

**EXPLORING THE PSYCHOLOGICAL EFFECTS
AND EMOTIONAL REACTIONS OF MOTHERS
TO THEIR CHILDREN'S BURN INJURY:
AIMING AT PROPOSED FUTURE
THERAPEUTIC INTERVENTIONS**

CHARISSA BLOOMBERG

**A dissertation submitted to the Department of Psychology,
University of Cape Town, in partial fulfilment of the requirements
for the Degree of Master of Arts (Research Psychology)**

Supervisor : Professor Peter Du Preez

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DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the Degree of Master of Arts (Research Psychology) at the University of Cape Town. It has not been submitted before for any degree or examination at any other University.

C. Bloomberg

This _____ day of _____ 1998.

University of Cape Town

Dedication

This thesis is dedicated to my mother,

Myra Bloomberg,

to express my gratitude for her love and devotion.

ACKNOWLEDGMENTS

I would like to express my sincere appreciation to those who have contributed to the completion of this research:

My supervisor, Professor Peter Du Preez, for his valued guidance, support and commitment in assisting me with this thesis. Thank you for your patience and concern.

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University of Cape Town

Excerpt from a letter written five years after burn injury by a 19 year old survivor of 99% total body surface area burns:

"Oh you know (G-d) this life I lead is such Bull ...; I think of doing myself in. A real life is what I need - all the doctors say it comes in time, but as you see I can't 'believe'. I've been through so much, with nothing but time, it only seems like yesterday it all began - this nightmare I live in will never go away, for it is welded to my body for all eternity."

(Blakeney, 1993; 14: 648)

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Excerpt written by a mother of a burn-injured child:

*"I have heard that when he ran out of the burning wreckage,
he was on fire,
his hair blazing like an unholy halo,
his body dancing within an incandescent aura of destruction.*

*You wouldn't know it to see him now.
He lies in a glacial calm, swathed in a snowdrift
of fresh bandages,
suspended in an arctic hush broken only by the soft hiss
of the ventilator.
So quiet and cool, remote from all knowledge or care.*

*In the day when I see him,
that calm engulfs me, too.
I talk to the doctors about consents, about risks and
benefits,
advance directives and probabilities,
and everyone seems amazed at my strength,
my ability to go on day after day, week after week,
with seeming acceptance of the horror.
I acknowledge their amazement with a small smile, from
a distance.
They do not realize that we are both still lost and
wandering
in the icy landscape of shock.*

*Or that at night,
that is how I see him:
On fire,
a glowing angel of pain etched across the inside of my
eyelids;*

*that this is the last searing image that follows me
into uneasy sleep.*

*Is it any wonder that I wait,
ignoring family, friends, job, meals, life itself?
Is it any wonder that I burn with a secret hope that,
finally,
before all is over,
my angel will wake and give me one last memory better
than this?"*

(Watkins, 1996: 78)

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ABSTRACT

Burn injuries are traumatic, destructive and painful, they usually involve long-term medical and psychological consequences. Burns, no matter how small, always leave a certain degree of scarring. When the facial area is involved, it leaves children feeling branded for life with painful psychological effects. When the 'survivor' of the burn injury is a child, the impact of these consequences are even more severe and long term.

When a child is burned, the whole family is affected . Most parents suffer the same process of guilt, anxiety and anger, whether the burn is large or small and irrespective of how the burn was caused. The trauma of the accident, the pain and fear of watching a child suffer and the difficulties of long term recovery and reintegrating the child back into the community, induces stress in most families.

There has however been little description or measurement of the psychological effects on mothers in the acute post-injury stage. Unfortunately there have only been a few reported psychological interventions to assist mothers in helping them emotionally to support their injured child and family, as well as to assist them over the traumatic period.

This study aims at investigating these issues and at initiating proposed future therapeutic interventions.

Three questionnaires were used in this study: the Self Blame Interview (Kiecolt-Glaser and Williams, 1987); Impact of Events Scale (Horowitz, 1979); and the researcher's own Semi-Structured Interview to elicit the mothers' reactions and concerns in respect of their children's burn injury. There were 40 mothers interviewed: 20 mothers of outpatients and 20 mothers of inpatients.

It was hypothesized that there may be differences between the in- and out-patient groups on most of the scores, with the in-patient group scoring higher.

From the summary statistics it seemed that the in and out groups had almost the same averages on all the 5 scores namely: **Total Self Blame Score, Blame-Guilt Score, Impact of Event Score, Intrusion Score** and **Avoidance Score**.

The Mann-Whitney test has shown there was no difference in the intensity (level) of feeling guilty, self blame or having intrusion and avoidance thoughts between the mothers of in and out-patients. This does not show, however, whether the level of the feelings described above was high or low.

From the *chi-square* test, the researcher concluded that any mother, irrespective of whether the child was treated at the out-patients' clinic or hospitalized, could still have high feelings of self blame, guilt, intrusion and avoidance thoughts.

It was established that most of the correlation coefficients between the **Five Scores** were statistically significant.

It was also found that the extent of the burn (as indicated by the T.B.S.A.) had no relationship to the degree that the mothers blamed themselves, felt guilty or had intrusion and avoidance thoughts.

Although all scores were similar for both in and out-patient groups, it is the researcher's opinion that there should be different interventions for both groups. The reason for this is that mothers' needs differ between children being hospitalized (in-patients) and those being treated at out-patients' clinics, although their initial reactions in the acute post-injury stage may be similar.

Different intervention suggestions were provided for post-injury in the acute stage, as well as long-term follow up.

CHAPTER ONE

INTRODUCTION

Children who have been severely burned experience intense and varied trauma, involving severe pain, scarring, possible functional deformities, loss of limbs and mobility as well as a threat to their sense of identity and self-worth. Hospitalisation is usually long-term and during this time, if the patient is lucky enough, his/her family will remain to comfort and console him/her. (Often mothers are the only single parent and have to work and therefore are unable to be present all the time.) Unfortunately the relatives of the burn patient appear to go through an adjustment process similar to that of the patients, involving two stages. According to Broadland (1974) the first stage is one of acute shock and grief, analogous to the actual physical and emotional trauma experienced by the patient. In the second or convalescent stage, the relatives have overcome shock and disbelief and begin to assist the patient in the process of recovery.

The family's coping has an important effect on the child because successful long-term psychosocial adjustment for survivors of severe burn injury has been linked with an intact and supportive familial system (Shelby et al 1992). Thus, because of the participation of the mother (and the family) in the rehabilitation of the child with burns, the psychologic adjustment of non-injured close relatives experiencing the stress-producing adverse life event (injury of a loved one) is of concern.

Future therapeutic interventions can assist and help both the patient and the family in coping with this traumatic injury. It can also help the child re-integrate back into his/her own world, namely family school, peers and society, as well as coping with scarring, deformities, loss of bodily functions, self-esteem and identity.

Unfortunately literature reveals no therapeutic intervention protocols for such programmes in South Africa and the body of research identified to this cause is almost

voiceless, a huge void exists.

The aim of this study is to examine the psychological effects and emotional reactions of mothers' distress after childhood burn trauma and to address these concerns by (1) identifying how complex these psychological and emotional reactions are, associated with burn care; and (2) to report the pertinent research studies that have been conducted in the area of caregivers (mothers essentially) associated with the psychological stress of their child's post-burn injury. It will become evident from the literature that more should be done in South Africa by way of therapeutic intervention programmes to cater for the needs of the family and the patient concerned.

A model for future intervention is a necessity as there is little guidance in the literature on how to conduct such an intervention. The awareness of the mother's concerns, therefore co-facilitate the development of models for post-burn recovery, with planned options of interventions and assessment of treatment outcome effectiveness.

This study therefore serves as a motivation for future research and integrates literature on burn trauma in children, emotional and psychological effects on the family, stress responses of close relatives of burn-injured children and reports the lack of literature available for future intervention guidance. There is a lack of research on 'burns' in general in South Africa. Future research is urgently needed to rectify this shortage. No research has been conducted in South Africa to formulate an intervention that will provide both support, psychological assistance and psycho-education for mothers regarding their burned child's changed behaviour (or emotional state) after the burn, as well as to help mothers understand and cope with their own responses after burn trauma. Very little has been done in general in the research field to find a protocol for future psychological interventions to support the family. Additional work is needed to develop interventions focused on augmenting psychosocial adjustment for mothers.

This study is organised conceptually and is written for health care professionals interested in providing further research into the area of assisting families of burn-injured children and providing research suggestions for future interventions. It can also serve to provide knowledge to potential sponsors of the lack of rehabilitation programmes and Burn Care Psychology Specialists in South Africa.

CHAPTER TWO

DEMOGRAPHICS

2.1 BURN INJURY INCIDENCE: OVERSEAS

MacKeith (1968) reports that in 1959, 4 004 boys and 2 912 girls were discharged from hospital in London after in-patient treatment for burns. Seligman, MacMillan and Carroll (1971) have identified that the leading cause of death among children in the United States of America are from accidents of which about 15 000 children under the age of 15 years die each year. Fire and explosion are the most frequent causes of these fatal accidents. These authors state that the average annual numbers of burn injuries in children is 612 000. Of these, 100 000 are hospital-bed-disabling injuries. Seligman et al (1971: 52) note that "in 1967 the Vital Statistics Division at the Department of Health, Education and Welfare listed 1 787 deaths of children for that year due to accidents caused by fire and explosion or combustible material and 114 deaths of children from electric current."

Gunay (1982: 312) reports that "4 000 people get burnt every year in Holland, 500 of these die and 3 out of every 4 burn victims are children between the ages of 3 and 12." According to Goodstein (1985) there are 2 million burn accidents each year in the United States and over 200 000 patients are hospitalized. Out of the 12 000 deaths per year, 10% are from electrical burns. Onuba and Udoidiok (1987: 382) in their report of the incidence of burn in Nigeria, state that "one hundred and forty one new cases of burns were treated at the University of Calabar Teaching Hospital in a 2 year period from January 1984 to December 1985. A large proportion of the patients, 64.5 per cent, were minor burns, while 28.4 per cent were serious burns and 7.1 per cent suffered major burns." There were 6 deaths, most of which occurred in the major burns group.

In 1988, incidences of burn injuries are still very high. Carvajal and Parks (1988) report that in the United States alone, 2 million burns occur annually, and of these, approximately 40% are children. Thirty to forty thousand burned children are hospitalized every year, and a considerable number succumb to their injuries.

In 1992 the incidences still remain the same, Helm (1992: 551) estimated that "each year 1% of the population of the United States will receive a burn injury; of these 2 million people burned, one half will require medical attention. Hospital admissions are estimated to be between 70 000 and 108 000 and the mortality is 6 500 to 12 000 deaths annually." Furthermore Helm (1992) states that the most common age groups burned are children (ages 2 to 4 years) and young adults (ages 17 to 25 years), usually male and that burn injury is the second most common cause of death during childhood, ranking behind motor vehicle accidents.

In 1993 incidences seem to have improved very slightly. Munster (1993) notes that fire is the fourth greatest cause of accidental death in the United States. It is surpassed only by motor vehicles as Helm (1992) also reported. Munster (1993: xvii) states that "each year, an estimated 20 000 adults and children die and an additional 75 000 to 100 000 are hospitalized, from fire-related injuries. Each year more than a million burn injuries require medical care or restriction of activity."

In 1993, figures reported by Patterson et al (1993: 362) suggest "731 000 emergency room visits and 60 900 hospital admissions annually for burn trauma. Burn injuries reportedly accounted for 2,4% of emergency room visits."

Pruitt and Mason (1996) describe the magnitude of the public health problem represented by burns by being reflected in fire and burn deaths, which are reported by each state to the National Center for Injury Prevention and Control. In 1991 Pruitt and Mason (1996: 5) report that "such deaths totalled 5 053 in the United States and ranged from 4 in Hawaii and 8 in Vermont to 337 in California and 359 in Texas. In 1991, the age-adjusted rate of fire and burn deaths, which

excludes patients of unknown age, ranged from 0,164 per 100 000 population in Colorado to 3.75 per 100 000 population in Mississippi."

Furthermore, according to Mason (1993) approximately twelve individuals die in a residential fire each day, with young children and the elderly being the most likely victims. Estimations of injuries due to burns in fires each year range from 1.4 million to 2 million injuries. Pruitt and Mason (1996: 5) also report that "in the United States, 270 to 300 patients per million population (67 500 - 75 000) per year sustain burns which require admission to a hospital."

2.2 BURN INJURY INCIDENCES: WESTERN CAPE

In a demographic study conducted at Somerset Hospital adult burn unit (Cape Town) during 1996, 219 adult subjects were admitted to the in-patient's unit (Shapiro, Bloomberg, Van Houten and Schomer, 1996). Of the 219 subjects, 114 (52%) were male and 105 (48%) were female. The most frequent age groups admitted were between 26-30 and 36-40 years. Fire being the most frequent cause of burns (65,7%) followed by 25 subjects who had hot water burns (11,4%). Six subjects (2,74%) had chemical burns, electricity and steam, each causing 1% of burns. 39 (18%) of the patients did not survive the injury. The highest total body surface area percentage admitted was between 10-20%. The highest occurrences of burn patients resided in Nyanga (60 patients) with 54 patients living in Khayelitsha, suggesting an increased vulnerability of persons living in poor socio-economic circumstances. July had the highest rate of admission to the burn unit (Shapiro et al, 1996).

At Red Cross Children's Hospital from April 1995 - March 1996 a total of 474 in-patients were admitted to the burn unit and 950 out-patients were seen at the Burns Clinic (Annual Report, 1996).

According to the Task Report (1996), the Task group met for the first time on 20 August 1996, their task being to present proposals to the co-ordinating committee on the future of Burns Services in the Western Cape. The Task

Report (1996) states that the epidemiology of burns in South Africa is largely unknown, but based on American estimates, it is determined that there are approximately

400 000 annual burns, of which 4 000 (1%) are admitted and at least 400 (0,1%) die in South Africa.

The Task Group based their deliberations on the estimated 4,2 million inhabitants of the Western Cape of which 1,3 million are under 15 years. The current bed-patient ratio is 2.6 bed/1 000 children and 6.8 beds/1 000 adults.

The Task Group (1996) reported that the consolidated figures for burns in the Western Cape during 1995/1996 statistics for the 12 months were as follows:

TABLE 1

**Consolidated Figures for Burns - Western Cape
1995/1996 Statistics (12 months)**

| | NO. OF BEDS | ADMISSIONS | ICU | OCC. RATE | OUT- PATIENTS |
|--------------------------------------|------------------------|-------------------|------------|----------------------|--------------------------|
| Tygerberg | 28 | 494 | 102 | 82% | 3 000 |
| N. Somerset | 13 | 245 | 27 | 97% | seen at GSH |
| Red Cross & Sarah Fox | 25 | 430 | 24 | 60%* | 2 000 |
| Total | 66 | 1169 | 153 | | |

* Only 15 beds are used due to a nursing shortage.

These figures are also subject to annual changes and may vary by 100-200 patients per year.

TABLE 2

Total Body Surface Area Burns (T.B.S.A.)

| SIZE OF BURNS | ADULTS % | CHILDREN % |
|----------------------|-----------------|-------------------|
| <10% | 29 | 25 |
| 10 - 20% | 30 | 32 |
| 20 - 30% | 19 | 17 |
| 30 - 40% | 9 | 8 |
| 40% | 9 | 10 |
| Unspecified | 4 | 8 |

TABLE 3

An example of specific referral patterns to Red Cross Children's Hospital and Sarah Fox Hospital

| | Red Cross & Sarah Fox Hospitals % |
|--------------------------------------|--|
| Khayelitsha, Langa, Nvanga, Guguletu | 49,8 |
| Southern Suburbs | 31,8 |
| Northern Suburbs | 2 |
| Mitchell's Plain | 10,6 |
| Boland | 2 |
| West Coast | 1,5 |
| Unknown | 2,3 |

The table below represents the number of patients admitted to regional hospitals (Task Report, 1996) in 1992 and 1995.

TABLE 4

| HOSPITALS | NO. OF PATIENTS 1992 | NO. OF PATIENTS 1995 |
|------------------------------------|----------------------|----------------------|
| Caledon | 20 | |
| Ceres | 91 | 120 |
| Eben Donges - Worcester | 392 | 192 |
| Hermanus | 41 | 105 |
| Hottentots Holland - Somerset West | 339 | 63 |
| Lapa Munnik - Porterville | 32 | 15 |
| Montagu | 26 | |
| Paarl | 336 | 255 |
| Radie Kotze - Piketberg | 8 | |
| Robertson | 49 | |
| Stellenbosch | 130 | 127 |
| Swartland | 74 | 117 |
| Vredenburg | 100 | |
| West Fleur | 135 | 0 |

The table below represents the consolidated figures for Burns in the Western Cape for 1995.
TABLE 5

| CONSOLIDATED FIGURES FOR BURNS - WESTERN CAPE | | | | | | | | | | |
|---|--------------|-------------|----------|--|------|-----------|-----------|------------|------------|----------|
| IN-PATIENTS - 1995 | TBH | NSH | RXH&SF | TOTAL | CON. | STELLEN | PAARL | HHH | WORC. | VICTORIA |
| No. of admissions per year | 494 | *245 | 430 | 1169 | 57 | 51(76 op) | 73(171op) | 48(103 op) | 53(192 op) | 65 |
| ICU admissions/yr(hrs of care) | 102(25630) | 27 (2668) | 24 (120) | 153 | | | | | | |
| BEDS | 28 (9 Coits) | 13 | 25 | 66 | | | | | | |
| Average Occupancy Rate | 82% | 97% | 60% | | | | | | | |
| Convalescent Beds | | | 12 | 12 | | | | | | |
| SIZE OF BURNS | | | | | | | | | | |
| < 10% | 23% | 34% | 25% | | | | | | | |
| 10 - 20% | 36% | 23% | 32% | | | | | | | |
| 20 - 30% | 19% | 18% | 17% | | | | | | | |
| 30 - 40% | 10% | 8% | 8% | | | | | | | |
| 40% | 12% | 7% | 10% | | | | | | | |
| Unspecified | 0% | 10% | 8% | | | | | | | |
| CAUSE OF BURNS | | | | | | | | | | |
| Hot Water | 47% | 14% | 65.00% | | | | | | | |
| Fire | 50% | 75% | 26.00% | | | | | | | |
| Chemical | | 1% | 1.40% | | | | | | | |
| Electrical | | 5% | 0.70% | | | | | | | |
| Hot objects | | 1% | 6.30% | | | | | | | |
| Other | 3% | 4% | 0.60% | | | | | | | |
| OUT-PATIENTS/YEAR | 3000 | seen at GHS | 2000 | *221 patients at NSH admitted to burns ward and 24 to other wards. | | | | | | |
| REFERRAL PATTERN | | | | Abbreviations: TBH-Tygerberg; NSH-New Somerset; RXH-Red Cross; SF-Sarah Fox; | | | | | | |
| Cape Metropolitan area | 83% | 87% | 85% | Con - Conradie; Stellen - Stellenbosch; HHH - Hottentots Holland; Worc - Worcester. | | | | | | |
| Regional | 15% | 8% | 10% | | | | | | | |
| Across border/unknown | 2% | 5% | 5% | | | | | | | |

2.3 THE BURN PROFILE

We know that children under the age of 5 are most vulnerable to burns and that the incidence of burns is higher in more deprived families (Jensen, 1959; Williams, Bowman and Malare, 1958; De Kock, 1979).

It has been noted that in this regard burned children are more likely to come from large families (Borland, 1967), have an absent parent (Gladstone, 1972, Long and Cope, 1961), have housing difficulties, live in crowded situations or move frequently (Borland, 1967, Williams, Bowman and Malare, 1958; De Kock, 1979). It follows then, that the majority of burned children tend to come from families whose wage earner is an unskilled or semi-skilled worker (Jensen, 1959; Martin, 1970; Williams, Bowman and Malare, 1958) although this is not always the case.

CHAPTER THREE

3.1 IMAGES OF BURN SURVIVORS IN POPULAR CULTURE

There seems to be a fascination with fire and its effects, which may have its origins in the importance of fire in the history of the human species. Mastery over fire, which sets humankind apart from other species, is coupled with awareness of its destructive potential.

Petro and Salzberg (1992) describe how flames are a means of purification and were used in mediaeval times to burn witches. Flames for this purpose were used to rid the world of evil. In some areas of Germany and France, entire villages were wiped out by witch-burning rituals.

The fascination with and consequences of fire are aptly demonstrated by intense media interest and curiosity in severely burned patients. The Phantom of the Opera is an example of public curiosity with burns and sees the burn survivor as a tragic figure, forced through circumstances of deformity to do the things they otherwise would not do. According to Adler (1992), assumptions are often made about disfigured individuals' intelligence, personality and psychopathology. Assumptions that cast considerable doubt on the cliché that 'beauty is only skin deep'.

It is natural for people to stare at someone different from ourselves. Petro and Salzberg (1992: 619) emphasise that there are no positive images of burn survivors within popular culture, only negative images. These may be divided into four categories: (1) 'evil personified acting; (2) the arch enemy as a force of evil opposing the hero; (3) tragic figures whose injury transforms them into something less than entirely evil, but who are unable to rise above injury sufficiently to become acceptable to society; and (4) burn survivor as victim.'

Victim implies weakness, gullibility and helplessness. Burn survivors are often

referred to as a 'burn victim' in the burn literature. The term implies that persons who are victims are not responsible for themselves. Only victims who fully retain their identity as non-victims seem to be accepted again into society.

According to Petro and Salzberg (1992: 621) 'burn professionals, by referring to burn survivors as 'victims', unconsciously support the rejection of the individual reflected in the poor state of burn rehabilitation progress and literature today.' The public's image of a burn survivor as evil or as victim or even as a tragic figure, must also unconsciously and negatively influence the public and the professional's attitude.

Furthermore, Petro and Salzberg (1992: 621) state that the recurrent theme that 'the inside reflects the outside', characterizes the negative image of burn survivors in films, comics and books. Burning is followed by transformation, but not restoration. What was, cannot be again. This negative powerful image is destructive and should not be ignored.

Burn survivors have recovered from major burns and have emerged from their ordeal and created meaningful and significant lives; therefore, transformation following survival has not always been negative. We must ask what impact these negative images have on the quality of survival affecting the majority of patients, especially those no longer seen in rehabilitation. It is the burn professionals' responsibility, even obligation, to these patients to examine their rehabilitation and recovery process for at least a few years post burn.

3.2 BURNS: MEDICAL TREATMENT

The evolution of burn treatment has evolved considerably over the last 50 years with a great awakening of burn interest, beginning in the decade centred on 1940. According to Jackson (1991), between 1935 and 1940, sulphanilamide, penicillin and plasma became available for clinical use. They were effective remedies against the two most common killing complications of extensive burns, shock and infection, therefore they offered new hope. World War II, because of

many casualties, soon concentrated on improving burn care. Before 1940 in Britain, a person with more than 30 per cent of the body surface area burned, might well have been given a good dose of morphia by his general medical practitioner, and considerably left at home to die among his/her own relatives. Now, in contrast, such a patient is the object of keen, costly, multi-disciplinary care in a well-ventilated, highly staffed specialist unit.

Immense improvements have evolved since the 1940s, which have been made measurable by mortality, healing time and restored function. Jackson (1991) suggests that this progress has been due to three factors, namely, the formation of burn research units, a better understanding of the burn wound and new improved techniques.

3.2.1 Initial Care: The first step: assessing life-threatening conditions

In the first phase of therapy, the immediate problems resulting from the burn injury must be addressed. Munster (1993) explains that the medical team's first concern is not the burn wound itself, but the patient's life-sustaining systems of respiration and blood circulation. The physician's initial evaluations will focus on determining whether the patient has shock or respiratory insufficiency, either of which may be immediately life-threatening. Munster (1993:7) defines shock "as a decreased rate of circulation to vital organs; if an inadequate amount of blood is circulating to these organs, they are being deprived of the oxygen they need to function." The severity of shock generally correlates with the amount of the body that has been burned, expressed as a percentage of the entire body surface.

Respiratory insufficiency is defined by Munster (1993: 8) "as the inability of the lungs to supply oxygen to the body." This condition is more likely if the patient has smoke inhalation burns. Both shock, smoke inhalation, burn size and how much of the total burn is third-degree determines a person's immediate chances for survival after a burn injury. Roberts and

Pruitt (1979) explain that generally the younger and more fit the patient is, and the smaller the burn is, the better the chances for survival, if smoke inhalation is not severe.

3.2.2 Burn assessment and wound care

Once vital signs and functions are stabilized, the medical team turns its attention to assessing the burn injury itself. Rudowski (1976) elaborates; burns are judged by the size of the burn in relation to the whole body and by the depth of the burn (determined by how much of the thickness of the skin is involved). The burn wound is cleaned by the staff once or twice a day and then dressed, usually with a medication designed to kill germs (a burn cream) and thick dressings. This treatment is painful and the patient will receive pain medications. Pain is an issue that the patient struggles with continuously until the burn wound is healed. This, according to Rudowski (1976) includes initial pain, pain during transportation, dressings, debridement and skin grafting. Pain can be alleviated, but no pain medication will completely remove a patient's pain. Roberts and Pruitt (1979) note that pain medications may be prescribed to allow the patient to sleep or calm the patient down. This is crucial, since burn patients are often anxious and anxiety can increase pain. Nervous tension, excitation, persistent sleeplessness and worries about surgery (i.e. skin grafting) require appropriate measures. Munster (1993) describes how the patient also receives fluids to make up the huge body fluid losses that seep out from the burn.

Cleansing the wound includes debridement which is a necessary part of burn wound treatment. Debriding the skin involves removing loose, dead skin and old creams or secretions from the skin. Infection or sepsis is the enemy of burn patients and becomes a serious threat after the first week. According to Munster (1993) no patient with a major burn is safe from the complication of sepsis until the burn wound is completely grafted or has healed, all intravenous lines have been removed and the patient is eating,

all antibiotics have been discontinued, and the patient has no fever for several days. Dead tissue from the burn acts as a medium for bacterial growth, but dead tissue also has a poor blood supply. This means that antibiotics, which are administered throughout the bloodstream, have difficulty reaching the burn wound.

3.2.3 Skin grafting

If the patient has deep second-degree or third-degree burns, the burn wounds must be covered with new skin, both to prevent infection and to limit scarring, which may interfere with the person's ability to function physically. Before receiving the donor skin, the recipient area must be prepared to accept the donor skin. This is done by excision. Rudowsky (1976) explains that in excision, the eschar is removed with a long razor blade in layers until all the dead tissue is gone and the surface consists of healthy tissue. This is a quick way of removing large amounts of burned skin and a healthier grafting surface is achieved. Munster (1993) describes that with skin grafts, a sliver of the patient's skin is removed from a healthy, unburned area (the donor area) and attached to the area destroyed by the burn (the recipient area), by stitches or staples. Donor sites must receive good nursing care and if treated correctly, will heal in 7-10 days (Roberts and Pruitt, 1979). Donor sites are like new partial-thickness burns and are treated as such with gauze dressings. They are also subjected to pain, scarring and infection and must be protected. Donor sites can serve as sites to be used again for future grafts after they have healed.

Grafts do not always 'take'. Munster (1993: 27) states that "the take is often expressed as a percentage of the grafted area. A take of more than 85 percent means the procedure was a success. If the take is less than 60 percent, another patching procedure usually must be performed." Infection, movement and complications can interfere with the take rates.

Once the burn wound is healed, there is less and less need for dressings. Grafted skin will always look different from normal skin, is less sensitive to touch and will always be somewhat more easily damaged than normal skin. After the burn wounds have healed, a lubricating lotion is applied after the daily bath and throughout the day (Munster, 1993).

3.2.4 Continuing care phase

During and after the initial and continuing care phase, intravenous (IV) lines for the administration of antibiotics, blood products and other fluids are frequently required. Roberts and Pruitt (1979) emphasize that the IV site dressing must be meticulously monitored, since it may become infected. In fact the physical environment of a burn unit is a reservoir of potential infection. Roberts and Pruitt (1979) state that each patient is admitted with an indigenous bacterial flora on and in his/her burn wound, unburned skin, gastrointestinal tract and respiratory tract. The patient's contacts with the other patients, nursing staff, visitors, waste and soiled utensils expose him/her to other sources of infection. Visitors are instructed in the cleansing and gowning procedures necessary prior to their entering the unit.

The burn care staff employs a variety of methods to decrease contamination. A surgical scrub at the beginning of the shift with good hand washing technique after each patient contact is effective in minimizing cross contamination between patients. Scrub suits are put on at the beginning of each shift and changed as needed. Masks and sterile gloves are worn when working on open wounds.

Infectious diseases (scarlet fever, measles, diarrhea) often complicate the course of burn disease in children. Pneumonia is also a frequent complication (Rudowski, 1976).

Nutrition

Nutritional support is crucial because spontaneous food intake by itself will usually not provide adequate calorie or nitrogen intake. Munster (1993) explains that a burn patient requires two to two and a half times his/her preburn calorie intake in order to minimize weight loss and support wound healing. Liquid dietary supplements are given in the form of commercially available high calorie, high protein solutions.

Activity and function

A burn patient must be kept as physically active as his/her general condition permits. Activity is initiated in the immediate postburn period and continued throughout the hospital course. Roberts and Pruitt (1979) stressed the importance of daily activities, such as turning, sitting, walking, eating, shaving and brushing the teeth, combined with physical therapy, to maintain the function and strength of joints and extremities and increase the patient's sense of well-being. There will be periods when the patient has to be immobile while skin grafts heal and very little activity takes place to benefit wound closure.

Comfort

According to Munster (1993) of all the discomforts that a burn patient experiences, the one most commonly complained of is, always feeling cold. This is especially true after surgery and other cleansing activities. Roberts and Pruitt (1979) note that the loss of heat due to surface evaporation secondary to such procedures may drop the patient's temperature to 94 F or below. The physiologic response to such cooling results in shivering.

A patient's surroundings are also important in promoting a sense of comfort and well-being. Favourite toys can be provided by the parents

and mobiles can be placed over the beds of infants.

As the wound begins to heal, it becomes very itchy, the patient tries to scratch through the bandages, even in their sleep. Medication is available to control the itching. Wounds that do not need to be covered any more, but still itch, are prone to becoming reinfected through dirty fingernails.

3.3 BURNS: MEDICAL ISSUES

To be burned alive is one of the most frightening and devastating catastrophes. Aside from direct injury to the skin and extensive physical sequelae in many major body systems, even a small burn, strategically placed, may cause significant trauma. Goodstein (1985) emphasises that in addition to the immobility and major metabolic complications of burns, the physical treatment procedures are themselves traumatic. Grafting sessions, dressing changes, potent medications and potential long-term surgical corrections seem to continue indefinitely. Contractures may cause permanent disability as well as a profoundly grotesque appearance which has major effects on the patient's well-being. The burned patient may be isolated for long periods in order to attempt prevention of infection.

Vanderplate (1984) explains that major burn injuries are classified according to body surface area involved (BSA) and presence or absence of respiratory burns. The major types of burns are flame burns, scald burns and electrical or chemical burns. Furthermore, Williams (1990) includes flash burns; explosions of natural gas, propane, gasoline and other inflammable liquids and contact burns resulting from hot metals, plastic, glass or hot coals. Degree of burn is classified as first, second or third in order of severity. First degree burns, such as sunburn, involve only shedding of epidermal tissue and are not typically serious. According to Vanderplate (1984) second degree burns, in contrast, are deeper, destroying dermis and nerve endings. Third degree burns are the deepest and most severe. These burns destroy all skin tissue and nerve endings and involve fatty tissue. Third degree burns generally must be skin grafted. Williams (1996)

adds fourth degree burns referring to situations where heat damage extends to deep structures, such as muscle, tendon and bone. Treatment may require elaborate debridement or even amputation.

