two further hypotheses drawn from the literature.

Incidence of Adverse Life Events

Children within clinical samples have experienced a higher number of life events than controls [Coddington, 1972; Sandberg et al., 1993].

Hypothesis Four

Children presenting to child and adolescent mental health services will experience a greater number of adverse life events in the first three years of life than children within the community at large.

Nature of Adverse Life Events

Events that specifically disrupt the early attachment relationship and elicit stress and trauma for the child have a greater impact on later mental health problems [Field, 1992; Glaser, 1995; Moore & Pepler, 1998; Schore, 1997].

Hypothesis Five

Children presenting to child and adolescent mental health services will have a greater number of adverse life events that denote disturbed or disrupted relationships within the first three years of life than children within the community at large.

METHODOLOGY

DESIGN

The main aim of the Community study was to investigate, in a non-clinical [community] sample, the incidence and nature of adverse life events occurring within the first three years of life. A cross-sectional survey design allowed a comparison of adverse life events counted in two time periods: 0 to 18 months and 19 to 36 months to be compared to the clinical findings previously described. A minimum sample size of at least 100 was required to avoid the need for a power analysis [Dunn, 2000].

PARTICIPANTS

Recruitment – Community Sample

Health Visitors were approached through Senior Nurse Managers at locality meetings and asked if they would consider participating in the research project. The Adverse Life Events checklist was outlined and was considered by the three Health Visitor groups [Lincoln city, Louth and Gainsborough] to be a feasible measure in respect of ease and speed of completion. Health Visitors themselves suggested that completing the checklist at the time of the 42 month screening assessment would provide an unbiased and cross sectional sample. Twenty Health Visitors [out of 68 within the District] agreed to complete the measure on the strength of their own knowledge of a child and family and by reference to the child's Health Record. Each participating Health Visitor was asked to complete the Adverse Life Events checklist for consecutive families screened and to provide returns according to their own time and work constraints.

MEASURES

The Adverse Life Events checklist, as described above, was the only measure applied in this part of the study. It was important therefore to test the reliability and validity of the checklist.

Inter-rater Reliability

Three colleagues [2 clinical psychologists together with an assistant psychologist] compiled 9 brief case vignettes using information selected from clinical files. All names and in some cases gender were changed. [Vignettes are shown in Appendix 8].

Ten raters (the author, three psychology colleagues and 6 participating Health Visitors independently assessed each subject (N=9) using the Adverse Life Events Checklist. Scores [the total life events given for each vignette] were entered onto a grid depicting case vignettes (N rows = 9) x raters (*k* columns = 10). Scores were ranked across the rows. Table 6.1 shows the Sums of Ranks assigned to individual raters. The Friedman Two Way Analysis of Variance (Xr^2) test was applied to the data. This nonparametric test examines whether the related samples could probably have come from the same population with respect to mean ranks. That is, it is an overall test of whether the size of the scores depends on the conditions [raters] under which they were yielded.

Table 6.1: The sums of ranked scores given by 10 raters for adverse life events in 9 vignettes.

Raters	1	2	3	4	5	6	7	8	9	10
Sums of Ranks	41.5	32.5	59	61	50.5	42.5	65	50	51	42

$Xr^2 = 11.21$ when $k = 10$ and $N = 9$; $df = 9$; n.s. [Table C – Siegel, 1956].

The null hypothesis that the ten raters were drawn from the same population with respect to identifying adverse life events could not be rejected. The Adverse Life Events Checklist was therefore considered a reasonably reliable and 'generalisable' measure across two different professional groups.

Criterion-related validity: comparison with Child Health Records.

An instrument's validity is an indicator of how well it is measuring the characteristic or property it is supposed to measure. Traditionally, the validity of an instrument has been described in three ways. Content validity refers to the meaning and coverage of the items in a questionnaire or interview. Criterion-related validity is evaluated by comparing measurements with some sort of external criterion or 'gold standard'. Construct validity is evaluated by investigating in detail what characteristics an instrument appears to be measuring. This study was primarily concerned with criterion-related validity, that is the ability of the measure to correctly identify the individual life events on the Adverse Life Events Checklist. It was important to ensure there were no

misclassification errors as opposed to errors solely to do with the measurement process.

A random sample of 12 clinical (case) Adverse Life Events scores were checked against the Child Health Record held by the Child Health Service within the Trust (external criterion). The data available for cross referencing included changes of address, hospital admissions including Accident and Emergency attendances, and Child Protection registration. Child Health records held very limited information about the child's experience that could be utilised for mental health assessment. There was no information, for example, about sibling births, parental difficulties, changes in family composition or loss for the child. Whilst comparison between the Adverse Life Events scores and the Child Health Records was thus limited, where comparisons could be made, there was a 'good fit'. For example, health records supported dates given by parents for change of address, entry to playgroup, and hospital attendances.

Where Health Visitors were providing data, there was additional access to the 'family' records that were used to corroborate information.

The Adverse Life Events checklist was assessed to be a reasonably reliable and valid measure for counting early life events.

ETHICAL ISSUES

A further application/amendment was approved for the Community Study in April 2001 from the Lincolnshire Healthcare NHS Trust [the name change following the merger of two Community Trusts]. Approval was verbally given in early April 2001 and was confirmed in writing in May 2001 [See **Appendix 7**]. The Community Study was approved on the basis that the author made no direct contact with the patients involved; did not request access to medical files, nor request any identifying information about the individual children or their families; the collection of information by Health Visitors should not impact upon the treatment or outcome of the healthcare episode [developmental screening]; the Health Visitors would not be collecting additional information to that already known to them; and the information collected was consistent across all patients. The Ethical Committee's concerns about both studies were that any collection of information should not cause distress for parents or their children.

Under these conditions parental consent was not required although Health Visitors often chose to talk to families about the research and this invited a lot of interest amongst parents. Health Visitors did not provide the child's name nor was an exact date of birth given, only the month and the year of birth.

PROCEDURE

Twenty Health visitors made the usual arrangements to visit families for the 42 months developmental screening. Immediately following the screening, individual Health Visitors completed the Adverse Life Events Checklist on the basis of their own knowledge of the child and family and by reference to Health Records available to them. One additional piece of information was requested. Did the Health Visitor have any concerns about the child? No guidance was given on this question other than to invite the Health Visitor to expand if she wished [See Appendix 3].

Health Visitors were given no training on completing the checklist. They each had the scoring criteria and access to clarification of the criteria if required through telephone or e-mail contact. This was not used although Health Visitors made comments about the Checklist on their returns as discussed below [page 87].

ANALYSIS OF DATA

Data from both the community study and the clinical study were recorded on the same SPSS 10.1 Spreadsheet as Case or Control. These were the dependent variables. The independent variables included each of the 5 categories of Event x 2 Age Bands (0 to 18 months and 19 to 36 months), Age, Gender.

Methods of Analysis

Analysis of data followed a Clinical/Community design with two independent groups. Logistic Regression was the statistic of choice. Table 6.2 shows the model and statistic applied for each hypothesis.

Table 6.2: The model and statistics utilised for each Hypothesis in the study.

Hypotheses	Participants	Design/Model	Statistical Analyses
Hypothesis 4 Hypothesis 5	N = 123 [Clinical] N = 193 [Community]	Binary Clinical/Community Comparison of Mean Values	[i] Logistic Regression [ii] Independent Samples t-test

Logistic Regression is a generalisation of the chi-squared test to examine the association of a binary-dependent variable [Clinical/Community] with one or more independent variables that can be binary, categorical or continuous. It is useful for analysing case-control studies. It was the statistic of choice in this study to examine the interaction between the independent variables of the Adverse Life Events Table across both samples.

