

Posttraumatic Stress Disorder in Parents of Burn Injured Children

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Abstract:

Background: A burn occurs when some or all of the cells in the skin or other tissues are destroyed by hot liquids, hot solids or flames. 84% of pediatric burn incidents occur at home of which 80% when the children are unsupervised. Early access to medical care has reduced the incidence of mortality which also means that there are more survivors than those in the earlier decades. This forces the affected children and their families into coping that makes the posttraumatic period more stressful and distressing. The most common psychological effects are depression, anxiety and posttraumatic stress. The Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) classified experience of a traumatic event accompanied by the 3 psychological symptoms of re-experiencing, avoidance and physiological arousal and associated functional impairment are features of posttraumatic stress disorder (PTSD).

Materials and Methods: In this study 50 parents of live burn injured children who were more than 2 years of age and treated in the Department of Pediatric Surgery participated. The study was conducted over a period of 1 year. The data was collected after a minimum of 3 months post burn injury. After obtaining a written consent, the demographic and clinical variables of the child and parent were collected using interview method. PTSD checklist – Civilian version was used to assess the PTSD in parents. It is a self-reporting rating scale consisting of 17 items where the respondents indicate how much they have been bothered by a symptom over the past month using a 5-point (1–5) scale. The responses range from 1 being ‘Not at all’ to 5 being ‘Extremely’. Scores above 3 are categorized as symptomatic; following which DSM criteria was used for diagnosing PTSD.

Results: 56% of the burn injuries in children occurred in the age group of 2-4 years, of which 58% were boys and 74% was scald burns. 42% of the children sustained burns involving 11-25% of total body surface area, 82% of the burn injuries happened at home and 72% of the children had sustained burns in the hand either in isolation or with other body parts. 20% of the parents suffered diagnostic PTSD and 46% of the parents exhibited moderate amount of PTSD symptoms. There was also a significant association between the body parts involved ($p=0.022$) and the need for hospitalization ($p=0.027$) and PTSD symptoms.

Conclusion: Psychological problems are recorded in a significant number among the parents of burn injured children. Regular screening by trained nurses or psychologists aimed to detect parents suffering from PTSD seems warranted.

Key Word: Burn injury, Scald burns, Children, Parents, Posttraumatic stress disorder, Posttraumatic stress disorder symptoms

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I. Introduction

International Society of Burn Injuries defines burns as “an injury to the skin or other organic tissues primarily caused by thermal or other acute trauma”. A burn occurs when some or all of the cells in the skin or other tissues are destroyed by hot liquids (scalds), hot solids (contact burns), or flames (flame burns). Injuries to the skin or other organic tissues due to radiation, radioactivity, electricity, friction or contact with chemicals are also identified as burns¹. 84% of pediatric burn incidents occur at home, of which 80% when the children are unsupervised². Globally in 2004, the incidence of burns severe enough to require medical attention was nearly 11 million people. Burns less than 20% total body surface area (TBSA) occur to 153 per 100,000 population of children

aged 0-15 years, making them the fifth common cause of non-fatal childhood injuries after intracranial injuries, open wounds, poisoning and forearm fractures. Approximately 6% of all unintentional injuries in children less than 15 years of age come from burns of under 20% TBSA³.

Early access to medical care has reduced the incidence of mortality which also means that there are more survivors than those in the earlier decades. This forces the affected children and their families into coping that makes the posttraumatic period more stressful and distressing. The most common psychological effects are depression, anxiety and posttraumatic stress⁴. Burn injury results in traumatic experience that is not limited to physical disfigurement but also mental disturbance. Burn injury is an extremely stressful experience for the injured and the family. Treatment and physical rehabilitation after burns incident is extensive and costly, adding to the stressors already faced by the children and their families⁵.

The Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) classified experience of a traumatic event accompanied by the 3 psychological symptoms of re-experiencing, avoidance and physiological arousal as described by American Psychiatric Association (APA) and associated functional impairment are features of posttraumatic stress disorder (PTSD) (symptom persistence for at least 1 month). PTSD is more likely to occur in vulnerable groups who have experienced trauma, such as those who had a preburn history of psychological disorders⁶. A study conducted in a Paediatric trauma centre revealed that 25% of the children and 15% of the parents suffered diagnostic PTSD, but only 46% of the parents of affected children sought help of any form for their child and only 20% of affected parents sought help for themselves⁷. A study conducted by Hall E et al revealed that 47% of the parents reported experiencing significant posttraumatic stress symptoms 3 months after the burn in the model indicating three independent pathways to PTSD symptoms (i.e., parent-child conflict, parents' dissociation, and children's PTSD symptoms)⁸.

