Mothers' Psychological Functioning Following Childhood Burn Injury: A Trauma Perspective

and

Research Portfolio

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August 1999

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Target Journal: The Psychologist (Appendix 1.3)

Word count: 3004

Introduction

Psychologists are increasingly being asked to provide expert evidence in legal procedures. In the majority of cases (80-90%) the psychologist will provide this evidence in the format of a written report alone and will only occasionally be asked to appear in court to support that report (Gudjonsson 1985). It is also common for a clinical psychologist to be asked to provide information with regard to a patient's benefit claim or application for housing. Although there is growing interest in this area of professional practice, with a number of articles providing guidelines for report-writing and making court appearances (Cooke 1990; Brookes 1995), little empirical research has looked specifically at the service-provision aspects of psychological report writing. However, Steinberg et al (1997), in a study of psychologists' mandatory reporting of child maltreatment, acknowledged that the therapeutic relationship can be affected in such cases. Similarly, recent research in the Unites States has examined therapists' use of the 'Tarasoff Ruling' and questioned the effect this practice can have on the therapeutic relationship. The Tarasoff Ruling refers to legislation establishing a duty to protect intended victims of patients who pose a serious threat and the legally sanctioned practice of warning the victim. Binder & McNeil (1996) found that, contrary to what they had expected, there was generally a minimal or a positive effect on the therapeutic relationship with their patient.

The psychodynamic concept of the 'therapeutic alliance' (TA) has, in recent times, being more widely accepted within other models of psychotherapy. TA is defined as 'a non-neurotic, rational, reasonable aspect of the relationship which the patient has with the therapist which enables him/her to work within that relationship and is more than simply the wish to get better' (Henry et al 1994). The quality of the therapeutic alliance is now generally recognised as an important factor in the prediction of outcomes in therapy (Henry et al 1994) and TA has been found to be a 'moderate' predictor of outcome (Horvath & Symonds 1991).

Given the growing body of literature supporting the importance of the therapeutic relationship

and how this can be affected by certain practices which psychologists perform, we should consider the potential impact of psychological report-writing on the therapeutic relationship. If this practice is found to have an impact on the therapeutic relationship then this is surely a matter of professional concern. Anecdotal accounts often suggest that psychologists, who have been requested to write psychological reports, identify some impact on the therapeutic process and the therapeutic relationship with the patient. Furthermore, the writing of a psychological report could place the psychologist in a compromising position, whereby their sympathies and concerns for their patient may be at odds with their professional and clinical judgement. In this way, countertransference issues may play an important role in the psychologists' writing of these types of reports.

The aims of this study were to

- describe the type of psychological reports requested, and the patients to whom they referred, within an NHS Psychology Department over a 20 month period,
- examine how psychologists interpreted their role in the writing of these reports,
- report any issues of professional concern arising through the writing of the report,
- examine the objectivity and degree of accuracy with which psychologists believe they represented the patient in the report, and
- investigate the potential impact of writing such reports on the therapeutic relationship and course of treatment with a client.

Method

The study was conducted within an Adult Mental Health, Clinical Psychology Department serving the East End of Glasgow. At the time of the study there were three Consultant Clinical Psychologists, one Counselling Psychologist, one full-time and two part-time 'A' Grade Psychologists and five Assistant Psychologists in post. Two trainees were also on placement in the department at the time of the study. Cases were primarily identified by examining the department's closed files. All cases which had been closed, since 1st January 1996 until 1st August 1997, were examined and those containing a request for a psychological report highlighted. Relevant information was extracted for each case, including the status of the case at the time of the request, the type of report requested and the type of problem from which the patient suffered (based on ICD-10 diagnostic procedures) (Appendix 1.1). 65 cases were

identified in this way. Concurrently, psychologists were asked to notify the author if they received a request for a report throughout the data collection phase (August 1997). 3 cases were identified in this way. The study sample therefore consists of a total of 68 cases which represent all requests for a psychological report/letter received by psychologists within the department from January 1996 until August 1997, a period of 20 months.

Psychologists were asked to familiarise themselves with the case and the report they had written and to complete a questionnaire regarding each case during a one-to-one meeting with the author (Appendix 1.2). Questions included how the psychologist had interpreted their role in the writing of the report, how objective and accurate they felt they had been in their representation of the patient and if they felt the writing of the report had had any impact on the process of therapy or the therapeutic relationship.

Requests for psychological reports related to three distinct categories of cases. These were a) assessment-only cases which had been requested for the purpose of writing the report, b) routine cases which were open and on-going at the time of the request, and c) routine cases which were closed and had been discharged at the time of the request. Although all psychologists were asked questions 1-4 for all cases, those where the report had referred to a case which was open and on-going received additional questions (5 & 6).

Data Analysis

Data gathered from the casenotes and the psychologists' questionnaires were coded, stored and analysed using SPSS.

Results

What type of reports were requested and to which patients did they refer?

Table 1 contains descriptive data regarding the requests for reports which represented the study sample. Of the 68 reports written only one involved a court appearance. Seven members of the department had been requested to write at least one report. The distribution of requests for reports, across the seven psychologists was: 16, 14, 10, 20, 6, 1 & 1 respectively. As can be seen, the requests were distributed evenly with respect to the gender of the patients concerned.

As may have been expected, the majority of requests related to patients who had received a diagnosis of PTSD. Similarly, the majority of requests related to compensation claims, via the Criminal Injuries Compensation Board (CICB) or otherwise.

Table 1 about here

Table 2 presents information relating to the status of the cases at the time of the request for the report. Only 54.5% of cases (n=37) were open and on-going at the time of the request. Therefore, data regarding the impact on the therapeutic relationship and the therapeutic process (questions 5 & 6 on the questionnaire) are based on this subset of the study sample.

Table 2 about here

How did psychologists interpret their role?

In 42.5% of cases (n=29) the psychologists interpreted their role as being mainly the provision of an 'expert' psychological opinion, in 17.5% (n=12) they interpreted their role as being to provide support for the patient, and in 40% (n=27) they interpreted their role as being the provision of a combination of both 'expert' psychological opinion and support. This data was analysed alongside certain key factors, namely the type of problem the patient suffered from, the type of report requested and the source of the request, using the Chi-Square statistical test for independence. A significant relationship was found between the way the psychologist interpreted their role and the type of problem from which the patient suffered (X^2=26.8;df=16;$\propto$=0.044). Depression and 'other anxiety disorder' cases were most often interpreted as providing an expert opinion, reports relating to adult survivors of child sexual abuse were most often interpreted as mainly providing support for the patient, and PTSD and neuropsychological cases were most often interpreted as a combination of expert opinion and support. A highly significant relationship was found between the psychologists' interpretation of their role and the type of report requested (X^2=43.9;df=10;$\propto$=0.000). Requests for legal reports regarding civil and criminal cases, were more often interpreted as an 'expert opinion', requests for letters in support of a housing application were usually interpreted as 'in support of the patient', and requests regarding CICB cases were more often interpreted as 'a combination of expert opinion and support'. Similarly, the source of the request was found to have a

significant association with the psychologists' interpretation of their role (X^2=30.5;df=6;∝=0.0003). Requests from solicitors were more often interpreted as 'an expert opinion' whereas requests directly from the patient were more often interpreted as 'in support of the patient'.

Did the psychologists feel that there were any areas of conflict in writing the report?

Although, in the majority of cases (79%) psychologists reported no conflictual issues, some conflict of interest between their feelings towards the patient and their professional/clinical judgement was reported in 21% of cases (n=14). The main reason offered to explain this conflict was that the psychologist felt the patient was more motivated to receive a favourable report than to make therapeutic gains. Again, this data was analysed, using Chi-Square statistical procedures, alongside the type of problem the patient suffered from, the type of report requested, and the source of the request. No significant associations were found for the type or source of the request. However, a significant association was found between the psychologist's report of conflict and the type of problem from which the patient suffered (X^2=19.6;df=8;∝=0.012). Conflict was most often reported in relation to patients suffering from other 'anxiety disorders'.

Did psychologists believe that they were able to exercise completely objective judgement in the writing of the report?

Psychologists reported that they had been completely objective in 88% of cases (n=60). Following the same statistical procedure, this data was analysed alongside the type of problem from which the patient suffered and the type and source of the request. No significant relationship was found between psychologists' reported ability to be completely objective and the type or the source of the request. However, a significant relationship was found between their reported objectivity and the type of problem from which the patient suffered (X^2=21.5;df=8;∝=0.006). Complete objectivity was reported in all of the cases regarding PTSD sufferers, whereas a significant proportion of reports regarding 'other anxiety disorders' were reported to have been written with less than complete objectivity.

How accurately did psychologists believe they had represented the patient?

Psychologists reported that they had been 'completely' accurate, in their representation of the patient in the report, in 78% of cases (n=53), 'moderately' accurate in 22% of cases (n=15), and did not report any cases in which the patient had been represented 'not at all' accurately. This data was analysed alongside the type of problem from which the patient suffered and the type and source of the request. No significant relationships were found.

Did the request for the report have an impact on the therapeutic relationship?

Although in the majority of cases (59.5%) (n=22) psychologists reported that the writing of the report had had no impact on the therapeutic relationship, 38% (n=14) felt that the writing of the report had had an impact. The psychologist was unsure about the reports impact in a further 2.5% of cases (n=1). This data was analysed alongside the type of problem the patient suffered from, the type of report which was requested and the source of the request. No significant relationship was found between the type or source of the request and the reported impact on the therapeutic relationship. However, a significant relationship was found between the reported impact on the therapeutic relationship and the type of problem from which the patient suffered (X^2=19.7;df=10;$\propto$=0.03). Those where the patient had a diagnosis of PTSD were significantly less likely to have an impact on the therapeutic relationship than those where the patient had a diagnosis of 'another anxiety disorder' or depression.

Did the request for the report have an impact on the therapeutic process?

Similarly, in 67.5% of cases (n=25) psychologists reported that the report had had no impact on the therapeutic process. However, it was felt that in 27% of cases (n=10) the therapeutic process was affected and in a further 5.5% of cases (n=2) the psychologist was unsure about the report's impact. Again, this data was analysed alongside the type of problem from which the patient suffered and the type and source of the request for the report. No significant relationships were found.

Discussion

Results indicate that psychologists interpreted their role in writing a report differently depending on the problem from which the patient suffered, the type of report requested and the source of the request. It is perfectly understandable that different requests require different

approaches but it may also be the case that psychologists have a different perception of patients depending on the type of problem from which they suffer. For example, it appears from the results that cases relating to survivors of child sexual abuse may be viewed more sympathetically and a more supportive stance taken than if the patient suffered from an anxiety or depressive disorder. Requests made by an independent agency are interpreted as demanding an expert opinion whereas requests made directly by the patient, more often interpreted as providing support, may be viewed as an opportunity to demonstrate empathic concern and as a vehicle for strengthening the therapeutic relationship.

It appears, from the results obtained, that the problem from which the patient suffers is a significant factor in psychologists' experience of conflict in writing the report, how objective they managed to be and whether or not they perceived the report to have any impact on the therapeutic relationship. It is a consistent finding that psychologists appear to experience more difficulties in writing a report relating to patient suffering from 'another anxiety disorder' and, to a lesser degree, a depressive illness. There is a substantial body of literature discussing malingering and the exaggeration of symptoms within the context of a diagnosis of PTSD. However, these issues are discussed less often in regard to the other anxiety disorders and psychologists in this study appeared to have markedly less difficulties in forming an opinion about PTSD than they did about those suffering from other anxiety problems. Schafer (1986) believed that having a compensable injury promotes a 'little larceny' in most litigants. It may be the case that this larceny is considered justifiable by the psychologist when the patient has clearly suffered a traumatic experience whereas this is tolerated less when the patient presents with vaguer symptoms and no clear onset to their problems. Another point was the fact that psychologists tended to believe that they had been completely objective in writing reports regarding PTSD cases and that they perceived the report in these cases to rarely have an impact on the therapeutic relationship. This is quite a different picture from that of anxiety cases. Further exploration of why this should be the case would obviously be useful. One possible hypothesis may be that the psychologist perceives less malingering in PTSD than in anxiety cases and, consequently, the perceived impact on the therapeutic relationship is actually a result of the therapists' countertransference of their concerns in the case.