Jackson (1991: 330-331) identifies four characteristics of burns: (1) "a burn leaks like a sieve", there is a loss of plasma from the circulation on the first day, for a 60 per cent burn, this can amount to 7 litres. Even after the shock period, water loss through such a burn can be 2-3 litres a day, but this can usually be replaced by oral fluids. The protein loss through the burn may be 60-90g a day, or more than a man's normal protein intake in health. Living leucocytes is also lost, these escaping through the burned tissue to correct the raised metabolic rate. Extensive burns are usually nursed at 80°F (27°C), but water vapour is lost at 10 times the rate of that from normal skin. (2) "a burn with its warm, moist, nutritious slough, grows bacteria like a cooked-meat culture plate." This bacteria encourages infection and septicaemia. (3) "A burn is also a sheet of blotting paper." White oedema fluid is flowing out through a recent burn under pressure, topical drugs can be absorbed into the body against the tide as it were. (4) "The difference between intensity and depth of burning." A burn is a three-dimensional lesion; and whether viewed from the surface or in sections, there are typically three zones of intensity of burning - the zones of hyperaemia, stasis and coagulation. Jackson (1991) explains that partial skin loss will heal in 3 weeks, full thickness skin loss or deep partial skin loss takes 4 or more weeks to heal and may result in considerable scarring.

To summarise, Goodstein (1985: 45) elaborates: "with destruction of skin there is a loss of protection and devastating illness may occur. Sequelae include infection, fluid loss due to external weeping and capillary permeability, coagulation necrosis, electrolyte imbalance with hyponatremia and hyperkalemia and heat loss via evaporation of 5-8 litres of fluid per day with subsequent negative nitrogen balance and anaemia. Fluid loss causes the condition of "burn shock" which involves hypovolemia, oliguria, decreased cellular hydration, hypotension and decreased organ perfusion."

Wound healing is a complex process involving many processes occurring simultaneously. The forces generated in wound healing are considerable and their primary function is to achieve wound closure as rapidly as possible. The extensive repair process involves large scars and severe contractures. Hurren (1995) describes normal scar formation producing undesirable effects due to the appearance of the scar and contracture formation leading to deformity and dysfunction. These effects are amplified in hypertrophic scarring which is a pathological form of scarring which frequently follows burns. Helm (1992) views hypertrophic scarring as representing the most challenging aspect of treating a burn patient. Hypertrophic scarring creates a major cosmetic problem and can cause severe contractures. Hurren (1995) identifies hypertrophic scarring as developing at between 3 and 13 months following the injury, persisting 1-2 years before finally maturing. It most frequently occurs in children and usually follows the healing of deep dermal loss. In such wounds healing is delayed. Hurren (1995) notes that it is usually considered that a wound which takes longer than 2 weeks to heal is at a high risk of hypertrophic scarring. To control hypertrophic scarring, pressure garments are used on healed or grafted skin, worn 22 - 24 hours a day.

Warden (1996) explains that scars which result from the healing of burned tissue may represent a special type of disfigurement. Burn scar contracture is probably the most frequently seen cause of impairment in a post-burn individual. Although much can be done to restore function, the skin is never restored to normal. Scar tissue is less tolerant of the everyday stress imposed on it than normal skin (see Appendix 1). Skin grafts have the same abnormalities as burn scars, in that they all involve contracture formation, have loss of sweat gland function, hair growth and altered pigment formation. Although frequently cosmetically more acceptable, skin grafts are still not normal skin. Physical limitations such as cold and heat intolerance, difficulty with sun exposure, altered sensation, or painful scars may persist indefinitely (Warden 1996).

Furthermore, Hurren (1995) explains that for most deep burns, scarring and a degree of contracture formation is inevitable. The power of the contracting

forces in scars, especially hypertrophic scars, is very great, with the result that voluntary maintenance of the correct position of joints by the patient is frequently not possible. These joints need to be positioned so as to oppose the contracting forces of the scars and provided with additional external support in the form of splints. Helm (1992: 553) states that "burn contractures are different from other types of contractures. Burns may cover an entire extremity, and as the scar tissue shortens, it may affect more than one joint. Therefore, the entire band of scar tissue as a whole must be stretched to achieve full combined joint motion as well as full individual joint motion." There are also muscular-skeletal changes where bone and joint changes have been reported to occur in about 2% to 5% of severely burned patients. Helm (1992) reports that they are particularly devastating when they occur in children. Bone growth disturbances can occur in children if the epiphyses are damaged or if scar tissue crosses a joint. This prevents normal growth from occurring.. Helm (1992: 554) describes how "kyphotic deformities may develop owing to burns of the chest wall and shoulders in combination with faulty positioning and poor exercise techniques. Scoliotic deformities, owing to asymmetric burns of the trunk, can cause permanent bony changes in the vertebrae if a child is in a growth phase. Proper positioning and exercise techniques may alleviate part of the problem." Furthermore the vital role of positioning and splintage are at variance with one another because of the maintenance of mobility to prevent stiffness. Hurren (1995) states that it is therefore necessary for splints to be removed so that mobility can be maintained. The positioning and the balance between splinting and mobilization are decisions that have to be made by the burns team, notably the physiotherapists and occupational therapists. Helm (1992) notes a problem of joint dislocation that can be found in patients and that can be provoked by faulty positioning during the acute stage of burns or can be a result of scar tissue contracture after wound closure.

At this stage of splinting and positioning, for the recovering patient, the mobility exercises that the physiotherapist and occupational therapists give them to do, are frequently painful. Wounds have not completely healed and the contractures make movements stiff and awkward. Blumenfeld and Schoeps (1992) report

that many recovered burn-injured patients, even after a successful rehabilitation, will state that if they should ever have another burn injury, they would prefer to die than to go through the ordeal of being treated for a burn again. The most common reason given for this dramatic statement is 'pain'. In both the treatment and rehabilitation stages of recovery from a burn injury, there can be situations of continuous chronic pain. Blumenfeld and Schoeps (1992: 601) elaborate: "to allow patients to progress into the reconstruction and rehabilitation aspect of their treatment, this pain must be addressed. Failure to do so can lead to a breakdown in the patient's psychologic functioning." This can include feelings of despair, depression and even suicidal thoughts and behaviour.

A change in behavioural pattern, combined with the abovementioned feelings, are not uncommon for burned patients. Several components, both physiologic and psychologic, seem to lead to this change. Long and Cope (1961) describe a fever usually accompanying the illness; the emotional changes take place at the time when the adrenal cortex is increasing its secretion in response to the stress of injury. The behavioural changes might well be instigated by this adrenal outburst. The development of ulcers in the duodenum and stomach supports the presence of such physiologic components. Goodstein (1985) state that Curling's ulcer (which is a stress ulcer) occurs in 12% of burn patients.

Delirium can occur during the acute phase of burn treatment because of metabolic changes. Patterson et al (1993) explain that delirium is usually an early reaction that occurs during the immediate postburn phase, when patients may be intubated, heavily medicated with narcotic analgesics, overstimulated or sleep and sensory deprived. These factors make reliable diagnosis of delirium difficult. Goodstein (1985) describes delirium as usually occurring prior to the completion of grafting procedures and is most common in patients with a greater than 35% burn. This is confirmed by Patterson et al (1993) who notes that not only is delirium more likely when patients have a greater than 30% total body surface area burned, but also a history of psychopathology, especially drug abuse. Goodstein (1985) argues that the occurrence of delirium is directly related to the pre-existing cerebral and physical status of the patient, the percent

of the burn and the age of the patient.

Blumenfeld and Schoeps (1992) explain this delirium, which is also a form of brain injury and brain dysfunction, usually lasting for weeks but can persist for months and may gradually improve or even become permanent. Seizures may also occasionally occur or vascular accidents happen because, as these authors suggest, of extreme cardiovascular conditions, immobility, or underlying conditions in the patient. According to Goodstein (1985) seizures may occur with cellular overhydration, cerebral edema, sepsis and hypertension. Many adult patients may seize due to withdrawal from previously unknown drug and alcohol addiction.

A burn injury frequently goes beyond skin damage; this may include fractures, trauma to the head or other vital organs and inhalation burns. Smoke inhalation can be devastating, not only because there is damage to the lungs, but also because of subsequent diminished oxygenation to the brain. Bartlett (1979) elaborates, that in smoke inhalation alone (without the complications of burns), the brain is the target organ. If the brain survives the anoxic insult, lung dysfunction is usually minimal. Goodstein (1985) explains that respiratory effects of smoke inhalation can be seen as damage to the respiratory epithelium, manifested by edema, hoarseness, bronchorrhea, wheezing, air trapping and occasionally small airway closure. Bartlett (1979) describes the fact that burn injury without smoke inhalation can also lead to respiratory failure by upper-airway injury and edema during the early acute phase. Upper airway damage and edema should be suspected in all patients with facial burns.

Respiratory failure due to inhalation burns and infection can lead to death in burn patients. Years ago, respiratory failure was still the major cause of death in burn patients and still poses a problem for patients today. Fitzpatrick and Cioffi (1996: 184) report that "despite increasing clinical interest in the problem of inhalation injury over the past few decades, the pathophysiology of inhalation injury remains poorly understood and few improvements in treatment have occurred. Inhalation injury continues to be one of the most serious associated

injuries complicating the care of thermally injured patients today." Burns which occur in an enclosed space, such as a building structure, often result in some form of inhalation injury to the respiratory system. Warden (1996) elaborates; impairment may be limited to a temporary need for ventilatory support or extend to permanent respiratory disease. Patients with severe inhalation injuries may require a tracheostomy long after the burn has healed. When closure of the stoma is often delayed for the purpose of intubation, infection needs to be monitored.

Infection control is crucial and every burn unit needs to monitor its own bacterial and resistance patterns continuously. In 1979, Miller (1979) reported that at most burn centres, 80 to 85% of the mortality following severe thermal injury was due to sepsis. Today sepsis is still a common problem for burn patients, given adequate resuscitation and good fluid management, infectious complications still appear to pose a big threat to survival of critically burned patients.

A further complication is that various immune functions are decreased after thermal injury. The specific immune network is a major portion of the body's defence against infection. If thermal injury somehow reduces immunocompetence, then Miller (1979) suggests that this would explain why severely burned patients are at increased risk for fatal sepsis.

Nutritional therapy in burned patients is important in the comprehensive management of the patient. Dudrick (1979) notes the crucial role of nutritional status and therapy in the maintenance and/or restoration of immunocompetence and resistance to infection.

A patient must maintain adequate calorie requirements in order to meet the unique metabolic demands for healing from burn trauma. Tomkins (1996) recommends that nutritional support beyond voluntary intake is required for most burns greater than 30% TBSA. Hildreth and Gottschlich (1996) explain that failure to meet increased energy and protein requirements results in impaired wound healing, cellular dysfunction and decreased resistance to infection.

Another complication with burn-injured patients is sleep deprivation. Helm (1992) notes the absence of studies objectively measuring sleep deprivation specifically for burn patients. With only deprivation of REM sleep, irritability, fatigue, increased sensitivity to pain and momentary illusions can occur. Processes during sleep are essential to good health, one of which is an increase in growth hormone which regulates growth of the body, influences healing of fractures, lowers the level of blood cholesterol and stimulates tissue healing (Helm, 1992).

It is not surprising that the burn patient may have difficulty sleeping. Not only does he/she have to deal with the pain of the burn and difficulty moving whilst sleeping, but also the trauma of the accident. From the moment of the catastrophe, the burn patient is abruptly confronted with an unexpected, painful and life-threatening circumstance. According to Mendelsohn (1983) when patients are attached to life-saving monitoring equipment, actual sensory deprivation can occur. Debridement, tubings and surgical procedures become a way of life. As the threat to survival abates for the patient mature enough; concern develops over possible disfigurement. Throughout this entire process, pain is prevalent as a constant concern.

Psychosis is another problem that frequently manifests itself during the second phase of treatment. It is not uncommon to see mild forms of psychotic behaviour during the first phase of recovery. Hallucinatory experiences and problems with reality testing can occur, but usually quickly clear once metabolic, physiologic and pharmacologic effects have been resolved (Mendelsohn, 1983).

Also occurring during the acute and second phase of treatment is renal failure, one of the major complications of burns and is accompanied by a high mortality rate. Most renal failure occurs either immediately after the injury or at a later period when sepsis develops. Shinozawa and Aikawa (1996) explain that the renal failure occurring in extensively burned patients is usually associated with failure or dysfunction of other organs in a form of multiple organ dysfunction syndrome, which has an adverse influence on the prognosis. Acute renal failure occurring immediately after burns is mostly due to reduced cardiac output, which

is mainly caused by fluid loss and is usually reversible.

With dramatic advances in burn treatment in recent years, many patients with severe burn injuries are surviving. Modern surgical medicine has made gigantic steps in the healing of burn patients. Patients who have sustained injuries that would previously have been fatal will now survive; however healing on the outside may not reflect healing on the inside. The psychologic injuries suffered can cause many children to become dropouts, recluses, addicts and withdraw socially. The trauma endured for many, is sometimes too much to bear.

University of Cape Town

CHAPTER FOUR

4.1 BURN TRAUMA IN CHILDREN

Burn injuries are traumatic, destructive and painful, they involve long-term medical and psychological consequences. When the victim of the burn is a child, the impact of these consequences are even more severe and long-term.

To be admitted as a burn-injured child to the unit is one of the most traumatic types of hospitalisation a child can experience. Knudson Cooper and Thomas (1988) explains that during initial hospitalisation, the child is suddenly separated from his/her familiar environment and placed in a strange, frightening place, where the child's parents are no longer in control and where strangers are hurting him/her. Added to this, there are distinct factors that set burns apart from other accidental injuries, namely, the patient with burns is usually fully conscious at the time of admission, unlike patients with other forms of severe trauma. In fact with severe burns, it often involves a period of deterioration after initial treatment before improvement begins. Burn care also involves repeated painful procedures for dressing and skin grafting. This usually causes unusual dynamics for young children who have difficulty understanding why the person who is supposed "to make things better" hurts them in the process (Adler, 1992). Healing by inflicting pain becomes a conflict for the burns team who have to perform painful procedures daily for the patients' own good.

The acute suffering endured from a burn wound, no matter how small, is extreme and children in pain have to comprehend the fact that terrible things are being done to them and they do not know if worse will happen, nor do they have any control and are helpless to take effective action. This is particularly the case with the daily bathing and dressing procedures where the wound is kept clean by scraping off old skin as well as skin grafting procedures. For days, sometimes weeks and months pain is experienced on a daily basis. Even after the pain subsides, when the wound starts healing, the memory of the pain

endured during procedures is enough to make the child scream in terror. Gilboa (1994) explains that patients with burns are repeatedly exposed to the trauma of the pain during treatment, which is not only traumatic in itself, but is also emotionally evocative of the precipitating trauma. Bearing in mind the lengthy hospital stay, the trauma of the burn injury remains continuously relevant in the patient's mind.

For other forms of paediatric injuries and illness there is a trend towards shorter periods of hospitalisation, whereas patients with burns usually require comparatively long hospital admissions that often extend over many months, with frequent re-admissions for subsequent corrective surgery. Unfortunately as Adler (1992) explains, the patient becomes progressively more dependent on the hospital and its staff, foregoing considerable autonomy in the process. Long-term hospitalisation may also contribute to a rivalry between patients and staff members over the care of the child and even to the child's reluctance to leave hospital.

Even when the patients are ready to be discharged from the hospital, the ongoing trauma continues. Although the traumatic event itself has ended, the child still will have to face periods of severe physical, mental and emotional suffering that can cause even further multiple trauma. After the burn injury event and the extremely difficult period of hospitalisation is over, the child has to contend with a new encounter; namely the social environment, family, school, peers and friends. This is particularly difficult for the patient if the scarring and deformities are visible and exposed. This ongoing trauma is continuous as further emotions come into play during the long-term recovery period. The psychological impact of the burn injury on the child is not only prevalent during hospitalisation, but also during the long-term adjustment to the burn injury.

4.2 THE PSYCHOLOGICAL IMPACT OF BURNS ON CHILDREN

4.2.1 The initial impact

Most younger children look to their mothers to keep them safe. After the

accident occurs, suddenly the child is taken out of his/her familiar safe environment into hospital where everything is strange. Shock, fear, bewilderment, together with intense pain are experienced by the children. Woodward and Jackson (1961) reminds us that it is easy for us to forget how frightening gowns, masks and ward equipment can be to them. Setting up drips and catheters can be the source of terrifying fantasies.

During the weeks that follow, the frightening experiences continue as younger children try to come to terms with the pain and separation from their mother. As parents appear to be all powerful to little children, anything that goes wrong tends to be seen as the parents' fault. These children do not understand that their parents cannot control certain situations and this often makes them feel that their parents do not love them, or they would never have allowed such a thing to have happened.

Frustration also occurs in hospital when the child cries for his/her mother and she is not able to be there. This sense of not being in control sometimes leads children to try out desperate ways of meeting the situation. Woodward and Jackson (1961) describe behaviour of shouting and flinging things about, refusing to eat and talk, regressing to babyish ways, wetting, rocking and thumb sucking.

Much of children's behaviour after discharge can be understood as testing out whether their parents love them and whether they can help to control aggressive feelings. Some children shout, swear and fight, unable to deal with underlying fears, others are unable to sleep at night or do not want to be left alone. Other children, according to Woodward and Jackson (1961) seem to give up the battle, regress, cannot face school, cry at the slightest reprimand, cling to their mothers and show fear of any new or difficult situation. Outbursts of temper are often the child's way of trying to deal with intense anxiety.

Such is the impact of the burn on the child. It is a slow, long road to

recovery where the psychological effects of the burn injury remain long-term and often persist into adolescence and adult life.

4.2.2 The long-term psychological effects of burn injury on children

Adaptation in burn-injured children is complex owing not only to the burn trauma, but also to age-specific developmental issues. Doctor (1992: 607) notes that "paediatric patients, by virtue of their limited life experiences, developing cognitive, emotional and social capabilities and dependence on others, are particularly vulnerable to influences fostering maladaptation." Yet, at the same time, they are often more available emotionally and dependent on the institution and its staff, having to forego a considerable amount of autonomy in the process.

After the endurance of the emotional trauma that is incurred by a lengthy hospital stay and separation from family members, children must adjust to the changes in their physical appearance and must learn how they will tolerate others' reactions to their changed appearance and disfigurement. According to Moore, Blakeney, Broemeling, Portman, Herndon, Robson (1993), some children learn to accept these challenges and adjust well psychologically, whereas other children withdraw and isolate themselves from social interactions.

The subsequent disfigurement can also place children at high risk for psychotic dysfunction. The best reconstructive efforts cannot always erase the psychological marks left by this severest of traumas. Jesse, Strickland, Leeper, Wales (1992) explain that children with disfiguring conditions tend to try to protect the sense of self from complete disintegration by maintaining the mental image of a normal body. This has a devastating effect when at a later stage in life the child has to confront his/her severe scarring and disfigurement. The child with visible burn disfigurement often has to deal with prolonged stress, shame, depression, apathy and ego restriction long after the trauma (Jesse et al, 1992).

It is therefore not surprising that a number of outcome studies of childhood burn injuries indicate that a significant number of subjects suffer from psychological problems. Blakeney, Broemeling, Herndon (1993) found that after one year post burn injury with between 15-50% total body surface area burns; boys aged between 4-11 years had behaviour problems in the areas of somatic complaint, social interaction and sexual identity. Those boys also showed more delinquent behaviour and less competence in social interactions at school. Girls of the same ages between 4-11 years, also suffered from somatic complaints, problems in interacting socially, in thinking and in paying attention.

Sleep disorders are also prevalent in children long after burn injury and discharge from hospital. Kravitz, Tomkins, Mulligan, Herndon (1993) established that these disorders included bed-wetting, sleep-walking, nightmares, with daytime naps reported in 50 subjects, although 46 were well beyond the normal age for napping.

Recognising and studying these emotional, psychological and psychosocial variables in burned patients is crucial in order to design any form of meaningful intervention, both during hospitalisation and after hospital discharge during the recovery period. The emotional reactions however are complex with long-term physical and emotional scarring where the psychosocial impact of the burn injury impacts on the child's developmental stage. Mattison (1979) explains that long-term childhood disorders may cause significant and permanent interference with the child's physical and emotional growth and development. This is particularly the case when the child suffers from depression and anxiety.

4.2.3 Depression and anxiety after burn injury trauma

Franulic, Gonzalez, Trucco, Vallejos (1996) observed emotional reactions in burned patients such as fear, anxiety, restlessness, psychotic

behaviour and depressive symptoms occurring while working through the traumatic event. Knudson-Cooper et al (1988) includes separation anxiety and regression to the emotional responses of children after burn injury.

Other long-term emotional problems resulting from the impact of the burn injury was investigated by Woodward and Jackson (1961) who studied 198 children under 15 years who had survived burns of more than 10% of the body surface area. Over 80% of the children showed emotional disturbance.

Most frequently the disturbance took the form of fears and anxieties, difficulties of management, lethargy, aggressiveness and psychosomatic disorders such as sleeping and feeding difficulties, enuresis and stammering.

The behaviours seen in burned children are similar to those seen with other types of hospitalisation, but tend to be more extreme. Knudson-Cooper et al (1988) explain that children of all ages who have a relatively large burn, commonly manifest extreme anxiety and pain, including body tensions, shivering and rhythmic movements. They sometimes grind their teeth or bite their lips or the insides of their mouths raw.

Even survivors of the most modest burns, with a small percentage of the body surface burned, experience prolonged disabilities, skin breakdown, itching, sleeplessness, reduced stamina, incomplete recovery of motion and strength, changes in body image and particularly depression. Petro and Salzberg (1992) suggest that these problems are redoubled with more extensive burns or if the burns involve face, hands or lower legs.

Sawyer, Minde and Zuker (1982) study found that when compared with the patient's description of their psychological functioning prior to the burn, adolescent burn patients with face and hand burns showed a significant increase in depression after the burn injury, while those with

burns to other areas of their body did not show the same increase.

The incidence of depression and anxiety is nevertheless high in burn-injured patients of all ages. Patterson, Everett, Bombardier, Questad, Lee and Marvin (1993) suggest that mild depression occurs in about 58% of burn-injured patients, while moderate depression occurs in about 23% to 61% of burn patients. Andreason and Norris (1972) claim the prevalence of severe depression is between 19% to 30%.

Depressive symptoms are high with burn-injured patients because with any burn injury it brings about various losses and separation. Blumenfield and Schoeps (1992) explain that some of these losses include loss of health or loss of appearance and sometimes loss of physical and mobile ability to play and be active. The separation from the parents and loved ones and isolation in the hospital Burn Unit is also a loss for the child. For older children there may be a gradual awareness of what one has lost, because of the burn injury. A study examining some of the losses and concerns of 60 paediatric burn survivors aged between 6 -19 identified five major aspects of post-burn life, namely "preoccupation with health", referring to the child's anticipatory thoughts and feelings about treatment procedures. "Internal acceptance" refers to the increased awareness of the various long-term medical or physical outcomes. "Reconstruction of one's life map" is the process of redefining personal dreams, goals and plans. "Changing relationships" involves the process by which others and the burn survivor incorporate the effects of the burn injury into their relationship. "Redefining the world" refers to attempts to make sense of the burn trauma (Robert, Berton, Moore, Murphy, Meyer, Blakeney, Herndon, 1997: 50).

With the working through of these issues of loss, separation and redefining their world, there is an inevitable degree of depression and anxiety for the future. Wilson-Barnett (1979: 25) explains that "not knowing what to expect, anticipating the worst, yet hoping it will not

happen" must all combine to lead to anxious feelings. Older children are worried and anxious about themselves, about operations and being cut open, about dying, about change in their appearance and body and about losing control of their bodily functions and consciousness.

The anxiety that a burn patient may feel from the beginning of the impact of the event, through to hospitalisation and later long-term recovery continues to be prevalent for the patient. Gilboa, Friedman and Tsur (1994) see the patient with burns as suffering from continuous traumatic stress. Although the traumatic event itself has ended, the patient still faces a period of severe psychological and mental suffering that may qualify for the definition of further or multiple trauma as well as post traumatic stress disorder.

4.2.4 Post Traumatic Stress

Burn injuries are, according to Jiminez, Bajo, Castillo, Salvador-Robert, Torres (1994) considered to be a traumatic fact of sufficient severity to meet the Stressor Criterion for Post Traumatic Stress Disorder (PTSD) of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-III-r, 1987). This disorder being defined by DSM-III (1987) as one caused by exposure to a traumatic event outside the range of human experience and that would be markedly distressing to almost anyone.

For the burn-injured child, post injury adjustment factors are critical determinants of PTSD development. Bryant (1966) reports that the incidence of PTSD is greater 12 months after injury than during hospital admission. Increasing attention has been given to factors that predict post-traumatic stress following burns. Bryant (1996) contends that during the post-discharge phase, burn victims respond to a variety of stressors, including pain, disfigurement and functional limitations, which can impede the adjustment process. During this phase PTSD is associated with disfigurement and low self-esteem, avoidant coping style and poor social support.

Gilboa et al (1994: 87) views the condition of the patient with burns as subjected to Continuous Stress Disorder, rather than PTSD and it is composed of three phases: "(1) the event itself (2) an extremely difficult period of hospitalisation and (3) a new encounter with the social environment, with all its concomitant difficulties." Although this specific study was conducted with adults, several case reports suggest that the criteria for post-traumatic stress disorder, as validated for adults (Horowitz, Wilner, Kultreider and Alvarez, 1980) can be directly applied to children who have been subjected to both physical and psychic trauma.

Psychic trauma is explained by Eth and Pynoos (1985: 38) as occurring "when an individual is exposed to an overwhelming event resulting in helplessness in the face of intolerable danger and instinctual arousal."

Children suffering from psychic trauma resulting in a traumatic state of regression and helplessness have been described by Eth and Pynoos, (1985: 39) as "exhibiting paralysis and immobilisation, ranging from numbness to an emotional storm; disorganised feelings, thoughts and behaviour and physical symptoms reflecting autonomic dysfunction." Furst (1967) discusses the child as looking panicky and submissive and Greenacre (1967) describes frenzied overactivity, tantrums, rage or shock-like, stunned reaction and unresponsiveness, symptoms that could possibly be linked to Post Traumatic Stress Disorder in children (PTSD).

The manner in which children are affected by PTSD is of the utmost importance because it directly affects the learning, behaviour and progress of children. To meet criteria for PTSD, at least one of the following re-experiencing symptoms must be present: intrusive recollections of the event, distressing dreams about the event, sudden activity or feeling as if the event were recurring and intense physiological distress when exposed to events that symbolise the event (DSM-III R, 1987).

Much remains to be done to clarify differences between childhood and adult PTSD. Benedek (1985) summarises children's PTSD symptomatology and in particular daydreams, fantasies, nightmares and behavioural changes linked to sudden visual and auditory stimuli that may remind children of the traumatic event. For children suffering from these symptoms due to the traumatic event, it can interrupt the normal progress of development.

Post-traumatic behaviours that can occur among pre-school children have been described by Johnson (1989) to include withdrawal, denial, anxious attachment and regression. In younger school age children: performance decline, behaviour and mood changes, psychosomatic complaints, and in older school-age children/adolescents: low self-esteem, acting out behaviours, displaced anger and pre-occupation with self.

Traumas occurring during a specific developmental stage create special vulnerabilities for the child, by not enabling successful resolution during that stage and leaving the child less able to resolve future issues successfully. The trauma produces anxiety and psychological disequilibrium and attempts at coping with this anxiety can block successful developmental task mastery (Johnson 1989).

An important developmental concern is the interplay of the processes of trauma resolution and other childhood tasks. According to Eth and Pynoos (1985), after psychic trauma in childhood, schoolwork, play and interpersonal relationships are hampered and the child's growing ability to assume an active role in addressing issues related to changes in current life circumstances, may be eroded by traumatic anxiety. When there is continued reworking of traumatic memories, it can also cause enduring effects on the child's cognition and learning abilities.

The long term effects of the burn-injury therefore continue long after the physical trauma is over. The psychic trauma of the impact of the injury

seems to leave emotional scars and impacts on the child's developmental process; affecting each child differently depending on his/her age.

Another psychological impact of burns on children is the scarring or deformity that occurs with serious burn-injuries resulting in poor body image and low self-esteem.

4.2.5 **Disfigurement, scarring and low self-esteem**

Orr, Reznikoff and Smith (1989) explain that when there has been a premium placed on physical attractiveness (as in most societies); scarring or loss of function can be devastating to the patient with burns, in terms of body image and self-esteem and can be accompanied by depression. Depression is frequently associated with medical illness and according to Goldberg (1974) is increased when the illness or disfigurement is visible to an observer. Unfortunately there are those children and adolescents with facial and hand burns, which leave extensive scarring to exposed areas that are difficult to conceal; these disfigured persons deal with the world by withdrawal and disappear socially not wanting to be ridiculed in public.

Disfigurement during adolescence where body image is so important, is particularly devastating and can leave the burn-injured patient prone to low self-esteem. According to Orr, Reznikoff and Smith (1989), body image is a component of the self-concept which is formed from both sensory and social experiences, with cultural and familial reactions to one's body; having great importance in determining one's own attitude. Altered physical conditions such as disfigurement can therefore be accompanied by changes in social interactions, leading to changed body image. For example Gladstone (1972) found that girls and women with burns have a more negative body image than boys and men with burns. This is particularly true for girls and adolescents who have breast scars and sometimes their breasts cannot develop properly due to tissue damage. This obviously will affect their body image and self-esteem.

A serious injury with concomitant disfigurement such as breast or facial burns affects the ease with which the child/adolescent adapts to specific developmental stages. To feel worthwhile and competent is important to all of us, but we also want to be attractive. Physical attractiveness comes close to being sexually attractive, which is one of the major areas of social functions that adversely affects the burn patient. According to Bernstein (1982), burn patients with facial scars are most readily rejected in the competition for sexual partners.

Doctor (1992) describes how burn-injured children of all ages in the context of peer group counselling, speak of guilt feelings associated with fear of discovery of hidden injuries. Younger children with concealable burns who may have made reasonable social adjustments, will often experience renewed social stress upon reaching the age when having to expose themselves to dress for physical education classes. It is here that body image comes clearly into focus.

The supposition that visible scarring is more psychologically damaging than hidden burns is often made, although there is little evidence to support this. In a study by Abdullah, Blakeney, Hunt, Broemeling, Philips, Herndon and Robson (1994), results indicate that awareness needs to be developed concerning paediatric survivors of burns who may appear superficially to be adjusting well, while harbouring grave self-deprecating feelings and those with visible scars who will need special support to enhance self-esteem.

For male or female, adult or child, the struggle to maintain a positive body-image and some sense of self-esteem in the face of negative reactions from the public to disfigurement and scarring, is a major problem. The self-concept is an important aspect of everybody's functioning, but for patients with burns, it is a struggle to maintain an acceptable picture of themselves. According to Bernstein, Connell and Chedeker (1992), bodily feeling and body image form the basis of the self-concept in the first few years of life and are therefore crucial for the

burn-injured child if exposed to negative public reactions. Many patients with burns must constantly deal with the negative responses from the public and therefore have to work constantly to maintain self-respect and self-esteem, in spite of how people react to them.

Mack and Ablon (1983:9) state that "the notion of self-esteem in its contemporary sense implies a large measure of reference to internal criteria ... we judge ourselves in relation to the community, and are aware of our self judgments, however dependent these judgments may be upon the approval and opinions of others." Bernstein et al (1992) refers to our sense of personal value as always (to a degree) depending upon relationships with the outside world and that a core sense of one's worth or lack of it, may be internalized in childhood and adolescence. This seems an unfair burden for children who then have to confront and integrate their own feelings towards their body image as well as the attitudes of the people and culture around them. Unfortunately society in general shows negative responses to visible scars and deformities, which then stigmatizes the individual and according to Bernstein et al (1992) denies individuals full social acceptance and involves moral disapproval, denigration and avoidance. Although this attitude towards scarred and disfigured people is not communicated visibly to the specific individual involved, it is an issue that burn-disfigured people have to confront at some stage during their long recovery period.