There is dearth of literature with regard to the posttraumatic stress in parents of burn injured children and there have been no studies conducted in India on the topic. So this present study will contribute to the body of knowledge and also give an insight and make the health care professionals sensitive about the amount of emotional and psychological trauma that the parents undergo, thereby this too can be addressed during the care of the child in the hospital.

The objectives of the study were to

- Identify the presence of posttraumatic stress disorder in parents of burn injured children
- Identify the severity of posttraumatic stress disorder symptoms in parents of burn injured children
- Determine the association between posttraumatic stress disorder in parents of burn injured children and the demographic variables of parents and demographic and clinical variables of children.

II. Material And Methods

This descriptive study was carried out on parents of burn injured children treated in the Department of Paediatric Surgery at Christian Medical College, Vellore. A total 50 parents participated in this study.

Study Design: Descriptive study

Study Location: This is a tertiary care teaching hospital based study done in-patient and outpatient units of Department of Paediatric Surgery at Christian Medical College, Vellore, Tamil Nadu, South India.

Study Duration: June 2017 to June 2018.

Sample Size: 50 parents.

Sample Size Calculation: The sample size was estimated on the basis of the number of burn injured children visiting the Paediatric Surgery Unit in a year.

Subjects & Selection Method: The study population was parents of children treated for burn injuries in the Department of Paediatric Surgery, and were willing to participate in the study. The data was collected after a minimum of 3 months post burn injury.

Inclusion criteria:

1. Parents of live burn injured children more than 2 years of age
2. Parents of children whose age was <15years at the time of the incident
3. Willing to participate in the study
4. Treated in the Department of Paediatric Surgery
5. >3 months since the burn injury
6. Parents who could read and write either English, Tamil or Telugu

Exclusion criteria:

1. Parents of Burn injured children who passed away
2. Parents of live burn injured children less than 2 years of age

Procedure methodology

Parents who fulfilled the inclusion criteria were taken to a room with privacy, after written informed consent was obtained, Part A of the instrument consisting the demographic and clinical variables of the child and parent were collected using interview method. This included the demographic variables of the child such as hospital number, age and sex of the child, ordinal position in the family and school absenteeism. The demographic variables of the parent such as age, relationship to the child, type of family, residence, parental education, occupation, monthly income, if the parent witnessed the injury, parent present at the site of injury, parent present during first aid and transport and the clinical variables of the child such as age at burn injury, type of burn, total body surface area burnt, duration of burn injury, areas burnt, contractures, disfigurement, requiring hospitalization, surgery performed and the place of injury.

Part B consisted of PTSD check list – Civilian version (PCL-C)⁹ to assess the PTSD of the parents. The PCL-C is a standardized self-report rating scale for PTSD comprising 17 items that correspond to the key symptoms of PTSD. The stressful experience mentioned in the tool referred to the Burn injury of their child in this study. It is a checklist where the respondents indicate how much they have been bothered by a symptom over the past month using a 5-point (1–5) scale, circling their responses. The responses range from 1 being ‘Not at all’ to 5 being ‘Extremely’. The score ranges from 17-85.

All the scores were added up and scores above moderately (3-5) are categorized as symptomatic and responses 1–2 (below moderately) as non-symptomatic. Following which DSM criteria was used for a diagnosis:

- Symptomatic response to at least 1 “B” item (Questions 1–5),
- Symptomatic response to at least 3 “C” items (Questions 6–12), and
- Symptomatic response to at least 2 “D” items (Questions 13–17)

Severity of PTSD was graded as follows,

- 28-29 – some PTSD symptoms
- 30-44 – moderate to moderately high severity of PTSD symptoms
- 45-85 - high severity of PTSD symptoms

Statistical analysis

SPSS 17.0 version was used to analyze the data. Descriptive statistics was used to describe the demographic and clinical data and posttraumatic stress in parents of burn injured children. Chi square was used to find the association between the posttraumatic stress in parents of burn injured children and demographic and clinical variables with more than 2 categories. The level $P < 0.05$ was considered as the cut-off value or significance.

III. Result

Table no 1: Demographic variables of the child and family.