Results obtained here are obviously based on a relatively small sample size and should be

generalised with caution. The data also consisted mainly of self-reports and respondents may have tended to answer in a socially desirable way. Furthermore, differences in reporting across individual psychologists was undoubtedly a methodological issue in this study. There are also likely to be individual differences across psychologists in their awareness of countertransference issues. This could be due to personal therapeutic orientation or to the type of training undergone by the psychologist. Langsley & Yager (1988) found that the ability to "recognise countertransference problems and personal idiosyncracies as they influence interactions with patients and to ... deal with them constructively" was rated second on a list of 48 skills that a psychiatrist of the 1990s should possess. It is clearly important that a therapist is aware of these issues and the state of the therapeutic relationship. The impact that a lack of awareness may have on therapy is unknown but is an important area for future research.

Requests for psychological reports, relating to a patient who is still being seen in a therapeutic context, might best be conceptualised as a *critical incident* in therapy. A critical incident is defined as an unusual or infrequent event that creates difficult problems for the therapist (Flanagan 1954). Plutchik et al (1994) listed 52 critical incidents, including 'patient expresses dissatisfaction with therapy' and 'patient attempts to have extra contacts outside of therapy by telephone'. The therapist's responses to such incidents are believed to have an important effect on the subsequent course of therapy and the therapeutic alliance. As Binder & McNeil (1996) found in their study of therapists' experiences of issuing a Tarasoff Warning, the most important factor in the maintaining of a positive therapeutic relationship was the careful explanation of what the therapist intended to do and the reasons why they felt that a warning was necessary. It may also be the case that being as open as possible with the patient, about any areas of conflict we have in the writing of reports, may help to buffer any potential adverse effects on the therapeutic relationship

In summary, the finding that, in this context, anxious patients appear to provoke significantly more difficulties than other groups raises questions about psychologists' perceptions of this group of patients. What are the factors which contribute to a lack of empathy or a suspicion of malingering in some anxious patients and not others? Given that anxious patients represent a large proportion of a psychologist's caseload, further research is required to examine this and the potential contribution of factors such as length of service and therapist burnout.

Acknowledgements

The author would like to thank all the staff at the Department of Clinical Psychology, East Glasgow, for their co-operation, support and encouragement in conducting this study. Special thanks to Mr. Sandy McAfee and Professor Colin Espie for their advice and comments on earlier drafts of the report.

Table 1: Descriptive information about the reports and the patients concerned

		N	%
Sex			
	Male	32	47
	Female	36	53
Age Group (years)			
	18-25	10	14.5
	26-34	25	37
	35-44	18	26.5
	45-54	13	19
	55-64	2	3
Type of Problem			
	PTSD	21	31
	Depression	18	26.5
	Other anxiety disorder	14	20.5
	Survivor of child sexual abuse	6	9
	Neuropsychological/Head Injury	5	7
	Other	4	6
Source of Request			
	Solicitor	27	40
	Patient	18	26.5
	CICB	16	23.5
	Other	7	10
Type of Report			
	CICB	21	31
	Civil case	16	24
	In support of housing application	10	14.5
	Benefits/Disability Living Allowance	10	14.5
	Criminal case	6	9
	Other	5	7
Fee Charged			
	Nil	25	37
	£20-25	11	16
	£26-99	8	12
	£100-200	13	19
	>£200	1	1.5
	Unknown	10	14.5

Table 2: Status of case at time of request for report

	N	%
One-off assessment	7	10
Open/on-going	37	54.5
Closed/discharged	24	35.5

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Psychological sequelae of accidental childhood burn injury: a trauma perspective

Major Research Project Literature Review

Target Journal: Burns (Appendix 3.5)

Word count: 3340

The nature of childhood burn injuries

Accidental injuries are the most common cause of childhood mortality, morbidity, and disability. Each year 50,000 children attend A&E departments as a result of burn or scald injuries (Department of Trade and Industry 1995). The cause of the injury is often related to the developmental stage of the child: scalds are most common in children younger than two and most often caused by bath water above 54°C, spilling hot drinks or pulling the flexes of electric kettles. Burns are most common in children aged between two and five and usually result from contact with heating appliances. Burns in school-aged children are more likely to involve fireworks or flammable chemicals (Marsh and Kendrick 1996). The majority of burns occur in children under three years, in or around the home, in the presence of a parent, and are around twice as common in boys (Rossi et al 1998). Burns are typically described in terms of burn degree and percentage of total body surface area (TBSA) affected. A first degree burn involves injury that is restricted to the epidermis. Injuries to the dermis are labelled second degree or partial thickness burns. Extensive injury involving multiple skin layers, with possible damage to subcutaneous tissue and peripheral nerve fibres, is labelled full thickness or third degree burn. The medical treatment of burn injury consists of three stages: emergency, acute, and rehabilitation. The initial emergency period is concerned with the immediate stabilisation of the patient. The acute stage is often associated with the most intense pain and can involve daily debridement, changing of dressings, and skin grafting. The rehabilitation stage requires self-care practices to minimise scarring and maximise functional recovery, often involving the wearing of pressure garments and physiotherapy. Treatment of burn injury is therefore a

protracted process which may require repeated hospital admissions and/or out-patient follow-up.

It should be noted that a significant minority of burn injuries to children are the result of deliberate harm. In one study of 507 consecutive admissions, 8% of cases were thought to be due to abuse or neglect and in a further 6% there were significant concerns about the aetiology of the burn (Andronicus et al 1998). A comprehensive discussion of the risk factors for deliberate burning is beyond the scope of the present article but several characteristics have been suggested as pointing to a burn being due to abuse or neglect: inconsistent reports by parent and child or one which does not adequately explain the injuries; a lack of appropriate parental affect; unwillingness to take responsibility for the child's burn care; a child aged less than eight months or greater than two years; the existence of other injuries such as fractures; features suggestive of forced immersion; or features suggestive of inflicted contact burns (Stone et al 1970; Ayoub & Pfeifer 1979; Hammond et al 1991; Hobson et al 1994; Kemp et al 1994).

Risk factors for accidental childhood burn injury

Contrary to the notion of the 'accident-prone child', a term coined by Farmer and Chambers (1926) to mean "a personal idiosyncracy predisposing the individual who possesses it in a marked degree to a relatively high accident rate", accidents are rarely due to a single cause. The risk factors associated with burn injury can be environmental (e.g. poor housing), developmental (e.g. children's eagerness to explore) or behavioural (e.g. lapse in parental

supervision) and are typically an interaction of the three. Rivara (1995) identified the main risk factors for accidental childhood injury as gender, age, socioeconomic status, developmental status, behaviour problems, parental substance abuse, and the parents' perception of risk of injury. A consistent finding in the literature has been the apparent constellation of factors which appear to predispose certain children to burn injuries. These findings led to the notion of the 'burn-prone' child who is more likely to i) have been identified as having premorbid behaviour problems, ii) belong to a family where there is a significant degree of disorganisation, conflict and emotional disturbance, iii) belong to a large family who live in crowded accomodation, move frequently or have housing difficulties, and iv) have lower socio-economic status (Bowden et al 1979). Although associations between these factors and risk of childhood injury have since been replicated (Langley et al 1980; Nersesian et al 1985) the strength of association is weaker than that suggested by Bowden et al. A recent methodologically rigorous study found that sibship size, birth order and number of residents were not important predictors of childhood burn injuries (Petridou et al 1998). The authors concluded that childhood burn injuries are largely preventable and that hard to change sociodemographic factors are less important than easily modifiable external conditions and processes. This view is supported by the 66% reduction in childhood burn admissions (1970-1994) in a region of Australia which was hypothesised to be due to changes in sleepwear standards, heating practices, household product safety and education about burn prevention (Streeton & Nolan 1997).

Psychological sequelae of childhood burn injury

With recent medical and surgical advances in the treatment of burns, and the resultant increased number of children surviving previously fatal injuries, research attention has turned to the long-term impact which a burn injury can have on a child and his family. This interest is fuelled by the traumatic onset, prolonged and painful treatment procedures, and the potential disfigurement and/or disability associated with burn injuries. Depending on the circumstances of the injury, children may also have to deal with the loss of their home, belongings and perhaps the injury or death of a loved one. Early research attempts in this area largely consisted of uncontrolled case descriptions which suggested that the majority of burned children showed marked psychopathology (Watson & Johnson 1958; Stoddard 1982). However, recent studies employing more rigorous methods have indicated that rates of psychopathology may have been overestimated and that significant adjustment difficulties are the exception rather than the rule in burned children (Tarnowski et al 1991; Tarnowski & Rasnake 1994).

Children's reactions to trauma have been described as similar to those of adults, such as repetitive intrusive thoughts and images about the event, increased alertness, anxiety, and depression. Children have also been shown to demonstrate regression to earlier stages of development, fearfulness, reckless behaviour, sleep disturbance and nightmares, separation difficulties, anger and irritability, and concentration difficulties (Yule 1994). That children can experience Post-Traumatic Stress Disorder (PTSD) has been acknowledged in both ICD-10 (World Health Organisation 1992) and DSM-IV (American

Psychiatric Association 1994) but understanding of the unique nature of trauma in childhood is limited. By and large, the literature on PTSD in childhood has focused on the aftermath of major disasters, such as the sinking of the Jupiter cruise ship (Yule et al 1990) and the California school sniper attack (Pynoos & Eth 1986; Pynoos et al 1987; Pynoos & Nader 1988) with comparatively little research attention having been paid to psychological consequences of physical trauma. Debate exists in the literature as to whether a discrete stressor, as opposed to longer-term stress, results in more severe disturbance in childhood. Gilboa et al (1994) suggested that the term 'Continuous Traumatic Stress Disorder' should be applied to burn survivors because of the ongoing trauma associated with their treatment.

That children *can* experience difficulties post-burn is well documented and there have been numerous studies which have attempted to identify the salient risk and protective factors, such as injury severity (Byrne et al 1986; Love et al 1987) and visibility of scarring (Blakeney et al 1988; Orr et al 1989). However, these studies have yielded largely equivocal results. Similarly, literature on the psychological functioning of adult burn survivors has found conflicting results regarding the contributory role of such burn-related factors. Tedstone et al (1998) found that psychological factors, such as self-blame, previous life events, coping, self-efficacy and cognitive appraisal, were significantly more predictive of post-burn psychological morbidity than the non-psychological factors usually investigated.

The most consistently recognised contributor to post-burn adjustment in children has been the family support system (Tarnowski et al 1991). Children with heightened psychopathology have been found to view their families as less cohesive, independent, assertive and self-sufficient than less disturbed children (Blakeney et al 1988). Browne et al (1985) found that the child's adjustment was more related to the mother's social resources and methods of coping than the time since, or the severity of, the burn. Similarly, children who have adjusted well post-burn have been consistently found to come from families who are cohesive, organised, less conflicted and who place greater emphasis on moral and religious values and high achievement (Le Doux et al 1998). There is considerable overlap between the descriptions of these families and those described by McCubbin & Figley (1983) and Figley (1983;1989). They identified characteristics of families who cope well with stress and trauma as including family-centred focus on the problem, high family cohesion, absence of violence and infrequency of substance use.

However, establishing whether compromised family functioning was a contributory factor to the burn injury itself, or occurred as a result of the burn, is extremely problematic. Reliable measures of premorbid family functioning are difficult to obtain because, by the time families are assessed, their functioning will already have altered and evolved in light of the burn injury. Kendall-Grove et al (1998) attempted to overcome this by interviewing parents of burned children immediately after hospital admission and found that 36% of the families interviewed exhibited at least one type of parental dysfunction, such as history of substance abuse, incarceration, or mental health problem.

Furthermore, 29% of the children above four years old were reported to have some form of dysfunction, such as history of physical and/or sexual abuse, behaviour problems or learning disability. The authors concluded that their results supported the notion that children who sustain burn injuries come from families with higher rates of psychological problems than the general population.