Willis-Helmich (1992:65) in her article on "reclaiming body image" explores her feelings as an adult after a burn injury at the age of four years old that left 45% of her body with permanent scars. In a burn survivors' self-help group, unclothed, she expresses the sadness in the group members eyes and states that "perhaps in my burn injury they recognised the pain that I had been through." The burn injuries are located on her chin, ears, neck, shoulders, upper arms, chest down to waist and large areas on her legs. Part of this support group was to rebuild and reclaim positive feelings about their unclothed bodies.

Looking at her body in a full-length mirror, her focus was on her scarring and the confirmation and acknowledgment of the physical and emotional pain that she had experienced with this burn injury. It took her several years to feel comfortable about her body before an integrated body image emerged.

This example identifies the years of struggling with issues that a serious burn injury at the age of four years can leave; low self-esteem and poor body image issues that can literally take a lifetime to work through before there is any form of acceptance of one's femininity.

In the working through of body image and poor self-esteem issues, Orr et al's (1989) study on 121 patients, 14-27 years old burned within the past ten years, found that those who received social support, especially from friends, had more positive body image, greater self-esteem and less depression than others. This finding, according to Doctor (1992) was consistent with the notion that body image is influenced by social experiences and that social support can buffer the negative effects of physical trauma.

Social support is crucial during the long term process when as Munster (1993) explains that burn survivors are often called on to look deeper into themselves, to ascertain the sense of beauty and worth that was formerly obtained by attention being paid to physical appearance.

4.2.6 Social support for the burn-injured patient

The burn-injured patient is in need of social support to assist him/her over the traumatic period, as well as the long-term recovery and reintegration of the patient into society. In this long recovery process, with support, it can lead to a better understanding of what it means to be a lovable human being, but as Munster (1993) confirms, it can also mean waves of grief, rage, anxiety and depression as the realisation of loss sinks in.

The degree of support given to a patient may vary, according to the resources available and studies have shown that this possibly has an effect on psychological adjustment. Davidson, Bowden, Tholen, James, Felter (1981) found that social support was both directly and indirectly related to patients' post-burn adjustment in their retrospective longitudinal study of 314 burn patients between 1956 and 1976. The data indicated that measures of social support from family, friends and peers were significantly related to several subjectively assessed outcomes, such as life satisfaction, self-esteem and participation in social and recreational activities.

To measure social support, Brown, Browne, Byrne, Love, Roberts and Streiner (1988) used the social support scale developed by Davidson et al (1981), measuring family, friend and peer support.

Challenging the findings of Davidson et al (1981), which suggested that family support is more important in the adjustment process, Brown et al (1968) results indicated that psychosocial adjustment was best explained by less functional disability, belonging to more recreational activities, greater friend support, less use of avoidance coping and more use of problem solving.

Numerous researchers have suggested that social support is likely to enhance success in the rehabilitation of burns patients (Bernstein, O'Connell, Chedeker, 1992; Doctor, 1992; Blakeney, Portman, Rutan, 1990). Appropriate training should be given to a suitable health care worker, so each burn patient has adequate social support throughout rehabilitation.

Overall, the above literature indicates that support has a positive effect on the adjustment process, although support is not always available. Parents and other members of the family are under considerable emotional stress, which makes it difficult for them to provide optimal

support for the child. Social support is valuable, even crucial, during the acute phase at hospitalisation, as well as during the long-term rehabilitation of the burn-injured child.

Working out some kind of meaning and some sense of personal worth for both the patient and the family, is part of the process of the long recovery from a burn injury, a recovery that cannot be made in isolation, but needs both social and family support in order to adapt to the post-burn adjustment process.

4.3 THE POST BURN ADJUSTMENT PROCESS

The recovery process that includes reintegration of the child into the family and social world, as well as the emotional adjustment to the injury as mentioned before, can take many years. According to Knudson-Cooper and Thomas (1988) the first one to two years after the injury are described as being the most difficult because of the required follow-up care, the wearing of pressure garments, recurrent skin breakdown, itching, the strain of resuming normal activities and the emotional intensity of the adjustment to the changes that have occurred.

Fleet (1992:118) defines adjustment as "the ability for a burns patient to resume his/her pre-burn level of functioning, accepting a change in body image and a loss of certain roles." It may also involve returning to a different, lower level of functioning. Steiner and Clark (1977) have outlined an adjustment process, similar to that of bereavement; they suggest that the patient goes through stages of shock and disbelief, grief, awareness and acceptance of loss where the patient comes to terms with reality and returns to the best possible level of functioning. Each stage will obviously need to be worked through successfully before adjustment is reached. Although this model of adjustment is for adults, it can apply to adolescents who have an understanding of their burn injury.

Knudson-Cooper and Thomas (1988:355) identify various variables that impact on the child's adjustment process. They are "(1) the severity of the injury, (2)

compliance, and (3) the characteristics of the child and family."

The child's developmental stage is also an important variable in the adjustment process. A young child may not be concerned about his/her appearance, but may in later years reactivate the grieving process during adolescence and young adulthood (Knudson-Cooper and Thomas, 1988).

The adjustment process clearly is an individual process, dependent not only on the child's developmental stage, but also varies according to the magnitude of adjustment required, the social context and the characteristics of the child. Long and Cope (1961) note the pre-burn emotional adjustment of the child which may affect and prolong recovery. This is particularly true if there was significant emotional maladjustment behaviour before the injury, such as aggressive-destructive behaviour or delinquent traits.

Watkins, Cook, May, Still, Luterman, Purvis (1996:78) state that "each patient, even the most autonomous, the youngest, the most outcast, the most mentally impaired or disorganised, comes to a burn care facility embedded in a rich background of personal experience and a network of social relationships." Therefore any serious emotional problems that occur during acute treatment for the burn injury, or even during the lengthiest period of post-burn adjustment, rarely arise simply as a result of the burn in its physical sequelae.

Before a traumatic event, the older child has both a distinctive personality style and coping skills that work for him/her, therefore adjustment to the burn injury is usually the result of an interplay of previous personal experience and continuing social support.

Bernstein et al (1992:4) have identified "antisocial personality, organic brain syndromes and lack of social support" as undermining good recovery adjustment for patients with burns. In a study by Sawyer (1982) examining the psychosocial adjustment of childhood burn injuries, it was found that adolescent burn patients show a markedly poorer psychosocial adjustment when compared with younger

children. Visible burns, emotional distress in the mother and multiple home moves were all associated with poorer psychosocial adjustment in adolescence, for burned children.

For a person to resume a normal life after a major burn injury, Bernstein et al (1992) emphasize that it is necessary for him/her to maintain a sense of hope for the future. Without this, there is a sense of failure, an inability to cope and a loss of gratification from interpersonal relationships, as well as a sense of disruption in time.

It is clear that the process of adjustment is a complex one that involves both internal acceptance and external participation and integration into society. For some it is a lifelong struggle and others may never reach the final stage of adjustment, often remaining in what Figley (1985:404) identifies as "the avoidance stage", which is a method using denial to cope; therefore reducing anxiety and stress symptoms temporarily. For those who reach adjustment, it is however through adequate resources, such as internal strength and emotional support from persons who care.

Doctor (1992) describes good adjustment as being predicted by a family environment in which commitment to each other is strong and where communication allows expression of conflict and encourages autonomy and active mastery of the environment. The role of parents in a child's adaption to a major burn injury is critical. Knudson-Cooper and Thomas (1984) report that social support is one of the most significant predictors of adjustment in children.

It is not easy for parents and family who need to provide support, as there is a growing recognition that trauma impacts on those closest to the individual (family and friends) as well as the survivor. According to Munster (1993) disruption of these relationships, whether temporary or permanent, affects all these people. Witnessing the traumatization of a person one cares about, often seriously affects the family. It takes little imagination to understand some of the pain endured by the parents, not only due to the trauma of the accident, but also by

watching helplessly as their child endures the pain of the burn and the medical treatment procedures. Herein lies the difficulty of the family in having to play a supportive role to the burn-injured child; whilst at the same time having to endure their own emotional effects of the trauma.

4.4 THE EMOTIONAL AND PSYCHOLOGICAL EFFECTS ON THE FAMILY OF THE BURN-INJURED CHILD

When a child is burnt, the whole family is affected. Verity (1995) observes that there is no correlation between the depth or extent of a burn and the stress it induces in the family. Most parents suffer the same process of guilt, anxiety and anger, whether the burn is large or small and irrespective of how the burn was caused. Blakeney, Meyer, Moore, Murphy, Broemeling, Robson and Herndon (1993 (2)) report some of the factors that weigh on the parent(s) of a burned child; the trauma of the accident, the pain and fear of watching a child suffer, the prolonged disruption to ordinary family life and the multitude of difficulties in parenting a child who requires time-consuming daily attention for months after hospital discharge.

The impact on the siblings of the burned child is also a primary concern to parents whose daily routine is disrupted by the injury, hospitalization and rehabilitation process of the burn survivor. Financial hardship can also be a real concern for the family; the mother having to sometimes stop work to visit the child daily or even sleep at the hospital.

Attention to the family as well as the total care of the patient is needed to promote emotional and physical healing. Bernstein, O'Connell, Chedekel (1992) report that a lack of family and social support has been correlated with poor recovery for patients with burns. Burn professionals are therefore recognising the importance of individual and family coping in relation to the burn trauma and consequent long-term stress.

After the burn injury, in the acute hospital phase, most of the attention of the

medical staff is focused on the suffering patient, the family members remain in the background and few people are aware of their suffering and emotional needs. Just as the patient must adjust to his/her injury, so the family must go through a completed process of understanding, accepting and adjusting to the illness and distress of the loved one. Broadland and Andreasen (1974) explain that relatives of the burn patient appear to go through an adjustment process similar to that of the patients, involving two stages. The first stage is one of acute shock and grief analogous to the acute physical and emotional trauma experienced by the patient. In the second or convalescent stage, the relatives overcome shock and disbelief, accept the injury and begin to assist the patient in the process of recovery. Verity (1995: 178) revealed that as parents cope with the initial shock, the distress of their child and the new information they are being given, they are also coping with great fears for the future, namely "will my child live?" Parents often think this even with a superficial 2% burn. "Will my child be scarred?" This evokes concern for the psychological process of acceptance for the child. "Will my child be able to live a normal life?" and "What changes will need to occur within our family for us to deal with this terrible situation?"

Knudsen-Cooper and Thomas (1988:356) have identified six stages of grief that can be identified in both the burned child and the family. At first there is the stage of emotional numbness, when nothing seems real, followed by denial that the burn injury could be as bad as it is. Then comes the anger and guilt, when one asks "why me?", "why my child?", "why now?", "what did I do wrong?", "how could I have let this happen?". During this stage, both the child and the family re-experience the burn accident in their minds, trying to figure out why it happened and what they could have done to prevent it. Although these stages tend to occur one after another, Knudson-Cooper and Thomas (1988) observe a shifting back and forth between emotions and stages. This occurs because burn patients, especially growing children, often require extensive or reconstructive surgery involving repeated adjustment to a new appearance; the process of adjustment for the child and family can therefore be prolonged over many years.

Martin (1970) studied the interacting aspects of parents' and children's reactions following burn injury in children and the findings related to attachment and loss theory. Frank separation anxiety was apparent in the mothers' disregard for the needs of other family members. The anguish experienced by many mothers seemed to represent an identification with the child and an attempt to take over his/her physical suffering. The grieving, withdrawn mother mourns the loss of the intact child (replaced by a damaged and angry child) and anticipates the feared death of the injured child. There is also a grief for the loss of her own image as a good, loving mother, replaced now by her image of herself as harmful, bad and unworthy (Martin 1970).

Other emotional and psychological post-burn effects on the family were investigated by Watkins et al (1996:81) and four phases were identified namely "(1) crisis, (2) control, (3) commitment, (4) consequences".

The first phase (crisis) begins when the family member becomes aware that the patient has been injured. The realization that injury has occurred initially causes the family member to experience emotional shock and to exhibit behavioural disorganization, consistent with shock.

The second phase (control) is characterized by Watkins et al (1996) as trying to regain control of his/her life and the routines of daily living after the disruption of the burn injury.

In the third phase (commitment), the family member must decide whether or not to make a temporary, but possibly prolonged commitment to continuing the relationship with the patient in an altered form through the period of recovery and rehabilitation.

In phase four (consequences), Watkins et al (1996) describe the task of the family member of negotiating a renewed relationship with the patient that at least has the potential to meet the emotional, social and economic needs of the patient. The issues therefore faced by the family member all relate to

determining the long-term consequences of the burn injury; to the relationship between the family member and the patient.

The family member post-burn adaption is a continuous process that begins at the time of the injury and proceeds at an individual pace to a conclusion, that may not occur until years after the burn injury.

The process is slow because the burn patient's progression to recovery and rehabilitation can result in persistent family distress, stimulated by constant reminders of the traumatic event, such as clinic visits or the patient's visible disfigurement. Cella, Perry, Kulchychy, Goodwin (1988)(2) explain that such chronic distress can also occur in reaction to continued demands on parents' coping resources, such as financial concerns, the patient's rehabilitative exercises or the need to help with the often painful application of pressure garments.

For some children with burns, a variety of psychological factors can make the burn trauma especially devastating, for example, many children who sustain burn injuries come from low income homes and have depressed mothers with poor parenting skills who are unable to aid the child in coping. Sawyer et al (1982) study examining the psychosocial adjustment of childhood burn injuries, found that adolescents with emotionally distressed mothers, show a markedly poorer psychosocial adjustment.

Forshaw (1987) has identified burn injury events as to be more frequent among families of the lower social classes, where poverty, poor housing, inferior diet and overcrowding interact and can lead to sudden tragedy, particularly in the one-parent family.

This is critical and bears impact on the long-term recovery period since Blakeney, Portman, Rutan (1990) have found that positive psychological adjustment was predicted by greater family cohesion, independence and more open expressiveness within the family. Undoubtedly this may be more difficult

for a child in a family with poor social problems and lack of family commitment and cohesion. The opposite extreme as Blakeney et al (1990) reveal, is that poor psychosocial adjustment is predicted by a family environment that is characterised by conflict and diminished cohesion, which can also be predictive of alcoholism, delinquency and other disturbances.

The importance of the family environment is imperative to the psychological adjustment of children after burn injury, but follow up studies Woodward (1959, 1961) of children who have recovered physically from severe burns have revealed that emotional disturbances exist in approximately 80% of the children and 60% of their mothers. Holter and Friedman (1969) explain that the majority of these mothers thought that the disturbances in their children were the result of the burn experience, pain and the separation from home during the hospitalization. However, Long and Cope (1961) report a high incidence of psychopathology in the family unit antedating the burn incident.

Martin (1970) found that 44 of the 46 mothers in her study were preoccupied with some unresolved problem at the time of the accident. This preoccupation appeared to divert the mothers' attention away from the child and delayed reactions which could have forestalled injury.

An additional issue to consider is the possibility that psychological problems in the 'burn parent' may be present prior to the injury and contribute to the likelihood of a child's burn. Seligman, MacMillan and Carroll (1971) have suggested that emotional disturbance in parents, specifically depression, is associated with higher risk for burn injury in children. Vigliano, Hart and Singer (1964) further suggest that chronic relationship problems may become overtly manifest only at the time of the children's burns. These maladjustments are related to the trauma of the burn injury and since the mothers were interviewed at 4½ years after the burn injury, it revealed that the trauma was not yet dealt with emotionally or worked through adequately. It is therefore essential for both the injured child and the mother (ideally the whole family) to get assistance in the form of counselling over this traumatic period. This is needed to reduce emotional maladjustments later in life, particularly because of the important role

the mother plays as caregiver in rehabilitating the child in his/her long recovery.

Family members need to be prepared for what to expect during all phases of recovery and supported in dealing with their own reactions to the injured child. Some family members who are having psychologic difficulties and whose emotional effects are unbearable, should ideally be offered counselling and therapy. Joint family sessions can be very helpful during and/or after hospitalization.

It therefore becomes evident that it is crucial for future research to evaluate emotional and psychological effects, as well as stress responses of close relatives (namely mothers) after burn trauma. This is imperative because a better understanding of family post-burn trauma can lead to more successful interventions for those who remain stressed and may also enhance patient and family cohesion.

4.5 STRESS RESPONSES IN CLOSE RELATIVES OF BURN-INJURED CHILDREN

Surprisingly few systematic studies of the needs of family members of burn victims have been undertaken. Furthermore as Mason (1993) notes, there has been little description or measurement of the mother's response in the early stages of the child's rehabilitation process, when the mothers' mental and physical resources are most needed to cope with the child's care. Cella, Perry, Poag, Amand, Goodwin (1988)(1) recognised that this void of information is particularly significant when one considers that psychosocial and perhaps physical recovery from burn injury, as well as compliance with follow-up care is associated with support from loved ones.

Most studies which examine the mother's response to their child's thermal injury confine themselves to retrospective descriptions and interpretations of mothers' emotional disturbance. Mason (1993: 495) reports some of the maternal responses, "as upset nerves, nervous breakdowns, psychological disturbances, depression, guilt, distress and increased psychopathology."

Even fewer studies have investigated what factors are related to stress symptomatology in parents of children with burns (Rizzone, Stoddard, Murphy and Kruger, 1994). These authors also found post-traumatic stress disorder (PTSD) prevalent in parents of burn-injured children. The implications are that post-traumatic stress symptoms can be disruptive to a mother and interfere with her caring for her child.

Shelby, Sullivan, Groussman, Gray and Saffle (1992) emphasise that because of the participation of the mother in the rehabilitation of the child with burns, the psychologic adjustment of non-injured mothers experiencing the stress-producing adverse event (injury of a loved one); is of concern for their well-being, as well as that of the child. When the family responds to crisis, it puts great stress upon them, interrupting routines, making abrupt changes and creating much anxiety.

Johnson (1989) explains that change creates stress for the family and sometimes these changes can be for the better, by drawing family members closer together, but this is not always the case. Often the crisis brings the opposite reaction. Families sometimes become fragmented and are unable to re-establish closeness. Communication lines can become blocked and resentments develop that are difficult to overcome. The stress then builds and mothers usually have to deal with this as well as their own stress responses to her child's burn injury.

There is a definite stress response of mothers in the initial reaction to the burn injury. Cella et al (1988)(2) reports that mothers of children with burns exhibit a heightened state of psychologic stress in the acute post-injury period, distinct from mothers of non-burn injuries, perhaps due to the suddenness of the trauma and its visible sequela. Cella et al (1988, 159)(2) elaborates: "the sudden impact of a severe burn throws the family unit into acute stress. When the burn victim is a child, the parents must deal with personal distress, such as guilt, depression or anxiety, as well as the usual parental responsibilities of wage earning and care of healthy siblings."

Broadland and Andreason (1979: 230) describe the family's first reaction on arriving at the hospital as being that of relief because the patient has not died or been burned more severely. Rationalizations that "it could have been worse" provide an affirmative basis from which to begin coping with the stress that they face. Soon after admission, severely burned patients experience confusion and disorientation and sometimes can be verbally abusive or assaultive. Relatives find this stressful and frightening and they have a difficult time deciding whether this behaviour represents the patient's true feelings, or whether it is a result of delirium or sudden mental illness. Furthermore, Broadland and Andreason (1979) identify another source of stress for relatives; namely the psychologic regression of patients who become complaining, demanding and dependent. For the family who are unaccustomed to this behaviour, they want to respond, but are confused by demands that seem out of character.

The pain that the patient must endure also results in a sense of helpless frustration in the relatives; as well as the frequent trips to the operating room for skin grafting, are yet another source of anxiety. Still later during recovery the problem of pain is replaced by itching as the skin heals. Some relatives become overwhelmed by the emotional stress of sitting at the bedside of a loved one, sharing in the patient's suffering. This can ultimately lead to anxiety and depression in the relative.

Added to this anxiety is further stress as Knudsen-Cooper and Thomas (1988) suggest that normal family functioning is disrupted when one or both parents spend a lot of time at the hospital or leave home to be with a child who is being treated at a large burn centre far away from the home community. If there are other children in the family, they are often without a mother or given to other relatives or friends to look after. These siblings frequently are emotionally upset by both the burn injury and the separation from their mother and brother/sister. Knudson-Cooper and Thomas (1988) report that they may even have nightmares or behaviour problems of their own; it also common for parents to have difficulties sleeping and eating. Previous physical problems that are stress related, such as hypertension, ulcers, headaches and asthma can often be aggravated by the added stress.

Furthermore, families often lack resources to manage this stress, as well as the restructuring necessary to accommodate the changes brought about by the burn injury. Johnson (1989: 123) defines this restructuring as occurring in three stages. "Recoil", following the critical incident, family members initially respond by allying themselves to meet the threat. This initial stage is characterized by increased intimacy, trust and communication. The second stage "reorganization" when the situation has stabilized, then old patterns of communication and old conflicts reassert themselves. This may lead to polarization and fragmentation. In the third stage, that of "restabilization" family members are unable to rebuild the relationships exactly as before. A new period of stability characterized by deteriorated or increased levels of intimacy occur. The reorganization phase presents a challenge to the family. New levels of family strength can be gained, or existing strength can be lost (Johnson, 1989).

Broadland and Andreasen (1979: 234) conclude that a burn injury is a traumatic experience for the uninjured relatives. The families of the burn patients face multiple stresses and adjustment problems and go through similar phases of adaption as the patients. "They must cope with anxiety about death, communication difficulties with the medical staff, fear of deformity and the boredom of a prolonged hospital stay, as well as enduring the trauma of watching a loved one suffer." Furthermore, it often seems that total recovery will never arrive and that one discomfort is succeeded by another.

Unfortunately if the mother is in a state of shock and suffering from stress and anxiety, she could impart these feelings to her child. Davis (1984) reports that if a mother is anxious and fearful about her child being in hospital, this may be conveyed to the child and increase his/her distress and impair the patient's adaption to the hospital setting and adjustment process after discharge. The main finding in Davis (1984) study is that there is a positive correlation between the mothers' self-reported anxiety and the amount of upset behaviour shown by the children after they had been in hospital. An overly distressed parent could

significantly impede the child's ability to tolerate burn pain, as well as hamper the therapeutic procedures and rehabilitation outcome. Cella et al (1988)(2) suggest that the anxiety and depression of parents may also compromise their ability to provide care for the child after discharge.

It has also been reported that parental stress response due to hospitalization of a burned child is both quantitatively and qualitatively different from parental stress response to hospitalization for other procedures not involving burns. In a study by Cella, Perry, Poag, Amand and Goodwin (1983)(1) it was found that depression, hopelessness and stress response symptoms of intrusion and avoidance were significantly more prominent in the parents of burned children. Three reasons these authors give to expect parents of burned children to experience more distress and depression than parents of children hospitalized for other procedures are: firstly, that burns occur in the context of acute trauma leaving little time for psychological preparation. Second, burn injury may irreversibly alter the appearance of a child and therefore trigger mourning reactions to this loss. Thirdly, burn injury is frequently associated with actual or perceived parental neglect.

Furthermore, Cella et al (1988:88)(1) describes two aspects of the burn trauma; its "suddenness and the visible scarring" it leaves behind, make it more likely to lead to the formation of stress response symptoms. "Suddenness" enhancing the severity of the stressor because it restricts the ability of a person to erect preparatory defences and "visible scarring", a constant reminder of the traumatic event itself. Cella et al (1988)(1) explain that since the phenomenology of the stress response is such that sensory reminders trigger distress in re-experiencing reactions, it is more likely that parents who must adjust to a visibly altered child, will suffer from stress response symptoms.

A study was conducted to examine post-traumatic stress symptoms in mothers. The purpose of Rizzone et al (1994) research was to determine what factors relate to parental post-traumatic stress disorder (PTSD). Analysis revealed that larger burns were more strongly related to PTSD symptoms than were proximity,

social support or perceived stress. Additional findings indicated that mothers with more than one child burned and those mothers who were burned themselves, met diagnostic criteria for PTSD. Rizzone et al (1994) concluded that implications for post-traumatic stress symptoms can be disruptive to a mother who needs to feel capable of caring for her child with burns after injury.

Horowitz (1986: 241-242) reviews stress-response syndromes included in post-traumatic and adjustment disorders. She explained that the signs and symptoms of response to a stressful-like event are expressed in two predominant phases: "the intrusive state, characterized by unbidden ideas and feelings and even compulsive actions, and the denial state, characterized by emotional numbing and constriction of ideation.". The intrusive state includes "sudden rushes of feeling, sleep disturbances, confusion, intrusive, repetitive thoughts, disorganized when thinking about themes related to the event.". Some of the symptoms that emerge during the denial phase of stress-response syndromes are listed by Horowitz (1986: 242) as "amnesia (complete or partial), numbness, fatigue, headaches, muscle pain, disavowal of meanings of current stimuli in some way associated with the event, loss of a realistic sense of appropriate connection with the ongoing world and withdrawal."

Also focusing on parental stress responses, Meyer, Blakeney, Moore, Murphy, Robson and Herndon (1994) analysed parental well-being and behavioural adjustment of paediatric survivors of burns. Parents of paediatric patients with burns often perceive their children as troubled and having an increased number of problem behaviours. This study examined the relationship between these problem behaviours and the parents' own emotional well-being. Results revealed that parents who report their children as troubled, are themselves stressed, not only by their children's behaviours, but in areas unrelated to their children. In addition, these mothers reported often feeling depressed and guilty.

In a study assessing parental stress as a cause and effect of paediatric burn injury, Blakeney, Moore, Broemeling, Hurt, Herndon and Robson (1993) found that parents reported significantly higher depressive symptoms at year 2 after

the child's burn injury and lower than normal levels of depression in years 4 and 5 after the child's injury. Parents of recovering children with burns seem to develop a focus on the child as their new primary source of stress, whereas parents of children who do not have burns and parents of children with acute burns, perceive their stressors to be more evenly divided among personal characteristics and their children.

Parents of recovering survivors of burn injury describe their children as very demanding, dependent and unhappy. Furthermore, Blakeney et al (1993) define these parents as perceiving their children to be overly active and restless and are disappointed in their children and do not experience them as a source of positive reinforcement.

Blakeney et al (1993) measured parental stress of paediatric burns involving 80% or greater total body surface area. Results indicated that the measures of parental stress differentiated the parents of the burned children from parental descriptions of non-burned children. These authors conclude that the impact of a huge burn injury (to a child) on the parent(s) of that child, is significant. The parents feel more stress in their own lives, which they attribute to their burned children, whom they describe as moody, demanding, disappointing and who seem to cause the parents to feel unsure of themselves as parents.

There is little doubt that family stress is rife, particularly when the mother is not coping due to stress. This inevitably affects the children. Banks (1995) analyzed whether family stress increases the risk of burn hospitalization in children. Acute stresses were identified by determining the mother's and child's activities at the time of the burn. While 74% of mothers were at home, most were engaged in activities that temporarily disrupted their attention away from the child. Single mothers living alone were at increased risk of having a child hospitalized for a burn, compared to married couples. Factors that continued to be related to childhood burns were low maternal education and low family income.

Epidemiologic studies reveal that burn injuries and trauma to children occur more often in families that are already more stressed than the general population (Blakeney et al, 1993). These families are described as single-parent families with limited financial resources and with a large number of children. Seligman et al (1971) suggests that emotional disturbance in parents, especially depression, is associated with higher risk for burn injury in children, whereas Libber and Strayton (1984) report that the child with burns has more often had emotional or behavioural difficulties before the burn.

According to Blakeney et al (1993), even if stress is not an etiologic factor in burn injury, it could be expected to increase as a consequence of the injury. Hospitalization of a child can be stressful to any family, yet for the family that may be more 'burn prone' as described in epidemiologic studies, it can be difficult for a single parent to attend to the hospitalized child, as well as possible other children at home and also probably lose wages that are the only source of income for the family. The distress for families increase when as Blakeney et al (1993) explain, the child is discharged from the burn unit and parents are expected to provide or supervise the daily baths, dressing changes, exercises and wearing of splints and pressure garments.

Psychological distress in mothers has been found to have an impact on child rearing parenting styles, which ultimately will also affect the long-term recovery of the burn-injured child and how he/she is reintegrated back into the family and society. A study by Loeb (1995) investigated female parenting styles and the associations with psychological distress and interpersonal relations. Results indicated that mothers' poor parenting style is related to more psychological distress, dissatisfying interpersonal relations and more general deviance.

Psychological distress not only has an emotional impact on the family, but it has also been shown to have a physical reaction on the body. Shelby et al (1992) examined the stress profiles of spouses and parents of patients with burns greater than 20% total body surface area. Measurements of depression, anxiety and cell-mediated immunity were used. There were significant negative

correlations between immune responses in psychologic distress, indicating that immune function declined as depressive symptoms increased. These results support an interaction between psychologic distress and immunity and provide further evidence of the stressful nature of severe burn injury on close non-injured relatives.

Every family who arrives at a burn care facility is in crisis. The crisis of having to face the consequences of an injury to a member of the family system. As clearly stated in research findings cited earlier; the role of parents in a child's adaptation to a burn injury is crucial, therefore parents exhibiting potential stress is of concern. The varying stress responses of parents to their child's injury have been discussed, but with little reference to the mothers' feelings of self blame. This warrants a separate review.

4.6 **SELF BLAME AND GUILT IN MOTHERS OF BURN-INJURED CHILDREN: PREDICTORS OF STRESS SYNDROMES**

In Vigliano et al's (1964) study of mothers of ten children who had long recovered from severe burns; results indicated the existence of lasting emotional maladjustments in both children and mothers, related at least in part to the trauma of the burn. In fact, they contained evidence of adjustment problems of sufficient magnitude to justify in ordinary clinical practice, their treatment in an outpatient child psychiatric clinic. Furthermore, Vigliano et al (1964) report that all but two of the mothers in their samples were described as depressed by the two interviewing psychiatrists; six of the seven mothers cried openly during the interviews whenever the children's burns were mentioned. Feelings of guilt were common with all.

Close relatives of patients hospitalized for burns showed specific stress syndromes characterised by intrusive and avoidant responses to the post-burn trauma, as measured on the Impact of Events Scale (Horowitz, 1979) in Cella et al (1988)(2) study. Intrusive-avoidant stress responses could not be predicted by demographic information, severity of the burn, facial disfigurement or actual

responsibility for the burn; but by the mothers blaming themselves for the injury to their child. Cella et al (1988: 166)(2) concluded that "self blame is a predictor of a stress syndrome and its presence in relatives should therefore be assessed shortly after the burn to target individuals requiring primary prevention."

Mason (1993: 496) found that one of the mothers' initial responses as she attempts to rationalise the accident causation, is to ask herself "whose fault is it?" This question usually produces the admission that, although the accident was completely unintended, the ultimate blame rests with her. The failure to protect the child from the thermal injury results in feelings of guilt. Mason's (1993) results indicated that 81% (46 out of 57 mothers) had a desire to protect the child from any further harm arising from their personal feelings of guilt. The child's remaining scar also reminds the mother that the accident was allowed to happen, feeding guilt feelings even further.

Knudson-Cooper and Thomas (1988: 348) referred to guilt as one of the main sources of emotional stress for parents and other family members. "All parents feel guilty about the burn accident, whether they were actually involved or not. They feel that somehow they have failed in their role as protector of their child." There is also the fear that the child will never forgive the parents and blame them for the accident. They go through a process of imagining what they could have done, or not done, to prevent the accident. Knudson-Cooper and Thomas (1988) suggest that parents having to observe their child in pain and being powerless to stop it, accompanied by the knowledge that their child will be permanently disfigured and possibly disabled, adds to the guilt. Furthermore, Watkins et al (1996) suggests that if a patient dies during the first phase of postburn adaption; that of crisis (soon after the injury), certain family members will be at a higher risk for developing problems during the bereavement process with issues of self blame for the patient's death.

Most relatives carry this additional burden because (as mentioned before) they feel that they have contributed to, or caused the accident in which the patient was injured. Rizzone et al (1994) also produced similar results describing guilt

and self blame as being very common among mothers of children with burns. Some of these mothers stated that the accident could have been prevented if they were there. One mother felt so guilty about her son's burn injury that she had contemplated suicide if he had died.