The **Independent samples t-test** was used to compare the Mean values of adverse life events between the two Clinical/Community groups.

RESULTS

Sample Characteristics

Twenty self-selected Health Visitors (12 within Lincoln city, 5 and 3 from the two more rural areas) participated in collecting data. The average number of Life Event returns per Health Visitor = 9. Children screened were born between September 1997 and February 1998. In the period September 1997 to August 1998, there were 2648 live births within the District. The Adverse Life Events Checklist was completed for 193 young children (109 [56.6%] males; 84 [43.5%] females; Mean Age = 43.15 months) - 14.6% of the total reaching the age of 42 months over the six-month period. [The clinical sample was split 82 [65%] males; 41[35%] females; Mean Age = 119 months].

A simple frequency analysis was conducted on the sample to establish the incidence of general characteristics. These are set out in Table 6.3. A minority of the sample had experienced parental separation and/or divorce [11.4%],

maltreatment [1.6%] or domestic violence [2.6%] within the first three years of life. The greatest differences observed between the two groups were for parental difficulties including mental health, alcohol and substance misuse problems that had led to child protection concerns.

Table 6.3. The incidence of psychosocial factors within the community sample (N = 193) with the percentages of the total compared to the incidence and percentages within the clinical sample (N = 123).

	Community [N = 193]		Clinical [N = 123]	
	Total	%age	Total	%age
Existence of a younger sib.	50	25.9	84	68.3
Birth of younger sib by 18 mths	9	4.6	16	13.0
Birth of younger sib by 12 mths	4	2.1	4	3.3
Separation/Divorce	22	11.4	77	26.8
Child protection issue	3	1.6	41	33.3
Maternal M.H. problem	21	10.9	60	48.8
Paternal M.H. problem	5	2.6	45	36.6
Both parents with M.H. problem	1	0.52	23	18.7
Domestic violence (known)	5	2.6	40	32.5

Children within the clinical group had experienced more parental problems, maltreatment, and parental separation and divorce. They were also more likely to have a younger sibling by 18 months of age.

Two hypotheses examined the general incidence and nature of Adverse Life Events experienced by the two groups.

Hypothesis Four

Children presenting to child and adolescent mental health services will experience a greater number of adverse life events in the first three years of life than children within the community at large.

Data from the Adverse Life Events checklist were tabulated for comparison across each of the 6 time bands recorded. This allowed a more detailed analysis of *when* events were experienced. Table 6.4 gives the total number of adverse

life events for each of the six age bands within the checklist, together with the percentages of the total and the Mean for each Group.

Table 6.4: The total number of adverse life events, the percentage of the total and the Mean number of events recorded for each age band within each of the two independent groups comprising the Clinical and Community samples.

Age At time of event in months	Clinical (N = 119)			Community (N=193)		
	No. of Events	% total	Mean	No. of Events	% total	Mean
0- 6	306	17.6	2.5	83	13.5	0.4
7-12	292	16.8	2.5	64	10.4	0.3
13-18	290	16.7	2.5	88	14.3	0.5
19-24	249	14.3	2.0	89	14.5	0.5
25-30	295	16.9	2.5	142	23.1	0.7
31-36	309	17.8	2.6	148	24.1	0.8
Total	1741		14.6	614		3.2

$t = 10.920$, $df = 133.68$, S.E difference = 1.08, $p < 0.001$

Children within the clinical sample experienced a Mean of 14.6 adverse life events within the first three years of life. Children within the community sample experienced a Mean of 3.2 adverse life events within the first three years of life.

An Independent Samples t-test was computed to statistically compare the Means across the two groups [Clinical/Community]. This analysis gave a $t = 10.92$; $p < .001$.

Hypothesis 4 was supported by the data. Children presented to clinical services have experienced significantly more adverse life events between birth and three years of age than children within the community at large.

Hypothesis Five

Children presenting to child and adolescent mental health services will have a greater number of adverse life events that denote disturbed or disrupted relationships within the first three years of life than children within the community at large.

Table 6.5 shows the total number of events recorded for each category of the Adverse Life Events Checklist [Loss, Disturbed Relationships, Change in Family Structure, Social Change and Physical Trauma] within each group, together with the Mean number of adverse life events experienced and the percentage number of children not experiencing an event within each category.

A majority of children within the clinical sample [64.7%] compared to [12.4%] of the children within the community sample experienced disturbed relationships with parents during the first eighteen months of life. Between 19 months and 3 years of age, 59.7% of the clinical sample compared to 12.4% of the community sample experienced difficulties.

Table 6:5 The total number of events recorded for each category of the Adverse Life Events Checklist within the Clinical and Community Groups together with the Mean. The percentage of the children not experiencing an event within each category is also recorded.

	Clinical Group N = 119			Community Group N = 193		
	Total number of events	Mean	%age for 0 events	Total number of events	Mean	%age for 0 events
Loss a	203	1.7	34.5	47	0.24	84.5
Loss b	217	1.8	36.1	87	0.45	74.6
Relate a	303	2.6	35.3	60	0.31	87.6
Relate b	246	2.1	40.3	70	0.36	87.6
Family a	125	1.1	59.7	30	0.16	89.1
Family b	190	1.6	43.7	71	0.37	66.8
Social a	135	1.1	59.7	67	0.35	73.6
Social b	143	1.2	50.4	108	0.56	61.7
Trauma a	122	1.0	43.7	27	0.14	88.1
Trauma b	57	0.48	73.1	47	0.24	82.9
Total	1741			614		

Logistic Regression Analysis was applied to the data using the Statistical Package for Social Scientists (SPSS) 10.1. Figure 6.1 shows the scatter of observations across the two dependent Clinical/Community variables.

Table 6.6: Output from the SPSS (10.1) logistic regression analysis showing adverse life events across 5 categories x two age bands (a = 0-18 months; b = 19-36 months) together with Gender. Highlighted variables show significance.

Risk Factor	Estimate (log odds)	S.E.	Wald	Sig.	95% Confidence Interval		Odds Ratio
					Lower	Upper	
Loss a ***	-.854	.238	12.836	.000	.267	.679	.426
Loss b	-.090	.186	.236	.627	.635	1.315	.914
Relate a *	-.551	.224	6.056	.014	.371	.894	.576
Relate b	-.044	.204	.047	.829	.642	1.427	.957
Family a	.042	.282	.023	.880	.601	1.813	1.043
Family b ***	-.820	.237	11.985	.001	.277	.701	.440
Social a	.412	.215	3.657	.056	.990	2.301	1.509
Social b	-.200	.187	1.150	.283	.568	1.180	.819
Trauma a ***	-1.935	.368	27.592	.000	.070	.297	.144
Trauma b	.462	.319	2.099	.147	.850	2.964	1.587
Gender	.501	.382	1.723	.189	.781	3.488	1.651

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

The Hosmer and Lemeshow Test gave a Chi Square = 8.192, df = 8, p = .415. The fact that this test was not significant, indicating that the observed counts and those predicted by the model were quite close, suggested the model was reasonable.

The predicted probability is for membership of the Control group. Factors that are additive on the log scale are multiplicative on the odds scale [Campbell, 2001]. The Odds Ratio gives the risk of being a control. The following inferences can be made from the data.