The impact of childhood burn injury on the family

Hu et al's (1993) study involving parental interviews demonstrated that severe injury to a child member can have significant, long-lasting effects on family life. Almost 50% of their sample reported disruption to family functioning six months after the child's hospital discharge and 25% still reported disruption one year post-discharge. Those at particular risk for long-term disruption were single parent families and those experiencing mental or emotional problems at the time of admission. Common family reactions to severe burns have been described as indecision, intensification of pre-existing problems, denial, and feelings of guilt, anxiety, depression, fear, helplessness and anger (Bowden and Feller 1973). Furthermore, Loomis (1973) pointed out that the child may blame their parent for the burn which may contribute to a parent's feelings of guilt, especially if a lapse in supervision did, in fact, precede the injury. Another potential parental reaction post-injury is a grief reaction. Although their child has survived the injury, parents may grieve for the loss of their 'perfect child', especially if the burn has resulted in significant scarring or functional loss of a body part. Studies have consistently found elevated rates of maternal disturbance post-burn (Martin 1970). Wright & Fulwiler's (1974) results

indicated that childhood burn injury had a more psychologically deleterious effect on mothers than on children themselves. They found that mothers of burned children had significantly lower perceptions of themselves and of their ability to fulfil the role of a mother. The authors concluded that, although it is conceivable that these maternal psychological factors predated the burn, their results indicated that mothers' emotional difficulties were a *result of* the child's burn and revolved around disturbed role perceptions. Mothers of burned children, even when the child's behaviour is within normal limits, have been found to be under greater parental stress (Blakeney et al 1993) and recent studies have shown that mothers typically perceive their child as more troubled than does the child or their teacher (Blakeney et al 1993; Meyer et al 1994; Meyer et al 1995). The question of whether the parental perception is accurate, or an artefact of exaggerated parental concern, remains unanswered but underlines the importance of maternal psychological well-being in any assessment of child post-burn adjustment.

Available evidence then suggests that burn injury has a two-fold relationship with family functioning: firstly, families of burned children are likely to have experienced a higher rate of pre-morbid difficulties, and secondly, burn injury is likely to further compromise their ability to cope post-injury.

The development of perceptions about the self and the world

A constructivist approach suggests that human beings construct their own personal realities through the development of complex cognitive structures which Piaget (1971) labelled as 'schemata'. These schemata include beliefs,

assumptions and expectations about the self and the world which enable individuals to make sense of their experiences. Beck's Cognitive Model (1980) suggests that schemata are developed early in life and are thereafter fairly resistant to alteration. It has been well established in the social psychological literature that people tend to ascribe to a just-world belief whereby 'good things happen to good people' (Lerner & Miller 1978). Janoff-Bulman (1992) postulated that the majority of people hold the core assumptions outlined in Figure 1. Similarly, Epstein (1989) suggested that individuals typically assume that i) the world is benign, ii) the world is meaningful, iii) the self is worthy and iv) people are trustworthy. It is believed that holding these types of assumptions promote feelings of security and psychological well-being. It is likely that when an individual becomes a parent, these assumptions may be extended to include their child. For example, a mother's assumptions about personal invulnerability may be extended to allow her to believe that her child is also invulnerable. This is likely to be functional in that it allows parents to be confident about their child's exploration of the environment and may facilitate the development of a secure attachment relationship between parent and child (Bowlby 1969, 1973, 1980; Ainsworth et al 1978). On the other hand, assumptions about child invulnerability could encourage complacency in parents' child protection efforts. Morongiello & Dayler (1996) found that although, when questioned, parents could identify potential hazards in their environment and likely injury outcomes, in the course of their daily interactions with their child they did not routinely consider injury possibilities. The authors believed that the parents in their study had a false sense of security based on not having experienced injury to their child. Research evidence indicates that parents consistently overestimate

their child's safety knowledge and ability to avoid accidents (Yarmey & Rosenstein 1988; Dunne et al 1992).

Figure 1 about here

The effect of trauma on schemata

A traumatic event is defined by the threat to life or physical integrity of oneself or others and by the response to the event involving intense fear, helplessness or horror (American Psychiatric Association 1994). Burn injury to a child often satisfies these elements and therefore could be described as a traumatic event, affecting both the injured child and their parent. Although DSM-IV describes how learning about the serious threat or harm to a close friend or relative can precipitate PTSD, this type of exposure to traumatic material has received comparatively little attention in the literature. This type of exposure has been defined as 'secondary traumatic stress' (Figley & Kleber 1995) and 'vicarious traumatisation' (McCann & Pearlman 1990) and is thought to occur when an individual very close to the victim, in an effort to understand their suffering, identifies with them and eventually becomes exhausted in their supportive role.

Current cognitive-behavioural models of post-traumatic reactions attempt to understand the occurrence of common post-traumatic symptoms by considering the central role of schemata. Janoff-Bulman (1992) suggests that individuals experience psychological distress following a traumatic event due to the shattering of their core assumptions about themselves and the world. Similarly, the cognitive processing model of reaction to trauma (Creamer et al 1992)

asserts that trauma can disrupt schemata and that the unique way in which trauma is experienced depends, in part, upon which schemata are central or salient for the individual. It is likely that, for a parent, schemata regarding vulnerability to harm and competence to fulfil the parenting role possess heightened saliency, in comparison with a childless individual, since one of the central roles of parenthood is to satisfy the safety and protection needs of the child. Therefore the experience of accidental childhood injury is likely to touch schemata which are highly salient for the parent.

Information Processing Theory has been useful in explaining the development of post-traumatic symptoms (Resick & Schnicke 1990;1992) with reference to the way in which information is encoded and recalled in memory. A traumatic event must be processed in light of, and is likely to be highly discrepant with, existing schemata. The mechanism by which traumatic events are thought to conflict with schemata is outlined in Figure 2. Adjustment to a traumatic event demands that the individual alter their core assumptions in order to accept the incompatible traumatic information, for example "although my child is usually safe from harm, accidents can happen" a process labelled as accomodation (Hollon & Garber 1988). However, assimilation, whereby information is distorted to fit existing schemata, for example, "the accident must have been my fault", is thought to occur more readily than accommodation and can result in psychological distress. Similarly, a process labelled over-accommodation (Resick & Schnicke 1992) can occur whereby there is a complete alteration of core assumptions, for example "my child will never be safe again". Green & Sonit (1964) described a clinical presentation, in parents whose child had

experienced serious ill health and threat to life, which they labelled 'vulnerable child syndrome'. Following the child's recovery these parents continued to consider their child vulnerable to serious illness or accident and destined to die in childhood. They described the parents as feeling as though their child were not really theirs but only on tenuous loan. With increasing understanding of post-traumatic reactions, this phenomenon might now be considered a sense of 'foreshortened future' which is a common symptom of PTSD. The authors reported cases of extended depression in these mothers during which her ability to relate warmly and intimately to her child was markedly impaired. The presenting symptomatology were difficulties separating from the child, often resulting in school refusal, an inability to set disciplinary limits and overprotective, over-indulgent and over-solicitous behaviour towards the child whilst the child was overly dependent, disobedient and uncooperative. It is possible that the schemata of these parents, regarding their child's vulnerability, was so disrupted by their threatened loss that they could no longer tolerate separation from, or conflicts with, their child. Although this is perhaps an extreme presentation of potential cognitive changes, it is clear that disruption to these salient schemata could potentially have a serious impact on the parent-child relationship and the child's future functioning.

Figure 2 about here

Summary

Developments in our understanding of post-traumatic reactions can contribute to a clearer conceptualisation of the potential difficulties consistently reported following childhood accidental burn injury. A trauma perspective can help to

account for the differing reactions among children and their parents which non-psychological factors, such as burn-related variables and psychiatric history, have been unable to adequately explain (Tedstone et al 1998). Further examination of the impact which accidental childhood injury can have at the level of schemata in parents is clearly required, in an attempt to better understand child and parental post-injury adjustment. This is particularly important in burn injuries because the literature has shown that:

- family functioning is a critical factor in children's post-burn adjustment;
- accidental burn injury can result in elevated levels of distress in some parents; and
- children who sustain burns are likely to come from families who are already experiencing a high rate of socioeconomic and psychological difficulties.

Efforts to appropriately support parents post-burn should aim to reduce the likelihood of further compromising of already potentially limited resources. The burn injury could positively be viewed as providing a 'window of opportunity' for therapeutic intervention with families who present with a history of pre-burn difficulties, to make changes in the family system which would improve functioning in the long-term.

Figure 1: Janoff-Bulman's (1992) core assumptions

Belief in personal invulnerability
Perception that the world is meaningful and comprehensible
View of the self in a positive light

Figure 2: Hypothesised paradoxical interaction between trauma and an individual's core assumptions

Trauma occurred

↓

Trauma means core theory is false

↓

But core theory must be preserved (or else life is impossible)

↓

Hence trauma can't have happened
(avoidance/denial)

↓

But triggers serve as reminders that trauma did happen
(flashbacks)

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Mothers' psychological functioning following childhood burn injury: a trauma perspective

Major Research Project Proposal

Word Count: 2163

Title

Mothers' psychological functioning following childhood burn injury: a trauma perspective.

Summary

The proposed study aims to examine mothers' psychological reaction to burn injury to their child, with particular attention to the burn's impact on core beliefs (schemata) about child safety and vulnerability. Comparisons will be drawn between mothers of children admitted to the specialist burns' unit, of the Royal Hospital for Sick Children, Yorkhill, for treatment of a burn injury (the study group), and mothers of children admitted to the same hospital for elective surgical procedures (the control group). It is hypothesised that there will be an observable difference in the cognitive, behavioural and emotional functioning of mothers in these two groups and that this will be due to the impact of childhood burn injury on core beliefs.

Introduction

Accidental injuries are the most common cause of mortality, morbidity, and disability during childhood and adolescence, with some 50,000 children attending A&E departments as a result of burn or scald injuries each year (1). With recent medical and surgical advances in the treatment of burns, and the resultant increased number of children surviving previously fatal injuries, research attention has turned to the long-term impact which burn injury can have on children and their families. Although the research evidence indicates that only a minority of children experience significant adjustment difficulties

post-burn (2), the factors which contribute to problematic post-burn functioning are not well understood. Variables such as burn severity and visibility of scarring have yielded largely equivocal results (3,4,5). However, the family support system has been consistently recognised as a crucial factor in children's post-burn adjustment. Children with heightened psychopathology have been found to view their families as less cohesive, independent, assertive and self-sufficient than less disturbed children (5), whilst well adjusted children typically describe their families as cohesive, well organised and less conflicted (6).

Studies of the impact of burn injury on mothers have consistently found a high rate of maternal disturbance post-burn. Several studies have shown a close correlation between maternal and child adjustment (7), with some indicating a more psychologically deleterious effect on mothers than on the children themselves (8 & 9). However, children who come from more chaotic and conflicted families, lower socio-economic groups and who have had pre-morbid behaviour problems have been found to be at increased risk of burn injury (10). It is therefore often difficult to establish whether compromised family functioning was a cause or an effect of the burn injury. Available evidence suggests that burn injury can serve to intensify pre-morbid difficulties and place further strain on already compromised family functioning.

More recently, psychological responses to burn injury have been considered as a type of post-traumatic stress reaction. Studies have shown that many adult burn survivors report discrete symptoms of post-traumatic stress disorder (PTSD), such as intrusive imagery, avoidance behaviour, or increased arousal, and about

one-third fulfil DSM-III-R (11) diagnostic criteria for the full-blown condition (12). Although DSM-IV (13) describes how learning about the serious threat or harm to a close friend or relative can precipitate PTSD, this type of 'secondary traumatic stress' (14) has received comparatively little attention in the literature. It is conceivable that mothers' elevated levels of disturbance post-burn could be related to a secondary traumatic stress reaction.