Si. No	Demographic variables	Number (No)	Percentage (%)
	Demographic variables of the child		
1.	Age of the child		
	2-4 years	28	56
	5-7 years	9	18
	8-12 years	11	22
	13-18 years	2	4
2.	Sex of the child		
	Male	29	58
	Female	21	42
3.	Order of the child		
	First	23	46
	Middle	13	26
	Last	14	28
4.	School attendance		
	Yes	19	38

	No	5	10
	Not applicable	26	52
Demographic variables of the parent			
1.	Age of the parent		
	< 30 years	28	56
	31-45 years	22	44
2.	Relationship to the child		
	Father	12	24
	Mother	38	76
3.	Type of family		
	Nuclear	23	46
	Joint	27	54
4.	Residence		
	Urban	11	22
	Rural	39	78
5.	Parental education		
	Primary	7	14
	Middle school	7	14
	High school	24	48
	Higher Secondary	4	8
	Graduate	5	10
	Post graduate	3	6
6.	Parental occupation		
	Unemployed	19	38
	Labourer	22	44
	Non-professional	6	12
	Professional	3	6
7.	Monthly family income		
	< 5000	13	26
	5001 – 10000	18	36
	10001 – 25000	18	36
	> 25000	1	2
8.	Parent witnessed the injury		
	Yes	38	76
	No	12	24
9.	Parent present during first aid		
	Yes	48	96
	No	2	4
	TOTAL	50	100

Table 1 indicates that majority (56%) of the burn injured children belonged to the age group of 2-4 years, a slightly more percentage (58%) of the affected children was males and 46% of the affected children were first born. The demographic variables of the parents revealed that majority (56%) of the parents aged <30 years, 76% of them were mothers, almost equal numbers were from nuclear (46%) and joint (54%) families, most (78%) of them resided in a rural setting, about 48% of the parents had high school education, majority (44%) of the parents were labourers, more than three fourth (76%) of the parents witnessed the injury and almost all (96%) of the parents were present during the first aid given to their children after the burn injury.

Table no 2: Clinical variables of the child.

Si. No	Clinical variables	Number (No)	Percentage (%)
1.	Age at burn injury		
	0-2 years	20	40
	3-5 years	17	34
	6-8 years	4	8
	9-12 years	7	14
	13-18 years	2	4
2.	Type of burn injury		
	Scald	37	74
	Flame	12	24
	Electrical	1	2
3.	Total body surface area burnt		
	<10%	18	36
	11-25%	21	42

	26-30%	5	10
	>31%	6	12
4.	Duration of burn injury		
	<1 year	42	84
	1-3 years	6	12
	>5 years	2	4
5.	Contractures		
	Present	11	22
	Absent	39	78
6.	Disfigurement		
	Present	14	28
	Absent	36	72
7.	Child requiring hospitalization		
	Yes	32	64
	No	18	36
8.	Child requiring surgery		
	Yes	15	30
	No	35	70
9.	Place of burn injury		
	Home	41	82
	Outside home	9	18
	TOTAL	50	100

Table 2 shows that majority (40%) of the children sustained burn injury when they were less than 2 years of age, scald burns were the most commonly (74%) seen type of burn injury, most (42%) of the children sustained burn injury affecting about 11-25% of the TBSA and most (84%) of the injury was sustained less than 1 year before, majority (78% and 72%) of the children did not develop contractures or disfigurement. 64% of the affected children required hospitalization but 70% did not require any surgical intervention. 82% of the burn injuries occurred at home.

Figure no 1: Distribution of samples according to the body parts involved in burn injury.

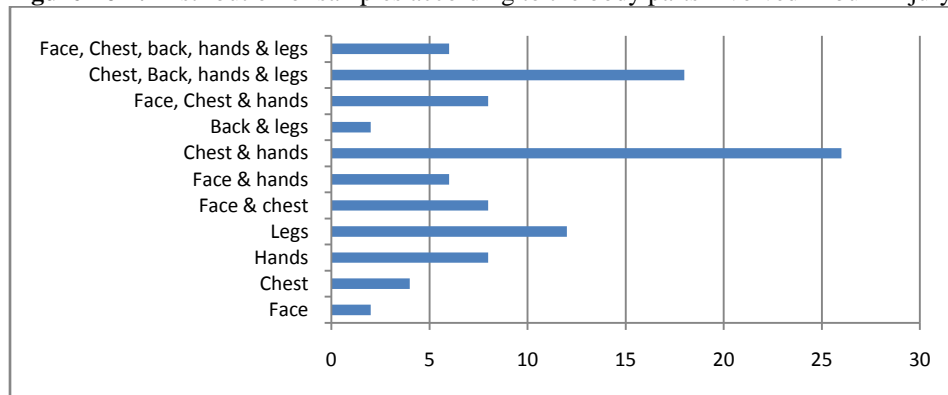


Figure 1 shows that majority (26%) of the children sustained burn injury in the chest and hand and 2% of the children sustained burn injury involving only face.

