



## Epidemiological study of burns in a government tertiary hospital of North Western Rajasthan-Bikaner

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### ABSTRACT

#### Back ground

Burns is a one of the major form of trauma faced by the surgeon. A variable numbers of demographic factors influence the burn in a particular region, thus demanding for the epidemiological study of burns.

#### Aims and objectives

To know the epidemiological, demographical and socio economic factors influencing the burn cases in the North Western part of Rajasthan and to know the pattern of burn in this area.

#### Material and methodology

A prospective study of all burn patients admitted as per admission criteria in the PBM hospital during the period of one year. (2015-2016). we studied a total of 177 patients with burns. Admission criteria were: 1) Patients who had sustained burn>15% total body surface area, second degree burn. 2) Third degree burns. 3) Burns sustained from chemical or electric burn. 4) Facial burns. 5) Inhalation burns.

#### Results

Young, aged people between 20-40 years of age accounted for the majority 64.96% cases. Higher incidence was seen in rural population (70.05%), married people (81.92%), illiteracy (39.54%) and low socioeconomic status (44.63%). Flame burns were the most frequent form of burns (81.92%); followed by electrical burn (10.73%). Incidence of the burn was highest in residence (kitchen) accounting for 86.44% and an overall mortality rate of 45.19% was noted (80 cases out of 177). Outcome of the patient was directly proportional to the TBSA of burn. Extremes of age; older age and younger group had a higher mortality rate.

**Keywords:** Burn, Epidemiological Factors, Demographic Factors, Socio Economic Factors

### INTRODUCTION

Fire is a double edge weapon which can serve humans and can also cause damage. WHO calls burn as "Forgotten Global Public Health Crisis".<sup>1</sup> It is the 4<sup>th</sup> most common cause of traumatic death worldwide.<sup>2, 3</sup> the developing world accounts for about 90% of burns worldwide.<sup>4</sup> In the world, South East Asian

countries form the epicenter for burns. Of 3, 20,000 global deaths due to burn injuries more than half around 1, 84,000 deaths occur in this region.<sup>5</sup> According to the Union health ministry of India, about 70 lakh burn injuries were recorded annually, of which 1.4 lakh people die every year, which makes burn as the second most common injury next to road traffic accidents.<sup>6</sup>

The number of fatal burns has increased from 2, 80,000 in 1990 to 3, 38,000 in 2010.<sup>7</sup> nonfatal burn injuries are a leading cause of morbidity.

Burn injuries are one of the leading causes of death in all medico-legal cases in India and the most common manifestation of dowry death. In many countries of the developing world, however, females have twice the risk of males. This is often related to accidents in the kitchen or domestic violence.<sup>8</sup> From the 1980s to 2004, many countries have seen decreases in the rates of both fatal burns and in burns generally.<sup>8</sup>

In India, about 7, 00,000 to 8, 00,000 people per year sustain significant burns, though very few are looked after in specialist burn units.<sup>9</sup> The highest rates occur in women 16–35 years of age.<sup>9</sup> Part of this high rate is related to unsafe kitchens and loose-fitting clothing typical to India.<sup>9</sup> It is estimated that one-third of all burns in India are due to clothing catching fire from open flames.<sup>10</sup> Intentional burns are also a common cause and occur at high rates in young women, secondary to domestic violence and self-harm.<sup>8-11</sup> The most commonly affected age group fall in the productive age group. This accounts for about 70% of all burn injuries. Every four out of five burnt cases are women and children. This may be just the tip of the iceberg as all burn incidents are medico legal cases as per the law, so most of the burn cases are not reported to the police. Either in developed or developing countries, burn injury causes not just mere medical and psychological problems but it also causes severe economic consequences for families and even on society. Deaths are only a part of the problem for every person who dies as a result of their burns, but many more are left with lifelong disabilities and disfigurements and living with the stigma and rejection that often comes with disability and disfigurement.

The etiological factors of burn injuries vary considerably in different communities and regions and hence there is a need for detailed epidemiological studies to understand the problem status in different regions. The causes vary in different communities and so this study was conducted to know the epidemiology, socio economic burden and outcome of burn injuries in North Western Rajasthan.