Broadland and Andreason (1979) describes the fact that even when relatives have had nothing to do with the injury, some feel guilty. They explain this feeling on the basis of not having foreseen the possibility of the accident and not having taken steps to prevent it. Mason (1993) on the other hand, explains that some mothers are so filled with horror over their child's burn injury that they are unable to acknowledge blame for the accident or will make excuses to account for the accident to soothe their guilt feelings. This denial of guilt is usually a temporary response and acceptance of some responsibility usually occurs in time, which varies widely from minutes to months.

Other occurrences of guilt are discussed by Martin (1970) where in view of their child's visible injury and obvious physical distress; many mothers felt too guilty to express the anger and resentment which they felt towards the injured child. There are also those parents who felt that their child grew up or away from them during hospitalisation and some maintained this detachment in their relationship after discharge (Martin, 1970). These were particularly the parents whose anxiety and guilt after the accident were denied or unresolved. Mattsson (1979) states that beyond those denying attitudes of the parents, feelings of mourning the loss of their desired normal child and feelings of self blame in regard to their ailing child, usually begin to emerge.

In Cella et al's (1988)(2), longitudinal study on stress and coping in relatives of burn patients, the extent of guilt and self blame was measured to find out how it may predict persistent distress. Those relatives who were rated as guilt-ridden, clearly demonstrated more dramatic stress response symptoms than those who were either troubled by guilt (had mild guilt) or expressed no guilt. Most of the relatives who were quite distressed and guilt-ridden at the time of the burn injury, also were significantly distressed after six months and all showed at least

moderate distress.

In a different study by Cella et al (1988)(1) also analysing stress responses in parents of burned children, results indicated that all parents were quite distressed. The specificity in the nature of their distress was that they were more depressed and hopeless. Similar to individuals suffering from stress response syndromes, they were more likely to experience intrusive thoughts and use avoidant coping mechanisms. Cella et al (1988)(1) give a possible explanation for this, being that the injury itself and the often -painful procedures are striking visual assaults upon parents. Furthermore it is also possible that the guilt frequently associated with these injuries, contributes to the intrusive thoughts experienced. This relationship between guilt and intensity of stress response symptoms is well known (Horowitz, 1986).

Related to this, Martin, Lawrie and Wilkinson (1968) noted that the memories and effects of these burn accidents were usually recalled in detail and did not decrease significantly with time. Cella et al (1988)(2) findings also supported these results. These parents can be conceptualised according to Cella et al (1988(1)) in terms of post-traumatic stress disorder and related stress response syndromes.

Visual and other cues associated with a traumatic event (seeing one's disfigured child, often in pain) can serve as reminders of the event. This causes negative emotions and distress as if the event were re-occurring. Guilt and associated distress in this case can be either an antecedent or a consequent experience (Cella et al (1988)(1).

Wright and Fulwiler (1974) suggest that it could be assumed that 1.5 - 5 years is sufficient time for a reasonable, stable mother to adapt to a burn crisis, and if she still shows signs of disturbance at that point, then one is forced to wonder if she were not chronically disturbed before the burn crisis. If so, her disturbance may have in some way contributed to the accident.

Upon the occurrence of the accident, most of the abovementioned researchers

reported that the primary parental reaction of parents was fear for the survival of the child, but that this was quickly followed by guilt and general anxiety about the future. Jackson (1968) reported that 60% of mothers had upset nerves and 16% suffered nervous breakdowns, which was felt to be related to guilt and a loss of mother image. Furthermore these mothers possessed unconscious hostility towards the burned child. Martin (1970) hypothesised that such hostility stems from guilt and alienation, causing parents to fluctuate between rejection and overprotection of the child. Mason (1993) as mentioned before, discovered that failure to protect the child from injury results in guilt and this leads to a desire to protect the child even further. This according to Mason (1993: 496), is called "child protection action" which involves: (i) "spoiling the child to repair the damage done to him/her; (ii) anxiety at any further potential danger to the child, resulting in the mother becoming protective with the child to the extreme, (iii) experiencing a strong desire to warn others of the dangers of thermal injury."

Woodward and Jackson (1961: 319) define the mothers' feelings during the period when the child first comes home as involving two contrary emotions, namely "shame and guilt" and "angry". The mothers feeling shame and guilt are the ones who try to "make it up" to their children. They spend more than they can afford and are unable to say no in any form. Often they develop an over-protective attitude that is aimed at safeguarding the child from the risk of further accidents, but it is also associated with reducing their own guilt feelings. The mothers that are angry with their children are the ones who feel that their child has let them down. This hostility is not easily expressed openly, but sometimes shows itself in a crippling possessiveness, and encouraging the child to be dependant, which can only be harmful to the child (Woodward and Jackson, 1961).

Wright and Fulwiler (1974) describe the parents of burned children in their study as having experienced a loss of appropriate perceptions. Jackson (1968) and Martin (1970) also found similar results, and concluded that parents of burned children have an unconscious hostility towards the child due to the role perception loss. A trend towards both anxiety and hostility and pre-occupation with physical injury and/or deformity, as well as poor self-concept was observed

in mothers in Wright and Fulwiler's study (1974). Conclusions made in this study suggested that the mothers of burned children possess very low perceptions of themselves in general and in their ability to fulfil the role of a mother in particular.

Martin (1970) examined the interesting aspects of parents' and children's reactions following burns in children. Aggressive reactions occurred among children whose mothers consciously blamed themselves for the accident and who responded to feelings of guilt with depression and withdrawal from the child. Their children countered this loss of support with provocative, anxiety-arousing behaviour which was essentially a protest against the mother's withdrawal and an attempt to restore her interest and evidence of her care.

The interactional stress symptoms after a burn injury affects the whole family and often marriages are threatened. Vigliano et al (1964) reported that 4 out of 10 mothers had marital problems, 2 had been divorced within one year of the accident, 7 out of 10 were depressed and most felt it was necessary to suppress these feelings in order to help the child. These mothers reported their restraint from displaying or even discussing their feelings with their doctors at the time of the accident. They refrained from making their emotional state known because of the irrational apprehension that their action would distract the doctor from the care of the child. Also because of a guilty sense of selfishness over their own sense of need. Possibly for mothers carrying this guilt burden alone, it causes a tremendous strain on the family.

Woodward and Jackson (1961) also revealed that in a few cases marital conflict follows when a child is severely burned. It generally arises when the father blames the mother for the accident and by projecting all the fault on to her, he escapes from his own guilt feelings. The removal of his support seems to be one of the major factors in causing a breakdown in the mother.

According to Martin (1970) the burn accident frequently happens in the absence of the father and his experience depends on information given by others. His early reactions often reflect the marital relationships, for example when he is critical and uses the accident as a pretext for expressing anger at his wife.

Where the marital relationship was predominantly warm and supportive, he more often showed concern and tolerance. Furthermore many fathers also isolated themselves by visiting the children less often and leaving responsibility with their wives. The explanation offered for this common withdrawal that Martin (1970) noted, was that it may have been their unconscious anxiety of the mothers' failure to protect the child that somehow might extend to them and expose them to injury also.

Martin et al (1968) also notes an absence of parents visiting their burn-injured child in hospital, but for different reasons. These parents felt useless and helpless in the presence of the specialists' skills of the hospital staff. Parents also were acutely sensitive to what sometimes seemed to them a critical atmosphere and some failed to return to visit the child because of this.

Woodward and Jackson (1961) suggest that most mothers experience great anxiety and guilt and often the conflict centres around frustration at losing immediate responsibility for their child. This is shown by repeated requests to take home a severely burned child, by a mother who, at the same time, feels the accident is already evidence of her inability to be responsible and knows that in reality she could not nurse the child at home.

Coming to any Burns Unit can be a great strain for most mothers, even if their own child is not badly burned. Mothers describe nightmares that they have and some worry about other burned children that they have seen in the ward. One mother is even described as feeling so ill after two visits to the unit that she could not return, although her own son's burn was a slight one (Woodward and Jackson, 1961).

Not only is the visit to the Burns Unit traumatic for mothers, but it is an added strain to see other children suffering and crying in pain. Added to this, is her ever present guilt feelings to work through. For the family of the fatally burned child, the mother's guilt has a devastating effect. Martin et al (1968) referred to 6

out of 7 mothers who felt guilt arising from their absences at the time of the accident, and in some from an ambivalent relationship with the child before the accident. Guilt had a punitive effect; of the 3 mothers who showed suicidal tendencies, 2 received psychiatric treatment; 3 others suffered from severe depression and said they too, felt partially dead. Furthermore Martin et al (1968) states that when these parents gave up the hope that their child would survive, they could no longer feel like good parents, but only inadequate bad parents with no chance now to change this situation. This feeding the guilt feelings and self blame even more and adding to parental stress responses.

In Martin's (1970) study, results indicated that in 19 instances mothers consciously blamed themselves for the accident, while 27 mothers projected their feelings of responsibility on to other objects, including the child, other people and external circumstances, such as particular housing conditions and specific domestic practices.

Broadland and Andreason (1979) explains that eventually the relatives (i.e. usually the mothers), resolve their guilt feelings and achieve rationalisation, that relieves them from full responsibility for the accident. They do this for example, by thinking or claiming that the accident happened because it was G-d's will or because it would draw the family together, or because of the carelessness of others.

It is interesting to note that the guilt and self blame apparent in most mothers with burn-injured children cannot be compared to the self blame found among adult burn-injured patients. Gilboa, Shafir, Tsur and Floro (1983) noted that from their experience in the burns unit, there is the added anxiety of death because of the expectation of punishment as a result of the patient always tending to blame himself/herself for his/her burns. In Kiecolt-Glaser and Williams' (1987) study on self blame, compliance and distress among burn patients they reported that behavioural self blame for the burn accident was a significant predictor of poorer compliance with nurses, more pain behaviour and greater depression.

Tennen, Affleck and Gershman (1986) study on self blame among parents of infants with perinatal complications, recognised that behavioural self blame can bolster a sense of personal efficacy and is more likely to occur when victims perceive their misfortune as severe. These researchers reported that behavioural self blame was associated with greater perceived severity, and preventability of recurrence. The greater the perceived severity, the greater the self blame produced self blame in mothers, which in turn played an indirect role in adaption through its association with the belief that a recurrence could be prevented.

It would be useful to repeat this study with mothers of burn-injured children to examine the relations among severity of victimisation, self blame and perceived control over recurrence and adaption.

Janoff-Bulman (1979) suggested that the type of self blame adopted by a person has consequences for adaption. "Behavioural" self blame as Kielcolt-Glaser and Williams (1987: 187) state, "involves the attribution of undesirable events to one's behaviour and allows a person to perceive the occurrence of similar future events as more controllable." In contrast, attributions to stable aspects of the self are the dominant force in "characterological self blame", where negative events are seen as the result of personal inadequacies or failings. Characterological attributions may result in subsequent motivational deficits and greater distress.

No explanation of the abovementioned distinctions between the two kinds of affective consequences of self blame have been described by researchers in explaining mothers' guilt and self blame, although several researchers have alluded to an association between guilt over the occurrence of an accident and greater depression and anxiety in hospitalized burn patients (Hamberg, Artz, Reiss, Amspacher and Chambers, 1953; Hamberg, Hamberg and de Goza, 1953; West and Shuck, 1978).

Further explanation is given by Janoff-Bulman (1985) from the perspective of rebuilding a viable assumptive world, following victimisation after an injury or illness. He suggested that behavioural self blame appears to explain why the event happened to the victim in particular because of something he/she did or failed to do. While characterological self blame would also be a satisfactory way to respond to "Why me?". This self-attribution would be detrimental to the rebuilding of assumptions about personal invulnerability and positive self-esteem (Janoff-Bulman, 1985: 30).

In summary, a burn injury to a child is traumatic for both child and parent. The extent of the burn injury according to Verity (1995) does not necessarily equate with the stress it induces in the family. All parents seem to experience a grief process, exhibiting the emotions of guilt, anger and anxiety for their child's future. The psychological trauma of the accident seems to have long-lasting effects. Individual therapy during and after a child's hospitalisation may be useful for mothers to reduce stress and to develop better coping skills. Counselling can assist the parents to express their grief and to work through their guilt and self blame.

All the above research findings conclude that the mother seems to be a neglected victim of her child's thermal injury and that she is as much the victim of the injury as her child and her plight needs recognition. Unfortunately, to date, there have only been a few reported psychological interventions to assist mothers in helping them emotionally to support their injured child and family, as well as to assist them over the traumatic period and long-term recovery.

4.7 REVIEW OF SUGGESTED PSYCHOLOGICAL INTERVENTIONS FOR MOTHERS AND FAMILIES

Psychological support and interventions of burn patients and their families, by health care professionals, although urgently required, is not offered in South Africa. There is a shortage of burn professionals in terms of psychologists and psychiatrists. Rehabilitation with a multi-disciplinary team offering psychological assistance does not exist at any of the main burn unit hospitals, therefore long

term follow up of the burn patient is almost impossible. Future interventions are urgently needed in South Africa, as well as a protocol or psychological theoretical model to follow, in assisting with interventions. The literature indicates that there is no clear psychological intervention to assist both family and patient.

In a study by Hurt (1990) in the United States, results indicated that very little effort has been devoted to the development of intervention methods to assist paediatric patients to cope with hospitalisation and repeated exposure to highly invasive medical procedures. It was suggested in this study, that areas for contributions by medical psychotherapy consultants could include assessment, teaching of self control methods, staff consultation, patient and family support and planning outpatient follow-up.

Hurren (1995) suggests some interventions in the management of psychological consequences of burns; namely post-traumatic stress debriefing, the support of family and friends, psychotherapy, behavioural therapy, psychiatric approach, as well as social skills training.

Rizzone et al (1994) suggest consultations with social workers and other mental health professionals to allow mothers to express overwhelming feelings of helplessness, anxiety and guilt. Child psychologists and psychiatrists may also provide necessary information to mothers regarding their child's changed behaviour and emotional state after the burn. An understanding of how children react to a burn injury may help mothers regain some control of their parental roles.¹

The availability of parent groups have been useful in helping mothers adjust to their children's burns (Broadland and Andreason, 1979 and Rizzone et al, 1994). Fears relating to a child's survival, possible deformity and future adjustment can be discussed openly in groups. Through individual and group support, mothers can begin to understand their own feelings and possibly regain confidence in

¹However, at Red Cross there is no psychologist or psychiatrist to facilitate these helping roles.

their parenting ability.²

Fleets' (1992) literature review investigated the types of support available in the United Kingdom for burn patients and their families and their value in the adjustment process. It concluded that social support is valuable during rehabilitation, but that greater professional support programmes are required, as well as support services. In this study it reported that the majority of patients would welcome regular support meetings after discharge; even after 2 years post-injury. All patients or parents wanted additional information or support groups, hospital talks and social meetings. Fleet (1992) explains that pain, anger, fear of deformity and depression are necessary stages in emotional adjustment. Expression of these emotions is part of the healing process and therefore, patient education forms an essential part of treatment.

Orr et al (1989) suggest that by providing information to patients with burns and their families about the importance of social support, it may lead to more positive psychological responses to the burn injury. These researchers recommend adolescent and young adult volunteers to lead peer support groups for young persons with burns in the hospital. This will provide education, the opportunity to explore feelings and the experience of acceptance.

Watkins, Cook, May and Still (1992) focused on the role of the psychiatrist in the team treatment of patients with burns, to form a liaison with burn unit staff members. This would assist with the patient's normal process of psychologic adaptation after injury. The patient being the focus here, without mention of the family. Bernstein (1976) states that the psychiatrist should be required to deal with the management of disruptions and despair of the families; as well the care of the patient and staff issues, as an integrated member of the burn team. Helm (1992) views the psychiatrist as playing a major role in burn care, by assisting in co-ordination of care, communication with the primary physicians, prescribing rehabilitation treatment and more importantly providing follow-up care.

²Parental groups do not exist at Red Cross Children's Hospital due to lack of facilities, professional support, transport and financial problems of parents.

According to Doctor and Bernstein (1992) today's burn care professionals must learn many aspects about the psychology, the social and sexual backgrounds of their patients and the patient's families.

The health care provider's own experience cannot be depended on as a model for all human experience. The unique expression of the emotions of many patients from various backgrounds and in various states of health must be consciously considered by the staff.

Watkins, Cook, May, Still, Luterman and Purvis (1996) have identified specific interventions burn staff can make with family members to resolve the issues faced and thus facilitate appropriate postburn adjustment. This article describes a model of postburn adaption that delineates the most common cognitive and emotional issues faced by family members of burn survivors. It covers from the time of the patient's acute injury through completion of the patient's recovery and rehabilitation. It is one of the few comprehensive, theoretical models of interventions for the family.

Cella et al (1988)(1) make suggestions for psychotherapeutic interventions to involve specific methods to reduce depression and post traumatic intrusive and avoidant stress responses in parents of burned children. Early treatment is recommended to improve social ties and maximize access to available support mechanisms. Horowitz (1986: 247) stressed the distinct advantages of early interventions for stress-response syndromes; namely "immediate distress is reduced, chronic or delayed responses may be prevented, and pathological responses may not be fixed, making for a briefer intervention." Brief dynamic therapy for stress disorders is one appropriate modality or if the patient fails to progress well through the adaptive phases (within a few weeks); further intervention is needed. An outline of brief dynamic therapy for stress disorders is discussed in Horowitz's (1986) study.

Cella et al (1988)(2) explain that the trauma of a burn injury to a loved one and the subsequent reminders (scars, deformities, check-ups) cause more persistent distress in some family members than would be anticipated by a standard crisis model. Therefore, it is important to identify the relatives at risk early in the development of the stress response, to enhance their compliance with psychotherapeutic treatment and perhaps also the medical rehabilitation of their relative. Relatives should be assessed shortly after the burn to target individuals requiring primary prevention.

Blakeney et al (1990) acknowledge that there is a need for future research on family values and the long-term psychological adjustment of children after severe burn injuries. How the individual and his/her family move through this process from the moment of injury and how helping professionals can best assist them, are questions that require further study.

Blumenfield and Schoeps (1992) strongly suggest that family problems must be anticipated and addressed by the medical and mental health professionals caring for the patient. Family members' need to be prepared for what to expect during all phases of recovery and supported in dealing with their own reactions to the injured patient. Family members who are having major psychological difficulties should be offered counselling and therapy, joint sessions or family therapy can also be helpful.

According to Doctor (1992) there is a need to optimize parents' potential to provide adequate physical and emotional rehabilitation of the burn-injured child. Parents who are supported, encouraged and counselled during the inpatient phase can reinforce treatment goals for their child. Doctor (1992) claims that supportive interventions for parents during the acute period can enhance their ability in the adaption of their child during the rehabilitative phase.

So far the literature, merely indicates a need for psychological interventions and recommendations, but besides Watkins et al (1996) model, few explicit interventions have been detailed. Suggestions have been made with little detail

for specific intervention methods.

Goodstein (1985) recommends family groups with a hospital staff leader, as being very helpful to fill the emotional adjustment needs. Home visits, if at all possible, are critical to determine family and social functioning, as well as family dysfunctions.

Verity (1995) describes how the absent parent (at the time of the accident) is inevitably angry with the parent involved. Working through the second parent's anger often assists them to acknowledge that they in fact could have been the one involved in the accident. Verity (1995) suggests counselling to assist parents to express their grief and to work through residual grief from past losses.

Woodward and Jackson (1961) stressed the need for a hospital psychiatric social worker to get to know the child and mother in the early stages of inpatient treatment. The social worker can help the mother to appreciate that her own confusion is largely due to the sudden and unexpected quality of the new situation. She can help the mother with suggestions as to what to do during this early stage. When the child is home the social worker can help the mother to appreciate how the accident has upset the child's previous expectations of life being safe for him/her.

Bersohn (1987) describes how burn team members at the unit where she works, work together to establish a realistic and satisfying approach to long-term rehabilitation. The approach on the burn unit is family centred; where the social worker and psychiatrist work closely with other members of the team to help the patient and family cope with any emotional problems present at the time of the burn. They also work with issues arising out of the trauma of the accident and treatment. Crisis intervention is offered during the acute phase where support around life and death issues are dealt with. Help is also offered to the family in making plans for the long hospitalisation, during which the roles of all family members are generally disrupted. Later there is counselling for family members to be supported and encouraged to express their feelings in their own time.

Bersohn (1987) states that allowing the parents to assist in their child's care and management, can result in positive feelings and enhanced self-esteem, helping to decrease the parents' sometimes unavoidable feelings of guilt about the burn.

Forshaw (1987:22) asks the question "how many units prepare patients and their families to cope with the years ahead". The Frank Robinson Clinic in Manchester (U.K.) specialises in guidance and support for the patients and parents. Parents are educated in the anatomy of the skin, what problems will be met in the years ahead and how these can be overcome. Generally such interactive emotional support for the family is not a common occurrence in many hospitals. This is, as Forshaw (1987) describes, a paradoxical situation. On the one hand the increasingly high-technology burns unit can offer life to the extensively burned patients, who only a few years ago would have died of their injuries. On the other hand, the corresponding need to increase the availability of aftercare nurse specialists to meet the challenge of helping such patients and their families return to a fairly normal existence, is apparently denied.

Mason (1993: 495) developed a model of the mothers' responses to her child's burn injury at all various stages of the child's rehabilitative process. This model is called "the Maternal Thermal Injury Response Pattern" (MTIRP) which describes a phasic pattern of general response categories. The use of the MTIRP as an education tool for health care workers promotes increased understanding of what emotions mothers experience and further contribute to a model for post burn intervention for families.

Broadland and Andreason (1979) have a few suggestions for relatives of burn patients; namely, that hospitals prepare a simple pamphlet to be given to them on arrival, explaining simple facts about injuries from burns and the operation of the unit. A second way of providing communication and understanding among relatives would be the establishment of group support meetings, composed of family members or close relatives of patients. Ideally this group would be

conducted by a pair of group leaders - a psychiatric social worker and a nurse or physician who are members of the burn unit treatment team. The meetings would also serve to educate relatives about problems of burn trauma, particularly when discharge draws near. Broadland and Andreason (1979) suggest that group discussions would provide relatives with an open forum for raising questions. They would provide emotional support by strengthening the bonds formed between family members. Such a group would not be designed as therapy, but as a means of sharing strengths and information.

Mattsson (1979) explains that the association and identification with other parents of seriously ill children, is helpful to many parents. Both informally and in group discussions, they can share many of their distressing hardships and learn to adopt more realistic child caring attitudes, as well as being able to pass on their positive experiences to less knowledgeable parents.

Munster (1993) describes a family support group as being composed of spouses, significant others, siblings and close friends of the burn survivor. The purpose of the group is to provide an opportunity for family members and friends to express their feelings and discuss the impact of the trauma on their lives. Issues such as their fears, feelings of helplessness, anger and guilt. Group members benefit not only from sharing their own emotions, but also from listening to others express similar feelings and from learning how other people have coped in a situation that is similar to theirs.

Martins et al (1968) survey recommended that the parents of the severely injured child need even more comfort, sympathy and explanation of what they see and of what is being done to their child. These researchers suggest that additional help might be provided by a medical social worker, specifically attached to the unit, who is not committed directly to the clinical care of the child, as the doctors and nurses. Further suggestions are that help should be offered as soon as possible after the child's admission and that treatment of the reactions of the parents and other relatives, is almost as urgent as resuscitation and other

surgical treatment of the severely injured child.

Blakeney et al (1993) recommend the value of completing a prospective longitudinal study of the stressors, the strains and the healthy defence mechanisms that are required for parents of children with burns to provide physical and psychologic care to a recovering child. Family issues need to be addressed during the initial hospitalisation and in discharge planning. Blakeney et al (1993: 78) emphasise that "just as we plan when and where the child with burns will receive outpatient physical therapy, we must also consider how to assist the parental caretaker(s) in dealing with their own emotions and in coping with the numerous stressful demands of parenting a recovering child without destroying the parent-child bond."

Rudowski (1976) acknowledges that problems of parent psychology and preparation of the parents for contact with their children, are of fundamental importance. Psychological disorders in children may persist for a long time after leaving hospital and often require the advice of a psychologist and psychiatrist, as well as having a supportive, understanding family.

Doctor (1979) describes the role of the social worker in the assessment and treatment of the family of the burned child. Seeing parents during the initial, vulnerable period around admission, facilitates the establishment of a rapport as well as rapid assessment. During Doctor's (1979) contact with parents in this period of disequilibrium, she found that parents tend to zero in on core issues of family dysfunction, and search for ways to cope and reach out for help. The time in the waiting room is used to help parents get in touch with their fears and guilt.

Later in the rehabilitation stage the child and family should be prepared to re-enter the community. Doctor (1979) feels that it is in this follow-up stage, that there is a particular need for development. A need for follow-up groups for parents, increased input on a community level and research efforts in assessing the long-term impact in children and parents.

According to Blakeney and Meyer (1996) the long-term impact on the families of burn survivors has not been well studied, but scanty empirical data indicate

the sequelae to be significant. Families may need psychotherapeutic attention for months or years as they adapt to new roles. Regular monitoring of psychosocial problems is important in early intervention. Blakeney and Meyer (1996) stressed the importance of treatment plans and programs to be based on an assumption of life beyond the hospital. Supporting and enhancing whatever coping strengths the family manifest, is the primary task for psychotherapy.

Hill (1979) emphasises that contact maintained, either on an ongoing or as-needed basis, is very important in helping families resolve many of the practical concerns that follow discharge. Interim telephone contact with very anxious families can be tremendously supportive and also allow an opportunity to reinforce or clarify instructions received in the clinic. In order to facilitate rehabilitation, the family needs to be involved in and be aware of both intermediate and long-range medical and social rehabilitation goals and the importance of their roles in this process. Psychological intervention should be directed towards restoring the family to its pre-burn position; which is achieved by contact with the family over time, as they are helped to understand and gradually prepare for required adjustments (Hill, 1979).

Bowden (1979) states that the family must constantly be considered in dealing with the child's rehabilitation, because in some cases the family presents special problems that significantly impede progress for the child. Some families are so disorganised that they cannot manage care and rehabilitation of a severely burned child. Psychotic parents, problems with abuse and neglect, and intellectual limitations that interfere with basic day-to-day functioning, are all examples of serious problems. These crisis-prone families require continual community support and monitoring to maintain a child in a rehabilitation program, as well as financial aid.

Broadland and Andreason (1979) suggest a way for social work staff to be effective and that is to offer family members resources and information about funds available to assist in the high cost of hospitalisation, funds for care of dependants and opportunities for vocational rehabilitation.

Unfortunately sophisticated rehabilitation programmes, long-term follow-up services and community outreach assistance to both patients and families is sadly lacking in many countries. South Africa being one in particular, with our high percentage of burn accidents and fatalities, something urgently needs to be done. There is also a lack of research in the field of assisting parents and relatives in the care of their burned child, as well as how to provide emotional support for the concerned family.

4.8 THE NEED FOR ADDITIONAL FUTURE RESEARCH

Petro and Salzberg (1992: 617) make three recommendations for future interventions and programmes "(1) the burn team should define their objectives and carefully design their rehabilitation programs to resolve psychological problems. (2) Rehabilitation programs should include the interaction of physical limitations and psychosocial factors affecting those limitations. (3) A planned approach to comprehensive rehabilitation for the burn patient should incorporate pre-injury, significant life events and post-injury adjustment, as well as coping mechanisms used during hospitalisation." These authors note that although they acknowledge that, over time, patients with large burns will require continued burn team support and possible intervention, such programs do not exist.

Furthermore, not only is there a need for more interventions and correct protocols to follow, but Helm (1982) identifies another serious problem in burn rehabilitation; only a few clinical studies have compared various treatment techniques to determine which protocols are best, as related to treatment outcome. Protocols for inpatient rehabilitation are different from outpatient rehabilitation. There is no comparison of these treatment protocols between institutions. The lack of research is also discussed by Helm (1992); longitudinal research involving multiple burn centres with a common protocol would allow for adequate numbers of patients to be studied. Valuable information could be collected for predicting and preventing complications, and it would provide outcome data for patients to help them plan better for their future.

Adler (1992) observed that many research findings in the area of family support

needs replication and the scope for further research is immense. The immediate survival of the patient with burns undoubtedly depends mainly on the skills of the surgical, anaesthetic and nursing staff. However, the patient's long-term adjustment is likely to depend on personality and family support, therefore Adler (1992) views the need for evaluative studies to be conducted in this area.

Knighton, Carrougher, Marvin, Bayley, Rutan and Weber (1992) in their report on research priorities for burn nursing, concluded that a major goal for research should be the identification of nursing interventions to reduce stress in patients with burns. In addition, interest also lies in learning which interventions are most effective in the support of successful coping mechanisms in-patients and their families. Appropriate timing of such interventions is also necessary and warrants further study. Furthermore, collaborative research among nurses, social workers, psychiatrists, psychologists and child life workers would seem most appropriate in order to gain an understanding of individual stress and coping behaviours. Knighton et al (1992) suggest that additional information could be gathered on family responses to stress.

Shelby et al (1992) maintain that the relevance of their study provides further evidence of the stressful effects of severe burn injury on close non-injured relatives of the patient. Suggestions that additional work is needed to develop interventions focused on augmenting psychosocial adjustment for the close relative care giver, is prescribed. The benefits of such a programme will not only positively affect the non-injured relative, but will also help optimise the rehabilitation of the recovering patient with burns.

Unfortunately, as Helm (1992) observed, there is an acute shortage of allied health personnel trained in burn rehabilitation. This applies not only to the United States, but in South Africa as well. A large number of occupational and physical therapists have left the hospital setting to work either in private practice or with home care agencies. Helm (1992) explains that an influencing factor for the exodus is financial; which also holds true in South Africa. This is reaching a critical stage in most hospital environments. To date, no psychologist or

psychiatrist forms part of the multi-disciplinary team at the only children's hospital on the African continent. With this critical shortage, a consideration would be training another type of rehabilitation specialist to care for patients and their families.

As medical research develops, increasingly sophisticated techniques for saving the lives of more severely burned persons, psychological research, emotional support and psychological interventions for both the patient and family, lag very far behind. Severe burn patients' lives are being saved and then they are being put back into the community with little or no support being offered, with disastrous effects of social withdrawal, depression and even suicide. Psychological research may be applied towards improving the quality of life for patients with severe burn injuries who survive, as well as the impact of the injury on their families.

Gilboa et al (1994) emphasises that by advancing the rehabilitation field, we can ensure that those individuals surviving severe burns have optimal recovery of both function and appearance, so that not only will life be preserved, but also the quality of that life, thus reducing the burden on the survivor, the family and the community.

There is much work to be conducted in South Africa in all the abovementioned areas, hence the motivation for this research study.

CHAPTER FIVE

METHODOLOGY

5.1 MOTIVATION FOR THE STUDY

It was brought to the present researcher's attention that there is a desperate lack of psychological assistance for burn patients and their families in the hospital setting in South Africa. This includes both adults and children burn survivors. Psychological help is needed over the immediate shock of the burn injury, the trauma and pain endured, as well as the long-term suffering (lengthy hospital stay, skin grafts and painful surgical procedures). Scarring, deformities, a lack of certain body functions and possible amputations are all part of the severe burn patient's long-term recovery.

No psychological assistance is given to these patients, both adults and children, who are hospitalized at separate institutions. A social worker is available for all wards at both hospitals, therefore cannot possibly serve to assist the entire burn ward and could not possibly see all the burn-injured patients individually. Burn patients need support and counselling through their traumatic ordeal and to help them adapt once they are discharged. Unfortunately another shortage of assistance for burn patients and their families, is the fact that (to date), no rehabilitation and long-term follow-up exists (a project currently being proposed).

Another concern is the lack of informative research providing a protocol for therapeutic interventions for burn patients and their families in South Africa. In fact, a lack of research, in general, is sadly lacking from the psychological perspective in the South African context.

At the Red Cross Children's Hospital Burn Unit, very little psychological assistance exists for the children hospitalized (aged 0-13 years).