1. For every loss in the first 18 months, there is an increase risk of approximately two of being a case [a risk of 0.43 of being a control].

2. For every event depicting disturbed family relationships in the first 18 months, there is an increased risk of approximately two of being a case [a risk of 0.58 of being a control].
3. For every change in family structure in the period 19 – 36 months of age, there is an increased risk of approximately two of being a case [a risk of 0.44 of being a control].
4. For every event defined as a trauma that occurs within the first 18 months, there is an approximately 7 times risk of being a case [a risk of 0.144 of being a control].
5. A child who has experienced loss, disturbed family relationships and trauma within the first 18 months, will be approximately 28 times more likely to have later mental health problems (a risk of $0.43 \times 0.58 \times 0.144 = 0.036$ of being a control). When an event of change in the family structure between 19 – 36 months is also experienced, the child will be approximately 63 times more likely to have later mental health problems [a risk of $0.43 \times 0.58 \times 0.144 \times 0.44 = 0.016$ of being a control].
6. Gender was not a significant factor when the model was fitted separately, using male and female as the binary dependent variable.

The data supported Hypothesis 5 and provided additional information about the interaction between adverse life events.

Health Visitor Concerns

Health Visitors expressed concern for 32 children [16.6%] who collected 182 [29.6%; Mean = 5.7, Range 0 – 24] of the total number of adverse life events recorded within the Community sample. To explore this data, a logistic regression model was set up incorporating health visitor Concerns versus No concerns as the binary dependent variable. Table 6.7 shows the SPSS [10.1] output for adverse life events cross 5 categories and two age bands within the Community sample.

Table 6.7: Output from the SPSS (10.1) logistic regression programme showing adverse life events across 5 categories x two age bands (a = 0-18 months; b = 19 -36 months) for the Community sample together with Gender. Highlighted variables show significance. The predicted probability is for membership for 'No concerns'.

Risk Factor	Estimate (log odds)	S.E.	Wald	Sig.	95% Confidence Interval		Odds Ratio
					Lower	Upper	
Loss a	-0.474	.371	1.630	.202	0.301	1.289	0.622
Loss b	0.447	.339	1.741	.187	0.805	3.035	1.563
Relate a	0.041	.407	0.010	.919	0.469	2.316	1.042
Relate b **	-1.004	.366	7.541	.006	0.179	0.750	0.366
Family a	0.862	.763	1.274	.259	0.530	10.564	2.367
Family b	-0.262	.412	0.402	.526	0.343	1.728	0.770
Social a	-0.231	.381	0.366	.545	0.376	1.675	0.794
Social b	0.082	.287	0.082	.775	0.619	1.904	1.086
Trauma a	-0.318	.471	0.456	.499	0.289	1.832	0.727
Trauma b *	-0.614	.262	5.479	.019	0.324	0.905	0.541
Gender	1.274	.505	2.328	.127	0.803	5.816	2.161

*p ≤ 0.05; **p ≤ 0.01

The Hosmer and Lemeshow Test gave a Chi Square = 4.341, df = 8, p = .825. The fact that this test was not significant suggested the model was reasonable.

Health visitors were almost 3 times as likely to express concerns for children who had experience of disturbed parental relationships between 19 and 36 months [a risk of 0.366 of a health visitor expressing no concerns].

For children who had experienced physical trauma between 19 and 36 months there was an almost two-fold chance that health visitors would express concerns [a risk of 0.541 of a health visitor expressing no concerns].

Health Visitor Concerns compared to Clinical Risk Variables

Observation of the data showed that Health Visitors did not express significant concerns when the variables Loss [0 – 18 months], Chronically Disturbed Relationships [0 – 18 months], Change of Family Structure [19 – 36 months] or Physical Trauma [0 – 18 months] were recorded. These four variables were those identified as indicators for risk of later mental health problems in children.

The findings of the study are discussed in the next chapter.

CHAPTER SEVEN: DISCUSSION

In this chapter the results of the study are discussed and related to the theoretical background in which the experimental hypotheses were formulated. There is then a discussion of the methodologies used and the merits of the study overall. General findings are placed within the broader context of psychological theory and clinical practice and their implications discussed. Finally, some conclusions are reached and related to future research needs.

The aim of the study

The overall aim of the study was to explore the nature and incidence of adverse life events that evoked stress and/or trauma in early childhood. Stress and trauma were seen as the continuing emotional response resulting from events that disrupted the relationship with the primary carer. By establishing links between early events and the problems children later presented to child mental health services, it was anticipated that an infant screening measure would enable clinicians to identify and ameliorate potential difficulties at an early stage. Consequently, this thesis reported an investigation that sought to clarify both in a community and a clinical sample, the incidence and nature of those events most likely to precede mental health problems.

Adverse Life Events Checklist

One of the challenges for clinicians is to identify those infants who are at risk of later psychopathology and to intervene at an early stage. The literature reviewed showed that Attachment theory provided a bedrock on which to build concepts of vulnerability and resilience to mental health problems and later psychopathology. Hence, an Adverse Life Events Checklist was designed to capture those events that would impact upon the infant's relationship with the primary carer. The Checklist needed to be feasible and 'user friendly' within a community setting as well as within more specialised clinical practice. It also needed to be reliable and valid.

The checklist designed met these criteria, but inter-rater reliability would ideally be more robust. In the Community study, Health Visitors were not trained to use the measure. This was a pragmatic decision given the time constraints and numbers of people involved. Further work would therefore be required to 'fine

tune' the procedure and to standardise scores. Health Visitors themselves commented that this would be helpful.

Research Hypotheses: Clinical Study

Hypothesis One predicted that children presenting to child mental health services would have a higher number of adverse life events in the first three years of life than in the three years prior to referral. This hypothesis was supported and gave credence to a two-trauma model of mental disorder aetiology [McKenzie & Wright, 1996]. The correlations between variables indicated that events were consistently experienced across the two age bands from birth to 18 months and from 19 months to three years of age. Continuity of adversity was seen to be necessary for the development of later psychopathology [Rutter, 2001]. The results did not support findings that adverse life events increase in a linear fashion with age [Sandberg et al., 2001; Sroufe & Rutter, 1984]. However, no previous research had identified the frequency of adverse life events in a non-clinical sample during the first three years of life. The results did support findings that single events are unlikely to lead to mental health problems in later childhood [Rutter, 1995]. In addition, 78% of the clinical sample had experienced an event within the first six months of life. This had risen to 91.5% of the sample by 18 months of age indicating support for the notion that early events would decrease resilience.

Hypotheses Two and Three predicted that there would be a distinct difference in the presentation of childhood symptoms depending on the age at which the child first experienced stress and trauma: children presenting with depressed symptoms experiencing adversity in the first year of life; children presenting with conduct disorders first experiencing difficulty after the age of 18 months [McKenzie & Wright, 1996; Stern, 1985]. Data sought to establish the nature and severity of events leading to these two symptomatic outcomes. The hypotheses ran into problems of co-morbidity across the clinical sample and were not supported by the data. The likelihood of co-morbidity was corroborated by the results obtained for Hypothesis One. Correlation Coefficients demonstrated that children experienced a consistent number of events for each category of the Adverse Life Events Checklist across the full span of the first three years of life. In particular, these adverse life events were experienced at a high level during the first six months of life. It is therefore essential to identify difficulties in early

rather than late infancy to ensure appropriate amelioration and later prevention of mental health problems [Ramey & Ramey, 1992].