## **MATERIALS AND METHODOLOGY**

This prospective study was conducted in the Department of general surgery, PBM & AG Hospital, Bikaner, for a period of 1 year from January 2015 to December 2015. This included the patients with burn referred to our center, who was more than 15 years of age. These patients were initially received and primarily managed in the casualty and then patients were shifted to the burn ward.

### **Admission criteria were**

1. Patients who had sustained burn >15% total body surface area, second degree burn.
2. Third degree burns.
3. Burns sustained from chemical or electric burn.
4. Facial burns.
5. Inhalation burns.

### **Patients were excluded from this study with the exclusion criteria of**

1. Age below 15 years.
2. Burns less than 15 % TBSA of second degree burn.
3. First degree burns.

The TBSA of the burn was calculated using the “Rule of Nine” of Wallace. For all practical purposes, these burn patients were being divided into 5 groups depending on the percentage of TBSA of burn as follows:

- Group 1: TBSA < 20 %
- Group 2: TBSA 20-40 %
- Group 3: TBSA 40-60 %
- Group 4: TBSA 60-80 %
- Group 5: TBSA >80%

Any burn more than 40% TBSA of the burn was considered as a major burn and burns less than 40% TBSA as a minor burn. At the time of admission to burn unit, a standardized Performa's were dedicated to all the patients. The Performa's had following details:

Epidemiological profile, including age, sex, religion, occupation, economic status according to modified Kuppaswamy's Classification (2014)<sup>12</sup>, educational status, marital status of the individual, etiology of burn, circumstances leading to burn, timing of burn, any psychiatric illness and any drug abuse causing burns, duration of hospital stay, pre-morbid conditions,

initial treatment received by the patient prior hospitalization. The educational status was defined as illiterate if patient dint knows to do signature in the mother language, primary education till class VII, higher education till plus two and graduate with graduation in any field. This Performa also recorded the initial condition of the patient including vitals. According to “the rule of 9” of Wallace, TBSA of the burn was calculated and the body parts involved in the burn was recorded.

**Statistical methodology**

Information collected was tabulated on windows excel and statistical significance was

calculated in the form of percentage, mean, median, mode, range etc.

**Results**

**Age and gender**

In this a period of one year, it was noted the maximum number of burns were noted among the individuals aged between 20-40 years with 56 (31.63%) males and 59 (33.33%) females. [n=177]. The least commonly involved age group was > 80 years with only 5 cases (2.81%; n=177). [Table I] Females and males were almost equally involved with only slight preponderance of females (50.28%; n=177) over males (Female to male ratio of 1.011:1). [Table 1]

**Table 1: Distribution of cases, according to patient’s gender and age**

AGE IN YEARS	MALE (Number of patients)	FEMALE (Number of patients)
<20	04 (2.2%)	09 (5.08%)
21-40	56 (31.63%)	59 (33.33%)
41-60	20 (11.29%)	13 (7.34%)
61-80	06 (3.38%)	05 (2.982%)
>80	02 (1.12%)	03 (1.69%)
<b>TOTAL</b>	<b>88 (49.71%)</b>	<b>89 (50.28%)</b>

**Religion**

Hindu’s had the highest incidence of burn (84.74%); Hindu females accounted for 44.06% (n=177) cases and Hindu males for 40.67%

(n=177). The least number of burn cases was noted in the Sikh community. No cases in the Christian religion were noted. [Table 2]

**Table 2: Distribution of cases, according to location of residence**

DISTRICT	URBAN	RURAL
Bikaner	38 (21.46%)	39 (22.03%)
Churu	03 (1.69%)	32 (18.07%)
Sikar	01 (0.56%)	01 (0.56%)
Hanumangarh	04 (2.25%)	33 (18.64%)
Sriganganagar	05 (2.82%)	14 (7.90%)
Nagore	01 (0.56%)	05 (2.82%)
Others	01 (0.56%)	00 (0.00%)
<b>TOTAL</b>	<b>53 (29.94%)</b>	<b>124 (70.05%)</b>

**Residence**

Out of 177 cases, significant numbers of cases were from the rural population (70.05%) in

comparison to urban population (29.94%). [Table 3]

**Table 3: Distribution of cases, according to religion**

SEX/ RELIGION	MALE	FEMALE	TOTAL
Hindu	72(40.67%)	78(44.06%)	150(84.74%)
Muslim	07(3.95%)	08(4.51%)	15(8.47%)
Sikh	09(5.08%)	03(1.69%)	12(6.77%)