Figure no 2: Distribution of samples according to the Diagnosis of posttraumatic stress disorder in parents of burn injured children.

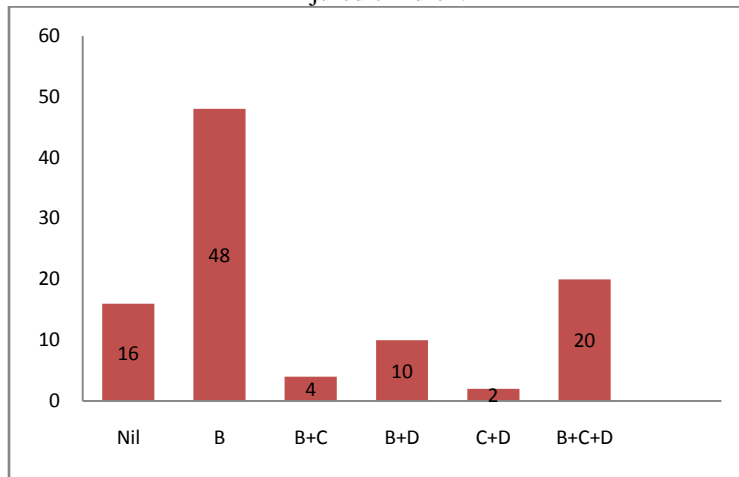


Figure 2 depicts the number of parents diagnosed to have PTSD according to the symptomatic response given following the DSM criteria for diagnosis of PTSD. 20% of the parents gave a symptomatic response in the B, C and D item which was required for the diagnosis, whereas 16% of the parents did not give any symptomatic response for any of the items.

Figure no 3: Distribution of samples according to the severity of posttraumatic stress disorder symptoms in parents of burn injured children.

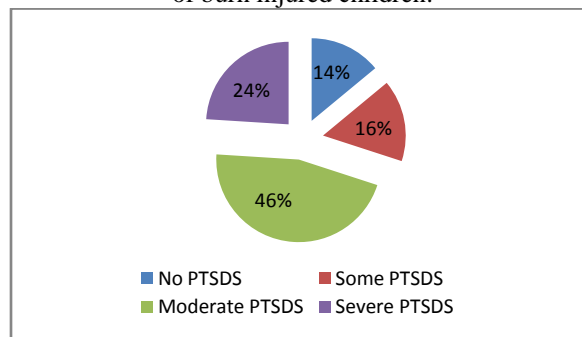


Figure 3 illustrates that majority (46%) of the parents exhibited moderate amount of PTSD symptoms whereas only 14% of the parents had no symptom of PTSD.

Table no 3: Distribution of samples according to the response to the checklist on posttraumatic stress disorder by the parents in relation to the stressful experience of their child sustaining burn injury.

Si. No	Response	Not at all		A little bit		Moderately		Quite a bit		Extremely	
		Num ber (No)	Perc entag e (%)	Num ber (No)	Perc entag e (%)	Num ber (No)	Perc entag e (%)	Num ber (No)	Perc entag e (%)	Num ber (No)	Perc entag e (%)
1	Repeated, disturbing <i>memories, thoughts, or images</i> of a stressful experience from the past?	11	22	10	20	13	26	12	24	4	8
2	Repeated, disturbing <i>dreams</i> of a stressful experience from the past?	31	62	8	16	6	12	5	10	0	0
3	Suddenly <i>acting or feeling</i> as if a stressful experience <i>were happening</i> again (as if you were reliving it)?	30	60	11	22	4	8	4	8	1	2
4	Feeling <i>very upset</i> when <i>something reminded</i> you of a stressful experience from the past?	8	16	8	16	10	20	12	24	12	24
5	Having <i>physical reactions</i> (e.g., heart pounding, trouble breathing, or sweating) when <i>something reminded</i> you of a stressful	26	53	11	22	3	6	5	10	5	10