This year (1998) is the first year in which a psychology intern has been taken on. Recently reflexologists also started to volunteer on a regular basis and other outside volunteers come and play with some of the children. No support, counselling, psycho-education, nor interventions are given to the parents of these patients who suffer from their own numerous reactions to the burn trauma, namely, shock, anxiety, guilt and continuous post-traumatic stress symptoms. Parents, mothers in particular, need to provide support to their burn-injured child, but find it difficult if they themselves are severely traumatised.

It is specifically in the area of mothers' emotional reactions to their childrens' burn injury that this research aims to target. It also hopes to be able to provide psychological assistance in the future, in terms of specific therapeutic intervention methods. Members of the Red Cross Burns Unit teams have asked the researcher to include in this study, future recommendations and a protocol to follow for psychological interventions to assist family members.

5.2 RATIONALE FOR THE STUDY

- 5.2.1 The caregiver (usually the mother) plays a significant role in her child's eventual post-burn outcome, partially through compliance with treatment and by providing a supportive environment. For this reason the psychological adjustments of the mother whose child has been burned, is of concern.
- 5.2.2 To gain insight into the mothers' concerns and needs, so that it may be of future use to assist these caregivers facing similar stressful situations.
- 5.2.3 To identify how complex the psychological and emotional reactions are, associated with burn care. It will possibly become evident that more should be done by means of a therapeutic intervention to cater for the needs of the family.

5.2.4 The needs and concerns expressed by the mothers will be able to facilitate a model for future interventions.

5.3 AIMS OF THE STUDY

5.3.1 To study in the acute phase only, the emotional reactions and concerns of mothers whose children have burn injuries.

5.3.2 To measure the mothers' self blame and guilt, concerning the accident.

5.3.3 To measure the mothers' stress response in terms of intrusive and avoidance thoughts.

5.3.4 To explore the mothers' reactions, concerns and causes of anxiety in order to link it to future interventions.

5.3.5 To inform the institution of appropriate future interventions.

5.4 CENTRAL RESEARCH QUESTIONS AND HYPOTHESES

Hypothesis one

Mothers of children with burns suffer from self blame and guilt.

Hypothesis two

Mothers of in-patients score higher and suffer from more self blame and guilt than mothers of out-patients.

Hypothesis three

Mothers of in-patients score higher on the Total Self Blame Interview.

Hypothesis four

Mothers of children with burns exhibit a heightened state of psychological stress in the acute post-injury period, as measured by the Impact of Events Scale

(Horowitz, 1979).

Hypothesis five

Mothers of in-patients score higher than mothers of out-patients and have more intrusive and avoidance thoughts, as measured by the Impact of Events Scale (Horowitz, 1979).

Hypothesis six

The child's percentage burn has an effect on the mothers' scores from the Self Blame interview and Impact of Events Scale.

Hypothesis seven

For any mother with a burned child, the scores in the Self Blame interview and the Impact of Events Scale are positively correlated (intense feelings of self blame and guilt are associated with frequent intrusive and avoidance thoughts).

5.5 SAMPLE SELECTION

Sample selection

2 Groups.

The **in-patient group**: Mothers of children hospitalized with burn injuries.

The **out-patient group**: Mothers of children with burn injuries seen at the out-patient burn clinic.

20 Mothers were seen in each group, with a total of 40 subjects.

Criteria for inclusion

1. A delimiting time range between burn injury and enrolment in the study is between 1 - 10 days.
2. Mothers of burn-injured children who have between 2% - 65% total body surface area (T.B.S.A.) burned.
3. For out-patients, the T.B.S.A. burned is between 2-15%.

4. For in-patients, the T.B.S.A. burned is between 15%-40% or less if burns are to hands, face or perineum.
5. Both partial and full-thickness burns.
6. Patients aged between 0-13 years.
7. Etiology of the burn will include all variations, i.e. flame, hot water, oil, chemical, electrical.
8. Location of injury will include both indoor and outdoors.

Exclusion criteria

- (i) Any burn injury over three weeks old.
- (ii) Any burn injury under 1%.

Sample description

A non-probability convenience sampling approach was used as the researcher had to rely on voluntary participation of mothers. Consequently, saturation sampling rather than random sampling was necessary to ensure a sufficient sample size for the present study (Kerlinger, 1986). Of the 40 subjects included, 20 were from each group (out-patients and in-patients).

Questionnaire administration

The approach used by the researcher was to explain to individual subjects that the researcher is not a doctor or a nurse, but a neutral person interested in the concerns of the mothers.

Once verbal acknowledgment to participate in the study was obtained, confidentiality and anonymity explained; subjects signed a consent form (see

Appendix 2).

The researcher then proceeded to complete the questionnaire forms together with each subject.

The Pilot Study

Before administering the questionnaire and interviewing the mothers, the researcher spoke to 10 subjects in each group, in order to become orientated and acquainted with the needs and feelings of patients (from both out- and in-patients). Five patients from each group participated in this pilot study. Each subject was interviewed and asked for feedback on the clarity of the instructions and questions. The interviews were also timed. In response to feedback, the researcher modified the questionnaire. These modifications were however minimal, as the subjects in the pilot study reported generally clear questions and instructions.

5.6 MEASUREMENTS: QUESTIONNAIRES

5.6.1 Demographic and biographic information was collected. Details of the etiology of the burn was obtained (fire, hot water etc.) as well as location of injury and how the burn occurred. The total body surface area burned (T.B.S.A.) was documented in percentages (e.g. 50% burn means that half the body surface area is burned) and the major burn area was recorded (e.g. face, hands, legs etc.)

5.6.2 Semi structured interviews (see Appendix 3). This questionnaire identifies relevant information relating to mothers' reactions, concerns, feelings and worries about her child's future, the emotional support obtained and how the mothers are attempting to deal with their child's injuries.

5.6.3 The Self Blame questionnaire (see Appendix 4) is a six-item instrument

adapted from Kiecolt-Glaser and Williams (1987). Questions 3-6 were modified to be used with mothers instead of burn patients. The 1-4 point Likert scale rating that subjects completed in response to a question was rated from 1 (not at all to blame) to 4 (completely to blame); 4 being the highest rating in all 6 questions.

Kiecolt-Glaser and Williams (1987) validated the self blame questionnaire and have demonstrated it to be a reliable and valid measure to assess self blame and perceived avoidability of the accident.

5.6.4 The Revised Impact of Events Scale (Horowitz, 1979) is a well-documented and validated measure of subjective stress (see Appendix 5). Internal reliability, retest reliability and sensitivity tests have been conducted. The Impact of Events Scale is used to assess current subjective distress for any life event. The wording is not anchored to a specific occurrence, but to the particular qualities of conscious experience that encompass all stressful life events. Items on the Impact of Events Scale are frequently endorsed by a population seeking help for post-traumatic stress disorders. This 15-item scale also yields subscores for both intrusive and avoidant stress responses. For example, an item measuring an intrusive response is "pictures about it (the traumatic event) popped into my mind". A sample item measuring an avoidant response is "I stayed away from reminders of it".

The 15-item Impact of Events Scale was reduced to 7 items by combining certain subsets. The intrusion subset questions from the original scale were combined; namely question no. 1 + 10 = No. 1 on the revised scale. Questions 4 + 6 = 3 and question 14 = 4. From the avoidance subset, questions 2 + 3 = 2. Questions 8 + 15 = 5 and questions 9 + 13 = 6. Question 12 = 7. (See Appendix 6) for the revised, reduced 7-item scale used.

Horowitz et al (1979) have noted that persons of various educational,

economic and cultural backgrounds have been able to use the scale.

5.7 STATISTICAL ANALYSIS

The three questionnaire results from all 40 mothers were entered into a computerised statistical package which was used for all the analysis. Frequencies and percentages were calculated for the variables of interest.

The following statistics: the mean, mode, standard deviation, range and confidence intervals were calculated for the Total Self Blame Score and the Blame-Guilt Score for 40 mothers, as well as mothers of in- and out-patients, separately. (Refer to Chapter Six (5.1) for explanation of Total Self Blame Score and Blame-Guilt Score.)

The mean, mode, standard, range and confidence intervals were also calculated for the Impact of Events Score and the Intrusion and Avoidance subsets. This was again separated for all 40 mothers of in- and out-patient groups. (Refer to Chapter Six (5.2) for explanation of how Impact of Events Scores were calculated.)

The Mann-Whitney test (the non-parametric equivalent of the two sample t-test) was used to compare the groups, as the data was categorical. The Mann-Whitney tests were performed on the in and out groups in respect of all the following scores: Total Self Blame and Blame-Guilt Score, as well as all scores from the Impact of Events Scale and the Intrusion and Avoidance subsets.

The Chi-Square test (Pearson, 1904) was used to examine the association between the type of mothers (in- and out-patient groups) with each of the above mentioned scores.

Correlation coefficients (Pearson, 1896) were used to measure the relation between 2 variables. The following variables were correlated: Total Self Blame and Impact of Events Scores. Intrusion and Avoidance Scores, Blame-Guilt and

Intrusion Scores. Blame-Guilt and Avoidance Scores. Total Self Blame and Intrusion Scores and Total Self Blame and Avoidance Scores.

Qualitative data in the case of question 14 on the semi-structured interview ("as a parent how are you feeling now?") was reported as the mother described her feelings at the time of the interview.

The results of these statistical tests are presented in Chapter Six.

University of Cape Town

CHAPTER SIX

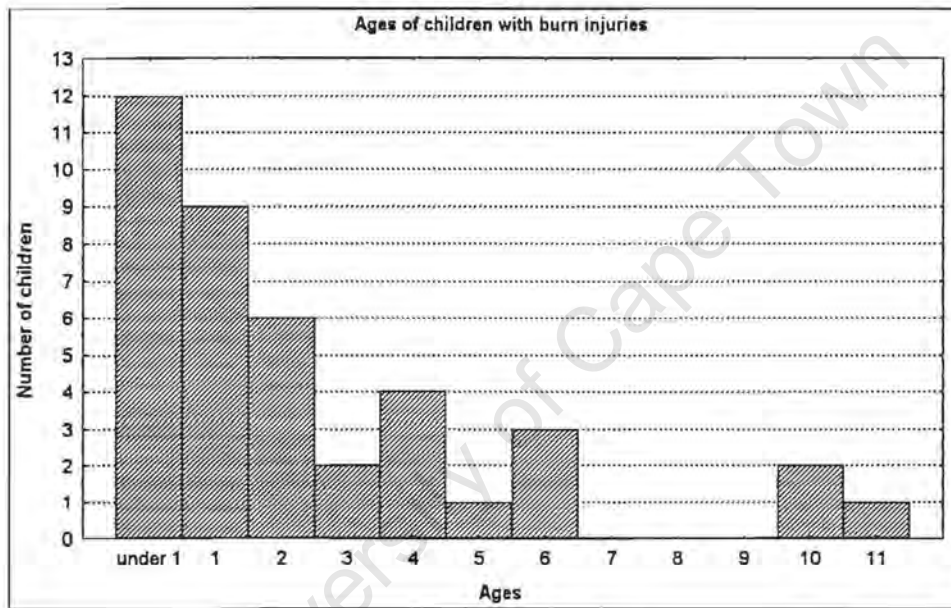
RESULTS

1. DEMOGRAPHIC INFORMATION: BURNED CHILDREN

1.1 Children's Age and Gender

40 mothers were interviewed. Of the 40 children with burn injuries, 21 were males and 19 females. Graph 1 shows the age ranges of these children.

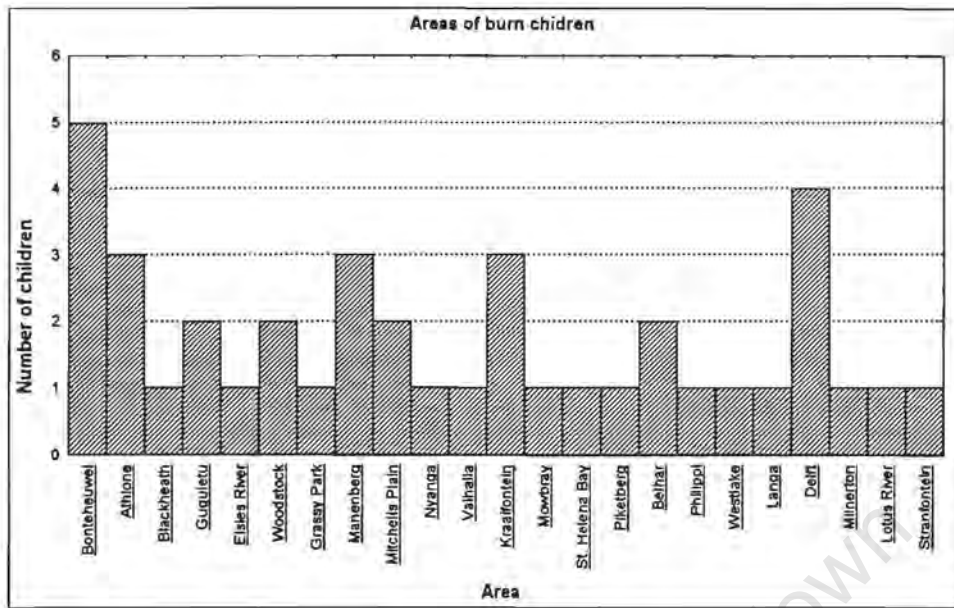
Graph 1: Age Ranges



1.2 Vulnerable Geographic Areas

The Western Cape distribution of housing facilities would suggest that certain residential and industrial areas would be more represented in the population of burn patients. Although the sample is small, this would be consistent within the literature consensus of increased vulnerability of persons living in poor socio-economic circumstances. This result is overwhelming confirmed in Graph 2. The highest percentage of burn patients admitted were from Bonteheuvel (12.5%), Delft (10%), with 7.5% from Kraainfontein and 7.5% from Manenberg.

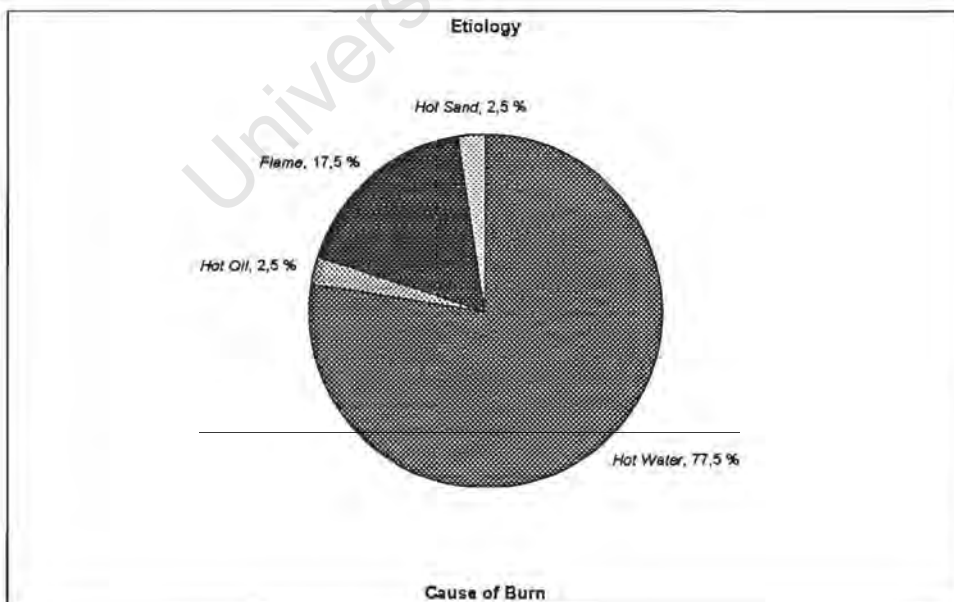
Graph 2: Area of burn patients



1.3 Etiology

Graph 3 represents the cause of burn injuries with hot water being the most frequent for both in and out patients.

Graph 3: Etiology



1.4 Location at time of injury and circumstance in which the injury occurred

Graph 4 summarises the locations at which the children sustained their burn injuries with the kitchen being the most frequent place of injury.

Graph 4: Location at time of injury

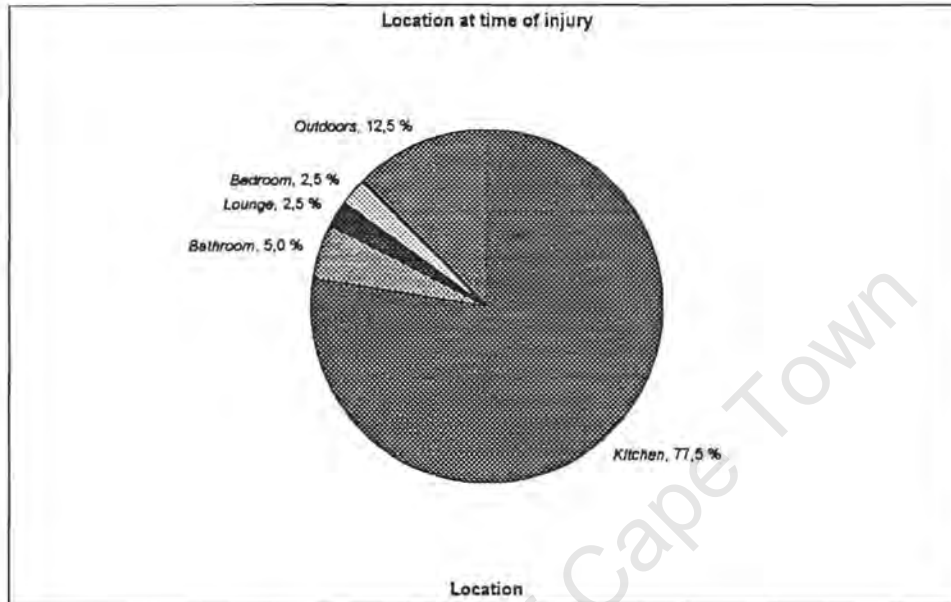


Table 1 indicates the circumstances in which the injury occurred.

Table 1: Circumstances

| Circumstance | Percentage |
|---|------------|
| Knocked over hot water (coffee, tea, kettle, pot) | 15% |
| Pulled kettle cord onto themselves | 55% |
| Hot water in bath | 10% |
| Fire | 17.5% |
| Other (car accident) | 2.5% |

By comparing the location at the time of the injury and the circumstance in which the injury occurred, a clear relationship can be seen between the two. In this sample most of the burn accidents occurred in the kitchen and the most frequent circumstance was of children pulling the kettle cord onto themselves.

1.5 Total body surface area burned (T.B.S.A.)

Table 2 represents the amount of burns sustained during the injury, expressed in percentages.

Table 2: Percentage burn and frequencies

| Percentage Burn (T.B.S.A) | Frequencies |
|---------------------------|-------------|
| 1% | 2 |
| 2% | 4 |
| 3% | 4 |
| 4% | 1 |
| 5% | 3 |
| 7% | 1 |
| 8% | 4 |
| 9% | 1 |
| 10% | 2 |
| 11% | 2 |
| 12% | 3 |
| 13% | 1 |
| 14% | 3 |
| 18% | 1 |
| 22% | 1 |
| 25% | 1 |
| 30% | 2 |
| 31% | 1 |
| 35% | 1 |
| 37% | 1 |
| 38% | 1 |

55% had 10% or lower total body surface area burns. The highest percentage of subjects burned fell into the 2, 3 and 8 T.B.S.A burns.

1.6 Burn on body

Table 3 indicates the body areas burned with the face being the most frequent.

Table 3: Burn Area

| Area | Percentage |
|------------------------------|------------|
| Face | 40% |
| Hands | 12.5% |
| Genitalia | 2.5% |
| Arms | 25% |
| Legs | 7.5% |
| Other (chin, scalp, neck) | 12.5% |

2. SEMI-STRUCTURED INTERVIEW: MOTHERS' RESPONSES

The semi-structured interview consisted of 14 questions. The 13 questions and the most frequent responses to each question given by mothers of burned children are presented in Table 4.

Table 4

| No. | Questions from the semi-structured interview | Response given most often |
|-----|---|---|
| 1 | Who was with the child at the time of the accident? | The mother |
| 2 | What was your reaction when your child was burned? | Cried; Panicked |
| 3 | How are you dealing with your child's injury? | Thinks about it all the time |
| 4 | Do you have any emotional support? | Family stands by the mother |
| 5 | What emotions are you feeling now about the burn injury? | Sad; Worried |
| 6 | Are you able to be supportive to your child? | Yes |
| 7 | What are your concerns in general? | Worried about the child's scaring and pain |
| 8 | When you think specifically about your child's burn injury, do you think about any of the following? | How it must feel; How much pain he or she is in |
| 9 | Do you feel that you are being informed enough about your child's medical condition from doctors and nursing staff? | Everything is being explained |
| 10 | What worries you about your child's future? | Scaring; Will the child blame me? |
| 11 | Are you worried about your own levels of stress and coping? | Yes, I am very worried and stressed; Depressed |
| 12 | If you were offered support and counselling through this crisis would you take it? | Yes |
| 13 | Ideally, what kind of support could assist you? | Ongoing support group with other mothers of burned children |

There were only a few responses given to question 14. The responses are presented separately for mothers of in and out patient groups and are presented in tables 5 and 6.

Table 5: Mothers of outpatients

Q14. As a parent, how are feeling right now?

| No. | Responses |
|-----|--|
| 1 | Am I negligent? Am I a good mother? |
| 2 | I'm hurt for the child. |
| 3 | You can burn me but not her. |
| 4 | Child needs more places to play. |
| 5 | Can't explain. Feel very guilty. Could have prevented it. It is my first child, I feel bad. |
| 6 | Learnt a lesson to look after him and not leave him alone. Teach him the difference between right and wrong. |
| 7 | Depressed. |
| 8 | If I were there I would feel better. |
| 9 | Every pain she has, I've got. |
| 10 | Feel guilty for sending him to his aunt. I blame myself. |
| 11 | I'll be more careful and cautious now. |
| 12 | Worried. She must get better. Worried about scars and future. |
| 13 | In shock. |
| 14 | Terrible. |
| 15 | Hard to explain. |
| 16 | Better now. |

Table 6: Mothers of inpatients

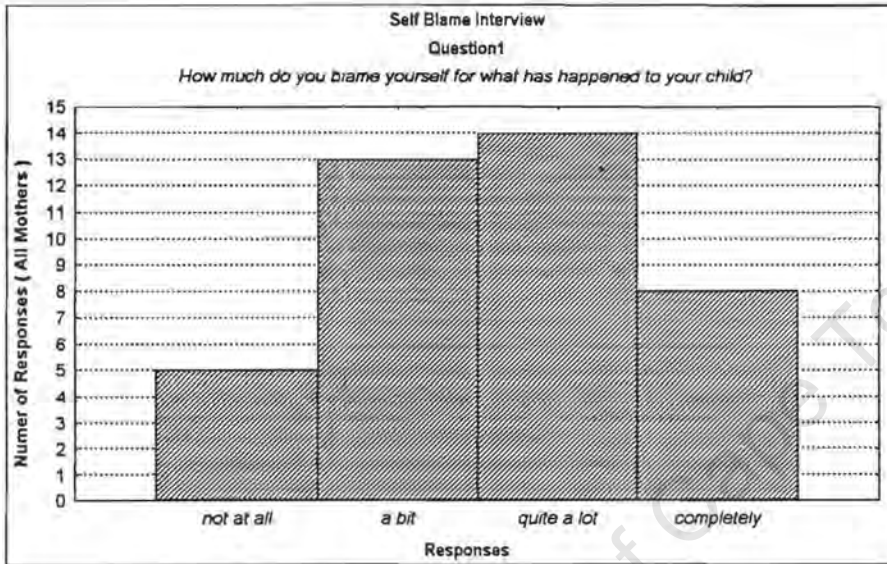
Q14. As a parent, how are feeling right now?

| No. | Responses |
|-----|---|
| 1 | Better than a few days ago, just worried. |
| 2 | Heart sore. He can't take pain. |
| 3 | When I am with him, I feel better. When I am not there , I think about it all the time. |
| 4 | Feel responsible as a mother. |
| 5 | Bad, sad. So many "ifs" in my mind. If only I did not boil the water. |
| 6 | I want to be at home with him, not at work. |
| 7 | This is to learn lessons from, learn to be more responsible, open my eyes, take better care of him. I pray a lot. |
| 8 | I want to keep him safe, protect him. |
| 9 | Drained, exhausted, I wish I hadn't boiled the kettle. |
| 10 | Feel empty, want to cry. Child's father is dead. |
| 11 | Heart sore, afraid of husband, helpless to watch him in pain. I would rather have been burned. |
| 12 | Your future is not in your hands, it is in G-d's hands. I'm here to look after him. |
| 13 | I have to be strong for the child. |
| 14 | Mixed emotions, lots of "should have's" in my mind. |

3. SELF BLAME INTERVIEW (Kielcolt-Glaser and Williams, 1987)

There were 6 questions in the Self Blame Interview. The following Graphs 5 to 10 summarize the answers given to each of the 6 questions. Tables below each histogram indicate the responses taken from mothers of in and out patients.

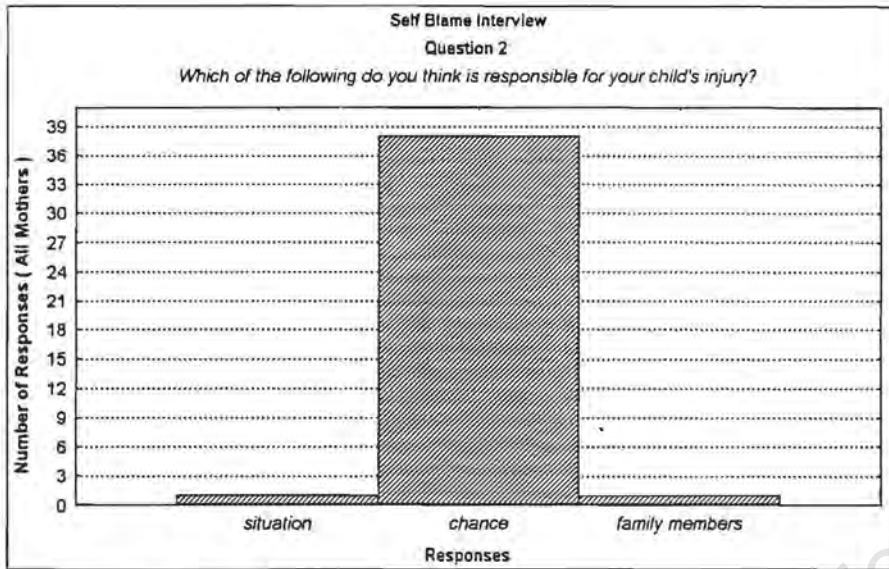
Graph 5: Question 1



| Response | Mothers of Outpatients | Mothers of Inpatients |
|--------------------|------------------------|-----------------------|
| <i>Not at all</i> | 2 | 3 |
| <i>A bit</i> | 6 | 7 |
| <i>Quite a lot</i> | 7 | 7 |
| <i>Completely</i> | 5 | 3 |

The number of responses from both groups are evenly distributed in all the categories. Most mothers, with varying degrees of blame, feel responsible for their child's accident.

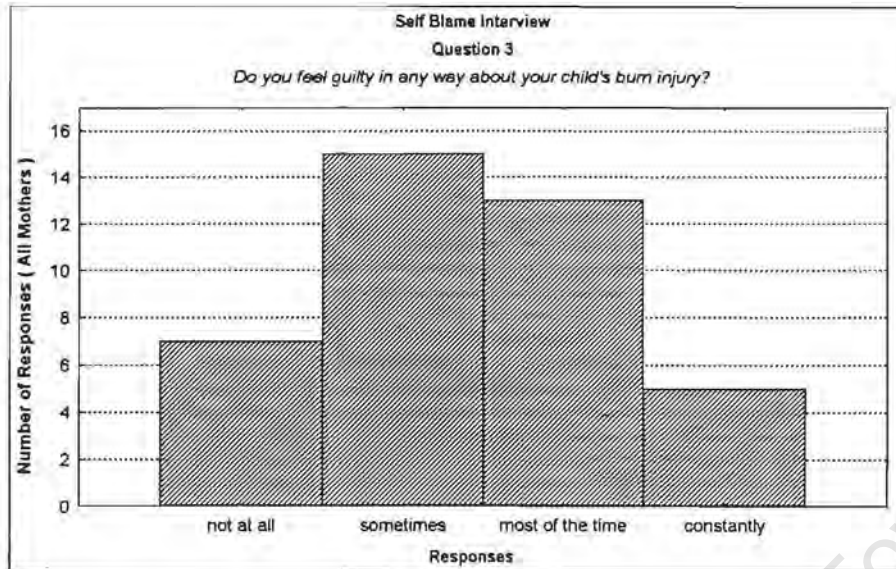
Graph 6: Question 2



| Response | Mothers of Outpatients | Mothers of Inpatients |
|----------------------|------------------------|-----------------------|
| <i>Situation</i> | 0 | 1 |
| <i>Chance</i> | 20 | 18 |
| <i>Family</i> | 0 | 1 |
| <i>You, yourself</i> | 0 | 0 |

Almost all mothers from both groups believe that the child's burn injury occurred by chance.

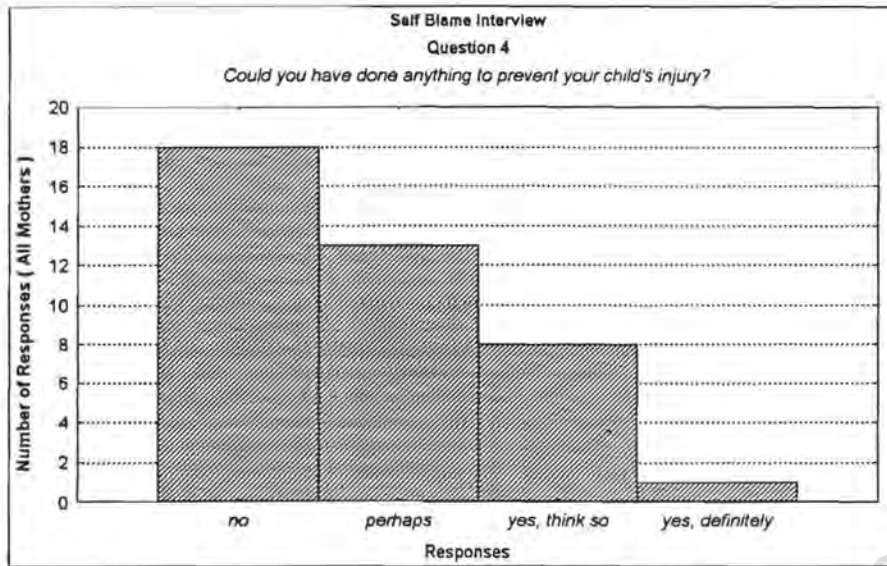
Graph 7: Question 3



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------------|------------------------|-----------------------|
| <i>Not at all</i> | 3 | 4 |
| <i>Sometimes</i> | 10 | 5 |
| <i>Most of the time</i> | 6 | 7 |
| <i>Constantly</i> | 1 | 4 |

It appears that the mothers of inpatients have chosen the response of "most of the time" and "constantly" more often than the mothers of outpatients. On the other hand, the response of "sometimes" is more frequent in the mothers of outpatients.

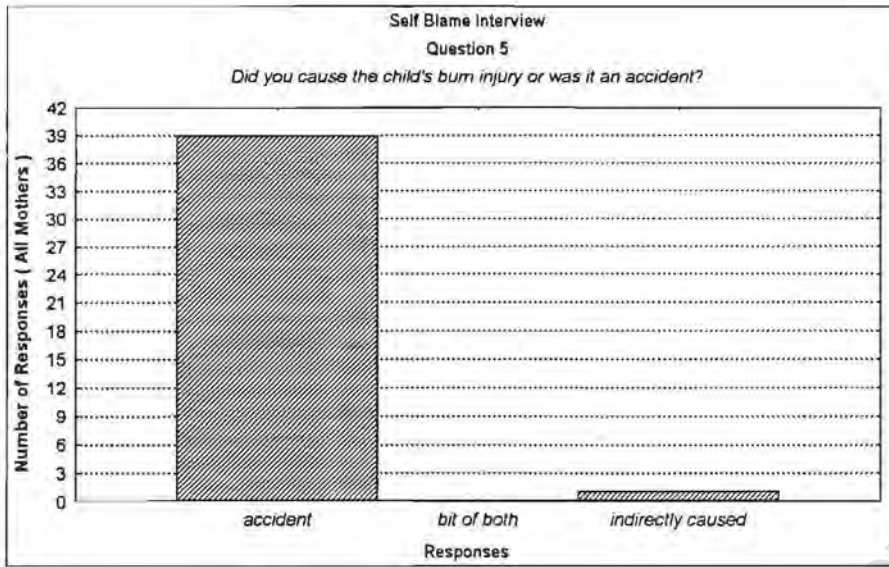
Graph 8: Question 4



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-----------------|------------------------|-----------------------|
| No | 10 | 8 |
| Perhaps | 5 | 8 |
| Yes, think so | 4 | 4 |
| Yes, definitely | 1 | 0 |

The responses of both groups are similar as most of the mothers doubt that could have done anything to prevent the injury.