Research Hypotheses: Community Study

Hypothesis Four predicted that children in a community sample would experience fewer events than children within a clinical sample [Sandberg et al., 1993]. Overall this hypothesis was strongly supported. However, Table 6.4 showed that children within a clinical sample experienced more events in total during the first 18 months, but thereafter, children within the community generally experienced a higher number of events proportionate to the total score. This suggested a linear increase in the number of adverse life events with age in the community sample. Within the clinical sample adverse life events remained at a consistently higher level across age.

Hypothesis Five predicted that children in a Clinical sample would experience more adverse life events that chronically disturbed the nature of the attachment with the primary carer than children in the community. This hypothesis was supported. However, logistic regression analysis demonstrated that loss within the first 18 months and a change in family structure between 19 and 36 months were of almost equal importance. Individually, these events doubled the likelihood of a child reaching clinical services. What was shown to be more significant was a trauma within the first 18 months – increasing the risk of being referred sevenfold.

The analyses showed clearly that **a child who had experienced events depicting a loss, a disturbed relationship with the carer and an event of physical trauma within the first 18 months would be 28 times more likely to have later mental health problems.** These events are thus indicators for early identification and could be counted using a screening measure. Further data collection and more detailed analysis are needed to corroborate these findings. Since event continuities exist across the range of infancy, it can be argued that this level of risk is also consistent for infants younger than six months. These findings have important clinical implications for early intervention.

Additional Findings

Health Visitors were asked to say whether they had concerns about a child at the 42 months Developmental Screening. These concerns were explored with Logistic Regression analysis. Results showed that Health Visitor concerns were primarily focussed on children who had experience of disturbed parental relationships between 19 and 36 months and children who had experienced physical trauma between 19 and 36 months. The main findings of the Community study suggest that Health Visitors may be focussing intuitively on less significant risk indicators and too late. Further research with a larger sample is needed to explore this more fully.

Constraints within the Design

The period of study spanned five years. The study was conducted through a series of phases within the constraints of full time employment. There was ongoing NHS reorganisation including the merger of two Community Trusts within Lincolnshire. The political agenda was also changing.

As a result of these factors there were certain difficulties inherent within the design.

- There were, by necessity, different methods of data collection between the two groups. One method [Clinical sample] relied on parental information provided by a semi-structured interview with a clinical psychologist and a parent-rated questionnaire, with access to health records; the other [Community sample] utilised Health Visitor knowledge of the family [that often extended beyond information given by parents] plus health records. Parents were not interviewed in the Community sample. It could be argued that the use of a semi-structured interview would elicit more information and therefore more adverse life events than Health Visitor Records alone. However, parents within the clinical sample were required to recall events across a wider time span. Therefore they were at some disadvantage in this respect and might have been expected to recall fewer events.

- The Adverse Life Events checklist was the measure for each group. In discussion with Health Visitors, it was considered that 15 of the 20 events measured constituted 'hard data' that would be known to, or could be accessed by, Health Visitors [e.g. birth date of a sibling, date of changed address, parental separation/divorce, parental mental or physical illness]. It was accepted that there would be issues such as domestic violence, alcoholism or the introduction of a step parent that the Health Visitor might not know. However, if Health Visitors were unaware of such events, it was unlikely that parents would disclose this information at a first interview even if asked.
- Health Visitors were not trained to use the measure yet inter rater reliability was confirmed between the author, other clinicians and Health Visitors. This implied that the Checklist was an easy one to use. Health Visitors confirmed this in their feedback although, as stated above, they would have liked training particularly regarding mental health issues.
- A further constraint within the design was the time/age of the child when information was collected. Adverse life Events were more recent in the Community study and were objectively recorded rather than subjectively recalled by the parent or carer. This might have resulted in a bias that raised the number of events recorded in the Community sample given the difficulties of parental recall. Even with this potential bias in place, the parents in the clinical sample described significantly more events.
- In both samples information was collected retrospectively but with some corroborative facility [health records] to test validity. Robins [2001] has supported the use of retrospective studies when children are of different ages as the same criteria can be applied to both groups, and participants from different birth cohorts can be included.
- There were difficulties in isolating discrete events from processes and in discriminating the exact nature of the experience for each individual child. For example, whilst the birth of a sibling is a discrete event, the process leading to this event has been ongoing for many months. This has been a difficulty for all studies in this area of research. However, inherent within the Adverse Life Events measure there was the notion of 'contextual threat' – the number of

events that occurred within the same six month period. This could indicate the severity of change at any one time and in turn, the potential level of stress and trauma for the child.

Rutter [2000] used the expression 'a natural experiment' to describe epidemiological studies of psychosocial adversity. Adverse life events research with infants and young children is a new area of study and baseline data is crucial to determine what constitutes a 'normal' life experience for children from birth to three years. Whilst acknowledging the above constraints, the study was deemed a valid and important one.

Theoretical and Clinical Implications

The importance of this study lies in the empirical evidence it has provided about adverse life events in the first three years of life. It has provided a process model for the way in which young children experience stress and trauma within the context of the attachment relationship. It has examined the antecedents [adverse life events] and consequences [mental health problems] that surround infant distress within this first relationship.

There were difficulties in the clinical study in determining clear diagnostic symptoms. Over half of the completed behavioural questionnaires indicated symptoms for both depression and conduct disorder as perceived by parents. Results within the study showed that children had experienced aversive events from birth. Therefore the hypotheses that predicted the onset of symptoms from the time of an initial 'dose' of stress and trauma were not supported. Given the high percentage of co-morbidity, the research strategy needed to be adapted accordingly. This raises again the issue of classification in childhood mental health services. It perhaps makes more sense to think of continua rather than discrete categories of disorder. The question then needs to be 'how much has the child got?' rather than 'has the child got it?' [Dunn, 2000]. Further study is needed to test clinical outcomes by selecting groups with discrete classifications.

Attachment Theory provided the context in which to explore the aetiology of early stress and trauma and later mental health problems in children. "Evidence that suggests that attachment is the foundation for later adaptation is neither reliable nor consistent" [Fonagy, 2001, page 30]. However, there is evidence that "while the residue of early attachment might not be very apparent in overt functioning, it

may have discernible effects on the mental processes that underpin personality and psychopathology” [ibid]. When theoretical models of stress and trauma are interwoven with attachment classifications, an understanding develops about how internal working models are formed.

Whilst attachment interventions are being increasingly used in therapy with children who are fostered and adopted [Hughes 1997; Levy, 2000], there is a proven need to offer similar therapy to all parents and their children. If the presence of stress and trauma in older children presenting with clinical symptoms is assumed, then clinical interventions need to target the limbic system by directly involving emotions [Perry, 1997]. Cognitive therapies may only be effective once attachment issues have been addressed.

The Training Needs of Health Visitors have been highlighted. The study outlined the difficulties Health Visitors experience working in the field of mental health. Whilst they are in a particularly good position to promote the early identification of attachment difficulties, Health Visitors informally reported a lack of knowledge, training and experience of adult mental health problems; difficulties in referring parents and/or children to specialist services; difficulties in assessing risk to the child, especially when parents were not coping; a lack of resources for supportive work with families; a child’s safety not taking precedence over confidentiality in the work of some professionals; lack of motivation in depressed parents to seek help and the fact that parental problems were too often seen in isolation from those of the children [Dent & McIntyre, 2000]. The results of the study raise important considerations for training professionals in Primary Care settings.