	experience from the past?										
6	Avoid <i>thinking about</i> or <i>talking about</i> a stressful experience from the past or avoid <i>having feelings</i> related to it?	16	32	10	20	12	24	5	10	7	14
7	Avoid <i>activities</i> or <i>situations</i> because they <i>remind you of</i> a stressful experience from the past?	14	28	11	22	13	26	8	16	4	8
8	Trouble <i>remembering important parts</i> of a stressful experience from the past?	30	60	8	16	6	12	4	8	2	4
9	Loss of <i>interest in things that you used to enjoy</i> ?	27	54	12	24	2	4	6	12	3	6
10	Feeling <i>distant</i> or <i>cut off</i> from other people?	29	58	12	24	3	6	5	10	1	2
11	Feeling <i>emotionally numb</i> or being unable to have loving feelings for those close to you?	33	66	7	14	5	10	4	8	1	2
12	Feeling as if your <i>future</i> will somehow be <i>cut short</i> ?	39	78	1	2	3	6	6	12	1	2
13	Trouble <i>falling</i> or <i>staying asleep</i> ?	20	40	12	24	10	20	5	10	3	6
14	Feeling <i>irritable</i> or having <i>angry outbursts</i> ?	24	48	14	28	5	10	5	10	2	4
15	Having <i>difficulty concentrating</i> ?	25	50	11	22	7	14	6	12	1	2
16	Being " <i>super alert</i> " or watchful on guard?	4	8	3	6	2	4	9	18	32	64
17	Feeling <i>jumpy</i> or easily startled?	26	52	13	26	2	4	4	8	5	10

Table 3 indicates that majority (64%) of the parents were extremely being watchful, 24% of the parents were both extremely and quite a bit feeling very upset when something reminded them of their child’s burn injury, 26% of the parents were moderately having repeated, disturbing memories, thoughts, or images of their child’s burn injury. On the other hand as 66% and 78% of the parents were not at all feeling emotionally numb or felt as if their future will somehow be cut short, respectively.

Table no 4: Association between Demographic variables of the child & parent and posttraumatic stress disorder symptoms in parents of burn injured children.

Demographic variable	PTSD symptoms								X ²	P value
	No PTSD symptoms		Some PTSD symptoms		Moderate PTSD symptoms		Severe PTSD symptoms			
	No	%	No	%	No	%	No	%		
Demographic variables of the child										
Age of the child										
2-4 years	3	42.9	5	62.5	14	60.9	6	50.0	5.694	0.770
5-7 years	1	14.2	2	25.0	3	13.0	3	25.0		
8-12 years	3	42.9	1	12.5	4	17.4	3	25.0		
13-18 years	0	0.0	0	0.0	2	8.7	0	0.0		
Sex of the child									6.888	0.076
Male	6	85.7	6	75.0	9	39.1	8	66.7		
Female	1	14.3	2	25.0	14	60.9	4	33.3		
Order of the child									11.280	0.080
First	1	14.2	5	62.5	14	60.9	3	25.0		
Middle	3	42.9	3	37.5	4	17.4	3	25.0		
Last	3	42.9	0	0.0	5	21.7	6	50.0		
School attendance									4.578	0.598
Yes	2	28.6	3	37.5	8	34.8	6	50.0		
No	2	28.6	0	0.0	2	8.7	1	8.3		
Not applicable	3	42.9	5	62.5	13	56.5	5	41.7		
Demographic variables of the parent										
Age of the parent									3.338	0.342
< 30 years	2	28.6	6	75.0	13	56.5	7	58.3		
31-45 years	5	71.4	2	25.0	10	43.5	5	41.7		
Relationship to the child									3.952	0.267
Father	3	42.9	0	0.0	6	26.0	3	25.0		
Mother	4	57.1	8	100.0	17	73.9	9	75.0		
Type of family									2.301	0.512
Nuclear	4	57.1	4	50.0	8	34.8	7	58.3		
Joint	3	42.9	4	50.0	15	65.2	5	41.7		
Residence									2.192	0.534
Urban	2	28.6	2	25.0	3	13.0	4	33.3		
Rural	5	71.4	6	75.0	20	87.0	8	66.7		