A constructivist approach suggests that human beings construct their own personal realities through the development of complex cognitive structures which Piaget (15) labelled as 'schemata'. These schemata include beliefs, assumptions and expectations about the self and the world which enable individuals to make sense of their experiences. Beck's Cognitive Model (16) suggests that schemata are developed early in life and are thereafter fairly resistant to alteration. Janoff-Bulman's (17) cognitive model of PTSD suggests that individuals experience psychological distress following a traumatic event due to the shattering of their core assumptions (schemata) about themselves and the world. He postulated that the majority of people hold the following core assumptions:

- Belief in personal invulnerability
- Perception that the world is meaningful and comprehensible
- View of the self in a positive light

It is likely that when an individual becomes a parent, these assumptions are extended to include their child. For example, a mother's assumptions about

personal invulnerability may be extended to allow her to believe that her child is also invulnerable. Indeed, parents of children as young as five years have been consistently found to significantly overestimate their child's ability to anticipate and avoid dangers in their environment (18). It is conceivable that accidental burn injury could serve to shatter these core assumptions and lead to symptoms of a post-traumatic reaction.

The proposed study aims to investigate the impact of paediatric burn injury on maternal psychological well-being. Specifically, it will investigate the impact of childhood burn injury on mothers' core beliefs and attempt to account for findings with reference to cognitive formulations of post-traumatic reactions.

Purpose

The purpose of the study is to examine the impact of childhood burn injury on mothers' cognitive, behavioural and emotional functioning.

Aims

To examine whether childhood burn injury:

a) has an impact on mothers' perceptions of their child's vulnerability;

b) has an impact on mothers' parenting behaviour;

c) has an impact on core assumptions about the benevolence of the world, meaningfulness of the world and self-worth;

d) leads to elevated levels of emotional distress in mothers;

e) leads to increased parenting stress, especially in the parent-child relationship.

The hypothesised model of the impact of burn injury on maternal functioning is outlined in Figure 1. Specifically, it is hypothesised that mothers in the study sample will show a higher rate of i) disruption to cognitions about child vulnerability, benevolence, meaningfulness and self-worth ii) overprotective behaviour, iii) emotional distress, and iv) parenting stress, especially in the parent-child relationship, in comparison with mothers in a control sample.

Plan of investigation

Participants

The *target population* will be mothers of children (aged 5-10 years) admitted to a specialist burns unit for treatment of a burn or scald injury. The *study population* will consist of mothers of all 5-10 year old children admitted to the Burns Unit at Yorkhill, between three and six months prior to the data collection period. It is envisaged that at three-months post-injury the acute distress will have remitted and that any results will be due to endurable post-injury changes. Similarly, at six-months post-injury it is envisaged that the experience, and their pre-morbid functioning, will still be easily recalled. Suitable participants will be accessed via hospital records and approached, in the first instance, by letter from the hospital consultant. The *study sample* will comprise of those mothers who opt-in to the study. Few exclusion criterion will be applied, with the exception of burn injury associated with deliberate harm, in order to maximise the range of participants and support wide generalisability of results. The *control population* will consist of mothers of otherwise healthy children (aged 5-10 years) admitted to the same children's hospital for an elective surgical

procedure in the same time period. The *control sample* will comprise of those mothers who opt-in to the study. It is hoped that the use of a clinical comparison group will control for the experience of hospitalisation of a child.

Measures

Participants will take part in a purpose-designed, semi-structured interview with the author (Appendix 2.1) which will elicit the following information:

- Mother's age
- Years of education
- Physical and mental health history
- Previous traumas
- Concurrent stressors
- Parenting experience
- Conception, pregnancy, delivery & bonding experiences
- Previous injuries and/or injuries to siblings
- Child's age
- Child's health
- Circumstances surrounding the burn injury
- Time since injury
- Length of hospital admission
- The burn's impact on the child
- The burn's impact on the mother (using DSM-IV diagnostic criteria for PTSD)
- The burn's impact on the mother-child relationship
- Number of life events in previous two years
- Mother's rating of 'safety' of neighbourhood on 0-10 scale

Participants will also be asked to complete the following self-report measures:

Child Vulnerability Scale (CVS) (19): an 8-item measure of parents' perceptions of their child's vulnerability. Higher scores reflect increased perceived vulnerability. A cut-off score equivalent to ≥ one standard deviation above the mean of the normative reference group (≥10) has been suggested as indicative of significant perceptions of vulnerability. Although psychometric information has not been published, the authors report that the scale has adequate psychometric properties.

Parent Protection Scale (PPS) (20): a 25-item measure of specific parenting behaviours related to child autonomy, individuation and separation. Higher scores reflect greater levels of protective behaviour. A cut-off score equivalent to ≥ one standard deviation above the mean of the age-matched normative reference group has been suggested as indicating 'overprotective' behaviour. The scale has been shown to have adequate psychometric properties with internal consistency of .73 and test-retest reliability of r = .86.

Hospital Anxiety and Depression Scale (HAD) (21): a 14-item questionnaire with two subscales which measure anxiety and depression. A cut-off score of ≥11 on either scale is suggested by the authors as indicative of clinically significant anxiety or depression. The scale has been shown to have adequate psychometric properties with internal consistency of .93 for the anxiety and .90 for the depression scale, and test-retest reliability of .92 and .89 respectively.

World Assumptions Scale (WAS) (22): a 32-item questionnaire with three subscales which measure assumptions about the benevolence of the world, the meaningfulness of the world, and self-worth. Higher scores reflect greater agreement with the three assumptions whereas lower scores reflect more shattering of assumptions. Normative data are not available (23) therefore cut-off scores equivalent to ≤ 50% agreement with each of the three assumptions will be considered as indicative of significant disruption. Reliabilities for the three subscales are .87, .76 and .80 respectively.

Parenting Stress Index - Short Form (PSI-SF) (24): a 36-item questionnaire with three subscales, namely Parental Distress (PD), Parent-Child Dysfunctional Interaction (P-CDI) and Difficult Child (DC). A Total Stress (TS) score provides an indication of the overall level of parenting stress which an individual is experiencing, higher scores reflecting higher levels of stress. Cut-off scores equivalent to ≥ one standard deviation above the mean of normative data are considered to be indicative of dysfunctional levels of parenting stress. Reliabilities for the subscales are .79 for PD, .80 for P-CDI, .78 for DC, and .90 for Total Stress.

Hospital records will be used to access burn severity, required treatment and to corroborate mother's description of the circumstances surrounding the burn.

Sample Size

The appropriate sample size is most usefully estimated according to i) the power of the tests of significance to be used to detect any differences between the

groups, and ii) the minimum magnitude of difference between the groups worth detecting. A power of 80% and significance level of 0.05 is generally considered adequate in clinical research (25) and will be adopted in the proposed study.

In a normally distributed sample approximately 16% of cases would be expected to fall ≥ one standard deviation above the mean. Therefore around 16% of the control group would be expected to score in the 'caseness' range of the standardised measures administered. This is in comparison with the study group whereby available evidence suggests a substantially higher rate of psychological disturbance than in the general population. The relative frequency of disturbance in mothers of burned children has rarely been estimated, one exception being the study by Vigliano (26) who found the rate of maternal disturbance to be 80%. Furthermore, the rate of maternal disturbance is known to be significantly higher than that of child disturbance (8), which has been found to range from 15-20% (2) to ≥ 30% (27). This suggests that the proportion of study group mothers scoring in the 'caseness' range could be expected to be in the region of 50%.

Based on these estimated proportions of disturbance in the study versus control group (16% versus 50%), and power calculation according to the formula shown in Appendix 2.2, 26 participants per group would be required to provide an 80% chance of correctly rejecting the null hypothesis where the null hypothesis was false.

Design

The study will be of cross-sectional, survey methodology. It will adopt a case-control, between-subjects design and will be retrospective in nature. Ideally cases and controls would be assessed 'blindly' but this is unlikely to be achievable since the lead applicant will be responsible for the recruitment and interviewing of all participants.

Procedure

All mothers will be assessed at least 3-months after the injury/procedure. Testing will usually take place in the participants own home. However, where the child is still resident in the hospital, interviews could be conducted within the hospital setting. Similarly, where families live a considerable distance away, interviews could be conducted by telephone and questionnaires returned by post.

Independent variables to be considered

- Factors relating to the mother, including age, socio-economic status, marital status, level of education, previous experience of trauma, physical and mental health, parenting experience, and other life events.

- Factors relating to the child, including age, gender, birth order, previous injuries sustained (by identified child and by siblings), issues about conception, pregnancy, delivery and early attachment experiences, previous potential or actual losses.

- Factors in the environment, including a Deprivation Index score for the family's postcode and mothers' 'objective' rating of the safety of their neighbourhood.

- Burn-related factors, such as time since the injury, severity, cause, treatment, length of hospitalisation, visibility of scarring and outcome.

Data Analysis

Raw data will be anonymised and stored on a secure computerised database. Appropriate descriptive and inferential statistical procedures will be carried out on the data, using SPSS. Depending on the characteristics of the data obtained, the two-sample t-test or Mann-Whitney U test will be used to compare the questionnaire scores of the study versus control sample. The Chi-Square test will be used to explore categorical data. Multivariate statistics will be used to examine factors related to poor post-burn functioning.

Practical Applications

Results from the study would clarify the cognitive processes occurring in mothers post-injury and the resultant emotional and behavioural sequelae of childhood injuries. This would prove useful to therapeutic practice with families where there has been injury to a child member.

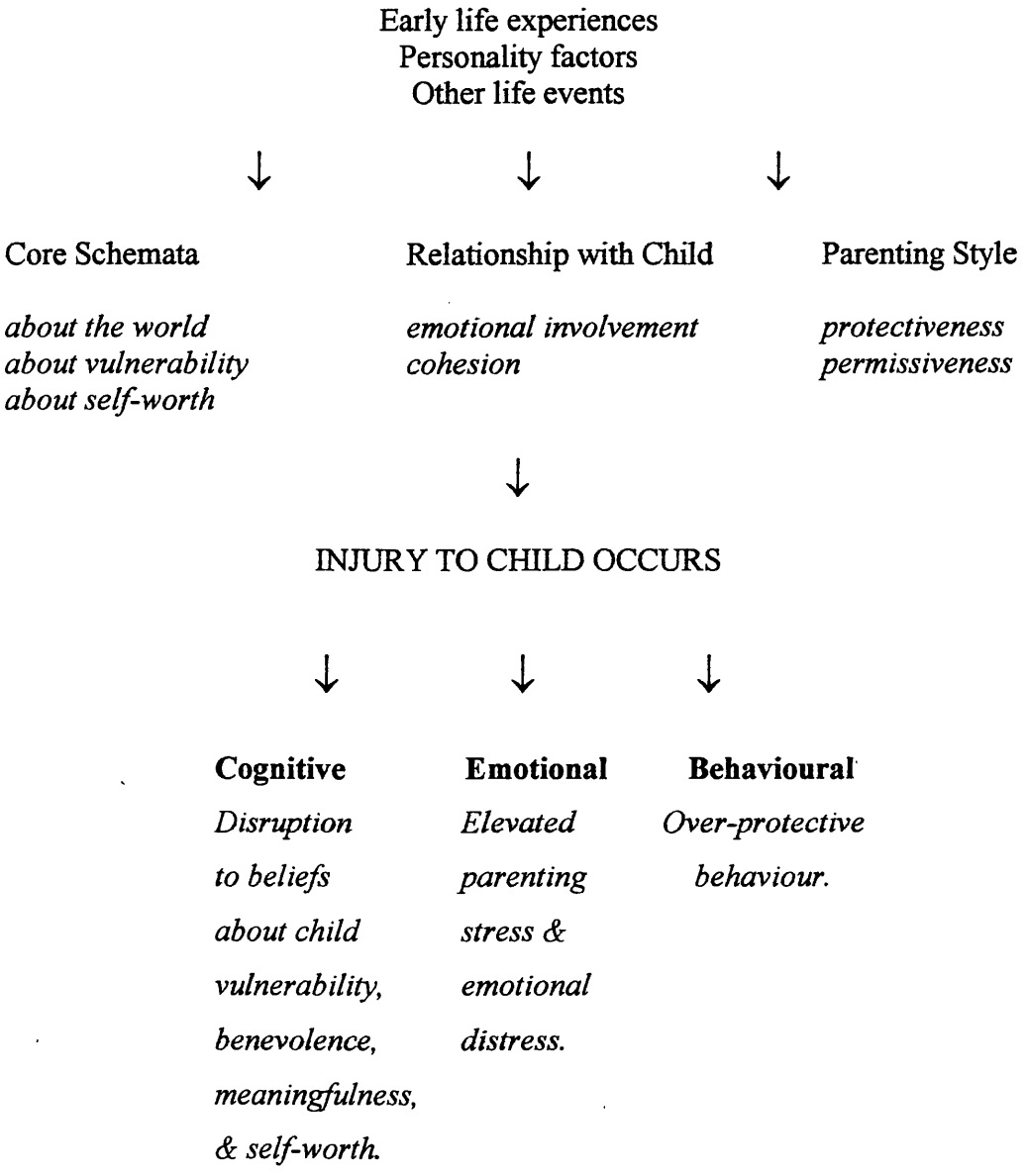
Ethical Approval

Ethical approval for the study will be sought from the Yorkhill NHS Trust Ethics Committee.