Early intervention

There is a rapidly growing interest in infant mental health within the UK although Government policies mostly ignore the first years of life. Government schemes such as Sure Start, On Track, Health Action Zones, Healthy Living Centres and Connexions target poverty and other social issues. Whilst these are important, there is little evidence to show how the reduction of poverty actually creates positive mental health outcomes for children. Child Health Services need to be proactive in the search for effective and early intervention strategies. Against a background of rapid organisational change on the one hand and the increasing demand for services on the other, this study provided a focus in which to consider clinical solutions.

The importance and effectiveness of early intervention to support parents in their understanding of their infants has been demonstrated in recent research [Crittenden, 2002; Morrell & Murray, 2001]. The results of this study show that risk for later problems can be identified by six months of age, confirming the work of many others in this field [e.g. Balbernie, [in press]; Crittenden, 2002]. The Adverse Life Events Checklist could provide a screening tool that is objective and simple to use. It could provide a reference point to help parents understand their own as well as their child's level of stress.

Clinical Records at Survey were shown to lack sufficient information to enable an understanding of the child's experience. The Adverse Life Events Checklist could be used as a quick reference for clinicians. It might also offer a context in which to talk with the child about adverse life events and the difficulties of adjustment.

Further research

Further research would be important in the following areas

- The Adverse Life Events Checklist needs to be used with larger clinical and community samples, preferably across different geographical areas, to further test validity and reliability and to standardise it as a measure. Training would be provided for Health Visitors and Primary Care workers.
- Longitudinal studies would be needed to test the predictability established from the current data.
- Further work is needed on the difficulties of classification in child mental health and alternative approaches to assessment. For example, Ladnier and Massanari [2000] renamed Attention Deficit with Hyperactivity Disorder [ADHD] as Attachment Deficit with Hyperactivity Disorder and recommended intervention to address the problems of attachment identified in children presenting with this disorder.

The current study has shown that adverse life events could be used as a screen for later mental health problems. Since attachment security predicts resilience for later mental health problems:

- Research is needed to evaluate the valuable and effective interventions pioneered by Hughes [1997] for children with an attachment disorder. This work needs to be adapted for use with infants and with children and parents in the ordinary clinical setting. Models of stress and trauma could facilitate these interventions.
- Split screen video observations have offered a methodology for research into early resilience. An infant's responses to stranger/mother expressions might allow a measure of vulnerability/resilience at a younger age than attachment categorisations that are susceptible to change. For example, whether the parent and stranger can elicit a smile response with equal reliability in a 10 week old infant and so ascertain the infant's awareness of self and other.

Summary of Findings

This study has examined adverse life events across the first three years of life. The risk experiences for this age group have been identified as events of loss, chronically disturbed relationships and physical trauma within the first eighteen months. Together these events predict a 28 times higher risk of a child being referred to mental health services. When an event of change in the family structure between 19 and 36 months is additionally experienced, then the risk of referral is 63 times higher than for a child who has not experienced these events.

Children in a clinical sample have been shown to experience a significantly higher number of events when compared with children in the community. There is a consistency in the nature and incidence of aversive adverse life events across the age range within a clinical population. The risk of referral to clinical services increases progressively [dose response] according to the severity [contextual threat] or duration of risk experiences during the first eighteen months of life. Health Visitors are less likely to express concerns about a child at this early stage.

Concluding remarks

"Prevention needs to be focused on specific risk or protective factors, firmly rooted in empirically based formulations of the development of the disorder"

[Fonagy, 1998, page 147].

By the year 2020, mental health disorder is estimated to be the most common health affliction of adulthood with one adult in six having a mental disorder at any one time [WHO: The World Health Report, 1998]. Government policies have, as a result, placed an increasing emphasis on the prevention and early amelioration of mental health problems [National Service Framework, Department of Health, 1999]. However, financial resources will always be limited. It is thus increasingly important to place clinical services where they are most needed and can be most effective.

There is clearly further work needed to explore the potential links between pre/perinatal adverse events or stressors and later psychiatric outcomes for children and adults. There are difficulties of classification. As this study has shown, there is often a continuing pattern of adverse experiences across time that makes it often difficult to isolate discrete events. However, while Government Policies and Health Services continue to ignore the first years of life, children will increasingly grow into adults who are fragmented and thereby vulnerable to reactive affect, impulsive behaviour, rigid thought, disorganised narrative and dissociation.

This study has provided a tool with which to identify infants at risk of these later mental health problems. Adverse life events indicate potential sources of stress and trauma for infants. Once these potential difficulties have been identified, Primary Care workers and Mental Health professionals are in a position to facilitate timely and non-judgemental parental support to ameliorate or prevent future mental health problems [Allen, 2001; Bleiberg, 2001; Crittenden, 2002].

APPENDIX 1

Comparison of Two Sets of Criteria for Post Traumatic Stress Disorder: *DSM-IV* and the Alternative Criteria for Infancy and Early Child

<i>DSM-IV Criteria</i>	<i>Alternative Criteria</i>
<p>A. The person has been exposed to a traumatic event in which both of the following were present:</p> <p>(1) The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.</p> <p>(2) The person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganised or agitated behaviour.</p>	<p>A.</p> <p>(1) Same.</p> <p>(2) Deleted.</p>
<p>B. The traumatic event is persistently re-experienced in at least one of the following ways:</p> <p>(1) Recurrent and intrusive distressing recollections of the event, including images, thoughts or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.</p> <p>(2) Recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognisable content.</p> <p>(3) Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Note: In young children, trauma-specific re-enactment may occur.</p> <p>(4) Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.</p> <p>(5) Psychological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.</p>	<p>B. Re-experiencing. One item needed.</p> <p>(1) Post-traumatic play: compulsively repetitive, represents part of the trauma, fails to relieve anxiety and is less elaborate and imaginative than usual play.</p> <p>(2) Play re-enactment: represents part of the trauma but lacks the monotonous repetition and other characteristics of post-traumatic play.</p> <p>(3) Recurrent recollections of the traumatic event other than what I revealed in play and which in not necessarily distressing.</p> <p>(4) Nightmares: may have obvious links to the trauma or be of increased frequency with unknown content.</p> <p>(5) Episodes with objective features of a flashback or dissociation.</p> <p>(6) Distress at exposure to reminders of the event.</p>
<p>C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by at least three of the following:</p> <p>(1) Efforts to avoid thoughts, feelings, or conversations associated with the trauma.</p> <p>(2) Efforts to avoid activities, places or people that arouse recollections of the trauma.</p> <p>(3) Inability to recall an important aspect of the trauma.</p> <p>(4) Markedly diminished interest or participation in significant activities.</p> <p>(5) Feeling of detachment or estrangement from others.</p> <p>(6) Restricted range of affect (eg. Unable to have loving feelings).</p> <p>(7) Sense of a foreshortened future (eg. Does not expect to have a career, marriage, children, or a normal life span).</p>	<p>C. Numbing of responsiveness. One item needed.</p> <p>Deleted.</p> <p>Deleted.</p> <p>Deleted.</p> <p>(1) Constriction of play. Child may have constriction of play and still have post-traumatic play of play re-enactment.</p> <p>(2) Socially more withdrawn.</p> <p>(3) Restricted range of affect.</p> <p>Deleted.</p> <p>(4) Loss of acquired developmental skills, especially language regression and loss of toilet training.</p>
<p>D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by at least two of the following:</p> <p>(1) Difficulty falling or staying asleep.</p> <p>(2) Irritability or outburst of anger.</p> <p>(3) Difficulty concentration.</p> <p>(4) Hypervigilance.</p> <p>(5) Exaggerated startle response.</p>	<p>D. Increased arousal. One item needed:</p> <p>(1) Night terrors.</p> <p>(2) Difficulty going to sleep which is not related to being afraid of having nightmares or fear of the dark.</p> <p>(3) Night-waking not related to nightmares or night terrors.</p> <p>Deleted.</p> <p>(4) Decreased concentration: marked decrease in concentration or attention span compared to before the trauma.</p> <p>(5) Hypervigilance.</p> <p>(6) Exaggerated startle response.</p>
<p>E. Duration and disturbance (symptoms in criteria B, C and D) is more than 1 month.</p>	<p>E. New fears and aggression. One item needed:</p> <p>(1) New aggression.</p> <p>(2) New separation anxiety.</p> <p>(3) Fear of toileting alone.</p> <p>(4) Fear of the dark.</p> <p>(5) Any other new fears of things or situations not obviously related to the trauma.</p>
<p>F. The disturbance causes clinically significant distress or impairment in social, occupational or other important areas of functioning.</p>	<p>F. Duration of disturbance greater than one month..</p> <p>Deleted.</p>