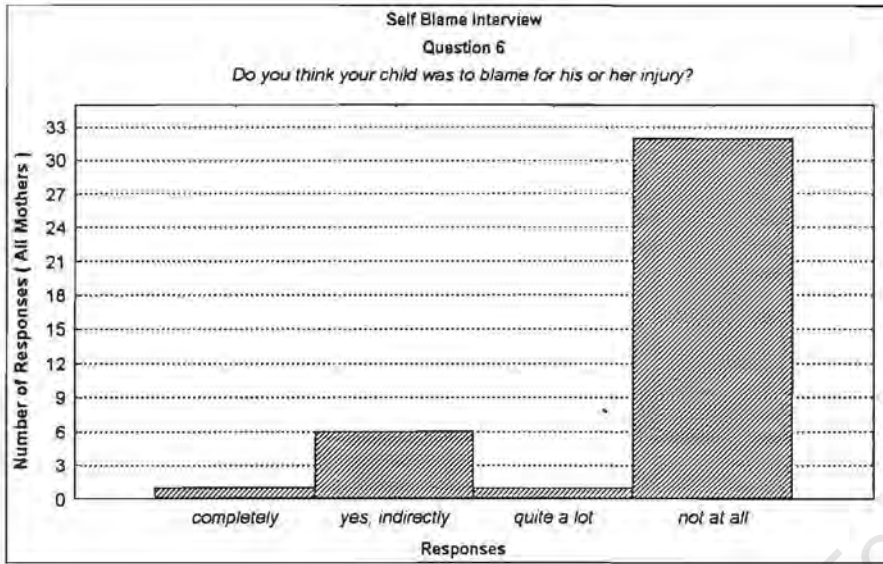
Graph 9: Question 5



| Response | Mothers of Outpatients | Mothers of Inpatients |
|---------------------------|------------------------|-----------------------|
| <i>Accident</i> | 19 | 20 |
| <i>Bit of both</i> | 0 | 0 |
| <i>Indirectly</i> | 1 | 0 |
| <i>Yes, you caused it</i> | 0 | 0 |

Mothers from both groups attribute the child's burn injury to an accident.

Graph 10: Question 6



| Response | Mothers of Outpatients | Mothers of Inpatients |
|------------------------|------------------------|-----------------------|
| <i>Completely</i> | 1 | 0 |
| <i>Yes, indirectly</i> | 3 | 3 |
| <i>Quite a lot</i> | 0 | 1 |
| <i>Not at all</i> | 16 | 16 |

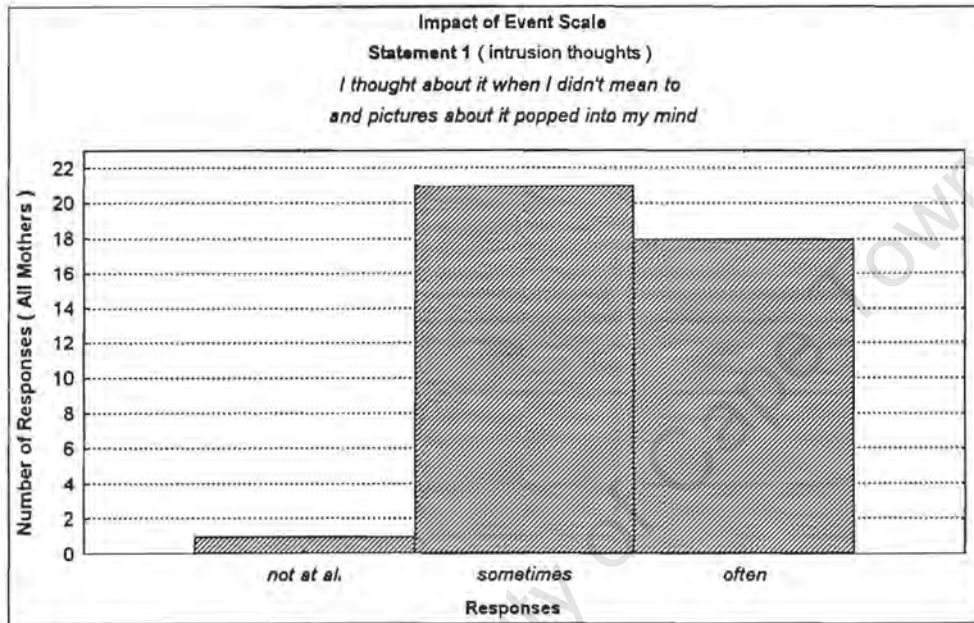
The responses are almost identical. Most mothers do not believe that their children are to be blamed for the accident.

Summarizing the graphs and tables of the Self Blame Interview, there appear to be very few differences between the groups.

4. IMPACT OF EVENTS SCALE (HOROWITZ, 1979)

There were 7 statements in the Impact of Events Scale. The following Graphs 11 to 17 summarize the answers given to each of the 7 statements. Tables below each histogram indicate the responses taken from mothers of in and out patients.

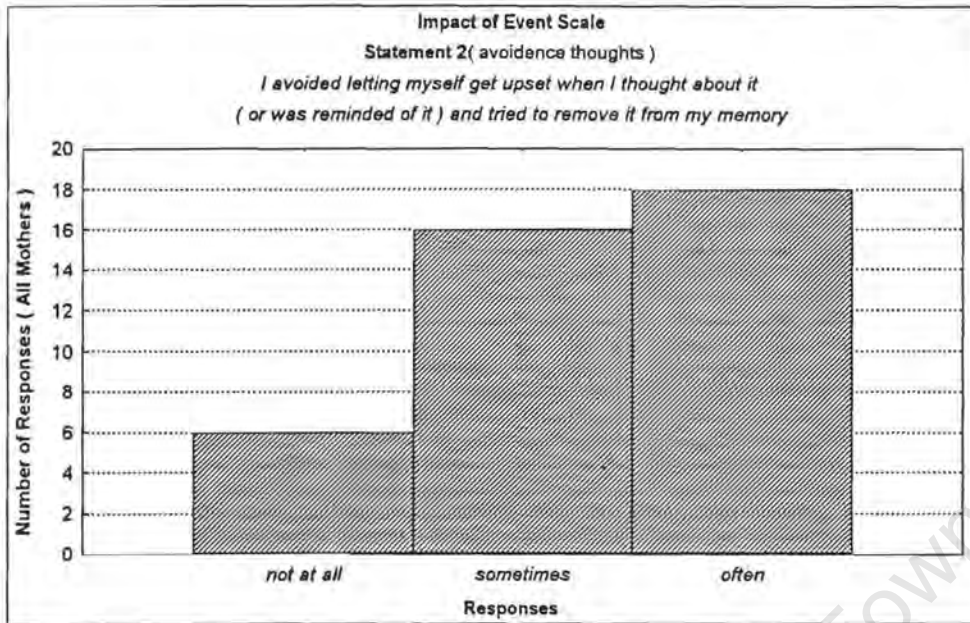
Graph 11: Statement 1



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 1 | 0 |
| <i>Sometimes</i> | 9 | 12 |
| <i>Often</i> | 10 | 8 |

Almost all mothers interviewed think about the accident when they do not mean to.

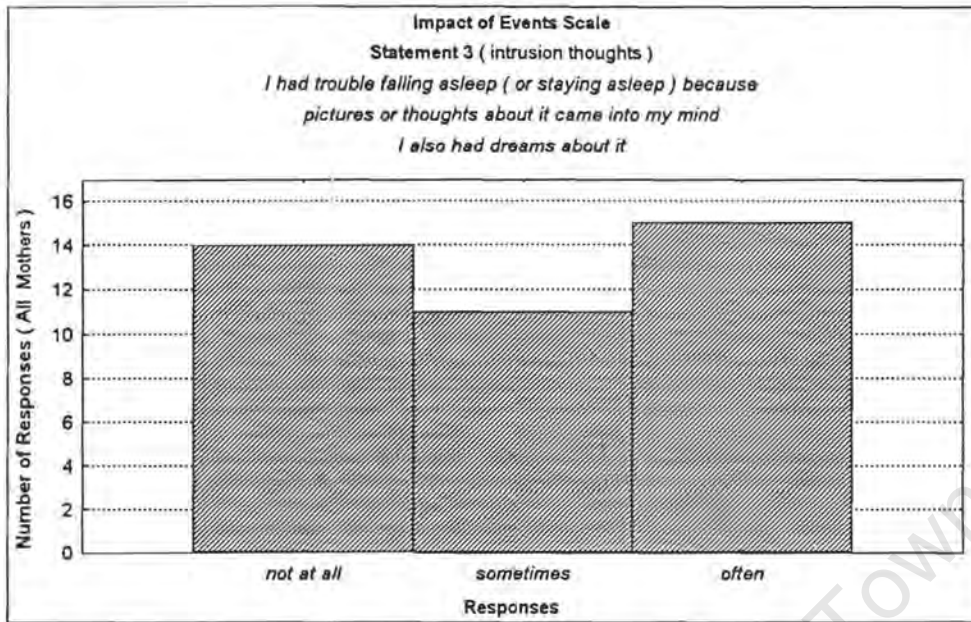
Graph 12: Statement 2



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 3 | 3 |
| <i>Sometimes</i> | 7 | 9 |
| <i>Often</i> | 10 | 8 |

It seems that the mothers in both groups are avoiding letting themselves get upset about the burn accident when they are reminded of it.

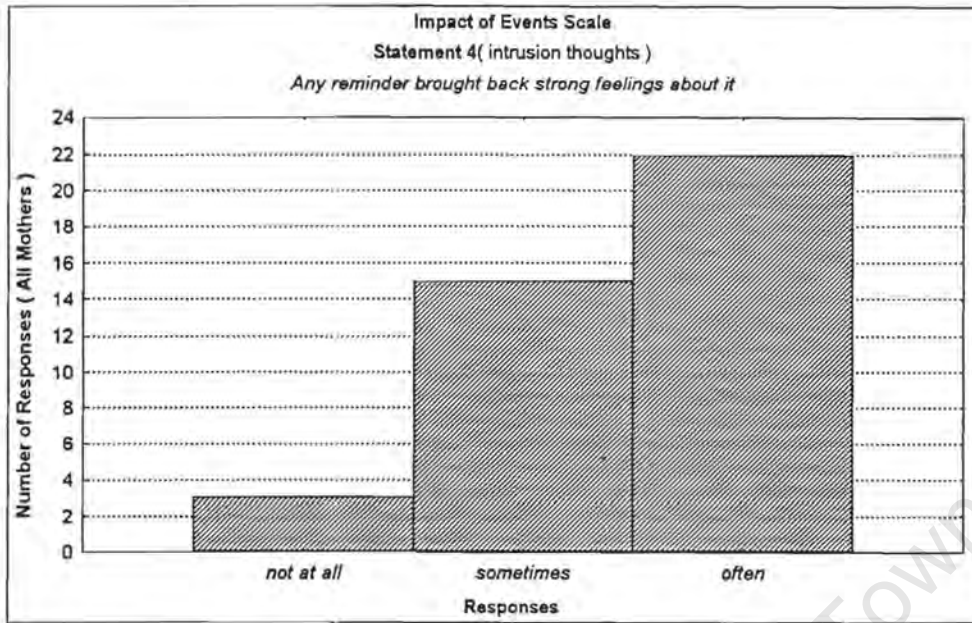
Graph 13: Statement 3



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 7 | 7 |
| <i>Sometimes</i> | 7 | 4 |
| <i>Often</i> | 6 | 9 |

For both groups the responses are distributed equally in all the categories.

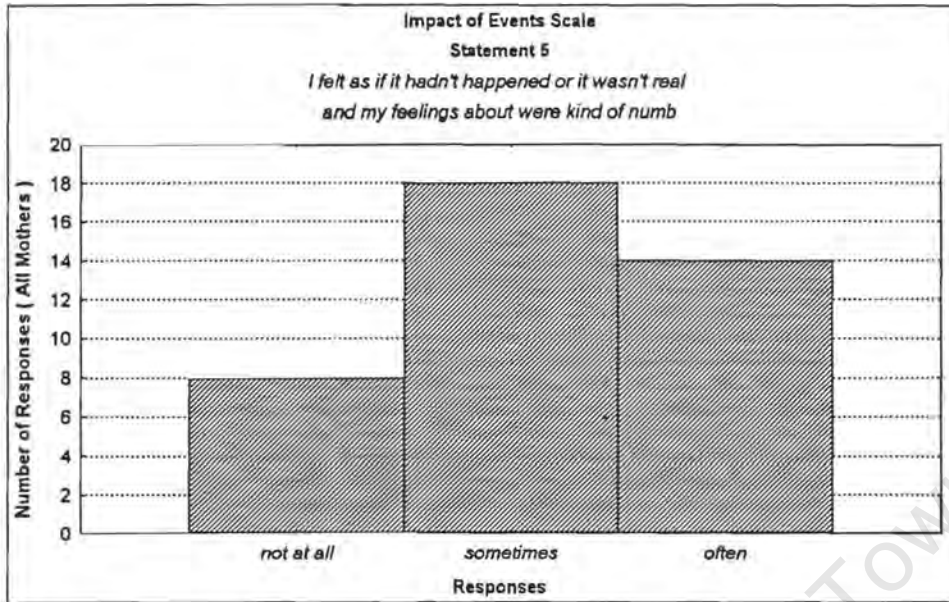
Graph 14: Statement 4



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 2 | 1 |
| <i>Sometimes</i> | 8 | 7 |
| <i>Often</i> | 10 | 12 |

For both groups any reminder of the burn accident brings strong feelings back.

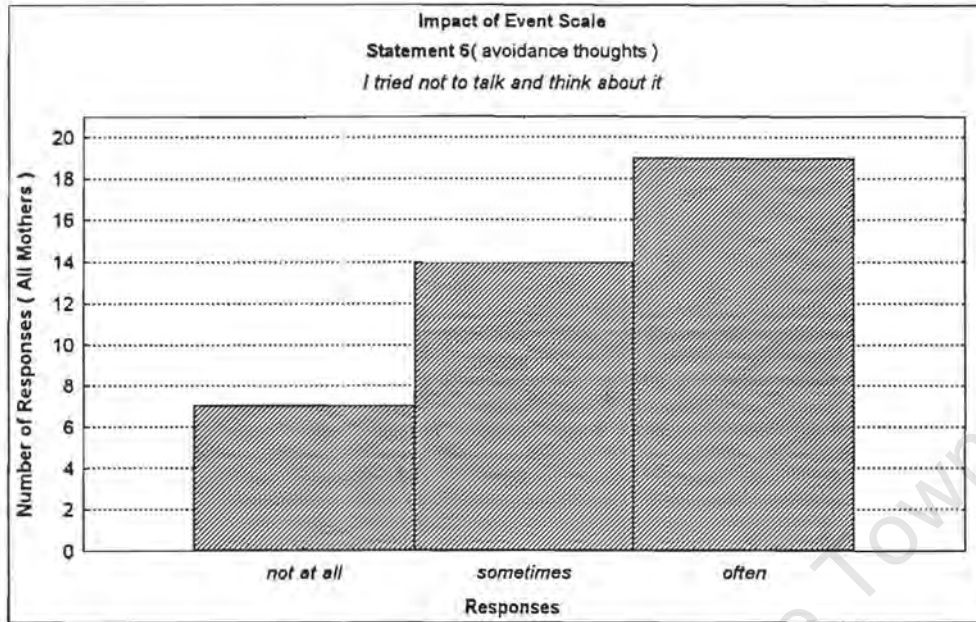
Graph 15: Statement 5



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 4 | 4 |
| <i>Sometimes</i> | 9 | 9 |
| <i>Often</i> | 7 | 7 |

The responses are identical for in and out groups. Most mothers seem to be still in shock and feel numb.

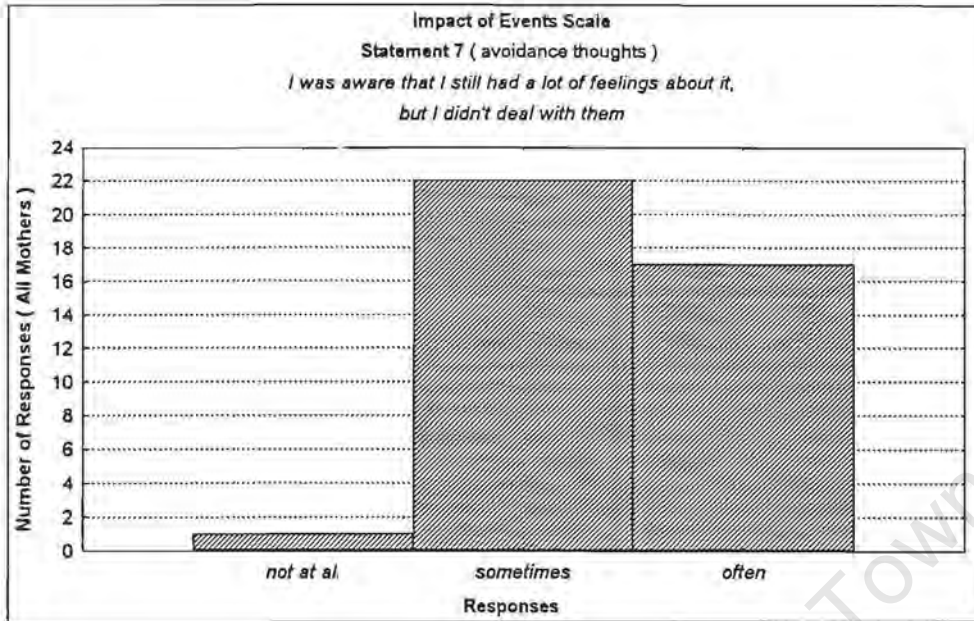
Graph 16: Statement 6



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 4 | 3 |
| <i>Sometimes</i> | 7 | 7 |
| <i>Often</i> | 9 | 10 |

Mothers from both groups try not to talk and think about the accident.

Graph 17: Statement 7



| Response | Mothers of Outpatients | Mothers of Inpatients |
|-------------------|------------------------|-----------------------|
| <i>Not at all</i> | 0 | 1 |
| <i>Sometimes</i> | 10 | 12 |
| <i>Often</i> | 10 | 7 |

The responses in both groups are similar as most mothers still have feelings about the burn accident, that have not been deal with.

Summarizing the graphs and tables of the Impact of Event Scale, there appear to be very few differences between both groups. Mothers in both groups have high intrusive and avoidance thoughts.

5. SCORES FROM THE SELF BLAME INTERVIEW AND THE IMPACT OF EVENTS SCALE

5.1 Scores from the Self Blame Interview

Each of the 6 questions from the Self Blame Interview had 4 answers to choose from. Each of the responses was given a rating from 1 to 4 (with 1 being the lowest and 4 the highest ratings).

Based on these ratings, two separate scores were calculated for each mother:

- 1) Referred to as the **Total Self Blame Score** (where the total score was the sum of the ratings from all the 6 questions; thus the range of possible scores is from 6 to 24)
- 2) Referred to as the **Blame-Guilt Score** (where the total score was the sum of the ratings from questions 1 and 3 which dealt directly with the mother's blame and guilt associated with her child's injury; thus the range of possible scores is from 2 to 8)

Tables 7 to 12 display the following statistics associated with the **Two Scores**: mean (*average score*), mode (*most frequent score*), standard deviation (*measure of variation in the mean score*), range (*measure of spread of the scores*), minimum (*lowest score*), maximum (*highest score*), 95% confidence interval (*range where the true population mean score could be found*).

Tables 7 and 10 show the statistics associated with the **Total Self Blame** and **Blame-Guilt Scores** for the 40 mothers interviewed.

Tables 8 and 11 and tables 9 and 12 show the statistics associated with the **Two Scores** for the 20 mothers of outpatients and the 20 mothers of inpatients respectively.

**Table 7: Summary Statistics:
Total Self Blame Scores: All Mothers**

| Statistic | Value |
|---------------------|----------------|
| Mean | 13.47 |
| Mode | 14 |
| Standard Deviation | 2.34 |
| Range | 11 |
| Minimum | 8 |
| Maximum | 19 |
| Confidence Interval | (12.72; 14.22) |

**Table 8: Summary Statistics:
Total Self Blame Scores: Mothers of Outpatients**

| Statistic | Value |
|---------------------|----------------|
| Mean | 13.45 |
| Mode | 13 |
| Standard Deviation | 2.62 |
| Range | 11 |
| Minimum | 8 |
| Maximum | 19 |
| Confidence Interval | (12.22; 14.68) |

**Table 9: Summary Statistics:
Total Self Blame Scores: Mothers of Inpatients**

| Statistic | Value |
|---------------------|----------------|
| Mean | 13.5 |
| Mode | 14 |
| Standard Deviation | 2.09 |
| Range | 8 |
| Minimum | 8 |
| Maximum | 17 |
| Confidence Interval | (12.52; 14.48) |

**Table 10: Summary Statistics:
Blame-Guilt Scores: All Mothers**

| Statistic | Value |
|---------------------|--------------|
| Mean | 5.02 |
| Mode | 4 |
| Standard Deviation | 1.57 |
| Range | 6 |
| Minimum | 2 |
| Maximum | 8 |
| Confidence Interval | (4.52; 5.52) |

**Table 11: Summary Statistics:
Blame-Guilt Scores: Mothers of Outpatients**

| Statistic | Value |
|---------------------|--------------|
| Mean | 5.00 |
| Mode | 4 |
| Standard Deviation | 1.52 |
| Range | 6 |
| Minimum | 2 |
| Maximum | 8 |
| Confidence Interval | (4.29; 5.71) |

**Table 12: Summary Statistics:
Blame-Guilt Scores: Mothers of Inpatients**

| Statistic | Value |
|---------------------|--------------|
| Mean | 5.05 |
| Mode | 6 |
| Standard Deviation | 1.66 |
| Range | 5 |
| Minimum | 2 |
| Maximum | 7 |
| Confidence Interval | (4.27; 5.83) |

The means and their 95% confidence intervals from the **Total Self Blame Scores** are very similar for both the in and out groups. This indicates that the mothers of in and out patients get on average similar **Total Self Blame Scores**. The same observation applies to the **Blame-Guilt Scores**.

5.2 Scores from the Impact of Events Scale

Each of the 7 statements from the Impact of Events Scale had 3 answers to choose from. Each of the responses was given a rating from 1 to 3 (with 1 being the lowest and 3 the highest ratings).

Based on these ratings, three separate scores were calculated for each mother:

- 1) Referred to as the **Impact of Events Score** (where the total score was the sum of the ratings from all the 7 statements; thus the range of possible scores is from 7 to 21)
- 2) Referred to as the **Intrusion Score** (where the total score was the sum of the ratings from statements 1, 3 and 4 which dealt with intrusion thoughts; thus the range of possible scores is from 3 to 9)
- 2) Referred to as the **Avoidance Score** (where the total score was the sum of the ratings from statements 2,5 ,6 and 7 which dealt with avoidance thoughts; thus the range of possible scores is from 4 to 12)

Tables 13 to 21 display the summary statistics associated with the **Three Scores**.

Tables 13, 16 and 19 show the statistics associated with the **Impact of Events Scores**, **Intrusion Scores** and **Avoidance Scores** for the 40 mothers interviewed.

Tables 14, 17, 20 and tables 15, 18, 21 show the statistics associated with the **Three Scores** for the 20 mothers of outpatients and the 20 mothers of inpatients respectively.

**Table 13: Summary Statistics:
Impact of Events Scores: All Mothers**

| Statistic | Value |
|----------------------------|-----------------------|
| <i>Mean</i> | 16.07 |
| <i>Mode</i> | 14 |
| <i>Standard Deviation</i> | 2.88 |
| <i>Range</i> | 10 |
| <i>Minimum</i> | 11 |
| <i>Maximum</i> | 21 |
| <i>Confidence Interval</i> | (15.15; 16.99) |

**Table 14: Summary Statistics:
Impact of Events Scores: Mothers of Outpatients**

| Statistic | Value |
|----------------------------|----------------------|
| <i>Mean</i> | 16.05 |
| <i>Mode</i> | 17 |
| <i>Standard Deviation</i> | 2.76 |
| <i>Range</i> | 10 |
| <i>Minimum</i> | 11 |
| <i>Maximum</i> | 21 |
| <i>Confidence Interval</i> | (14.76;17.34) |

**Table 15: Summary Statistics:
Impact of Events Scores: Mothers of Inpatients**

| Statistic | Value |
|----------------------------|-----------------------|
| <i>Mean</i> | 16.01 |
| <i>Mode</i> | 19 |
| <i>Standard Deviation</i> | 3.07 |
| <i>Range</i> | 10 |
| <i>Minimum</i> | 11 |
| <i>Maximum</i> | 21 |
| <i>Confidence Interval</i> | (15.57; 17.44) |

**Table 16: Summary Statistics:
Intrusion Scores: All Mothers**

| Statistic | Value |
|----------------------------|---------------------|
| <i>Mean</i> | 6.22 |
| <i>Mode</i> | 7 |
| <i>Standard Deviation</i> | 1.45 |
| <i>Range</i> | 5 |
| <i>Minimum</i> | 4 |
| <i>Maximum</i> | 9 |
| <i>Confidence Interval</i> | (5.76; 6.68) |

**Table 17: Summary Statistics:
Intrusion Scores: Mothers of Outpatients**

| Statistic | Value |
|----------------------------|---------------------|
| <i>Mean</i> | 6.8 |
| <i>Mode</i> | 7 |
| <i>Standard Deviation</i> | 1.64 |
| <i>Range</i> | 5 |
| <i>Minimum</i> | 4 |
| <i>Maximum</i> | 9 |
| <i>Confidence Interval</i> | (6.03; 7.56) |

**Table 18: Summary Statistics:
Intrusion Scores: Mothers of Inpatients**

| Statistic | Value |
|----------------------------|---------------------|
| <i>Mean</i> | 7.05 |
| <i>Mode</i> | 6 |
| <i>Standard Deviation</i> | 1.27 |
| <i>Range</i> | 4 |
| <i>Minimum</i> | 5 |
| <i>Maximum</i> | 9 |
| <i>Confidence Interval</i> | (6.45; 7.64) |

**Table 19: Summary Statistics:
Avoidance Scores: All Mothers**

| Statistic | Value |
|---------------------|--------------|
| Mean | 9.15 |
| Mode | 10 |
| Standard Deviation | 1.94 |
| Range | 7 |
| Minimum | 5 |
| Maximum | 12 |
| Confidence Interval | (8.53; 9.77) |

**Table 20: Summary Statistics:
Avoidance Scores: Mothers of Outpatients**

| Statistic | Value |
|---------------------|---------------|
| Mean | 9.25 |
| Mode | 10 |
| Standard Deviation | 1.68 |
| Range | 6 |
| Minimum | 6 |
| Maximum | 12 |
| Confidence Interval | (8.46; 10.03) |

**Table 21: Summary Statistics:
Avoidance Scores: Mothers of Inpatients**

| Statistic | Value |
|---------------------|---------------|
| Mean | 9.05 |
| Mode | 12 |
| Standard Deviation | 2.21 |
| Range | 7 |
| Minimum | 5 |
| Maximum | 12 |
| Confidence Interval | (8.02; 10.08) |

The means and their 95% confidence intervals from the **Impact of Events Scores** are very similar for both the in and out groups. This indicates that the mothers of in and out patients get on average similar **Impact of Events Scores**. The same applies to both the **Intrusion** and **Avoidance Scores**.

5.3 Mann-Whitney Test (1947): Comparing the Scores of Mothers of In and Out Patients

As seen in 5.1 and 5.2 it seems that the scores achieved by the mothers in both groups are similar. The Mann-Whitney test (the non-parametric equivalent of the 2 sample t-test) was used to compare the groups as the data was categorical (i.e. ratings from 1 to 4 for questions from the Self Blame Interview and ratings from 1 to 3 for statements from the Impact of Events Scale). The Mann-Whitney test was performed on the mothers of in and out patients in respect to all the **Scores** described in 5.1 and 5.2.

Table 22 displays the values obtained in the Mann-Whitney test for all the different **Scores** in the sample interviewed.

Table 22: Mann-Whitney Test

| Score | Value for The Mann-Whitney Test | Critical Value At 5% significance level |
|-------------------------------|---------------------------------|---|
| <i>Self Blame Score</i> | 185.5 | 260.81 |
| <i>Blame-Guilt Score</i> | 187.5 | 260.81 |
| <i>Impact of Events Score</i> | 197.5 | 260.81 |
| <i>Intrusion Score</i> | 170.5 | 260.81 |
| <i>Avoidance Score</i> | 210.5 | 260.81 |

As compared with the critical value (of 260.81 at 5% significance level), none of the tests are significant. This result suggests that there are no statistically significant differences in the way that the mothers of in and out patients have scored in the Self Blame Interview and the Impact of Events Scale.

It appears therefore that the extent of the burn injury has a similar impact on all the mothers, irrespective of whether the child is hospitalised (for larger percentage burn wounds) or treated at the outpatients clinic (for smaller percentage burn wounds).

7. CORRELATION COEFFICIENTS (Pearson Correlation, 1896)

The correlation coefficient is a measure of the relation between two variables.

7.1 Correlation coefficients between the *Five Scores*

The researcher was interested to find out whether there were any relationships between the *Five Scores* as described in 5.1 and 5.2.

Table 28 contains the different relationships between the *Scores*, their correlation coefficients and the associated p-values for all the 40 mothers interviewed.

Table 28: Correlation coefficients between the Scores

| Variables Correlated | Correlation Coefficient | p-value | Interpretation of p-value |
|--|-------------------------|---------|---------------------------|
| <i>Total Self Blame Score and Impact of Events Score</i> | 0.3663 | 0.020 | Significant |
| <i>Intrusion Score and Avoidance Score</i> | 0.4300 | 0.006 | Significant |
| <i>Blame-Guilt Score and Intrusion Score</i> | 0.4250 | 0.006 | Significant |
| <i>Blame-Guilt Score and Avoidance Score</i> | 0.3085 | 0.053 | Not Significant |
| <i>Total Self Blame Score and Intrusion Score</i> | 0.3639 | 0.021 | Significant |
| <i>Total Self Blame Score and Avoidance Score</i> | 0.2714 | 0.090 | Not Significant |

Most of the correlation coefficients appear to be statistically significant but they are rather weak correlations (their values are less than 0.5). However the following conclusions can be drawn:

- A mother with a high *Total Self Blame Score* is likely to have a high *Impact of Events Score*
- A mother with a high *Intrusion Score* is likely to have a high *Avoidance Score*
- A mother with a high *Blame-Guilt Score* is likely to have a high *Intrusion Score*
- A mother with a high *Total Self Blame Score* is likely to have a high *Intrusion Score*

(All the relationships above are proportional.)

It seems that the correlation coefficients between the *Blame-Guilt Score* and the *Avoidance Score* and the *Total Self Blame Score* and the *Avoidance Score* are not statistically significant. These results show that a mother, irrespective of her level of feeling self blame and guilt for her child's burn injury, may still have frequent avoidance thoughts about the accident.

7.2 Correlations between the total body surface area burned (T.B.S.A) and the Scores

The researcher wanted to find out whether the extent of the burn (as indicated by the T.B.S.A) had any impact on the mothers' responses (as measured with the different *Scores*).