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Parental education										
Primary	3	42.9	0	0.0	2	8.7	1	8.3	14.740	0.680
Middle school	0	0.0	1	12.5	4	17.4	2	16.7		
High school	2	28.6	5	62.5	10	43.5	7	58.3		
Higher Secondary	0	0.0	1	12.5	3	13.0	0	0.0		
Graduate	1	14.2	1	12.5	2	8.7	1	8.3		
Post graduate	1	14.2	0	0.0	1	4.3	1	8.3		
Parental occupation										
Unemployed	1	14.2	5	62.5	8	34.8	5	41.7	8.771	0.459
Labourer	4	57.1	1	12.5	11	47.8	6	50.0		
Non-professional	1	14.2	2	25.0	3	13.0	0	0.0		
Professional	1	14.2	0	0.0	1	4.3	1	8.3		
Monthly family income										
< 5000	1	14.2	5	62.5	3	13.0	4	33.3	9.522	0.391
5001 – 10000	3	42.9	2	25.0	9	39.1	4	33.3		
10001 – 25000	3	42.9	1	12.5	10	43.5	4	33.3		
> 25000	0	0.0	0	0.0	1	4.3	0	0.0		
Parent witnessed the injury										
Yes	6	85.7	6	75.0	17	73.9	9	75.0	0.428	0.934
No	1	14.2	2	25.0	6	26.0	3	25.0		
Parent present during first aid										
Yes	7	100.0	8	100.0	22	95.7	11	91.7	1.219	0.748
No	0	0.0	0	0.0	1	4.3	1	8.3		
TOTAL	7	100	8	100	23	100	12	100		

Table 4 indicates no significant association between any of the demographic variables of the child or parents and the PTSD symptoms in parents of burn injured children.

Table no 5: Association between clinical variables of the child and posttraumatic stress disorder symptoms in parents of burn injured children.

Clinical variable	PTSD symptoms								X ²	P value
	No PTSD symptoms		Some PTSD symptoms		Moderate PTSD symptoms		Severe PTSD symptoms			
	No	%	No	%	No	%	No	%		
Age at burn injury										
0-2 years	1	14.2	5	62.5	12	52.2	2	16.7	19.339	0.081
3-5 years	3	42.9	2	25.0	4	17.4	8	66.7		
6-8 years	0	0.0	1	12.5	2	8.7	1	8.3		
9-12 years	3	42.9	0	0.0	3	13.0	1	8.3		
13-18 years	0	0.0	0	0.0	2	8.7	0	0.0		
Type of burn injury										
Scald	6	85.7	6	75.0	17	73.9	8	66.7	3.710	0.716
Flame	1	14.2	2	25.0	6	26.0	3	25.0		
Electrical	0	0.0	0	0.0	0	0.0	1	8.3		
Total body surface area burnt										
<10%	4	57.1	3	37.5	9	39.1	2	16.7	13.084	0.363
11-25%	2	28.6	5	62.5	9	39.1	5	41.7		
26-30%	0	0.0	0	0.0	3	13.0	2	16.7		
>31%	1	14.2	0	0.0	2	8.7	3	25.0		
Duration of burn injury										
<1 year	6	85.7	8	100.0	19	82.6	9	75.0	2.767	0.838
1-3 years	1	14.2	0	0.0	3	13	2	16.7		
>5 years	0	0.0	0	0.0	1	4.3	1	8.3		
Body parts involved in burn injury										
Face	1	14.2	0	0.0	0	0.0	0	0.0	47.487	0.022*
Chest	0	0.0	0	0.0	1	4.3	1	8.3		
Hands	3	42.9	0	0.0	1	4.3	0	0.0		
Legs	1	14.2	3	37.5	2	8.7	0	0.0		
Face & chest	0	0.0	0	0.0	3	13.0	1	8.3		
Face & hands	1	14.2	0	0.0	0	0.0	2	16.7		
Face & legs	0	0.0	0	0.0	0	0.0	0	0.0		
Chest & hands	0	0.0	2	25.0	8	34.8	3	25.0		