APPENDIX 2: Differential Development during the First Three Years [Dower, 1999]

AGE	Cycles of Brain Growth [Fischer & Rose, 1994]	Development of Attachment	Neurobiological Development	Emotional Development [Sroufe, 1996]
0 – 3 months	Development of Controlled Reflexes 3 – 4 weeks 7-8 weeks 10-11 weeks	Physiological Dependence Mother regulates affective state Primary intersubjectivity Brain to Brain interaction Sleep pattern differentiated	Brain weight at Birth – 25% Physiological homeostasis Neuronal migration to cortex Dendritic elaboration of cortical neurons Visual acuity 20/200	Startle/pain Obligatory attention Distress/discomfort Turning towards pleasure – smiling Excitation [excitement]
4 – 6 months	Development of Sensori-motor Actions 15 – 17 weeks	Facial mirroring –synchronised gaze Mutual regulatory system of arousal Responsive smiling	Brain weight –50% Unconscious emotion –no cortical regulation Increased myelination of occipital cortex Early maturing right hemisphere Early hippocampal development [recognition]	Delight/excitement Active laughter Wariness Frustration Regulation of tension [positive affect]
7 – 9 months		Emotional attachment observed by selective responses Attunement to primary carer Object permanence Reacts to mirror image	Rise in glucose metabolism Frontal brain asymmetries Frontal lobe activity begins Development of parietal cortex [experience dependent] Limbic system control beginning	Disgust Fear [stranger aversion] Anger distinguished from general distress Joy
10 – 12 months	11-13 months	Physical ability to separate Reunion allows arousal level to be rapidly recalibrated Attachment pattern regulates neurochemicals	Orbital- frontal cortex [development determined not innate] Synaptic excess Visual acuity 20/20 Development sympathetic nervous system Cortico-limbic connections established	Self regulation of affect Increase in positive emotion Fear, stronger aversion Angry mood Petulance Anxiety. Immediate fear Elation

AGE	Cycles of Brain Growth [Fischer & Rose, 1994]	Development of Attachment	Neurobiological Development	Emotional Development [Sroufe, 1996]
13 – 18 months		Mother expresses prohibition every 9 minutes	<p>Accelerated development of para sympathetic nervous system</p> <p>Brain weight – 75%</p> <p>Development Wernicke's area [language/comprehension]</p> <p>Myelinization – pre frontal lobes/ emergence of internal executor</p>	<p>Initial appearance of Shame Defiance Rage Affection</p>
19 – 24 months	<p>Development of Representations</p> <p>18 – 24 months</p>	<p>Symbolic representation. Infant can 'memorise' image of mother's face.</p> <p>Secure v Insecure attachment observed</p> <p>'Insecure' mothers inaccessible for psych-biological reunion</p>	<p>Structural changes and maturation in front-limbic systems</p> <p>Stress induced adreno-cortical steroids influence gene regulation and brain growth</p> <p>Growth of synaptic connections</p> <p>Pruning/parcellation of cortical synapses</p> <p>Development of Broca area [language production]</p>	<p>Emotional expression as a function of experience – dependent maturation.</p> <p>Specific emotional responses emerge</p> <p>Intentional hurting</p> <p>Frustration – later development of Broca's area [temper tantrums]</p>
25 – 30 months			<p>Brain weight – 75 – 90 %</p> <p>Neurons connecting left and right hemispheres – not totally myelinated</p>	
31 – 35 months				<p>Guilt Pride Love</p>

SPECIAL NOTE

**This item is tightly bound
and while every effort has
been made to reproduce the
centres force would result
in damage.**

APPENDIX 3

LIFE EVENTS TABLE: Children up to 3 years of age
(Recorded at 3½ year developmental screening)

Health Visitor: _____

Child: Sex: M/F Dob: __/__/__ (month/year)

Contact No: _____

Sibling(s): 1. Sex: M/F Dob: __/__/__ (month/year)

Date completing form: _____

2. Sex: M/F Dob: __/__/__ (month/year)

3. Sex: M/F Dob: __/__/__ (month/year)

Have you any concerns about the child? YES/NO

Comments:

		Age of child (months)					
		0-6	7-12	13-18	19-24	25-30	31-36
1. Loss	a) Bereavement						
	b) Maternal Separation						
	c) Paternal Separation						
	d) Other						
2. Chronically disturbed relationships	a) Parental Alcohol/Substance misuse						
	b) Parental Mental Health Problems						
	c) Parental Chronic Illness						
	d) Other (incl. domestic violence)						
3. Change of family structure	a) Birth of siblings						
	b) Separation/divorce						
	c) Introduction of step-parent(s)						
	d) Other						
4. Social Adaptation	a) Change of address						
	b) Change of child minder/nursery						
	c) Change of family						
	d) Other						
5. Physical Trauma	a) Medical Operations/Hospitalisation						
	b) RTA						
	c) Abuse (Physical/Sexual)						
	d) Other						
	Total:						

Please return completed form to: Moore House
10/11 Lindum Terrace
Lincoln LN2 5RT

e-mail: libby.dower@virgin.net
libby.dower@ldhc.trent.nhs.uk

APPENDIX 4

SCORING CRITERIA FOR LIFE EVENTS TABLE

1. Loss:

a) Bereavement	<ul style="list-style-type: none"> - Death of sibling(s) including in utero if one of twins/triplets - Death of mother/father or step-parent (longer than 3 months) - Death of grandparents (if involved in care of child)
b) Maternal Separation:	- More than 48 hours
c) Paternal Separation:	- More than 7 days
d) Other:	<ul style="list-style-type: none"> - Significant family member or others who share the care of the child, eg: Nanny (More than 6 hours of day care)

2. Chronically disturbed relationships:

a) Parental Alcoholism/ Substance Misuse	- Either maternal/paternal (or both score 2) or other adult who lives in the home and might have some care of the child.
b) Parental Mental Health Problem	<ul style="list-style-type: none"> - Either mother or father or both (score 2) to include: Schizophrenia Depression Eating Disorder Suicide (actual/attempted) Munchausen PTSD, Personality Disorder, and/or other
c) Parental Chronic Illness/Disability	<ul style="list-style-type: none"> - eg MS; Cancer, Heart condition; Learning Disability etc. Or other adult/child who lives in the house and demands care (Disability Living Allowance) - That either: <ol style="list-style-type: none"> 1) creates difficulties for the parent in caring for the child 2) pre-occupies the parent eg. sibling illness and mother's stay in hospital
d) Other:	eg: Domestic violence

3. Change of Family Structure

a) Birth of sibling(s):	- Score for each sib born within the three year period.
b) Separation/Divorce:	<ul style="list-style-type: none"> - These may be multiple and include: <ul style="list-style-type: none"> - Separation – relationship terminated between two adults in household. - Mother's exodus to women's refuge with/without child. - Extended parent absences from home – exceeding 30 days.