Timescale

Jan-Mar '98	Development of research proposal
Apr-Aug '98	Application for ethical approval and literature searches
Sep '98	Literature review submitted
Oct-Dec '98	Ethical approval and discussion with hospital consultants
Jan-Mar '99	Identification and recruitment of participants
Apr-Jun '99	Data collection and concurrent analysis
Jul '99	Writing up

Figure 1: Model of impact of childhood burn injury on maternal functioning



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Mothers' psychological functioning following childhood burn injury: a trauma perspective

Major Research Project Paper

Target Journal: Burns (Appendix 3.5)

Word Count: 4741

Summary

The primary objective of the study was to clarify the nature and extent of the impact of childhood burn injury on maternal psychological functioning, with specific reference to mothers' beliefs about child safety and vulnerability. The cognitive, emotional and behavioural functioning of mothers (n=28) of children who had sustained a significant burn injury within the previous 18 months was assessed via semi-structured interview and a battery of standardised instruments, including the Hospital Anxiety and Depression Scale (HAD), Child Vulnerability Scale (CVS) and World Assumptions Scale (WAS). Controls comprised mothers (n=14) of children who had been hospitalised for elective surgical procedures. Results did not identify a high rate of maternal emotional or behavioural disturbance following childhood burn injury. However, mothers of burned children had significantly weaker beliefs about the meaningfulness (or controllability) of the environment than controls. Risk factors for maternal post-burn disturbance were identified as living apart from the burned child's father, concurrent stressors, having experienced a previous trauma and having multiple children. Findings suggest that mothers' who are already under significant stress should be screened for psychological disturbance in the acute and follow-up stages of their child's burn care, and offered therapeutic input to assist the accommodation of the burn experience into functional beliefs about the controllability of the environment.

Key Words

Burn injury; maternal adjustment; post-traumatic reactions; parenting; schemas.

Introduction

Each year around 50,000 children are admitted to A&E departments as a result of burn or scald injuries (1), the most severe of which often require in-patient treatment. Burns are typically described in terms of the degree, or depth, and the percentage of total body surface area (TBSA) affected. Treatment can be painful and protracted, potentially involving daily debridement, changing of dressings, skin grafting, the wearing of pressure garments and physiotherapy. With recent advances in the treatment of burns, and the increased number of children surviving previously fatal injuries, research attention has turned to the impact which paediatric burn injury can have on the child's later functioning. Research has consistently shown that family functioning is an important factor in mediating children's post-burn adjustment (2) and, more specifically, mothers' social resources and methods of coping (3). However, mothers' ability to optimally support their children after a burn injury can be compromised by i) pre-existing emotional problems, and/or ii) personal difficulties in coming to terms with the burn. Children from families where there is a significant degree of disruption and conflict have been consistently shown to be at increased risk of sustaining a burn injury (4, 5 & 6). Furthermore, paediatric burn injury has been shown to have a deleterious effect on maternal psychological well-being. Mothers have been found to experience a high rate of anxiety, depression, guilt, helplessness and anger (7), elevated levels of parenting stress (8), to perceive their child as more troubled than does the child or their teacher (8, 9 & 10), and to have disturbed perceptions of their parental competence and self-worth (11).

Although the potential impact of paediatric burn injury on maternal psychological functioning has been acknowledged, the mechanism by which disturbance occurs has received relatively little attention. Developments in our understanding of individual (12) and family reactions to trauma (13) could help to clarify the mechanism by which childhood burn injury affects maternal functioning. Recent cognitive formulations of post-traumatic stress disorder (PTSD) have suggested that individuals experience psychological distress after a traumatic event due to the shattering of their core assumptions about themselves and the world (14) and that the unique way in which trauma is experienced depends, in part, upon which beliefs are central to the individual (15) Since satisfaction of the child's need for safety is a central role of parenthood, it is likely that, for a parent, beliefs about child vulnerability and safety possess heightened saliency and, therefore will be preferentially affected by the experience of childhood injury. The development of post-traumatic symptoms is thought to be related to the way in which information is encoded and recalled in light of existing schemata (16). Successful adjustment to a traumatic event demands that the individual alter their core assumptions in order to accept the traumatic information, a process labelled as accommodation (17). However, the distortion of information to fit existing schema, a process called assimilation, is thought to occur more readily and can result in psychological distress.

There is clearly a need for further research into the nature of the impact of paediatric burn injury on cognitive, behavioural and emotional aspects of mother's psychological well-being. The present study examined differences

between a group of mothers of children who had been admitted to a specialist burns unit for treatment of a burn injury, and mothers of children admitted for an elective surgical procedure, with regard to their:

1. level of perceived parenting stress
2. beliefs about their child's vulnerability
3. level of protective behaviour
4. emotional state
5. assumptions about themselves and the world

Figure 1 about here

As illustrated in Figure 1, it was hypothesised that mothers of burned children would experience disruption to their beliefs about their child's vulnerability and their assumptions about themselves and the world, elevated levels of parenting stress and emotional distress, and display more protective parenting behaviour, in comparison with mothers of non-injured children. A clinical comparison group was used in order to control for the experience of a child's hospitalisation across the same age group. The study also attempted to identify the risk factors for significant post-burn disruption in the hope that they could be used to screen for 'at-risk' mothers in the acute and rehabilitation stages of the child's burn treatment and contribute to improvements in therapeutic intervention with families after burn injury to a child member.

Method

Sample

The study sample consisted of 28 mothers of children, aged 0-10 years, who had been admitted to the specialist burns unit of the children's hospital serving the West of Scotland for treatment of a burn injury between 5 and 18 months previously. The control sample consisted of 14 mothers of children, aged 0-10 years, who had been admitted to the same children's hospital for an elective surgical procedure in the same time period.

Identification and Recruitment

Study Sample: all children who had been admitted to the children's hospital serving the West of Scotland for treatment of a burn injury during 1998, and who had been aged 0-10 years at the time of their injury, were identified via hospital records (n=116). The characteristics of the study population were expanded from those outlined in the original proposal, in terms of child's age and time since the injury, in order to obtain a sufficiently large pool of potential participants. The identified child's general practitioner was notified, by letter, of the researcher's intention to invite the child's mother to participate and asked to comment on any factors which might preclude her involvement (Appendix 3.1). Four GPs could not be contacted due to missing data. Seven mothers were excluded following GPs' advice. Where GPs indicated the reason for their concerns, examples were suspicion of deliberate harm associated with the burn injury, recent family bereavement or domestic violence. Letters of invitation, from the consultant paediatric surgeon who had been responsible for their

child's hospital care, were sent to suitable mothers (Appendix 3.2). They were asked to opt-in to the study by signing and returning a consent form using the prepaid envelope provided (Appendix 3.3). Reminder letters, from the researcher, were sent approximately three weeks later (Appendix 3.4). Thirty participants opted-in to the study, representing a response rate of 29%. Two participants subsequently dropped out, resulting in a final study sample of 28.

Control Group: children who had been admitted to the same children's hospital for an elective surgical procedure in the same time period as the study group, and who had been aged 0-10 years at the time of the procedure, were identified via hospital records (n=80). GPs were contacted according to the same procedure as the study population and resulted in the exclusion of two mothers. Suitable mothers were then contacted in the same way as the study population. 14 participants opted-in to the study, representing a response rate of 17.5%.

Mothers were asked to provide a contact telephone number on their returned consent form and, where possible, interviews were arranged by telephone (n=43). Otherwise, mothers were contacted by letter and asked to contact the researcher to arrange a suitable appointment (n=1). Interviews were conducted in participants own homes (n=37), within the hospital setting (n=1), or, where distances were prohibitive, by telephone (n=4). Study sample interviews lasted a mean of 45 minutes (range 35 to 70 minutes). Control sample interviews lasted a mean of 35 minutes (range 25 to 55 minutes).

Instruments and Data Collection Procedure

Mothers were asked to participate in a semi-structured interview which gathered information in the following key areas (Appendix 2.1):

- Demographic
- Socio-economic status (as defined by the DEPCAT postcode index (18)]
- Family composition
- Details about the injury/surgical procedure
- Mother's physical health
- Mother's mental health
- Mother's history of trauma
- Mother's concurrent life stressors
- Number of life events within the past two years
- Conception, pregnancy, delivery & bonding experiences with the identified child
- Effect of the injury/surgical procedure on the identified child/mother/ relationship between mother and child/other family members (using DSM-IV diagnostic criteria for PTSD)
- Health status of the identified child and siblings
- Other injuries to the identified child and siblings

They were also asked to complete the following standardised self-report measures:

Child Vulnerability Scale (CVS) (19): an 8-item measure of parents' perceptions of their child's vulnerability. Higher scores reflect increased vulnerability. A cut-off score of ≥10, equivalent to ≥ one standard deviation above the mean of the normative reference group, was considered to be indicative of a significant degree of perceived child vulnerability. Although psychometric information has not been published, the authors report that the scale has adequate psychometric properties.

Parent Protection Scale (PPS) (20): a 25-item measure of specific parenting behaviours related to supervision, separation problems, dependence and control. Higher scores reflect greater levels of parental protective behaviour. Age-related cut-off scores equivalent to ≥ one standard deviation above the mean of the normative reference group, were used to delineate 'overprotective' behaviour. The scale has acceptable psychometric properties with internal consistency of .73 and test-retest reliability of .86.

Hospital Anxiety and Depression Scale (HAD) (21): a 14-item questionnaire with two subscales which measure anxiety and depression. The authors' suggested cut-off score of ≥11 on either scale was considered to be indicative of clinically significant depression or anxiety. The scales have adequate psychometric properties with internal consistency of .93 for the anxiety and .90 for the depression scale, and test-retest reliability of .92 and .89 respectively.

World Assumptions Scale (WAS) (22): a 32-item questionnaire with three subscales which measure assumptions about the benevolence of the world, the

meaningfulness of the world, and self-worth. Higher scores reflect more intact, and lower scores reflect more shattering of, assumptions. Normative information was not available therefore a cut-off score equivalent to ≤ 50% agreement with the assumption was considered as indicative of significant disruption. The scale has been shown to have reliable psychometric properties with reliabilities for the three subscales as .87, .76 and .80 respectively.

Parenting Stress Index - Short Form (PSI-SF) (23): a 36-item questionnaire with three subscales, namely Parental Distress (PD), Parent-Child Dysfunctional Interaction (P-CDI) and Difficult Child (DC). A Total Stress (TS) score provides an indication of the overall level of parenting stress which an individual is experiencing. Higher scores reflect higher levels of stress. Cut-off scores equivalent to ≥ one standard deviation above the mean of the normative reference group were considered to be indicative of dysfunctional levels of parenting stress. Reliabilities for the subscales are .79 for PD, .80 for P-CDI, .78 for DC, and .90 for Total Stress.

Data Analysis

The groups were subjected to chi-square goodness of fit calculations to examine their comparability with the theoretical 'normal distribution'. A series of chi-square calculations (Fisher's Exact Tests where cells were of less than 5 items) were employed to identify associations between 'group' and various other maternal, child and environmental factors. A series of Mann-Whitney U tests were also employed to compare the groups' scores on standardised measures. Within the study group, associations between significant disruption and various

maternal, child, environmental and burn-related factors were examined via the chi-square (or Fisher's Exact) statistic and logistic regression analysis.