**Literacy status**

Illiterate population (39.54%) had the maximum involvement, followed by the primary

education (32.76%), secondary education (15.81%) and graduates (11.86%) respectively. [Table 4]

**Table 4: Distribution of cases, according to patient’s educational status**

EDUCATIONAL STATUS/SEX DISTRIBUTION	MALE	FEMALE	TOTAL
Illiterate	27 (15.25%)	43 (24.29%)	70 (39.54%)
Primary education	27 (15.25%)	17.51 (9.89%)	58 (32.76%)
Secondary education	19 (10.73%)	09 (5.08%)	28 (15.81%)
Graduate	15 (8.47%)	06 (3.38%)	21 (11.86%)

**Occupation**

House wives were most commonly involved in burn injuries (37.85%; n=177) followed by the farmers (27.11%), labourers (15.25%), other

occupations (12.99%) respectively and the least number of cases were noted among the students (6.77%). [Table 5]

**Table 5: Distribution of cases, according to patient’s occupational status**

OCCUPATION	TOTAL NO OF BURN
House wife	67 (37.85%)
Farmer	48 (27.11%)
Labourer	27 (15.25%)
Student	12 (6.77%)
Others	23 (12.99%)

**Economic status**

The class 4 economic group had the maximum number of cases (44.63%; n=177) and

the class 1 had the least number of cases (12.42%). [Table 6]

**Table 6: Distribution of cases, according to economic classification**

ECONOMIC CLASS (According to Kuppaswamy classification 2014)	TOTAL NO OF BURN CASES
Class 1	22 (12.42%)
Class 2	34 (19.20%)
Class 3	42 (23.72%)
Class 4	79 (44.63%)

**Marital status**

Married people were majority in numbers with 81.35%; in comparison to unmarried/single people 18.64%. [Table 7]

**Table 7: Distribution of cases according to marital status**

MARITAL STATUS/ GENDER	MARRIED		UNMARRIED/SINGLE
	MARRIED(<7YRS OF MARRIED LIFE)	MARRIED(>7 YRS OF MARRIED LIFE)	
Male	7 (3.95%)	56 (31.63%)	25(14.12%)
Female	20 (11.29%)	61 (34.46%)	08(4.51%)
<b>TOTAL</b>	<b>27(15.25%)</b>	<b>117(66.10%)</b>	<b>33(18.64%)</b>

**Seasonal variation**

Months like January, March, April had maximum number of cases noted 18 (10.16%) and least number of cases 10 (5.64%) in October.

Slight preponderance was seen in a winter climate (October – March) 90 (50.85%) in comparison to the summer climate (April-September) [Table 8, 9]

**Table 8: Distribution of cases, according to the month of incidence**

MONTH OF INCIDENCE	NUMBER OF CASES
Janurary	18 (10.16%)
Febraury	17 (9.60%)
March	18 (10.16%)
April	18 (10.16%)
May	16 (9.04%)
June	16 (9.04%)
July	13 (7.34%)
August	12 (6.78%)
September	12 (6.78%)
October	10 (5.64%)
November	12 (6.78%)
December	15(8.47%)

**Table 9: Distribution of cases according to seasonal variation**

SEASON	NUMBER OF CASES
Winter (october-march)	90 (50.85%)
Summer (april-september)	87 (4.92%)

**Location of incidence and circumstances of burn**

The residence was the most common place of incidence of burn with 86.44% cases (n=177) when compared to the working place was

involved in 12.42% cases and other places was 1.13%. Out of 140 accidental cases, 117 cases (83.57%; n=140) occurred at the residence and all the suicidal burns occurred in residences (36 cases, 100%). [Table 10]

**Table 10: Distribution of cases on the basis of location of incidence and cause of burn**

PLACE OF INCIDENCE/ CAUSE OF BURN	NUMBER OF CASES IN RESIDENCE	NUMBER OF CASES IN WORKING PLACE	NUMBER OF CASES IN OTHER PLACES	TOTAL
Accidental	117	22	01	n=140
Suicidal	36	00	00	n=36
Homicidal	00	00	01	n=1
<b>TOTAL</b>	<b>153 (86.44%)</b>	<b>22 (12.42%)</b>	<b>02 (1.13%)</b>	<b>N=177</b>