3. *Change of Family Structure (Cont)*

c) Introduction of Step-parent	- Introduction of partner into the home to live.
d) Other:	- eg: Introduction of step-sibling(s) to live in home Child fostered into home. Family member moves in to live eg: Grandparent.

4. *Social Adaptation:*

a) Change of address:	- House move. - Move to foster home/Change of foster home. - Stays with relative for longer than 30 days.
b) Change of Childminder/ Nursery:	- Any change that lasts for longer than 48 hours.
c) Change of Family:	- Moving from mother's home to father's or vice versa. - Adoption. - Change of foster family
d) Other:	

5. *Physical Trauma*

a) Medical Operations:	- Including all invasive procedures, eg: injections (other than vaccinations) tongue snip, grommets inserted, as well as major surgery.
b) RTA	- Any accident whether on road, air, train, etc. - Separations from significant adults who were involved in accident.
c) Injury:	- Any known injury, however caused, that required medical supervision.
d) Other:	- Any fear provoking event, including A&E visits. - Any injury caused to parent witnessed by child. - Any hospital stay for illness.

Score 1 for each separate incident/occurrence

Where there is more than one event in any time period, put the appropriate number of ticks in the box(es).

EMD/CAFS: Moore House
10/11 Lindum Terrace
Lincoln LN2 5RT
01522 513875

e-mail: libby.dower@virgin.net
libby.dower@ldhc.trent.nhs.uk

Your Ref:

Our Ref: EMD/KE

Please ask for: Psychology Secretary

Lincoln District HEALTH CARE NHS TRUST

DIRECTORATE OF COMMUNITY HEALTH SERVICES

CHILD, ADOLESCENT AND FAMILY SERVICES Clinical Psychology

Moore House, 10/11 Lindum Terrace, Lincoln LN2 5RT
Telephone: (01522) 513875 Ext: 234
Fax: (01522) 513405

Invitation to participate in research.

I understand that you have been offered an appointment with me at Moore House for an assessment of your child's difficulties. I have asked that this letter be sent out with all my appointment letters to tell you about the research I am currently conducting. I have been working as a Clinical Psychologist now for some twenty years or so and have become particularly interested in how children adapt to stressful life events in their infancy or early years. Stressful life events for children are, of course, usually also stressful for their parents. Infants and very young children do not understand life events in the same way as adults. They cannot tell us about their anxieties because they have not yet learned the words to know how. It is likely, therefore, that young children find different ways of showing their anxiety by their behaviour. This might become difficult to understand or manage and will create even greater difficulties for parents.

My research hopes to find out how young children react to stress and whether this affects their behaviour in the longer term.

The appointment you are being offered is for an assessment of your child's difficulties and is part of the normal service you would receive from the Child, Adolescent and Family Services here at Moore House. Participation in the research is separate and is completely voluntary.

If I agree to participate, what will I have to do?

I shall ask you, as the child's main carer, to complete two questionnaires. The first will tell me more about your child's behaviour and the second will tell me more about how difficult you find the behaviour to manage. Although I would ask you for this information in an ordinary interview, these questionnaires provide much more detail.

How long will this take?

Each of the questionnaires takes between 20 - 30 minutes to complete. If you bring your child for further appointments to Moore House, these could be completed while your child is being seen as part of our ordinary support service.



What about confidentiality?

The only information that will go into the research project from the questionnaires is your child's age, sex and scores for each type of behaviour. No names, addresses or other personal information will be given.

What if I don't agree to participate in the research?

This will make no difference to the first appointment interview you will have with me or indeed to any other aspect of the Service you receive.

If you have any further questions or would like to know more about the research, I will be happy to answer your questions when I see you.

Please complete the slip below and give it to me at your first appointment. I can make a photocopy and then attach it to your child's records.

.....
Elizabeth Dower
Consultant Clinical Psychologist

----- ✂ ----- ✂ ----- ✂ -----
Consent for research project: Stress, Trauma and Child Problems.

I would like to participate in this research project and I give my consent for the information I give about my child to be used for research purposes. I understand that all identifying information about myself or my child will remain confidential.

Signed:

Relationship to Child:

Child's name:

Lincolnshire Health

Cross O'Cliff, Bracebridge Heath, Lincoln LN4 2HN
DX 709481 Lincoln 7
Tel: (01522) 513355 Fax: (01522) 540706
Minicom: (01522) 536837



Dr Elizabeth Dower
Consultant Clinical Psychologist
Peter Hodgkinson Centre
Lincoln County Hospital
Greetwell Road
LINCOLN

Family Services
Child, Adolescent and

- 9 APR 1998

District Department of
Clinic Psychology

Please ask for: Karen Ockleford
Ext: 515302
Our Ref: JH/KO/ed.181
Your Ref:
Date: 02/04/98

Dear Dr Dower

RE: STRESS AND TRAUMA IN INFANCY AND EARLY CHILDHOOD: IMPLICATIONS FOR LATER MENTAL HEALTH

Thank you for your letter of 26 February 1998 with enclosed amendments. I am pleased to inform you that your study was approved in accordance with the following:

Any future amendments to the study should be submitted to the Committee for approval.

Could we remind you of your signed undertaking to the Committee regarding this study (copy enclosed).

Should any untoward event occur during the conduct of the study, the Chairman of the Committee or, failing this, a member of the Committee, must be informed immediately.

Should you leave your current post before completing the project, the Committee will need to be advised if the project is to continue and the name of the person who will be taking responsibility for its continuation. If it is to be continued, some written information on progress-to-date should be deposited with the Secretary of the Committee to be kept on file.

You are asked to provide a progress report in approximately one year. A brief report of the project should be submitted to the Ethics Committee at the end of the project.

We wish you every success with the study.

Yours sincerely

DR JOHN HARVEY, CONSULTANT HISTOPATHOLOGIST
CHAIRMAN, NORTH LINCOLNSHIRE RESEARCH ETHICS COMMITTEE

Please ask for: Liz Clements
Telephone: 01522 515399
E-Mail address: liz.clements@lincs-ha.nhs.uk
Our Ref: TWW/LC/L2 – 181(north)
Your Ref:

APPENDIX 7

Lincolnshire 
Health Authority

Chairman: Mr Terence W Wiseman

LINCOLNSHIRE RESEARCH ETHICS COMMITTEE

Miss E Dower
Consultant Clinical Psychologist
Lincolnshire Healthcare NHS Trust
Moore House
10/11 Lindum Terrace
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LN2 5RT

District Department of
Clinical Psychology

Cross O'Cliff
Bracebridge Heath
LINCOLN
LN4 2HN

Tel: 01522 513355
Fax: 01522 540706

- 4 JUN 2001

**Child, Adolescent and
Family Services**

2 May 2001

Dear Miss Dower,

Re: Research Protocol No: 181 (north) (please quote this number on all future correspondence)
Title of Study: Stress and Trauma in Infants and Young Children: Implications for Later Mental Health – amendments to study

Thank you for submitting the requested amendments to the above Protocol.