Results

Between-Groups

Table 1 illustrates the demographic characteristics of the study (n=28) and the control sample (n=14). There were no significant associations between 'group' and socio-economic status (as defined by postcode deprivation category) (Carstairs & Morris 1991), ethnic origin, mothers' age, relationship status and years of education, children's age at the time of testing or when admitted to hospital, and the length of time since hospitalisation. Significant associations did exist between group and gender (X^2=5.048;df=1;p=0.025) and the length of hospital stay ($X^{2=}$26.831;df=3;p=0.000). As shown in Table 1, there was a significantly higher proportion of male children in the control sample and children in the study sample stayed in hospital for significantly longer than did controls. The mean age of mothers when interviewed was 32.5 years (range 19-48 years) and they had a mean number of 12.4 years in education (range 10-17 years). Children were a mean of 39.7 months old (range 12-120 months) when tested and 29.1 months old (range 1-109 months) when admitted to hospital. The mean time since hospitalisation was 10.5 months (range 5-18 months).

Table 1 about here

As can be seen in Table 2, study group children had sustained burn injuries of between 3% and 37% of their total body surface area (TBSA). The majority had

between 3% and 37% of their total body surface area (TBSA). The majority had been injured in household accidents, most commonly scalded by a hot drink (50%), and a large proportion required a skin graft to the affected area (39.3%). More than one body part was affected in the majority of cases (60.7%) and most had been injured to body parts which are usually visible (53.6%), for example the face or hands. The majority of study group children had stayed in hospital for between 4 and 14 days (54%) whereas the majority of control group children had been admitted on a day surgery basis (93%). Control group children had been admitted to hospital for such elective surgical procedures as circumcision or the correction of a tongue-tie.

Table 2 about here

Further exploration of the comparability of the samples, via the chi-square test for independence, revealed no significant associations between 'group' and variables such as number of life events in the previous two years; the existence of concurrent stressors; conception, pregnancy, delivery and bonding experiences; mothers' level of parenting experience, history of mental health problems, and rating of the safety of their neighbourhood; the proportions of 'only' children, children who suffer from a problematic health condition and children who have sustained an (other) injury requiring medical treatment. 'Group' was significantly associated with mother's experience of (other) trauma (X^2 =12.923; df=1; p=0.000), the study group reporting a significantly higher frequency of, at least one, previous traumatic experience.

Table 3 illustrates the proportion of the study and control group scoring more than one standard deviation above the mean (in the 'caseness' range) on the standardised measures. The chi-square test for independence revealed no significant associations between 'group' and scoring in the 'caseness' range, with the exception of the 'Meaningfulness of the World' scale whereby the frequency of scoring above cut-off in the study group was significantly greater than that in the control group (50% versus 14% respectively) (X^2=5.048; df=1; p=0.025).

Table 3 about here

In a normally distributed sample, approximately 84% would be *expected* to score less than one standard deviation above the mean and approximately 16% would be *expected* to score more than one standard deviation above the mean. In order to determine the 'goodness of fit' of the study and control groups, with the theoretical normal distribution, the *expected* frequencies were compared with the *observed* frequencies (via the chi-square goodness of fit test) derived from the standardised measures whereby normative data was available (CVS, PPS and PSI-SF). The observed frequencies in the study group appeared to be largely consistent with the theoretical normal distribution on the scales examined. However, the observed frequency of the control group scoring more than one standard deviation above the mean was significantly greater than that expected in a normally distributed sample on the Parental Distress (X^2=4.166; p>0.05), Parent-Child Dysfunctional Interaction (X^2=7.594; p>0.01), Difficult Child (X^2=4.166; p>0.05) and Total Stress (X^2=7.594; p>0.01) scales of the PSI-SF.

Comparison of the groups' scores, via the Mann-Whitney U test, revealed no significant differences between the study and the control sample on measures of perceived child vulnerability (CVS), parental protective behaviour (PPS), current emotional distress (HAD), parental stress (PSI-SF) and the strength of their assumptions about the 'benevolence of the world' and their 'self-worth' (WAS). However, the study group had significantly lower scores on 'meaningfulness of the world' (WAS) than did controls ($U=91.5$; $p=0.04$).

Within-Group

Within the study sample, there were no statistically significant correlations between burn-related factors such as severity (defined by TBSA affected), length of hospitalisation or time since injury with scores derived from the standardised measures (according to the Pearson Correlation Coefficient test). As might have been expected, a significant association did exist between the child's age at testing and mothers' PPS scores ($r=-0.572$;$p=0.001$), mothers of younger children tending to exhibit more protective behaviour. This association also held for the entire sample ($r=-0.502$;$p=0.001$). Similarly, mothers' age at testing also had a significant relationship with CVS scores ($r=-0.529$;$p=0.004$), younger mothers tending to perceive their child as more vulnerable than older mothers. This association also held for the entire sample ($r=-0.320$;$p=0.039$). Number of children was significantly associated with mothers' 'meaningfulness of the world' scores ($r=-0.381$;$p=0.045$), mothers with fewer children tending to score higher on this scale, indicating stronger agreement with the assumption. This association did not hold for the entire sample.

As shown in Table 4, various other variables were analysed alongside 'caseness' on the standardised measures, using the Chi-Square Test for Independence. Due to several cells containing less than 5 items however, results were derived from Fisher's Exact Test. The variables which appeared to be associated with 'caseness' on the largest number of scales were 1) mothers' relationship status, 2) the child's need for a skin graft, 3) the existence of concurrent stressors, and 4) mothers' experience of previous trauma. Mothers who were living with the burned child's father were significantly *less* likely to score as cases on the anxiety and depression scales of the HAD, the P-CDI and TS scales of the PSI-SF. Mothers whose child had required a skin graft were significantly *less* likely to score as cases on the PD, DC and TS scales of the PSI-SF. Mothers who described concurrent stressors were significantly *more* likely to score as cases on the anxiety scale of HAD, the TS scale of the PSI-SF and the Meaningfulness of the World scale of the WAS. Mothers who reported at least one previous traumatic experience were significantly *more* likely to score as cases on the P-CDI, DC and TS scales of the PSI-SF. Other significant associations were that mothers of children with a health problem were *more* likely to score as cases on the anxiety scale of the HAD and the P-CDI scale of the PSI-SF. Mothers who reported at least one major life event in the previous two years were *more* likely to score as cases on the Meaningfulness of the World scale of the WAS. Mothers who reported that the burn had had an impact on their relationship with their child were *less* likely to score as cases on the DC scale of the PSI-SF. Mothers who described a problematic pregnancy were *more* likely to score as cases on the CVS and mothers who reported

difficulties in the initial bonding with their child were *more* likely to score as cases on the anxiety scale of the HAD.

Table 4 about here

Given that the study group had significantly lower scores on the Meaningfulness of the World scale (WAS), and that the observed frequency of the study group scoring in the 'caseness' range was significantly higher than that of controls, the variables which were identified as most closely associated with 'caseness' on this scale, namely i) the existence of concurrent stressors, ii) having experienced at least one major life event in the previous two years, and iii) that mothers perceived the burn to have had an impact on the mother-child relationship, were subjected to logistic regression analysis in order to examine which, of the three factors, were most strongly predictive of significant disruption to assumptions about the meaningfulness of the world (Table 5). The analysis correctly identified an overall 82.14% of cases but did not identify any of the factors as significantly predictive of 'caseness' on this scale.

Table 5 about here

Discussion

Evidence of maternal disturbance after childhood burn injury

Contrary to the results of previous research, the present study did not identify a high rate of symptoms of maternal disturbance following paediatric burn injury. Mothers of children burned between 5 and 18 months earlier did not differ significantly from norms or controls on standardised measures of perceived child vulnerability, parental protective behaviour, emotional distress or parenting stress. However, mothers of burned children, in comparison with controls, had significantly lower scores on the 'meaningfulness of the world' scale, indicating that, as a group, they had significantly weaker belief in this assumption. Janoff-Bulman (14) describes the concept of 'meaningfulness of the world' as the assumption that we can directly control what happens to us through our own behaviour. This has considerable overlap with Seligman et al's (24) concept of 'learned helplessness', whereby a predictable psychological state can be induced when individuals are placed in a situation where what happens to them is independent of what they do. The question of whether this cognitive set occurred as a result of the burn injury, or predated, it remains unclear. However, weak agreement with this belief was observed in mothers who did not report any previous traumatic experiences or significant life events, therefore results suggest that childhood burn injury is likely to have had a deleterious impact on mothers' assumptions about meaningfulness, likely reflecting their inability to make sense of why this happened to their child.

Design and sampling issues

The reasons for the present study's failure to identify a higher rate of symptoms of maternal disturbance may include:

1) children in the present study having sustained burns of between 3% and 37% TSBA, rendering them markedly less severely injured than those included in previous studies (8 & 10);
2) the majority of children being below school age which may have been too young to, as yet, adequately challenge mothers' beliefs about their safety and vulnerability;
3) the measures used being insensitive to certain aspects of maternal dysfunction;
4) those mothers failing to opt-in to the study being significantly more disturbed than those who agreed to participate;
5) the control sample comprising a higher proportion of 'disturbed' mothers than expected and therefore masking more diffuse between-group differences; or
6) the study having insufficient statistical power to reliably detect smaller between-group differences.

The measures used in the present study assessed aspects of cognitive, behavioural and emotional functioning and were chosen according to their psychometric properties. Therefore it is unlikely that they were too insensitive to detect real evidence of dysfunction. It is more likely that failure to detect a higher rate of maternal disturbance was related to sampling factors. Due to practical reasons, neither the study nor control samples were randomly sampled from the target populations. This has obvious implications for the

representativeness of the samples as various unknown selection biases will, undoubtedly, have influenced individuals' decisions to opt-in to the study, not least the perceived saliency of the study topic. Furthermore, the low response rates, especially in the control sample, are indicative of highly self-selected samples. Comparison of the 'goodness of fit' of the control sample indicated that it was significantly skewed towards dysfunction on all subscales of the PSI-SF. This could suggest that control-mothers who were experiencing significantly high levels of parenting stress may have been preferentially opting-in on the basis of perceived need to participate in a 'psychological' study, therein masking more diffuse between-group differences. Although the study group (n=28) exceeded the 26.6 participants required to provide sufficient statistical power to have an 80% chance of correctly identifying true between-group differences, the control group fell considerably short of this number (n=14) (Appendix 2.2). Power is also maximised by equal sample sizes which this study failed to achieve. Furthermore, this estimated sample size was based on the hypothesis that there would be sizeable between-group differences. Therefore, it is likely that the study had sufficient power to identify between-group differences on the Meaningfulness of the World scale, as the magnitude of difference was sizeable, but had insufficient power to detect smaller between-group differences.

Risk factors for childhood burn injury

Nevertheless, the control sample did not differ from the study sample on key demographic and historical variables and therefore constituted an appropriate comparison group, most importantly in terms of their comparability in terms of

child's age, mothers' age and level of parenting experience, socio-economic status and experience of child's hospitalisation. The only significant associations with 'group' were in terms of child gender, length of hospital stay and history of trauma. Differences in the proportion of boys and the length of hospitalisation were judged to be less important than the above similarities between the groups. The higher proportion of boys in the control sample is characteristic of the type of surgical procedures included (i.e. primarily circumcision) and their shorter length of hospital stay is due to the fact that most elective surgery is carried out on a day surgery basis. The strikingly higher rate of previous trauma in the study group is less easy to account for but is somewhat consistent with the concept of the 'burn-prone' child. The literature suggests that the 'burn-prone' child comes from a family where there is a marked degree of emotional conflict, psychological problems, substance misuse, and behavioural problems (4 & 25). The results of the present study suggest that children who sustain burns are more likely to live with families where there has been a history of trauma. Mothers' symptoms of post-traumatic stress and/or difficulties in coping with this previous trauma may be contributory to the child's burn injury via a lapse in parental supervision or depressed affect.