**Source of burns**

Out of 177 cases, flame burns were 145 (81.92%), followed by electric burn 19 (10.73%) and scald burn 13 (7.34%). No cases of chemical and inhalation burn were noted. One hundred forty cases were due to flame burn. Out of these 145 cases, 108 cases were accidental in nature; 36 cases were suicidal and a single case was

homicidal in nature. In males, kerosene was the most common source of flame burn with 25 cases (17%; n=145); in females LPG was the most common source of burn with 49 cases (34%; n=145). In overall, the most common source of flame burn was LPG with a total of 70 cases (48.27%) out of 145 cases (100%). [Table 11]

**Table 11: Distribution of cases according to type of burn**

TYPES OF BURN	NUMBER OF CASES
Flame burn	145 (81.92%)
Electric burn	19 (10.73%)
Scald burn	13 (7.34%)
<b>TOTAL BURN (N)</b>	<b>177 (100%)</b>

**Cause of flame burns**

Out of total 145 flames burn cases, accidental burn was the most common cause in 108 cases (74.48%; N=145) followed by suicidal

(24.82%; n=145) and homicides (0.7%; n=145). Out of 145 flames burn cases, male accounted for 66 cases (45.51%; n=145) and female for 79 cases (54.4%) [Table 12]

**Table 12: Classification of flame burn on the basis of cause of the burn and source of burn**

REASON OF FLAME BURN/SOURCE OF BURN	ACCIDENTAL		SUICIDAL		HOMICIDAL		TOTAL
	Male	female	Male	female	Male	female	
Petrol	12	02	07	00	01	00	22
Lpg	19	35	02	14	00	00	70
Kerosene	22	18	03	10	00	00	53
<b>TOTAL N=145</b>	<b>53</b>	<b>55</b>	<b>12</b>	<b>24</b>	<b>01</b>	<b>00</b>	<b>145</b>
	<b>(36.55%)</b>	<b>(37.93%)</b>	<b>(8.27%)</b>	<b>(16.55%)</b>	<b>(0.69%)</b>		<b>(100%)</b>

**Electric burns**

In 177 cases, only 19 cases were due to electric burning and all the electric burns were accidental in nature. Low voltage electric burns was the most common source of electric burn in

10 cases (52.63%; n=19) followed by the high voltage electric burns in 8 (42.10%; n=19) and injuries caused due to lightning were only 5.23% [Table 13]

**Table 13: Distribution of Cases on type of electrical burn**

TYPE OF ELECTRIC BURN	HIGH VOLTAGE	LOW VOLTAGE	LIGHTENING
MALE	07 (36.84%)	10 (52.63%)	00 (0%)
FEMALE	01 (5.23%)	00 (0.00%)	01 (5.23%)
<b>TOTAL n=19</b>	<b>08 (42.10%)</b>	<b>10 (52.63%)</b>	<b>01 (5.23%)</b>

**Scald burns**

Total number of scald burns were 13 out of 177. All the thirteen scald burns were accidental in nature and occurred in residence. Of the 13 cases, 8 were females (61.53%) and 5 were males (38.46%; n=13).

**Suicidal burns**

36 cases were due to suicide burns. All the suicidal burns were flame burn in nature. All these suicidal attempts occurred in residence.

Females were most commonly involved with 24 cases (66.66%) and males were in 12 cases (33.33%). Petrol was the most common source of suicidal burn in males with 7 cases (19.44%) but not even a single case of petrol burn in female was noted. On overall, LPG in both the male and female population accounted for 16 cases (44.43%) and was the most common source of suicidal burn. [Table 14]

**Table 14: Distribution of suicidal burn cases, according to the gender and source of burn [N=36]**

GENDER DISTRIBUTION	MALE	FEMALE
<b>SOURCE OF BURN</b>		
Petrol	07 (19.44%)	00 (0%)
LPG	02 (5.55%)	14 (38.88%)
Kerosene	03 (8.33%)	10 (27.77%)
<b>TOTAL n=36</b>	<b>12 (33.33%)</b>	<b>24 (66.66%)</b>