Back & legs	0	0.0	1	12.5	0	0.0	0	0.0		
Face, chest & hands	0	0.0	1	12.5	3	13.0	0	0.0		
Chest, back, hands & legs	0	0.0	1	12.5	4	17.4	4	33.3		
Face, Chest, back, hands & legs	1	14.2	0	0.0	1	4.3	1	8.3		
Contractures										
Present	1	14.2	2	25.0	3	13.0	5	41.7	4.065	0.255
Absent	6	85.7	6	75.0	20	87.0	7	58.3		
Disfigurement										
Present	2	28.6	2	25.0	4	17.4	6	50.0	4.202	0.240
Absent	5	71.4	6	75.0	19	82.6	6	50.0		
Child requiring hospitalization										
Yes	2	28.6	3	37.5	17	73.9	10	83.3	9.180	0.027*
No	5	71.4	5	62.5	6	26.0	2	16.7		
Child requiring surgery										
Yes	1	14.2	1	12.5	7	30.4	6	50.0	4.278	0.233
No	6	85.7	7	87.5	16	69.6	6	50.0		
Place of injury										
Home	6	85.7	7	87.5	19	82.6	9	75.0	0.634	0.889
Outside home	1	14.2	1	12.5	4	17.4	3	25.0		
TOTAL	7	100	8	100	23	100	12	100		

(*p<0.05)

Table 5 shows a significant association (p=0.022) between the body parts involved in the burn injury and PTSD symptoms in parents of burn injured children. There is also a significant association (p=0.027) between child requiring hospitalization and PTSD symptoms in parents of burn injured children.

IV. Discussion

The analysis of the demographic data revealed that about 56% of the burn injuries occurred among children in the age group of 2-4 years. This is similar to findings of Peddi M et al⁹ who reported that 44.7% of the burn injuries were seen in children aged between 1-4years. 58% of the burns injured children were boys which is again supported by Peddi M et al¹⁰ and Lal ST et al¹¹ whose studies revealed that 68.9% and 77.5% of the children affected were boys. 56% of the parents of burn injured children were less than 30 years of age which is supported by the research findings of Alnababtah et al¹² where 31.9% of the parents aged less than 25 years with a significant p=0.001.

74% of the burn injuries in children were due to scald burns or spillage of hot liquids. This is congruent to the findings of Peddi M et al¹⁰ and Lal ST et al¹¹ who reported that scald burns was the commonest type accounting for 45.6% and 54.5% respectively. 42% of the children sustained burns involving 11-25% of the TBSA which is similar to the findings of Mehta et al¹³, whose research revealed the 38.89% of the children sustained burns involving 11-20% TBSA. Majority (82%) of the burn injuries were sustained at home, which is consistent to the report by Centers for disease control and prevention² who published that 84% of the burn injuries among children happen at home and Lal ST et al¹¹ reported that 90.9% occurred at home setting. 72% of the children sustained burn injuries in the hand either in isolation or in combination with other body parts. This is strongly supported by Park JM et al¹⁴ and Lal ST et al¹¹ whose studies revealed that hands were involved in 54% and 43.7% of the burn injuries respectively.

The present study revealed that 20% of the parents suffered diagnostic PTSD which is supported by the findings of de Vries AP et al⁷ whose research revealed that 15% of the parents of burn injured children were diagnosed with PTSD. The parents who were diagnosed following the DSM criteria were referred to the Psychiatry Department of the hospital for further management.

The study revealed that 46% of the parents exhibited moderate amount of PTSD symptoms whereas only 14% of the parents had no symptom of PTSD. Hall E et al⁸ in their study reported that 47% of the parents reported significant posttraumatic stress symptoms 3 months after the burn injury. There was no significant association between any of the demographic variable of the child or parent and PTSD symptoms in the parent, similarly no significant association was seen between PTSD symptoms in parents and parental education and occupation (P=0.32)¹². On the contrary de Vries AP et al⁷ reported that Parental PTSD was associated with younger child age and parent witnessing the injury.

There was a significant association ($p=0.022$) between the body parts involved in the burn injury and PTSD symptoms in parents of burn injured children and between child requiring hospitalization and PTSD symptoms in parents of burn injured children ($p=0.027$). But there is no literature to support or contradict this finding.

V. Conclusion

The results of this study revealed that majority of the burn injuries among children happen at home, boys are more prone and children in the age group of 2-4 are at a greater risk for sustaining burn injuries. 20% of the parents suffered diagnostic PTSD and 46% of the parents exhibited moderate amount of PTSD symptoms. There are just few studies in relation to the treatment of psychological issues among parents of burn injured children. This is a large area which should be further developed in hospitals. Holistic care is a major aspect of nursing practice and to find few treatment studies for such issues is surprising. Psychological problems are recorded in a significant number among the parents of burn injured children. Regular screening by trained nurses or psychologists aimed to detect parents suffering from PTSD seems warranted. Implementation and evaluation of an in-hospital education and psycho-prophylaxis, taking into account the problem of coping with stress in this population should be promoted.

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