Risk factors for maternal psychological disturbance after childhood burn injury

Risk factors for maternal disruption following a burn injury did not include burn-related variables such as severity, length of hospitalisation or time since the injury. However, living apart from the burned child's father, having other concurrent stressors, having a history of previous trauma, where the burned child had pre-existing health problems, having had a problematic pregnancy,

and difficulties bonding with the burned child, were significantly associated with increased risk of disturbance in one or more aspects of maternal functioning. Specifically associated with disruption to assumptions about the 'meaningfulness of the world' were having had at least one life event in the previous two years, having other concurrent stressors and reporting that the parent-child relationship had been affected by the burn. However, multivariate statistical procedures were unable to add further clarification of which of the three factors were significantly predictive of disruption. Of note was the finding that, in the study group, there was a significant, positive correlation between the number of children which the mothers had and degree of disruption to assumptions about 'meaningfulness of the world'. This suggests that after a burn injury, mothers of multiple children may be at increased risk.

Although the risk factors identified are fairly generic for psychological disturbance, they indicate that those mothers most at risk of post-burn adjustment problems are those whose personal resources are already being severely taxed. This is consistent with previous studies which have identified the risk factors for extended disruption of post-injury family functioning as being a single parent and experiencing mental or emotional problems at the time of admission (26). Intensification of pre-existing problems has also been identified as a common reaction following childhood burn injury (7).

Protective factors after childhood burn injury

Mothers of children who had required a skin graft appeared to be less likely to experience dysfunctional levels of parenting stress and to perceive their child as

'difficult' post-burn. Similarly, mothers who identified that their relationship with their child had been affected by the burn were also apparently less likely to perceive their child as 'difficult'. This suggests that mothers of children who had undergone more extensive treatment perceived themselves as coping better post-burn and may indicate that the child's need for a skin-graft encourages mothers to view them in a more positive light. Similarly, mothers who have a greater awareness of the potential psychological impact of a traumatic experience on children appear to perceive their child more positively post-burn. However, these findings may also be related to a degree of parental permissiveness following the burn experience, and making allowances for the child's subsequent behavioural misdemeanours by blaming the burn experience. This has some similarities with Green & Sonit's (27) clinical description of 'vulnerable child syndrome' whereby mothers had difficulty setting disciplinary limits and which was associated with separation difficulties, school refusal, child behaviour problems and maternal depression. It is possible that this tendency to see the child positively may lead to problems in the longer-term.

Conclusions

Findings indicate that, where maternal disturbance is identified following childhood burn injury, it is primarily in terms of differences in core schemata rather than behavioural or emotional symptomatology. However, lack of agreement with assumptions about the meaningfulness of the world may lead to behavioural and emotional difficulties as the child grows up and places increasing demands on mothers in terms of independence and autonomy issues. Therefore, therapeutic efforts to assist the accommodation of the burn

experience into more functional beliefs about the controllability of one's environment may help to ameliorate the potential development of future problems.

Those mothers at particular risk of post-burn disturbance are those who are living apart from the burned child's father, who have experienced previous trauma, who are experiencing concurrent stressors and who have multiple children. In short, those mothers whose personal coping resources are already being severely taxed. Although these are generic risk factors for poor adjustment after a critical incident, they confirm that some mothers are more vulnerable to disturbance post-burn than others and that mothers should be screened for generic risk factors in the acute and follow-up stages of their child's burn care. Burn injury could positively be viewed as a 'window of opportunity' for therapeutic intervention with those families who present with a history of pre-burn difficulties, to make changes in the family system which could improve functioning in the long-term.

Acknowledgements

The study was granted ethical approval by the Yorkhill NHS Trust Ethical Committee. I am indebted to all the mothers who agreed to take part in the study. Thanks also to Mr. Peter Raine, Consultant Paediatric Surgeon, and Ms. Cath McColl, Clinical Director of Surgery, for their support and special thanks to Frank Duffy and Pamela Neilson for their identification of potentially suitable participants from hospital records. Thanks also to Dr. Elizabeth Campbell for her guidance in the design, execution and writing up of the study.

Figure 1: Model of impact of childhood burn injury on maternal functioning

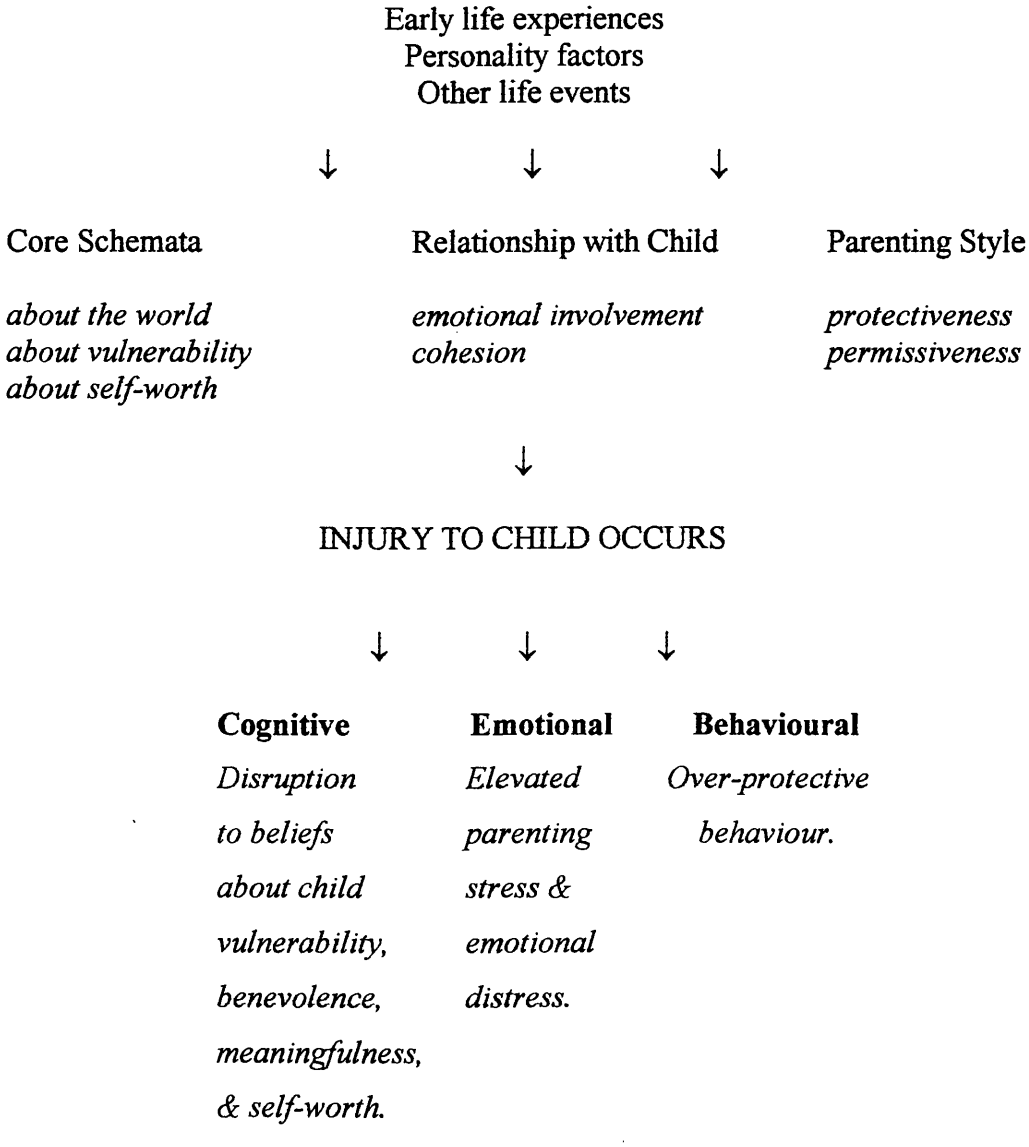

Table 1: Demographic characteristics of the study and control sample

	STUDY SAMPLE N (n=28)	%	CONTROL SAMPLE N (n=14)	%
Child's Gender				
Female	14	50	2	14
Male	14	50	12	86
Child's age at testing (months)				
12-24	14	50	5	36
25-60	9	32	6	43
61-95	3	11	0	0
96-120	2	7	3	21
Child's age at hospitalisation (months)				
0-12	9	32	5	36
13-34	13	46	5	36
35-72	4	15	1	7
73-109	2	7	3	21
Deprivation category				
Missing	0	0	1	7
1&2 (Affluent)	5	18	3	21
3,4&5	14	50	4	29
6&7(Deprived)	9	32	6	43
Mother's age at testing (years)				
19-25	4	15	1	7
26-35	16	57	10	71
36-43	6	21	3	21
44-48	2	7	0	0
Mother's ethnic origin				
European	28	100	12	86
Asian	0	0	2	14
Mother's level of education (years)				
10-11	14	50	8	57
12-13	5	18	4	29
14-17	9	32	2	14
Mother's relationship status				
Living with child's father	23	82	12	86
Separated but child has contact with father	3	11	0	0
Separated and child has no contact with father	1	12.5	2	14
Mother has new partner (step-parent)	1	12.5	0	0
Length of hospitalisation (days)				
1-3	3	11	13	93
4-14	14	50	1	7
15-30	5	18	0	0
31-42	6	21	0	0
Time since hospitalisation (months)				
5-11	17	61	9	64
12-18	11	39	5	36

Table 2: Burn-related information

	N	%
Cause		
Spilled hot drink	14	50
Hot bath	6	21.4
Cooking fat	3	10.7
Fire	2	7.1
Contact burn	1	3.6
Abrasion	1	3.6
Chemical	1	3.6
TBSA affected		
3-5%	13	46.4
6-10%	6	21.4
11-20%	8	28.6
21-37%	1	3.6
Number of body parts affected		
One	11	53.6
≥ Two	17	60.7
Visibility of affected area		
Yes	15	53.6
No	13	46.4
Treatment		
Conservative	17	60.7
Conservative plus skin graft	11	39.3

Table 3: Observed frequency distributions for the study and control sample

	Study Sample		Control Sample	
Scale	**≤ one S.D above the mean (%)**	***≥ one S.D above the mean (%)***	**≤ one S.D above the mean (%)**	***≥ one S.D above the mean (%)***
CVS	82	18	86	14
PPS	79	21	71	29
PD	75	25	64	36*
PCD-I	82	18	57	43*
DF	79	21	64	36*
TS	71	29	57	43*
HAD-A	68	32	71	29
HAD-D	93	7	86	14
MEANING			86	14
BENEVOL			93	7
SELF-WORTH			100	0

≤ 50% agreement

* observed frequer [illegible] those expected in a normally distributed sample (approximately 16%)

Table 3: Observed frequency distributions for the study and control sample

	Study Sample		Control Sample	
Scale	**≤ one S.D above the mean (%)**	***≥ one S.D above the mean* (%)**	**≤ one S.D above the mean (%)**	***≥ one S.D above the mean* (%)**
CVS	82	18	86	14
PPS	79	21	71	29
PD	75	25	64	36*
PCD-I	82	18	57	43*
DF	79	21	64	36*
TS	71	29	57	43*
HAD-A	68	32	71	29
HAD-D	93	7	86	14
MEANING	50	50	86	14
BENEVOL	96	4	93	7
SELF-WORTH	96	4	100	0

* observed frequencies significantly greater than those expected in a normally distributed sample (approximately 16%)

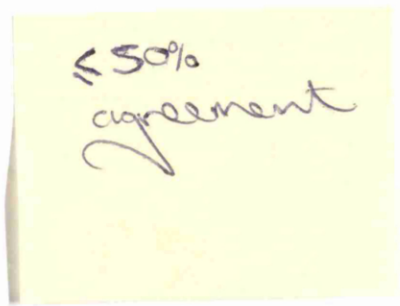

Table 4.a: Analysis of relationships between varia
PPS, HAD-A and HAD-D (Chi-Square-Fisher's E

$\alpha = \frac{0.05}{33}$

$\alpha = 0.0015$

Variables	CVS	PPS		D
DEPCAT	NS	NS	NS	
TBSA	NS	NS	NS	NS
Cause	NS	NS	NS	NS
Treatment	NS	NS	NS	NS
Visibility of	NS	NS	NS	NS
Body parts affected	NS	NS	NS	NS
Length of admission	NS	NS	NS	NS
Time since admission	NS	NS	NS	NS
Other injuries to child	NS	NS	NS	NS
Child's gender	NS	NS	NS	NS
Child's age at burn	NS	NS	NS	NS
Child's age at testing	NS	NS	NS	NS
Mother's age at testing	NS	NS	NS	NS
Parenting experience	NS	NS	NS	NS
Mother's education	NS	NS	NS	NS
Mother's mental health	NS	NS	NS	NS
Mother's history of trauma	NS	NS	NS	NS
Child's physical health	NS	NS	X^2=9.18;df=1;p=.007*	NS
Mother's physical health	NS	NS	X^2=3.93;df=1;p=.084†	NS
Relationship status	NS	NS	X^2=6.39;df=1;p=.026*	X^2=9.91;df=1;p=.026*
Only child	NS	NS	NS	NS
Danger to child's life	NS	NS	NS	X^2=5.39;df=1;p=.074†
Life events	NS	NS	NS	NS
Concurrent stressors	NS	NS	X^2=4.73;df=1;p=.044*	NS
Reported effect on child	NS	NS	X^2=4.17;df=1;p=.052†	NS
Reported effect on mother	NS	NS	NS	NS
Effect on relationship	NS	NS	NS	NS
Conception difficulties	NS	NS	NS	NS
Problematic pregnancy	X^2=5.38;df=1;p=.05*	NS	NS	NS
Delivery experiences	X^2=4.23;df=1;p=.062†	NS	NS	NS
Initial bonding	NS	NS	X^2=6.39;df=1;p=.026*	NS
PTSD symptoms	NS	NS	NS	NS
Self-blame	NS	NS	NS	NS

* Significant at 0.05
† Approaching significance

Modified sig. according to Dunn's test (1961) = 0.0015.