The Chairman, under delegated authority, is pleased to APPROVE your application.

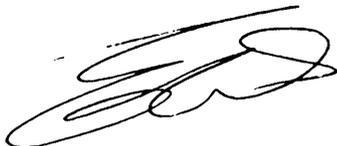
We would remind you of the following:

- a) You must comply with the protocol *exactly* as submitted to the Committee (as amended where appropriate).
- b) Any changes to the protocol must be submitted to the Committee for approval
- c) Should any untoward event occur during the conduct of the protocol, the Chairman or Vice-Chairman of the committee must be informed immediately.
- d) Should you leave your post before completion of the study/project, the Committee must be advised, and, if it is to continue, the details of the new researcher(s) submitted.
- e) You must submit a progress report annually and a final report on completion of the study.

We wish you every success with your study.

In accordance with the requirements of the Research Governance Framework, a copy of this letter has been sent to your Chief Executive.

Yours sincerely,



Dictated by

Terence W Wiseman

CHAIRMAN, LINCOLNSHIRE RESEARCH ETHICS COMMITTEE

And signed in his absence

APPENDIX 8

CASE VIGNETTES

BETH

Beth's mother experienced difficulties during her pregnancy with Beth. Both Beth and the placenta were in the wrong position and she had to be scanned on a weekly basis. At one point there were concerns that Beth had stopped growing. Beth was born two weeks early via a planned caesarian section and weighed 5lb 13 oz. Beth has always had difficulties with feeding. She initially breast fed for four weeks but was then transferred to formula milk. Beth experienced difficulties with vomiting on formula milk but her parents felt that she took more milk from the bottle.

Beth's eating patterns varied considerably from day to day. Some days she ate very little and some days she will eat all of her meals. There were concerns about her weight. Beth had a pH study when she was 14 months old and was admitted for four days. Her father stayed with her in hospital. As a consequence of the pH test she started medication. Her eating slowly improved.

Beth's younger brother, Claude, was born when Beth was 2 years 3 months. Her mother also experienced difficulties during this pregnancy and spent two weeks in hospital during which Beth's maternal grandmother stayed at the house to help care for Beth.

Beth now presents as a happy child whose weight is on the 15th percentile.

CARL

Carl was born in Hospital. At birth, complications with his heart were identified and he required immediate medical assistance and extensive medical investigations. Carl spent 48 hours in the Special Baby Care Unit prior to being transferred to a Specialist Children's Hospital 200 miles away. Carl's father accompanied him to hospital. However, his mother chose to stay at home. Carl was diagnosed with Tuberous Sclerosis within a week of his birth. The impact of this diagnosis and the life long complications that this would entail, were difficult for his mother to accept. She expressed confusion over whether she could cope with a child with special needs and was ambivalent about whether she wished to care for him.

Carl was discharged from hospital when he was 5 months old. He returned to live with his parents and older brother and sister. Carl has required ongoing medical involvement. He has had two major operations, one at 11 months and the second at 23 months. Both have been successful.

Carl's mother although having physically cared for him, has continued to express her ambivalence about having a son with Special Needs. At times she expresses her desire to place him in permanent foster care. Carl's father has consistently been supportive and attached to Carl. The difference in Carl's parent's views towards him has resulted in ongoing tension in their relationship. Since Carl's birth, their relationship has deteriorated with frequent arguments, which are observed by all the children.

AMY

Amy was born in Hospital. Amy has an older brother and sister who were 2½ and 5 when she was born. They all lived together with their mother and Amy's father who had been living with the family for approximately 12 months. They lived in Local Authority Housing.

When Amy was 14 months old her mother and father separated after an incident of significant physical violence towards Amy's mother. Amy's mother sustained severe physical injury and was hospitalised for nearly a week. The children stayed with their grandmother at her home. The Police were involved. Amy's mother does not feel the children were affected by this as they were upstairs in bed at the time. Amy has had no contact with her father since then.

Amy's mother has had two relationships since Amy's father left. The second of these resulted in the birth of Amy's youngest brother when she was two and a half. Since his birth, Amy has exhibited aggressive behaviour to all her siblings including biting, scratching and being destructive of her environment. Amy started nursery when she was nearly three and her behaviour has been challenging there as well. She requires constant supervision.

SARAH

Sarah was born by natural delivery in hospital and weighed 10lb 5oz. She was a healthy baby and toddler.

When she was an infant, Sarah's mother stayed at home during the day and worked a night shift. Her father sometimes worked away during the week (returning home every weekend) as his job as an IT advisor, and when he did so Sarah's aunt babysat when her mother was at work.

When Sarah was 7 months old, her father found a new job and for a while commuted. At 10 months of age the family moved house to Lincoln. Sarah's mother found a new job and Sarah was cared for by a child minder during the day.

PETER

Peter was born at 39 weeks gestation. There were no birth difficulties. In the first few months following birth, his mother experienced panic attacks and reported being obsessive about housework. She received support from a CPN for about 3 months. Peter was a poor sleeper and cried frequently.

At 5 months, Peter was knocked unconscious for about 5 minutes during a physical assault on his mother by his father. Domestic violence continued within the home.

When Peter was 2 years old, his father left the family home. There has been no further contact. Peter settled into Nursery and started school at the age of 4.

JONATHAN

Jon was born by planned caesarean section after a difficult pregnancy. His mother experienced difficulties following the birth and became depressed. However, by the time John was 18 months of age she felt well and was off medication. John started play group when he was 2 years old and Nursery at 3½ years of age.

CHLOE

Chloe is 5 years old. She lives with her Mum and Dad and older brother (9), sister (7) and her younger brother (2). There were no complications during Chloe's neo-natal period or with her early developmental milestones. She was a sociable toddler who enjoyed attending toddler groups and then nursery.

There is an extensive family network that all live locally. All the children have had regular contact with their grandparents as well as Aunts, Uncles and Cousins. From a young age (10 months) Chloe has been cared for by her maternal grandmother for 3 days a week to enable her mother to work part time. Chloe has a good relationship with her Grandparents.

When Chloe was 20 months old her maternal grandfather died unexpectedly. The whole family were shocked and upset, but able to support one another through this difficult time. Understandably Chloe's maternal grandmother was particularly distressed and for approximately 3-4 months declined in to depression. She was unable to care for Chloe during this time.

When Chloe was 2½ the family moved to a larger house. The maternal Grandmother came to live with them. They continued to live in the local area.

BETTY

Betty is the child of a teenage mother who placed her for adoption immediately following birth. Betty spent 10 weeks with foster carers and was then placed with adoptive parents. When Betty was 18 months old, her adoptive father was killed in a road traffic accident. She moved with her mother into the home of her maternal grandparents where she lived until she started school at the age of 4 years 6 months.

TRACEY

Tracey is the fourth child. She has two older brothers (twins) and a sister. Both parents report that her developmental milestones were 'on target' and there were no difficulties until she started nursery at the age of 3 years 6 months.

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