Table 29 contains the different relationships between the T.B.S.A and the *Scores*, their correlation coefficients and the associated p-values for all the 40 mothers interviewed.

Table 29: Correlations between the T.B.S.A and the Five Scores

| Variables Correlated | Correlation Coefficient | p-value | Interpretation of p-value |
|---|-------------------------|---------|---------------------------|
| <i>T.B.S.A and Total Self Blame Score</i> | 0.2294 | 0.155 | Not significant |
| <i>T.B.S.A and Impact of Events Score</i> | 0.0853 | 0.601 | Not Significant |
| <i>T.B.S.A and Blame-Guilt Score</i> | 0.0955 | 0.558 | Not Significant |
| <i>T.B.S.A and Intrusion Score</i> | 0.0123 | 0.940 | Not Significant |
| <i>T.B.S.A and Avoidance Score</i> | 0.1175 | 0.470 | Not Significant |

All of the correlation coefficients do not appear to be statistically significant. Therefore it seems that no matter how big or small the child's percentage burn is, it still has no relationship to how much mothers will blame themselves, feel guilty or have intrusive or avoidance thoughts. The percentage burn can be small and the mother will not blame herself less (or more if the burn was bigger).

6. ASSOCIATIONS BETWEEN VARIABLES: *CHI-SQUARE* TEST (Pearson, 1904)

The researcher wanted to investigate whether the mothers of inpatients were more likely to have any of the **Five Scores** higher than the mothers of outpatients.

To test these relations, the *chi-square* test was used. (This test examines the association between two categorical variables/groups. The hypothesis under the test is usually that the two groups differ with respect to some characteristics and therefore with respect to the relative frequency with which group members fall into particular categories)

There were 6 variables of interested: the **Five Scores** and the Type of Mother. As the *chi-square* test requires the data to be in discrete categories, all the **Five Scores** (as described in 5.1 and 5.2) were divided into two categories: low and high. The cut-off points in the particular categories for each of the **Five Scores** are given in Tables 23 to 27. The variableType of Mother had also two categories: Mothers of Inpatients and Mothers of Outpatients.

In each of Tables 23 to 27 we cross-tabulated the variables Type of Mother with one of the **Five Scores** (thus obtaining 2X2 contingency tables). These Tables also display the values of the *chi-square* statistics and the associated p-values.

Table 23: Type of Mother vs. Total Self Blame Score

| <i>Type of Mother</i> | <i>Total Self Blame Score</i> | | <i>Total</i> |
|--|-------------------------------------|--------------------------------------|--------------|
| | <i>Low Score (scores: 6-13)</i> | <i>High Score (scores:14-24)</i> | |
| <i>Mothers of Outpatients</i> | 11 | 9 | 20 |
| <i>Mothers of Inpatients</i> | 8 | 12 | 20 |
| <i>Total</i> | 19 | 21 | 40 |
| <i>chi-square statistic: 0.902256; p-value: 0.342180; not significant</i> | | | |

Table 24: Type of Mother vs. Blame-Guilt Score

| <i>Type of Mother</i> | <i>Blame-Guilt Score</i> | | <i>Total</i> |
|--|-----------------------------------|------------------------------------|--------------|
| | <i>Low Score (scores:2-4)</i> | <i>High Score (scores:5-8)</i> | |
| <i>Mothers of Outpatients</i> | 9 | 11 | 20 |
| <i>Mothers of Inpatients</i> | 8 | 12 | 20 |
| <i>Total</i> | 17 | 23 | 40 |
| <i>chi-square statistic: 0.102302; p-value: 0.749085; not significant</i> | | | |

Table 25: Type of Mother vs. Impact of Events Score

| <i>Type of Mother</i> | <i>Impact of Events Score</i> | | <i>Total</i> |
|--|------------------------------------|--------------------------------------|--------------|
| | <i>Low Score (scores:7-14)</i> | <i>High Score (scores:15-21)</i> | |
| <i>Mothers of Outpatients</i> | 7 | 13 | 20 |
| <i>Mothers of Inpatients</i> | 8 | 12 | 20 |
| <i>Total</i> | 15 | 25 | 40 |
| <i>chi-square statistic: 0.106667; p-value: 0.743972; not significant</i> | | | |

Table 26: Type of Mother vs. *Intrusion Score*

| <i>Type of Mother</i> | <i>Intrusion Score</i> | | <i>Total</i> |
|--|-----------------------------------|------------------------------------|--------------|
| | <i>Low Score (scores:3-6)</i> | <i>High Score (scores:7-9)</i> | |
| <i>Mothers of Outpatients</i> | 8 | 12 | 20 |
| <i>Mothers of Inpatients</i> | 8 | 12 | 20 |
| <i>Total</i> | 16 | 24 | 40 |
| <i>chi-square statistic: 0.0000; p-value: 1.0000; not significant</i> | | | |

Table 27: Type of Mother vs. *Avoidance Score*

| <i>Type of Mother</i> | <i>Avoidance Score</i> | | <i>Total</i> |
|---|-----------------------------------|-------------------------------------|--------------|
| | <i>Low Score (scores:4-8)</i> | <i>High Score (scores:9-12)</i> | |
| <i>Mothers of Outpatients</i> | 3 | 17 | 20 |
| <i>Mothers of Inpatients</i> | 6 | 14 | 20 |
| <i>Total</i> | 9 | 31 | 40 |
| <i>chi-square statistic: 1.29032; p-value: 0.255991; not significant</i> | | | |

All the *chi-square* statistics are statistically not significant. The Type of Mother and each of the **Scores** are statistically independent. This result indicates that irrespective of whether a mother has a child hospitalised or treated at the outpatients clinic, she can still have any of the **Five Scores** high.

8. CENTRAL RESEARCH QUESTIONS AND HYPOTHESES: ANSWERS

The conclusions drawn from the statistical analysis apply to the particular sample of 40 mothers interviewed. One would therefore need to be cautious in applying them to the population of all mothers with burned children.

Hypothesis One

Mothers of children with burns suffer from self-blame and guilt.

The feelings of self-blame and guilt were "measured" by both the **Total Self Blame Scores** and the **Blame-Guilt Scores**. The **Total Self Blame Scores** were rather high. They ranged from 8 to 19 with the average score of 13.47. The **Blame-Guilt Scores** were especially high. They ranged from 2 to 8 with the average score of 5.02. Both of these observations point to the fact that the *mothers of burn children suffer from self-blame and guilt.*

Hypothesis Two

*Mothers of inpatients score higher and suffer from more self-blame and guilt (as measured with the **Blame-Guilt Score**) than mothers of outpatients.*

From the summary statistics it seemed that the in and out groups had almost the same average **Blame-Guilt Score**.

Also the Mann-Whitney test has shown that there was *no difference* in the intensity (level) of feeling guilty and self-blame between the mothers of in and out patients.

From the *chi-square* test, the researcher concluded that any mother, irrespective of whether the child was treated at the outpatients' clinic or hospitalised, could still have high feelings of self-blame and guilt.

Thus these observations indicate that the mothers of in and out patients have the *same scores* and suffer the *same degree of self-blame and guilt.*

Hypothesis Three

*Mothers of inpatients score higher on the Total Self Blame Interview (as measured by the **Total Self Blame Score**).*

As for hypothesis two, the different results and tests have shown that the mothers of in and out patients had *similar scores* from the Total Self Blame Interview.

Hypothesis Four

Mothers of children with burns exhibit a heightened state of psychological stress in the acute post-injury period, as measured by the Impact of Events Scale (Horowitz, 1979).

The scores from the Impact of Events Scale ranged from 11 to 21 with the average score of 16.07. The scores seem to be rather high. (The possible maximum score is 24.) and point to the fact that *mothers of burn children exhibit a heightened state of psychological stress.*

Hypothesis Five

Mothers of inpatients score higher than mothers of outpatients and have more intrusive and avoidance thoughts, as measured by the Impact of Events Scale (Horowitz, 1979).

From the summary statistics it seemed that the in and out groups had almost the same average **Impact of Events, Intrusion and Avoidance Scores**.

Also the Mann-Whitney test has shown there was *no difference* in the intensity (level) of intrusive and avoidance thoughts between the mothers of in and out patients.

From the *chi-square* test, the researcher concluded that any mother, irrespective of whether the child was an in or out patient, could still have high intrusion and avoidance thoughts.

Thus all of these observations indicate that the mothers of in and out patients have *similar scores* from the Impact of Events Scale and have *frequent intrusive and avoidance thoughts*.

Hypothesis Six

The child's percentage burn has an effect on the mothers' scores from the Self Blame Interview and Impact of Events Scale.

The correlation coefficients between T.B.S.A and the **Five Scores** were not statistically significant. Thus these results indicate that the extent of the burn (as indicated by the T.B.S.A) had no relationship to the degree that the mothers blamed themselves, felt guilty and had intrusion and avoidance thoughts.

Hypothesis Seven

For any mother with a burned child, her scores in the Self Blame Interview and the Impact of Events Scale are highly related. (intense feelings of self-blame and guilt are associated with frequent intrusive and avoidance thoughts.)

Most of the correlation coefficients between the **Five Scores** appeared to be statistically significant except for the correlation coefficients between the **Blame-Guilt** and **Avoidance Scores** and the **Total Self Blame** and **Avoidance Scores**.

These results indicated that if a mother scored high in the Self Blame Interview, she would score high in the Impact of Events Scale. Intense feelings of self-blame and guilt are associated with frequent intrusive thoughts.

However a mother, irrespective of her level of feeling self blame and guilt for her child's burn injury, may still have frequent avoidance thoughts about the accident.

CHAPTER SEVEN

DISCUSSION

7.1 INITIAL RESPONSE TO THE ACCIDENT

As far as the mothers' initial response to the accident was concerned, the most frequent response to question 2 of the semi-structured interview ("what was your reaction when your child was burned?"), was that most mothers replied that they "cried and panicked". This was similar to Mason's (1993: 496) study where mothers' initial responses and immediate reactions were that of "shock, horror, disbelief and panic." Panic occurs usually if the mother is unsure of how to give the best help to the child who she can see is visibly suffering and in pain.

As the accident frequently happened in the absence of the father, a few mothers in this sample expressed their concerns that their husbands blamed them for what had happened. This was specifically the case for mothers who were home at the time of the accident. The father blaming the mother for the accident only adds to her guilt and self blame feelings. In Woodward and Jackson's (1961) study, they referred to a few cases of marital conflict occurring when the child is severely burned and the father blames the mother for the accident. By projecting all the fault on to her, he escapes from his own guilt feelings. The removal of his support seems to be one of the major factors causing a breakdown in the mother. Martin (1970: 185) notes that "the father's early reactions often reflected the marital relationship where this was strained, he was often critical and used the accident as a pretext for expressing anger at his wife." This leaves the mother feeling alone to deal with her emotions of guilt and self blame.

7.2 GUILT, SELF BLAME AND OVER PROTECTIVENESS

The high scores of guilt and self blame found in this study for both the in and out-patient mothers' groups, correspond with other research conducted in this field.

Verity (1995) observes that all parents seem to experience a grief process, exhibiting the emotions of guilt, anger and anxiety for their child's future. Mothers who spend most of their waking hours chasing after a bright, inquisitive toddler, are overwhelmed by the lapse of attention that has led to their child's injury and without fail, need to talk of their guilt.

Cella, Perry, Kulchycky and Goodwin (1988) identified the issue of parents blaming themselves for the injury to the patient, as being a significant predictor of persistent long-term distress. This could relate to having established such a high guilt score in both mothers of in and out-patients. Should a long-term study be conducted with this same sample, it would be interesting to validate Cella et al (1988) long-term study.

The current sample of mothers with their high self blame and guilt scores, corresponds to the sample in Vigliano, Hart and Singer's (1964) study of mothers, whose children had long since recovered from severe burns and referred to feelings of guilt still being common. Rizzone, Stoddard, Murphy, Kruger (1994) and Knudson-Cooper and Thomas (1988) produced similar results, describing guilt and self blame as being very common among mothers of children with burns. Guilt was one of the main sources of emotional stress for parents. Broadland and Andreason (1979) describe the fact that even when relatives have nothing to do with the injury, some feel guilty.

This was also the case with the in and out-patient groups. Some mothers who were not even present at the time of the injury still feel guilty. What is also interesting to note is that 38 out of the 40 mothers said that the burn injury occurred by accident, yet 15 mothers still feel guilty 'sometimes' and 13 mothers, 'most of the time' and 5 feel guilty 'constantly'. Approximately half the sample of mothers felt that they could not have done anything to prevent their child's injury, yet all except 5 mothers blame themselves (to some degree) for what has happened to their child and all except 7 mothers feel guilty to some extent.

Woodward and Jackson (1961: 319) referred to the mothers' feelings as seeming to follow a consistent pattern. Most of them feel shame and guilt and these are the ones who try to make it up to their children. This was consistent with the mothers who mentioned in the Semi-structured Interview that they want to spoil their children because they feel bad for what has happened to the child, due to all the pain and suffering that the child has to go through. As one mother said, she feels compelled to buy her child all her favourite sweets and anything else she may want.

Woodward and Jackson (1961: 319) continue to explain: mothers spend more than they can afford and are unable to say 'No' in any form. "Often they develop an over-protective attitude that is aimed at safeguarding the child from the risk of further accidents, but it is also associated with reducing their own guilt feelings."

This feeling was confirmed when mothers stated that "I want to keep him safe, protect him" (responses to question 14, Semi-Structured Interview). Other responses were "I do not want to leave him alone", "I feel responsible as a mother" and "I will be more careful and cautious now."

In Mason's (1993: 496) study, describing general categories of the mothers' responses, she found that in "Phase 1, Continuing Emotional Trauma" which focuses on two stigmatizing residual factors of the accident, namely "the protection failure and the scarring of the child". The failure to protect the child from the burn injury usually results in feelings of guilt and a desire to protect the child from any further harm, by means of "child protection action". According to Mason (1993: 496) this involves "spoiling the child to repair the damage done to him/her and anxiety at any further potential danger to the child, resulting in the mother becoming protective with the child to the extreme."

This behaviour was already evident in the acute stage of this study and it would be interesting to note how long this behaviour would continue. It seems that according to Mason (1993) the stigmatizing, residual factor of the accident would

remain for a lengthy period. The protection failure of the mother persists, as the scars are a continuous reminder that the accident was allowed to happen. The potential is also there for the child to blame or hold the mother responsible for his/her appearance and her failure to protect him/her from the injury.

This was a concern for mothers whose most frequent response to question 10 of the Semi-Structured Interview ('what worries you about your child's future?'), was the answer: 'Scarring, will the child blame me?' This relates to Martin's (1970: 186) study where she described mothers in the sample as feeling "grief for the loss of her own image as a good, loving mother, replaced now by her image of herself as harmful, bad and unworthy." This takes time for the mother to work through as she has other issues to confront such as new worries and concerns for the child's future.

7.3 **MOTHERS' CONCERNS IN GENERAL**

From the semi-structured interview, the mothers' concerns seemed to be about worries surrounding their child's future. Issues about pain and scarring were prevalent. This is consistent with Verity's (1995) description of the initial anxiety that mothers manifest as they cope with the initial shock, the distress of their child and their fears for the future. The Semi-Structured Interview also indicated concern about the mothers' own emotions and levels of stress. The most frequent responses related to these questions were sad, worried, stressed and depressed. Cella, Perry, Poag, Amand and Goodwin (1988) also noted parents of children hospitalized for acute burns to be depressed as well as hopeless. Their study was also in the acute post-injury stage, within 4 days of admission. It is interesting to note that mothers in both in Cella et al's (1988) study and this sample, showed signs of depression and stress at such an early stage. Depression also seems to persist after the acute stage, as Blakeney, Moore, Broemeling, Hunt, Herndon and Robson (1993) discovered. In their study of parents who were assessed at year 2 after burn injury, they were significantly more depressed than at other stages of recovery period. This clearly signifies that the child's burn injury has a huge impact on the mother's life.

7.4 IMPACT OF EVENTS SCALE: INTRUSIVE AND AVOIDANCE THOUGHTS

All these scores seemed very high for both mothers' groups. Almost all mothers interviewed thought about the accident when they did not mean to (intrusive thoughts). For both groups, any reminder of the burn accident brought back strong feelings, and both groups tried not to talk and think about the accident. In fact very few differences between both groups were noted, with all mothers having high intrusive and avoidance thoughts.

When viewing the Total Impact of Events Score for all 40 mothers in the range between 11 (minimum) and 21 (maximum) scoring - the mean value was 16.07, which is relatively high. This indicates that as 21 was a cut-off score, 16 can possibly indicate that these mothers are suffering from stress response syndromes after a traumatic event. The 'Impact of Event' in this case, the burn injury, has an effect (and for some a 'major effect') on their lives. The same mean of 16.05 for out-patients and 16.01 for in-patients was present within the same range of 11-21, again indicating no difference between both groups.

The mean was still relatively high for the intrusion scores of all 40 mothers, the range being between 4-9 (9 as being the cut-off point, or highest score). The mean was 6.22 for the in-patient mothers, intrusion, the mean score was 7.05, indicating slightly higher intrusion scores than out-patient mothers.

The avoidance scores for all 40 mothers, showed a range between 5-12 (12 being the highest score). The mean was still high at 9.15. For the in and out-patient mothers' avoidance score, both very similar at 9.25, indicating that on average, the mothers get similar Impact of Events scores and are relatively high for both groups. Results in Cella, Perry, Poag, Amand and Goodwin (1983), study also indicated stress responses symptoms of intrusion and avoidance thoughts which were prominent in parents of burned children. In fact these mothers did not return to their presumed baseline on the Impact of Events Scale scores in the 6-8 month post-burn period. They continued to show signs of stress response syndromes, with elevated avoidant thinking and intrusive recollections

of the event.

It would be interesting to follow up the 40 mothers in this sample at a 6-8 month post-injury period, to investigate whether these mothers would also show persistent intrusive and avoidance thoughts and possibly further signs indicative of stress response symptoms, or whether they would return to a baseline.

Horowitz (1986) has identified these intrusive and avoidant thoughts as being an integral part of stress-response syndromes included in post-traumatic and adjustment disorders. She explained that the signs and symptoms of response to a stressful-like event are expressed in the 2 predominant phases of intrusive state and denial state (avoidance thoughts). In Horowitz's (1979) study, items on the Impact of Events Scale were frequently endorsed by a population seeking help for post-traumatic disorders. Horowitz (1979) therefore observed that their findings affirmed the instrument as being suitable for obtaining reports from persons with such syndromes. Cella et al (1988: 160) has used the Impact of Events Scale for such purposes, stating that "scores above the cutting score on either subscale are strongly predictive of significant stress response symptomatology and a DSM III diagnosis of post-traumatic stress disorder."

Cella et al (1988: 159) also concluded that "intrusive and avoidant stress responses could not be predicted by demographic information, **severity of burn**, facial disfigurement, or actual responsibility for the burn, **but blaming oneself** for the injury to the patient was a significant predictor."

Severity of burn also showed to have no impact on how much the 40 mothers in this sample blamed themselves or scored on the Impact of Events Scale.

7.4.1 Percentage burn: correlations

The correlations between the Total Body Surface Area (T.B.S.A.) Burned and the five scores: Total Self Blame Score, Impact of Events Score, Blame-Guilt Score, Intrusion and Avoidance Score; did not appear to be statistically significant. Therefore, no matter how large or small the child's

percentage burn was, it still had no relationship to how much mothers would blame themselves, feel guilty or have intrusive or avoidance thoughts. The percentage burn can be small and the mother will not blame herself less (or more if the burn was bigger). So there was no difference between the two groups. In fact 55% of children had 10% or lower T.B.S.A. burns. The highest percentage of children fell into the 2, 3 and 8 T.B.S.A. burns. This is in fact not excessively high in percentage terms, yet all mothers still showed various degrees of guilt, self blame and high intrusion and avoidance thoughts.

Verity (1995) also observed that there is no correlation between the depth or extent of a burn and the stress it induces on the family. Most parents suffer the same process of guilt, anxiety and anger, whether the burn is larger or small and irrespective of how the burn was caused.

Blakeney, Moore, Broemeling, Hurt, Herndon, Robson (1993) also concluded that parents who had children with burns, showed no relationship between size of burn and their stress scores.

The 40 children of the mothers interviewed in this sample, did however, relate to other literature indicating subgroups of children at risk for burn injury.

7.5 DEMOGRAPHICS

Libber and Stayton (1984) described the most frequently burned children as being infants and toddlers (6-18 months) especially those between the ages of 1 and 2 years. This finding is corroborated by reports from England, Australia and the United States as mentioned in their study.

Of the children from the 40 mothers sampled, 30% were below 1 year old (12 children), the rest of the majority being between 1 and 2 years old, which corresponds to the conclusions that Libber and Stayton (1984) noted in their

sample of children.

Onubat and Udiodiolc (1987) identified scalds and fires as being the most common causes of burn injuries, with scalds being the most frequent cause of burns in children less than 5 years. The 40 children surveyed, showed similar result, 77.5% were hot water burns, confirming these authors' results.

Libber and Stayton (1984) describe the accident occurring by children pulling down or knocking hot liquid onto themselves. This concurred exactly with the 40 children, because 77.5% of the accidents occurred in the kitchen with 55% of children pulling the kettle cord onto themselves and 15% knocking over hot water/liquids.

Libber and Stayton (1984) also mention their sample of children as having learning difficulties and hyperactivity. This was not quantified in this sample, but there were mothers who (when asked how the injury occurred) explained that their child was very naughty or hyperactive and that is why the caretaker could not always watch him/her constantly. If this study were to be repeated, a category for the probability of this problem to be quantified, should be included.

The areas where the 40 mothers lived, suggested an increased vulnerability of persons living in poor socio-economic circumstances. Bonteheuwel, Delft, Manenberg, Kraaifontein and Athlone had the highest occurrences of burn patients. This corresponds to Shapiro, Bloomberg, Van Houten and Schomer's (1996) study, conducted at Somerset Hospital, Cape Town, where the highest occurrences of burn patients resided in Nyanga, Bonteheuwel and Manenberg. As their study was conducted with adults, this indicates that the majority of burn injuries sustained to children and adults in these two studies, reside in poor socio-economic residential areas.

The most interesting conclusion drawn from this study, was the fact that the Chi-Square statistics do not show any significant differences. The type of mother (in and out group) and each of the **scores** are statistically independent, indicating

that irrespective of whether a mother has a child hospitalized (in-patient) or treated at the out-patient clinic, she can still score high on any of the **five scores**, namely, the total Self Blame Score and the Total Impact of Events Score, Blame-Guilt Score and Intrusion and Avoidance thoughts.

The correlations also proved to be insightful, namely, that a mother with a high **Total Self Blame Score** is likely to have a high **Impact of Events Score**. A mother with a high **Intrusion Score** is likely to have a high **Avoidance Score**. A mother with a high **Blame-Guilt Score** is likely to have a high **Intrusion Score** and a mother with a high **Total Self Blame Score** is likely to have a high **Intrusion Score**.

The relationship therefore, between the Self Blame questionnaire (Kiecolt-Glaser and Williams, 1987) and the Impact of Events Scale (Horowitz, 1979) proved to be interactive and useful in exploring mothers' psychological effects and emotional reactions to their children's burn injury. The Semi-Structured Interview proved useful only in qualitatively exploring the mothers' concerns and emotional reactions.

CHAPTER EIGHT

LIMITATIONS AND DIFFICULTIES OF THE STUDY

8.1 WEAKNESSES AND LIMITATIONS OF THE STUDY

The sample size could possibly be bigger. This would be useful in order to infer conclusions and make relevant comparisons. This was not a random sample as mothers volunteered their time and not all mothers wanted to be interviewed. The researcher had to work with the sample available. Another problem is that the study was conducted in the acute stage only. A long-term follow-up of the same sample at six months or one year would provide useful information on whether mothers' high scores on the Self Blame and Impact of Events Scale, would be the same or have a lesser effect as time goes by. This would indicate whether the mothers in both groups would still be traumatised by the event or not. It would also indicate whether there would be a difference between both in- and out-patient mothers' groups concerning their child's long-term recovery.

A comparison group should also be made with mothers of children involved in injuries or illness where no burns were sustained. The psychological effects and emotional reactions of these mothers could then be compared with mothers of burn-injured children. Such a study has been conducted, but not in South Africa.

There should also have been more questionnaires, although there is a problem about the time it would require for mothers to complete. Mothers in this sample were already anxious about the time pressure and concerned for their focus being away from their injured child.

The semi-structured interview design could also be improved upon. There could be a better design of questions and possible responses to choose from. It could be narrowed down into smaller categories.

8.2 DIFFICULTIES OF THE STUDY

In response to these limitations, the following difficulties need to be taken into consideration. The reason that there were only 40 subjects was because in order to interview in-patient mothers, the researcher had to 'catch them' either when the child was sleeping or restful, but this was usually when the mother wanted to go home or slip out to the shop or take a break. If a mother was present at all; some mothers had to work and were not there at all during the day. At other times, the child is usually between different stages of crying, bathing, dressing changes, operations for skin grafts, other medical procedures, occupational or physical therapy treatments or meal times.

It is not a long-term study because many of the families are unable to be contacted once they have been discharged. There are those that do not have telephones, in which case, a telegram can be sent (if they do not live in a shack); some patients are from outside of Cape Town and would not be prepared to travel back to the hospital for a follow-up interview. Those that do have telephones, do not always have funding to return to the hospital. This proved to be the case in a current study that the researcher is conducting. After contacting 20 children (by telephone and telegram) to conduct a 2-3 year follow-up study (post-injury) only 4 families responded and 3 were prepared to return for an interview.

To conduct an interview with an out-patient mother also has its difficulties. There are three stages to the out-patient clinic: (1) waiting for dressing changes to be removed, cleaned and covered in plastic for the doctor to see (to prevent infection while waiting); (2) waiting to see the doctor; (3) waiting, after having seen the doctor for the plastic to be removed and the wound to be covered with bandages before going home. The researcher has to 'catch' these mothers between these stages, so there are constant interruptions if the mother's name is called for any of these three procedures. The interview then has to be left, in which case the researcher starts with another willing mother who may be at a different stage of waiting. This mother may then be called to see the doctor and

the researcher then goes back to the original mother. Many interviews had to be discontinued and were unable to be used because of these logistical problems. Mothers do not want to stay to complete the interview after the final stage of dressings. By this time, the mother and child have been waiting for hours (they get there early to queue up) and the child is usually traumatised, tired, hungry and possibly in pain.

Another hold up in conducting these interviews is that often the mother starts crying when asked how the accident occurred or when asked if she blames herself, feels guilty or if she has any intrusive thoughts about the scene of the accident. Often just asking about her concerns elicits tears. The researcher has to at least give some form of empathetic response and wait for the mother to restore her composure.

Some mothers become very withdrawn after they describe the accident and give rather explicit details of flesh sticking to clothes, blood and other gory details. The researcher also has to be sensitive to the mothers' needs should she feel she can not continue the interview and rather take a break.

Mothers also tend to ask many questions about medical or clinical procedures which makes the researcher's task difficult. Usually during the entire interview at the out-patient clinic, the child is on the mother's lap, crying, with the burn area exposed. Some children understand the questions asked by the researcher and seeing their mother crying or in distress, start crying themselves or get very anxious.

It is also difficult asking the mothers these questions and then being unable to refer them to support groups or after care service. For most mothers, the researcher is seen as a neutral, objective person, showing an interest in them, in which case it elicits questions on advice and emotional outpouring.

8.3 STRENGTHS OF THE STUDY

The scores of the Guilt and Self Blame and the Impact of Events Scale (with its high scores of intrusive and avoidance thoughts), indicates that these mothers (from both in- and out-patient groups) are traumatised and in need of psychological assistance. Hopefully, because this study is one of the first to be undertaken in South Africa, it will inspire other researchers to conduct further studies. It may also initiate the need for support groups, the start of rehabilitation facilities for families and future interventions to be integrated into existing structures to improve the care of the burn-injured child and his/her family.

CHAPTER NINE

PROPOSED FUTURE THERAPEUTIC INTERVENTIONS

The initial and basic first step towards any form of future therapeutic intervention would be to have a rehabilitation programme. Rehabilitation is an essential process to help both patients and their families to obtain their maximum potential following burn injury. Ideally to be able to return patients to the physical, social and psychological health they enjoyed prior to injury, is realistically not always possible for burn patients. This is not only due to the psychological trauma that burn children endure, but also because of the scarring, disfigurement, contractures, disabilities, loss of movement and sometimes in severe cases, amputation.

Family support and assistance is therefore crucial to help facilitate the burn patients' long-term adaption and recovery. The family, because they play such a vital role in the rehabilitation of the burn-injured child, need to have their own psychological needs taken care of and their trauma dealt with, in order to be available to assist the child.

Added to the enormous physical and psychological sequelae of burn patients at this present point in time, no (or very little) adequate rehabilitation exists for the burn patient and his/her family. No facilities exist to follow up patients and their families long-term and help them come to terms with the consequences of their injury. Due to the extensive range of injury caused by burns, the rehabilitative process needs to address all aspects of the injury, the physical, psychological and social, however this is not always possible and realistic goals need to be pursued.

With the 'cuts' in the health care system, rehabilitation seems to be a luxury that is unaffordable. Not only is there a lack of funding, but worse still, no staff available to assist in setting up such a project. A multi-disciplinary team effort is needed to assist the patient and his/her family in their attempt to return to a functional state. Unfortunately this is not the case at present and many children are 'abandoned to a social death' as the psychological scars remain long after their ordeal. Patients and

families are left alone to face a bleak future once they leave hospital (Wallace, 1988).

The extent of the burn injury does not necessarily equate with the stress it induces in the family (Verity, 1995). All parents seem to experience a grief process, exhibiting the emotions of guilt, anger and anxiety for their child's future. The psychological trauma of the accident seems to have long-lasting effects, not only for the patient, but the entire family.

We therefore need to ask how we as health care professionals can help the family to adapt? Burn units are not able to prepare patients and their families to cope with the years ahead. That is the role of rehabilitation (and aftercare) to help reunite the burned patients and families back into the community and to assist with issues about psychological scarring.

9.1 POSSIBLE REHABILITATION INTERVENTIONS

The following suggestions represent the idealistic rehabilitation setting, where both funding and a multi-disciplinary team is provided to maintain optimal service for the burned child and his/her family. For the South African context, suggested interventions need to be adapted to fit into existing structures. Small goals need to be created when setting up rehabilitation, where the least form of follow-up care provided will be a small step in the right direction.

9.1.1 Facilitating patients' and families' re-entry and reintegration into life at home should be **initiated before discharge**. Returning home signifies social interactions with the larger community and fear of social rejection - not only from the patient's point of view, but particularly mothers who feel they have failed in their role of 'protectors' of their children. The family must prepare for these encounters. Educating them about the difficulties that can be anticipated after discharge is crucial. **Rehearsing solutions** can be helpful in the process of anticipating difficulties after discharge.

- 9.1.2 Blakeney and Meyer (1996) suggest that in addition to preparing the family for discharge, the burn team should also **prepare the community** to which a patient will return. The community may include extended family, neighbours, church groups and the school.
- 9.1.3 A very important area of therapy that should be included in rehabilitation is the issue of **scarring**. Even relatively minor burns leave permanent scars, which both the patient and mother have to confront daily. It is a constant reminder of the suffering and pain that the child went through and can evoke feelings of resentment on behalf of the child, blaming his/her mother for having allowed the accident to happen. The constant reminder of the scars does not allow the mother to work through the trauma, leading to potential post-traumatic stress symptoms.
- 9.1.4 **A support group for mothers** is very important to promote increased understanding of the mothers' problems and help with the post-burn adaptation. As mentioned before, mothers often feel guilty or blame themselves. Their self-image as competent parents becomes shattered and they are unable to refuse the child any request so as to make up for the pain and suffering caused by the accident. Mothers also become over-protective, in case such an accident should occur again. A support group can yield empathic and more appropriate advice and education, as well as provide constructive coping techniques, successfully utilised by other mothers.
- 9.1.5 **Family support groups** are composed of significant others, siblings and close friends of the burn survivor. Such a group can provide an opportunity for family members and friends to express their feelings and discuss the impact of the trauma on their lives. Often their needs are overlooked, but they may have difficulty coping with the numerous demands placed on them because of the burn injury. Unburned siblings often resent the devotion given to the injured child and feel neglected. This is particularly the case when the mother sleeps at the hospital after

the initial injury and cannot be there for her other children. A family support group can provide a safe, nurturing, non-judgmental environment in which group members can express their fears, feelings of helplessness, anger and guilt (Munster, 1993).