Table 4.a: Analysis of relationships between variables and 'caseness' on CVS, PPS, HAD-A and HAD-D (Chi-Square-Fisher's Exact Test)

Variables	CVS	PPS	HAD-A	HAD-D
DEPCAT	NS	NS	NS	NS
TBSA	NS	NS	NS	NS
Cause	NS	NS	NS	NS
Treatment	NS	NS	NS	NS
Visibility of	NS	NS	NS	NS
Body parts affected	NS	NS	NS	NS
Length of admission	NS	NS	NS	NS
Time since admission	NS	NS	NS	NS
Other injuries to child	NS	NS	NS	NS
Child's gender	NS	NS	NS	NS
Child's age at burn	NS	NS	NS	NS
Child's age at testing	NS	NS	NS	NS
Mother's age at testing	NS	NS	NS	NS
Parenting experience	NS	NS	NS	NS
Mother's education	NS	NS	NS	NS
Mother's mental health	NS	NS	NS	NS
Mother's history of trauma	NS	NS	NS	NS
Child's physical health	NS	NS	X^2=9.18;df=1;p=.007*	NS
Mother's physical health	NS	NS	X^2=3.93;df=1;p=.084†	NS
Relationship status	NS	NS	X^2=6.39;df=1;p=.026*	X^2=9.91;df=1;p=.026*
Only child	NS	NS	NS	NS
Danger to child's life	NS	NS	NS	X^2=5.39;df=1;p=.074†
Life events	NS	NS	NS	NS
Concurrent stressors	NS	NS	X^2=4.73;df=1;p=.044*	NS
Reported effect on child	NS	NS	X^2=4.17;df=1;p=.052†	NS
Reported effect on mother	NS	NS	NS	NS
Effect on relationship	NS	NS	NS	NS
Conception difficulties	NS	NS	NS	NS
Problematic pregnancy	X^2=5.38;df=1;p=.05*	NS	NS	NS
Delivery experiences	X^2=4.23;df=1;p=.062†	NS	NS	NS
Initial bonding	NS	NS	X^2=6.39;df=1;p=.026*	NS
PTSD symptoms	NS	NS	NS	NS
Self-blame	NS	NS	NS	NS

* Significant at 0.05
† Approaching significance

Modified sig. according to Dunn's test (1961) = 0.0015.

$\alpha = \frac{0.05}{33}$

$\alpha = 0.0015$

Table 4.b: Analysis of relationships between variables and 'caseness' on subscales of the PSI-SF (Chi-Square-Fisher's Exact Test)

Variables	PD	P-CDI	DC	TS
DEPCAT	NS	UC	NS	NS
TBSA	NS	NS	NS	NS
Cause	NS	NS	NS	NS
Treatment	X^2=6.039; df=1;p=.016*	X^2=3.94; df=1;p=.063†	X^2=4.94; df=1; =.033*	X^2=7.25;df=1;p=.008*
Visibility of injury	NS	NS	NS	NS
Body parts affected	X^2=4.043; df=1;p=.06†	X^2=4.23;df=1;p=.062†	NS	NS
Length of admission	NS	X^2=3.939;df=1;p=.063†	NS	NS
Time since admission	NS	NS	NS	NS
Other injuries to child	NS	NS	NS	NS
Child's gender	NS	NS	NS	NS
Child's age at burn	NS	NS	NS	NS
Child's age at testing	NS	NS	NS	NS
Mother's age at testing	NS	NS	NS	NS
Parenting experience	NS	NS	NS	NS
Mother's education	NS	NS	NS	NS
Mother's mental health	X^2=4.043; df=1;p=.06†	NS	NS	NS
Mother's history of trauma	X^2=3.111; df=1; p=.091†	X^2=4.565; df=1;p=.044*	X^2=5.73;df=1;p=.021*	X^2=4.21;df=1;p=.048*
Child's physical health	NS	X^2=5.379; df=1; p=.05*	NS	NS
Mother's physical health	NS	NS	NS	NS
Relationship status	X^2=9.82; df=1;p=.08†	X^2=7.37;df=1;p=.027*	NS	X^2=7.89;df=1;p=.015*
Only child	NS	NS	NS	NS
Danger to child's life	NS	NS	NS	NS
Life events	NS	NS	NS	NS
Concurrent stressors	X^2=3.733; df=1;p=.077†	NS	NS	X^2=6.32;df=1;p=.022*
Reported effect on child	NS	NS	NS	NS
Reported effect on mother	NS	NS	NS	NS
Reported effect on relationship	NS	NS	X^2=6.21;df=1;p=.022*	NS
Conception difficulties	NS	NS	NS	NS
Problematic pregnancy	NS	NS	NS	NS
Delivery experiences	NS	NS	NS	NS
Difficulties in initial bonding	NS	NS	NS	NS
PTSD symptoms	NS	NS	NS	NS
Self-blame	NS	NS	NS	NS

UC Cannot be calculated due to small cell sizes
* Significant at 0.05
† Approaching significance

Table 4.c: Analysis of relationships between other variables and 'caseness' on scales of the WAS (Chi-square-Fisher's Exact Test)

Variables	Benevolence	Meaningfulness	Self-Worth
DEPCAT	NS	NS	NS
TBSA	NS	NS	NS
Cause	NS	NS	NS
Treatment	NS	NS	NS
Visibility of body parts affected	NS	NS	NS
Number of body parts affected	NS	NS	NS
Length of admission	NS	NS	NS
Time since admission	NS	NS	NS
History of other injuries to child	NS	NS	NS
Child's gender	NS	NS	NS
Child's age at burn	NS	NS	NS
Child's age at testing	NS	NS	NS
Mother's age at testing	NS	NS	NS
Parenting experience	NS	NS	NS
Mother's years of education	NS	NS	NS
Mother's history of mental health problems	NS	NS	NS
Mother's history of trauma	NS	NS	NS
Child's history of physical health problems	NS	NS	NS
Mother's history of physical health problems	NS	NS	NS
Mother's relationship status	NS	NS	NS
Only child	NS	NS	NS
Perceived danger to child's life	NS	NS	NS
Number of life events in past two years	NS	X^2=6.087; df=1; p=.020*	NS
Existence of concurrent stressors	NS	X^2=6.3; df=1; p=.016*	NS
Reported effect on child	NS	NS	NS
Reported effect on mother	NS	NS	NS
Reported effect on mother-child relationship	NS	X^2=3.74;df=1;p=.060†	NS
Conception difficulties	NS	NS	NS
Problematic pregnancy	NS	NS	NS
Delivery experiences	NS	NS	NS
Difficulties in initial bonding	NS	NS	NS
Development of PTSD symptoms	NS	NS	NS
Self-blame	NS	NS	NS

* Significant at 0.05
† Approaching significance

Table 5: Results of logistic regression

Variable	B	S.E.	Wald	df	Sig	R	Exp (B)
Life events	9.7648	41.0352	.0566	1	.8119	.0000	17409.464
Concurrent stressors	2.1343	1.2829	2.7676	1	.0962	.1406	8.4511
Relationship affected	-2.4138	1.2606	3.6663	1	.0555	-.2072	.0895
Constant	-8.2469	41.0237	.0404	1	.8407		

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Clinical Case Research Study (1)

A cognitive-behavioural approach to the treatment of co-morbid generalised anxiety disorder and binge eating disorder

Target Journal: Journal of Consulting and Clinical Psychology (Appendix 4.1)

Word Count: 2995

Abstract

Binge eating refers to a characteristic eating style which can be observed across the spectrum of eating disorders and is defined by i) eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat during a similar period of time in similar circumstances, and ii) a sense of lack of control over eating during the episode. The most frequently cited cognitive model of eating disorder (Fairburn et al 1986) assigns a causal role to overvalued beliefs and attitudes concerning weight and shape and proposes that most features of eating disorder are secondary to these overvalued ideas. Furthermore, low self-esteem (Johnson et al 1987) and a tendency to be anxious, dysphoric and emotionally unstable (Ruderman 1986) have been identified as preconditioning factors for binge eating.

A treatment case is presented regarding a young woman who met diagnostic criteria for a dual diagnosis of generalised anxiety disorder (GAD) and binge eating disorder. A cognitive-behavioural approach to GAD (Beck et al 1985) and a synthesised approach to binge eating (Johnson et al 1987) were successful in modifying the anxiogenic cognitive triad, overvalued ideas associated with body shape/weight and binge eating behaviour. However, further cognitive work at the level of underlying dysfunctional assumptions, primarily related to the patient's status as an adopted child, was necessary in order to achieve significant improvements in subjective distress. The patient's reluctance to disclose her adopted status was formulated as a form of avoidance from adoption-related distressing thoughts and the incorporation of exposure successfully achieved symptom relief.

Clinical Case Research Study (2)

Cognitive assessment and beyond: what needs to be assessed when an individual with Down syndrome is repeatedly referred with the query of dementia?

Target Journal: British Journal of Learning Disabilities (Appendix 4.2)

Word Count: 2946

Abstract

The assessment of a 40 year old woman with Down syndrome, who had been repeatedly referred with the query of dementia, is presented. The client's mother had persistently complained of her daughter's apparent cognitive decline although previous assessment had found no evidence of deteriorating functioning.

Re-assessment, again, found no evidence of a dementing process but merely reporting negative findings was unlikely to reassure the client's mother of her daughter's stable cognitive ability. Further assessment was carried out in order to investigate the origins of the mother's concern. Investigation indicated that the client's mother perceived her daughter's behaviour and level of ability to be more problematic than did other key individuals. This was formulated as a result of i) the mother's approach to parenting, ii) the family's developmental stage, iii) the mother's increased level of stress, and iv) deteriorating communication between the mother and formal services.

Re-framing of the presenting problem according to a systemic formulation led to the family and key individuals' acceptance of a referral to Family Therapy in order to address the presenting problem and improve communication within the system.

Clinical Case Research Study (3)

A cognitive-behavioural approach to the treatment of hypochondriacal concern in a young man with persistent nausea

Target Journal: Journal of Psychosomatic Research (Appendix 4.3)

Word Count: 2683

Abstract

Anxiety about one's health exists along a continuum in the general population, from mild anxiety to clinically significant hypochondriacal concern. Central to the cognitive-behavioural model of hypochondriasis is that normal bodily sensations are misinterpreted as indicative of disease, resulting in a vicious cycle of increased anxiety, autonomic symptoms and further misinterpretation.

The treatment of 20 year old male, who presented with persistent nausea, hypochondriacal concerns and severe self-imposed behavioural restrictions, is discussed. The treatment procedure sought to test-out the hypothesis that a) alteration of the patient's dysfunctional health-related assumptions, and b) exposure to anxiety-provoking situations, would result in reductions in his subjective experience of nausea. Changes in various aspects of his functioning are presented and discussed.