- 9.1.6 Some hospitals that have the means and staff, employ **psychometric assessment instruments** for the screening of psychosocial problems. Measurement for post-traumatic stress disorder, psychological adjustment to illness, substance abuse and personality and coping styles are assessed. This can be very useful in screening mothers who may be prone to psychological disturbances and which interfere with their child's rehabilitation.
- 9.1.7 **A multi-disciplinary group approach** to counselling the parents (mothers) of burned children was found to be effective by Rivlin and Forshaw(1986) where medical, psychological and social work therapists were group leaders.
- 9.1.8 **Family therapy** is also required where the burn injury has been part of a deliberate suicide attempt, abuse by a family member or bomb attack.
- 9.1.9 Even when active maltreatment is not an issue, severe family dysfunction, parental separation and poor housing conditions are common contributing factors to burns. **Prevention** of further harm to other children in the family may be required in the form of basic education, where ways of keeping children safe in the home can be suggested. Most parents become super-safety conscious following a burn accident (Verity, 1995).
- 9.1.10 Further **specific research** concerning the effects of burn injury on the patient, family and adjustment process, would provide valuable information to health professionals working with burn patients. It may promote the setting up of more support programmes for post-discharge

follow-up.

In a South African context, the above mentioned suggestions are not always possible and other alternatives need to be made.

9.2 SUGGESTIONS FOR SETTING UP REHABILITATION IN THE SOUTH AFRICAN SETTING

- 9.2.1 Once permission has been granted and space has been allocated, sponsorship from companies can provide many of the materials used for the children as well as basic requirements. It can also possibly finance therapists to provide counselling on a sessional basis.
- 9.2.2 A telephone 'hot line' can be set up and a counsellor can offer emotional support, basic medical advice and have a referral list to provide families with other necessary services that may be offered elsewhere.
- 9.2.3 Staff such as psychiatric nurses or social workers can lead self-help groups and offer educational talks to patients and their families at the time of discharge.
- 9.2.4 A lay support counselling service can provide and meet basic group and individual needs. Intern psychologists, student social workers and other individuals with counselling skills (i.e. Lifeline) can be utilised here.
- 9.2.5 Parents of burn-injured children can offer their expertise and help facilitate support groups for other parents or give talks forewarning them of problems and giving them ideas on how to cope.
- 9.2.6 Input from medical and paramedical staff would prove to be useful for some meetings.
- 9.2.7 If there is a psychologist available, he/she may be able to offer advice on emotional and behavioural problems, as well as provide skills on how to

facilitate groups.

- 9.2.8 Video-taped interviews with patients or parents who have coped well could be made, and these could be introduced at the beginning of a group meeting to stimulate discussion (Wallace, 1988).
- 9.2.9 A newsletter sent to patients after discharge, at regular intervals, is also a possibility where patients and families can write in. Preventative, updated research and education can also be included.
- 9.2.10 Ongoing continuous research should also be an integral part of rehabilitation. An example is the psychological sequelae of paediatric burns, involving 80% or greater Total Body Surface Area needs to be understood in the South African context as relating to patients' quality of life after they have survived severe burn injuries. What happens to these patients and their families after burn care specialists 'put them back into society' without any psychological support or follow-up? (Blakeney and Meyer, 1993) (see Appendix 7). Research is needed in this field as well as in numerous other areas.

9.3 DELIVERING REHABILITATION: ISSUES

9.3.1 Training

A major barrier in burn rehabilitation is lack of trained personnel. There is also an acute shortage of allied health personnel trained in burn rehabilitation. A large number of occupational and physical therapists have left the hospital setting. This is reaching a critical stage in most hospital environments. With this critical shortage, a consideration would be training another type of rehabilitation specialist to care for patients (Helm, 1992).

As a team member of the burns unit, a psychologist can play a major role in burn care by assisting in co-ordination of care, communicating with the

primary physicians, prescribing rehabilitation treatment and more importantly, providing follow-up care.

9.3.2 Public awareness

There is a definite lack of understanding by the public of the problems the burn patient faces after healing. These problems become crucial for children and adolescents returning to school. Initiating educational programmes concerning the consequences of being burned, is a priority in assisting the burned child in this traumatic adjustment period.

9.3.3 Standards of care

Due to lack of trained health personnel, standards of patient care should ideally be developed and guidelines with outcome criteria identified to uplift the present standard. Quality of care needs to be at least maintained, if not uplifted in the South African setting.

9.3.4 Funding issues

To fund a rehabilitation centre and to develop an adequate number of rehabilitation staff; opportunities first need to be made available to stimulate an interest in the area. This could be accomplished through funded outreach educational seminars and workshops, with follow-up on-site training made available through specialised fellowships or intern traineeships (Helm, 1992).

For funding to be continuous and worthwhile, ways to measure the value and outcome of rehabilitation need to be developed. As Hurren (1995) argues, of all the measurements, the most difficult to quantify is the cost of not adequately rehabilitating a burned patient. The financial cost to society of chronic disability is enormous.

9.4 GOALS TO DEVELOP

- 9.4.1 Evaluate treatment alternatives in relationship to quality of care and cost effectiveness.
- 9.4.2 Stimulate interest and provide specialised training for allied health personnel (Helm, 1992).
- 9.4.3 Educate the public as to the consequences of burns and stress the need for a rehabilitation programme.
- 9.4.4 Develop comprehensive standards of care after a rehabilitation programme is set up.
- 9.4.5 Identify methods of educating sponsors about the magnitude of burn rehabilitation treatment programmes to help resolve funding issues.
- 9.4.6 Be aware of the scope for more long-term research and teaching in a rehabilitation setting. Much research and work is needed in many areas, especially in family support. Aspects of the psychosocial management of the patient and family play a significant part in determining the long-term outcome. Evaluative studies in this area are needed.
- 9.4.7 Provide a therapeutic programme of high standard, as reintegration of identity is the last stage in the psychological recovery for survivors of burn injury.
- 9.4.8 Ways to measure the value and outcome of rehabilitation need to be developed. If rehabilitation is going to be compared with other treatments and come under attack by those who wish to save money, then there is a need to be able to express its impact on burns outcome in numbers (Hurren, 1995).

The following are specific intervention suggestions based on the information provided by the mothers in this study. Other suggestions will also be included to incorporate possible concerns not expressed in this study, but nevertheless need to be included in the intervention. Results indicate very similar responses on the Impact of Events Scale (Horowitz, 1979) and the Self Blame questionnaire (Kiecolt-Glaser and Williams, 1987). It can be inferred that the majority of mothers blame themselves and feel guilty about their child's burn injury and have intrusive and avoidance thoughts indicative of the injury having a large impact on their lives.

Although all scores were similar for both out- and in-patient groups, it is the researcher's opinion that there should be different interventions for both groups. The reason for this is that mothers' needs differ for children being hospitalized (in-patients) and children being treated at out-patient clinics, although their initial reactions in the acute post-injury stage may be similar.

A hospitalized child will have to endure daily bathing and painful dressing changes, possible skin grafts, clip removals after grafts and various medical procedures, as well as a lengthy hospital stay away from his/her family. The shock of having to admit your child to hospital and the lengthy recovery period may initiate different needs when compared with taking your child to be treated once or twice a week at an out-patient clinic for a few weeks (or less) without any skin grafts or medical procedures. To be on the safe side, different interventions will be provided for each group and suggestions will be made for post-injury recovery in the acute stage, as well as long term follow up.

9.5 SPECIFIC INTERVENTION SUGGESTIONS : IN-PATIENT MOTHERS' GROUP

- 9.5.1 **Debriefing the family (and in-patient, if old enough)** is an essential process of helping individuals look at what has happened to them and discuss their reactions to the trauma. This helps them recover from their experience and deal with the shock by venting their emotions, fear, sadness, anger or frustration. If debriefing does not occur, the chances of repressing the incident and possibility of experiencing post-traumatic stress symptoms are more prevalent. Releasing feelings and working through the traumatic event from the participant's cognitive, emotional and physical reactions is the core of debriefing. Debriefing should ideally be done in the first 3 days after the trauma. The subjects in this study received no debriefing which could be hypothesized as being the reason for the high incidence of intrusive and avoidance thoughts measured in the Impact of Events Scale (Horowitz, 1979).
- 9.5.2 A basic initial **crisis intervention approach** is necessary in the acute stage after injury. Both the burn-injured child and his/her family have experienced a crisis. Cahners and Kartiganer (1990) explain the need for early intervention, ensuring the social, emotional and psychological support essential to a positive outcome. Crisis intervention is an appropriate method used to alleviate the traumatic impact of the injury. Cushioning the impact of the stressful event by offering immediate emotional first aid and on strengthening the child and his/her family in their coping techniques throughout the crisis period is crucial (Golan, 1978). No subjects received this intervention, although some had support from family and friends.
- 9.5.3 If there are no counsellors or social workers available to provide a debriefing or crisis intervention service, there should at least be a **mothers' therapeutic support group** which is held on a continuous weekly basis, where mothers are able to deal with many issues:

- 9.5.3.1 Included in the counselling session should be an explanation of the child's likely course of recovery and what to expect. Understanding the recovery process, both psychological and physical, benefits the patient and family and can be helpful because they will be better equipped to assist their loved one in the future. Visual aids could be utilised showing the stages of treatment and medical procedures involved to assist with the physical knowledge of the burn injury.
- 9.5.3.2 Counselling should be provided to prepare the family for the patient's return home, because sometimes for other family members the presence at home of a child with scars can be an ongoing source of guilt, grief and self-reproach. Parents need to be supported and advised on how to deal with anxious siblings.
- 9.5.3.3 Feelings of guilt and self blame that were prevalent with this group, need to be normalised. Mothers need to know that they are having a 'normal' reaction to an 'abnormal' event and that other mothers also experience similar feelings of guilt and self blame.
- 9.5.3.4 These feelings apply to the working through of intrusive and avoidance thoughts that the majority of the subjects felt. Knowing that other mothers also suffer from similar intrusive thoughts allows mothers to feel that they are not losing control and are not alone. It is a very frightening experience to try and control all your thoughts and yet have continuous flashbacks of the scene of the accident.

- 9.5.3.5 The family plays a crucial role in the burned child's recovery from the trauma and a therapeutic group can assist mothers in understanding the direct impact that family support has on the emotional and physical recovery of their child. For the child to function well, he/she needs to know that someone cares deeply about them, even though they have changed. If mothers are struggling in this area, the group facilitator can refer them to family therapy. Some mothers found that their husbands blame them for allowing the accident to happen and could not understand how this occurred because the mother was home at the time. Blaming your partner can split families apart and does not allow adequate support for the child.
- 9.5.3.6 Unexpected traumas usually raise the question 'who's fault is it?' 'What did I do to deserve this?' Mothers also keep asking themselves 'what would have happened if ...' or 'if only I' ... or 'I should have ...' . Trying to find meaning in their experience can be explored in this group, so they can come to terms with the trauma that interrupted their lives and irrecoverably changed them. Helping find some kind of explanation for what happened and the unfairness of it, helps the mothers find peace.
- 9.5.3.7 Unhealthy interpretations of why their loved one was harmed, can also be dealt with. For example, one mother said this had happened to her child because she (as a mother) is being punished for the sins that she committed in her life. She is therefore unable to let go of her guilt. These are also attempts at trying to rationalise the accident causation.

9.5.3.8 This group can also facilitate the understanding of how mothers' reactions to the child's injury causes them to behave in certain ways. Some mothers wanted to spoil their child to repair the damage done to him/her. One mother said she couldn't stop buying her child all kinds of sweets, her favourite chocolates and anything she asks for. Obviously this kind of long-term behaviour can only harm the child. Mothers also had a desire to protect their child from any further harm. A few mothers in both groups mentioned in the interview that they constantly want to watch their child in case something happens to them again. The remaining scar reminds the mother that the accident was allowed to happen, feeding guilt feelings further. These issues need to be dealt with.

9.5.4 **Individual therapy** should be offered on an ongoing basis to assist the mother in all the challenges facing her, once the child is discharged from hospital. Supportive counselling can provide a basis from which to deal with any issues that may arise, such as the child's change in behaviour, problems at school, as well as her own feelings. There were mothers that did not want to be part of a group, but rather have one-to-one counselling. This option should be available to them.

9.6 **SPECIFIC INTERVENTION SUGGESTIONS: OUT-PATIENT MOTHERS' GROUP**

9.6.1 **Explanation of situation**

An intervention programme for out-patient mothers has practical problems. Firstly mothers are followed up weekly or twice weekly for anything from a few weeks to one month, depending on the extent of the burn injury. Sometimes they are only seen once and then sent to a clinic

in their area for daily dressing changes and may come back after 2-3 weeks only (if at all) for a check-up. There can be anything from 7 to 20 patients seen at a time. When mothers come to the clinic, they are obviously accompanied by their child and often other siblings as well. For a mother to attend a group, she would either have to do so with her child or leave the child in someone else's care, which some mothers are reluctant to do whilst the child is still in pain.

Another problem is that out-patient mothers are present when the child has to have their dressings removed and cleaned before the doctor looks at the wounds. This causes great anxiety, as two children are in the dressing room at a time, with two tables next to each other. Invariably the children are crying, due to anxiety and pain. Very little medication (if any) is given during dressing changes which can be very painful, as bandages stick to the wounds. The mother and child who come into the dressing room already see the other child on the table, crying with their wounds open, which causes further anxiety and fears. Added to this, the child sees other burned children, some worse off than themselves.

The children remember the pain associated with the dressing changes and even when the wound starts healing, the child associates it with pain and starts screaming, more due to anxiety than pain. Every time the child returns to the clinic for dressing changes, it evokes anxiety and fear in the child, thereby causing the child to re-experience the traumatic event from which he/she is trying to recover.

The mothers hold and help comfort the children during these dressing changes and for some mothers it is the first time they are coming face to face with the child's burn wound. Some mothers look away and others stare in horror. Seeing their child crying and in pain does not help alleviate any guilt or self blame that they may be feeling.

After dressings have been removed, the mother and child wait their turn to see the doctor. The wounds are exposed for the doctor to examine

(covered in plastic to prevent infection). At least four mothers and their children are in the examination room together, to ensure that there are no delays. As a result, those waiting to be examined sometimes witness the screaming, fear and anxiety of the child being examined. Often they become overwhelmed and anxious. Some of the children are in a state of undress, which is humiliating and embarrassing for the child who is exposed. Some families have been there for hours. After the doctor has seen the patient and mother, the wounds get bandaged before going home. Again everyone sits and waits their turn as there are only two nurses available at a time. The child is crying again due to the association with dressing changes once more.

An intervention needs to incorporate this stressful experience with the practical problem of how and when mothers could join in a group and where to leave their child. Many mothers would not want to return to the hospital on another day when there is no out-patient clinic, to attend a group. There is usually a financial problem and mothers sometimes travel from afar.

Should a group support programme be implemented, the following suggestions should be considered:

- 9.6.1.1 Possible continuous group meetings where new mothers could voluntarily join in and come and go as they need. Thus participants change every week, depending on their clinic schedule. Members may only need two or three sessions, but may return to the group at any time for support. The weekly meetings could be scheduled at the time of the out-patient clinic.
- 9.6.1.2 Areas to be covered would be the same as the in-patients' group, concerning issues around self blame and guilt, as well as intrusive and avoidance thoughts.

- 9.6.1.3 To discuss their feelings or helplessness whilst watching their child in pain. Mothers expressed this as a concern in the semi-structured interview.
- 9.6.1.4 Being part of a supportive group environment, even if it is only a once-off attendance where mothers can express their feelings of shock, despair and anxiety, will alleviate some of the emotions. Mothers will be able to see that they are not alone and everyone can offer ideas on how to cope with the post-injury phase.
- 9.6.1.5 Again the issue of scarring was another concern. Mothers should be able to express their fears for their child's future in a supportive environment.
- 9.6.1.6 For the families that are being torn apart, where one parent blames another for the accident, a support group can offer assistance and a means for referral.
- 9.6.1.7 If a rehabilitation programme was set up, it would be able to offer more services for mothers and their children; such as educational input, medical and preventative advice and have an additional helpline to answer queries and problems.
- 9.6.1.8 From the medical perspective an aftercare nurse should be stationed at the out-patient clinic to assist with advice such as dressing changes, wound healing, skin hygiene, removal and replacement of pressure garments, greasing the child's skin, anatomy of the skin and issues around scarring. The out-patient clinic should also then be seen as an aftercare clinic and provide effective communication concerning referral support services.

- 9.6.1.9 Individual therapy for out-patient mothers should be optional for those who do not want to be part of a group. Mothers could be provided with support and a few crisis intervention sessions, as well as stress debriefing, if needed.

CHAPTER TEN

RECOMMENDATIONS AND CONCLUSIONS

10.1 RECOMMENDATIONS

- 10.1.1 To start a rehabilitation programme. To set this up is a long-term goal, but a necessary one if we are going to raise the standards of professional help for the burned child and his/her family in this country.
- 10.1.2 The multi-disciplinary team working in the Burns Unit has a critical role to play, not only with the medical treatment of the burned child, but also in being responsible for the psychosocial care of the child. This care should include the family needs, as they are important to the child's recovery, both mentally and physically.
- 10.1.3 Social workers and a psychologist should be involved in the care and treatment of the child and family from admission to discharge and throughout the post-injury follow-up at the out-patients' clinic.
- 10.1.4 Ideally, a psychologist or psychiatrist should provide consultation to the Burn Unit. The job description would be to offer supportive and co-ordinating services to families and patients; to offer crisis-orientated short-term therapy; to facilitate referrals to community resources and to be available for staff to provide support around the stress factors incurred in burn care.
- 10.1.5 The importance of consultation with the parents and the child as soon after admission as possible, is crucial for the social worker. Consultation anticipates and prevents potential problems during hospitalisation. After discharge, follow-up sessions help the family to adjust to a new way of life.

- 10.1.6 Group meetings should be initiated as soon as possible, with other parents of burned children. This will allow parents to support each other by sharing their experiences and feelings until they gain information about burn treatment and the long-term implications of burn injuries. These meetings could be facilitated by the social worker.
- 10.1.7 Support groups should ideally be held at a hospital, because members of staff could inform families of the existence of such groups and the possible benefits that can be obtained.
- 10.1.8 A referral list should be drawn up, perhaps in the form of a pamphlet where families can be recommended to seek professional help (support services). So whatever the problem regarding 'burns', there is somebody ready to help. In the same way, preventative programmes/handouts should be prepared to give advice on how to prevent burn injuries and what to do (steps to be taken) should one be burned.
- 10.1.9 As far as the out-patient clinic is concerned, there is a need for more privacy and a sensitive, empathic approach from the staff. An interpreter is needed for those mothers and children who do not speak English or Afrikaans. Not being able to understand the doctor, heightens the child's confusion and the mother's feeling of being out of control.
- 10.1.10 More research in general is needed in terms of the family post-burn adaption. Integrating both the injured child's needs with his/her social environment is a vast problem and particularly because no long-term follow up care is provided in the South African context.

10.2 FUTURE RESEARCH

- 10.2.1 A long-term study is needed that measures mothers adaption for at least six months to one year post injury, to find out how they have coped with their child's injury.
- 10.2.2 To conduct a follow-up study that includes the entire family's adaption to the injury and how it has impacted on the family unit. Included in this study should be how specific roles within the family have either temporarily or permanently shifted.
- 10.2.3 To have a large study sample that includes at least 100 mothers interviewed over a longer period of time (possibly 50 mothers from in-patients and 50 out-patient mothers).
- 10.2.4 To offer some form of family intervention (even if it is just support groups) and measure the possible effects that such an intervention could have on the family.
- 10.2.5 To use the same questionnaires as the present study and compare results.
- 10.2.6 To use a different format of questionnaires and data analysis to measure the same concerns that this study has.
- 10.2.7 A needs analysis should be undertaken to determine the needs of the parents who attend the out-patients burn clinic. Their perception of the clinic could be explored, how they perceive the staff and what changes they feel should be made to improve the services provided.
- 10.2.8 Family members bring with them their established ways of dealing

with crisis situations. Parents often act in inappropriate ways and these reactions can seriously affect the hospital adjustment of the patient. Research into the different coping methods used would be useful in order to offer psychosocial evaluation and support within the first few days after admission.

- 10.2.9 Research in general should be conducted to identify and meet the needs of parents, as there is a lack of these studies in the South African context. This must be identified in order to be able to maintain parental and family stability in the stressful situation.
- 10.2.10 It would also be beneficial to note the effect that parents' reactions have on their children. The interacting aspects of parents and children need to be studied.
- 10.2.11 Studying the epidemiologic factors involved in burn injury may show some form of evidence that stress may be a contributing factor to burn injury, shedding more light on the 'burn-prone' family.
- 10.2.12 It would be of value to analyse the antecedent factors of burns. If the mother was home at the time of the accident, was she pre-occupied with other problems?
- 10.2.13 Further study is also needed to determine if parents of burned children show more distress and more specific types of distress than parents of children hospitalized on an emergency basis for other reasons.

10.3 CONCLUSION

There is probably no injury causing more physical and psychological trauma than a severe burn. Both the injury and the treatment that ensues are painful and frightening. Long hospitalisation, separation from home and family provides

additional stress to the painful medical procedures. It is no wonder that this creates a crisis for patients and their families. Attention is focused on the suffering patient and family members are often left in the background, but it is recognised that they need counselling and support.

The importance of this research is that it has highlighted the plight that mothers of burn-injured children have to endure in the acute post injury stage. It should be quite clear from this study that a major goal for future research should be the identification and implementation of interventions, not only to reduce psychological trauma in burn-injured children, but also in learning which interventions are most effective in the support of successful coping mechanisms for the family unit.

As mentioned before, both literature and research into the psychological trauma of burn patients and their families in the South African context is sadly lacking in this country. So too, are the lack of rehabilitation and after-burn care services for the patients and families. Further research problems will present themselves once rehabilitation is set up; there will need to be clinical outcome studies comparing various treatment techniques to determine which protocols are best related to treatment outcome. Protocols for in-patient rehabilitation should be different from those of out-patient rehabilitation. This should be borne in mind for any future therapeutic intervention programme.

More work in this area is needed to prevent psychological sequelae of both patients and their family. Looking to the future, it is in this follow-up stage that we have particular need for development. There is a need for follow-up groups for parents and older children, increased input on a health professional level and research efforts in assessing the long-term psychological impact on children and parents. It is obvious that more professional support is required, creating an important role for health care providers.

By examining and understanding the psychological effects and emotional reactions of mothers' distress after childhood burn trauma, the awareness of these concerns can facilitate the development of other models of post-burn

maternal recovery. This will lead to planned options for intervention and assessment of treatment outcome effectiveness. It may promote the setting up of more extensive professional support programmes and rehabilitation for patients and families post discharge and help reintegrate the child into school and society at large.

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APPENDIX 1



Limitation in shoulder abduction because of axillary burn scar contracture.

APPENDIX 2

Dear Participants

Thank you for participating in this research project. I am a Masters Psychology student, conducting research into understanding the emotional reactions of mothers to their children's burn injury.

All information received from you will be treated confidentially and your anonymity is assured, therefore your name will not be made known.

Thank you for your time and co-operation.

C. BLOOMBERG

CONSENT

I give my permission to use the information that I give for research purposes, provided that I remain anonymous.

Signed

Date

APPENDIX 3

SEMI-STRUCTURED INTERVIEW

1. **Who was with the child at the time of the accident?**

- you
- other family
- you and other family
- nobody

2. **What was your reaction when your child was burned?**

- calm, not really upset
- worried
- angry at yourself
- angry at your child
- guilty
- blame others
- cried
- panicked
- other

3. **How are you dealing with your child's injury?**

- managing, if so. how
- try not to think about it
- think about it all the time
- talk about it often
- get involved with work or other things
- cry a lot
- prayer
- other

4. Do you have any emotional support?

- family stands by you, helps you
- no, only you
- friends to talk to, help you get over shock
- other children in family stand by you
- people at work
- other

5. What emotions are you feeling now about the burn injury?

- sad
- angry
- worried
- scared
- nothing, empty
- alone
- frightened
- helpless
- other

6. Are you able to be supportive to your child?

- yes
- no, too upset
- too worried
- have to be at work
- can't afford to travel to hospital often
- other children and extended family to look after
- yes, sometimes supportive
- can't hug him/her
- other

7. **What are your concerns in general?**
- worried about child's future
 - worried about scarring
 - money
 - child's pain
 - possible operations
 - looking after child after going home
 - your work
 - others' reactions to child/or you
 - other members in your family that need you
 - other
8. **When you think specifically about your child's burn injury, do you think about the following?**
- how it must feel
 - how much pain he/she is in
 - can't look at burn/scar
 - wondering what the child is thinking about the burn
 - if the child is cross with you
 - other
9. **Do you feel that you are being informed enough about your child's medical condition by doctors and nursing staff?**
- no, doctor hardly speaks to you
 - doctor not often there
 - you are too scared to ask questions
 - nursing staff tell you some things
 - nursing staff too busy to explain
 - everything is being explained
 - you have no idea what is going on
 - you would like more information and your questions answered
 - other

10. **What worries you about your child's future?**
- scarring
 - friends at school
 - use of limbs
 - psychological scarring
 - will child blame you
 - pressure garments child has to wear
 - future rehabilitation treatment
 - future as an adult
 - other
11. **Are you worried about your own levels of stress and coping?**
- yes, I am very worried and stressed
 - depressed
 - cry a lot
 - frightened
 - taking the strain by yourself
 - no fine, coping alright
 - other
12. **If you were offered support and counselling through this crisis would you take it?**
- yes
 - no
 - want it for yourself
 - want it for yourself and child
 - other
13. **Ideally, what kind of support do you feel could help you?**
- private counselling (one-to-one)
 - ongoing support group with other mothers of burned children

- information (psychoeducation) about burn injuries (i.e. dressing changes, scarring, pressure garments, rehabilitation, long-term recovery)
- family counselling
- get the school more involved in understanding child's injury and recovery
- information about understanding your own emotional concerns
- information about understanding your child's behaviour (and emotional state) after the burn injury
- other

14. **As a parent, how are you feeling right now?**

University of Cape Town

APPENDIX 4

MEASUREMENTS

Self Blame (Kiecolt-Glaser and Williams (1987))

1. How much do you blame yourself for what has happened to your child?

| | |
|-------------|---|
| not at all | 1 |
| a bit | 2 |
| quite a lot | 3 |
| completely | 4 |

2. Which of the following do you think is responsible for your child's injury?

| | |
|-----------------------|---|
| situation/environment | 1 |
| chance (accident) | 2 |
| family members | 3 |
| you | 4 |

3. Do you feel guilty in any way about your child's burn injury?

| | |
|------------------|---|
| not at all | 1 |
| sometimes | 2 |
| most of the time | 3 |
| constantly | 4 |

4. Could you have done anything to prevent your child's injury?

| | |
|----------------------------|---|
| no, not there/not my fault | 1 |
| perhaps, not sure | 2 |
| yes, think so | 3 |
| yes, definitely | 4 |

5. Did you cause the child's burn injury or was it an accident?

| | |
|----------------------|---|
| accident | 1 |
| bit of both | 2 |
| indirectly caused it | 3 |
| yes, you caused it | 4 |

6. Do you think your child was to blame for his or her injury?

| | |
|---|---|
| completely, he/she deliberately burned himself/herself | 1 |
| yes, indirectly | 2 |
| quite a lot | 3 |
| not at all | 4 |

APPENDIX 7

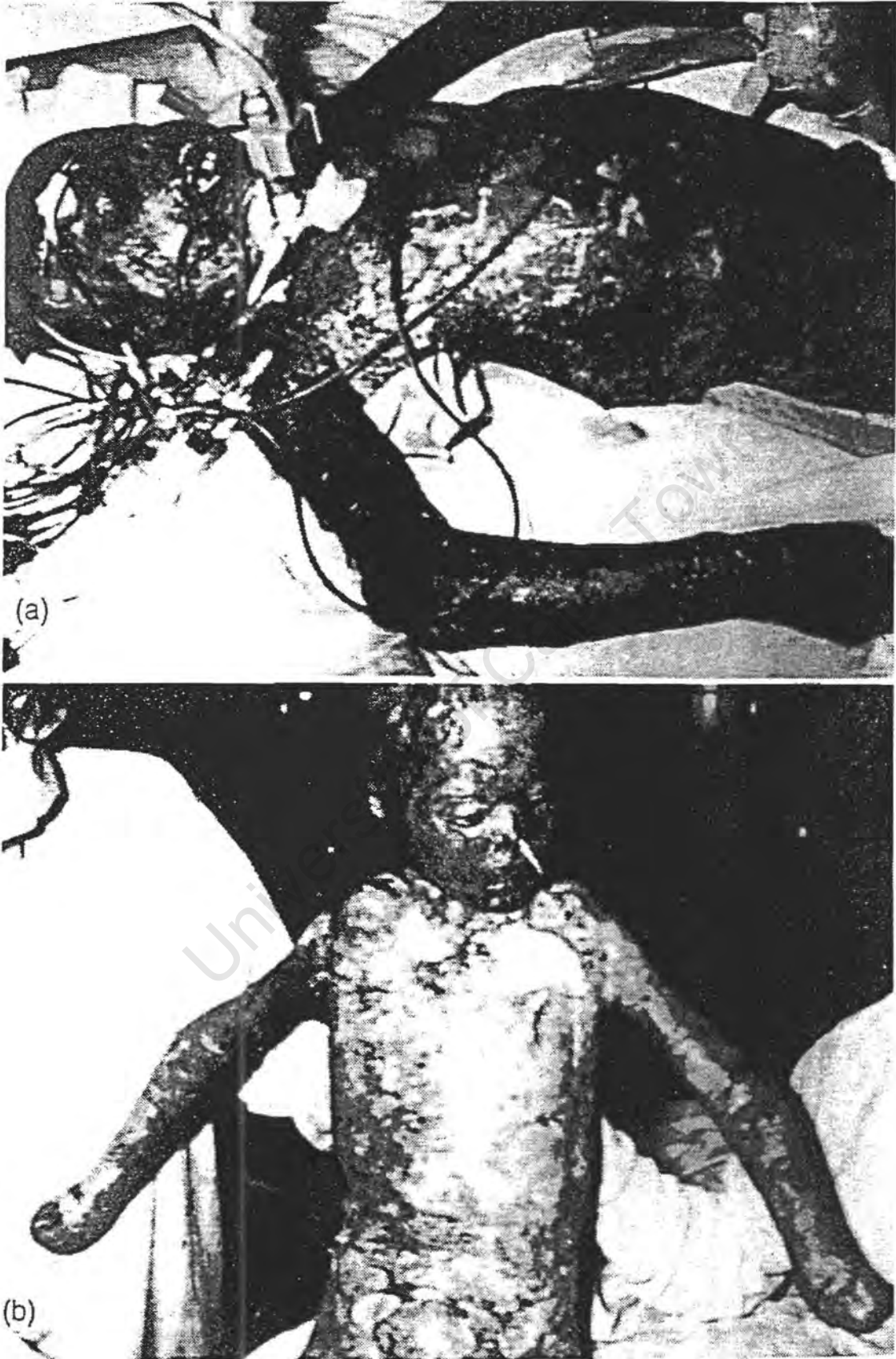


Fig. 53.1 Pediatric burn patient with 95% total body surface area burn (a) at the time of admission and (b) at discharge. Reproduced from ref. 3 with permission.