**TBSA of burn**

6.20% cases (11patients) had burn less than 20% TBSA, 24.85% cases had burn between 20-40%TBSA. Maximum numbers of cases were noted in the range of 40-60% TBSA with 27. 68% (27 females and 22 males). 18.07% cases and

23.16% cases were noted in the range of 60-80% and >80% TBSA of burn respectively. Out of total 89 female burn cases, 69cases (77.52%, n=89) had major burns (>40%TBSA) and in 88male burn case, 53 cases (60.22%, n=88) had major burns (>40% TBSA). [Table 15]

**Table 15: Gender Distribution according to TBSA of burn**

GENDER DISTRIBUTION/ TBSA OF BURN	NUMBER OF MALE PATIENTS	NUMBER OF FEMALE PATIENTS	TOTAL PATIENTS N=177
<20%	08	03	N=11
20-40%	27	17	N=44
40-60%	22	27	N=49
60-80%	11	21	N=32
>80%	20	21	N=41

**Body parts involved in the burn**

The most common body part involved in burn was upper limb seen in all 177 cases (100%)

followed by trunk in 139 cases (78.53%), face 136 cases (76.83%), lower limb 100 cases (56.49%) and genitalia only 33 cases (18.64%; n=177). [Table 16]

**Table 16: Distribution of cases according to body parts involved in burn**

BODY PARTS INVOLVED IN BURN	NUMBER OF PATIENTS	TOTAL NUMBER OF PATIENTS
Face	136 (76.83%)	177
Upper limb	177 (100%)	177
Lower limb	100 (56.49%)	177
Trunk	139 (78.53%)	177
Genitalia	033 (18.64%)	177

## DISCUSSION

The various variables collected from the Performa's of all the 177 patients admitted in the burn unit during a one year period were epidemiologically studied.

Young to middle aged population was the most commonly involved in the burns with about 84.96%. This young age population being involved in various works both in the household and occupation is more prone to burn hazards and accidents. The Male population had burns mostly in the occupational places where as the female had the maximum number of burns in the residence. 57% burns in Amir Paray et al study<sup>13</sup>, 67 % burns in Singh, D study of Chandigarh<sup>14</sup>; 78.4% burns in Kumar V<sup>15</sup> burns study had similar results noted in age group of 20-40 years.

Female to male ratio of about 1.011:1 was noted. This result was in part of other studies conducted by Amir Paray et al<sup>13</sup> in Jammu in 2015 with female to male ratio 1.167:1 and also with the study of Mzezewa S et al<sup>16</sup> in Harare with female to male ratio of 1.17: 1. This slight preponderance of female towards burn in the Indian society is due to the involvement of the female population in kitchen works and lack of safety measures adopted by individuals while cooking. Besides to the cooking, females are victims of burn due to the prevalence of dowry harassments.

Maximum cases were recorded in the Hindu community (84.74%; n=177) followed by the Muslim religion (8.47%; n=177). Similar results were noted in the study of Jammu, by Amir Paray in 2015<sup>13</sup>. A Study in South West Coast of India by Bhagwan B. Darshan, of KMC, Mangalore<sup>17</sup> in 2014-2015 showed Hindu's accounting for 89% of cases which was similar to our results, but a disparity was noted that the Christian population had a significant number of burns in that, where as in our study not even a single case from Christian population was recorded. These differences in the distributions of cases, according to religion were probably due to diversities in each state and each region. Society in our zone consists of a large number of Hindu and Muslim community people with rare numbers in Sikh and Christian communities. As per census of 2011, Mangalore (Karnataka) has 1.87% of the population made up of Christian, whereas Rajasthan has only 0.14% population made up of Christian.<sup>18</sup>

Illiterates were commonly involved in the burns with a total of 70 cases (39.54%) out of 177 cases. Lower socio economic status population had higher incidence of burn. Class 4 population under Kuppasawmy's classification<sup>12</sup> (2014) had the highest number of recorded burns in our study (79 cases; 44.63%; n=177). A decreasing pattern of burn incidence was noted with respect to that of education status of the individuals and socio economic classifications with least cases in highly educated population and Class 1 socio economic group. These results were similar in pattern with that of epidemiological study of Gandhari Basu et al<sup>19</sup> conducted in JNM Hospital, West Bengal; study of Gupta M<sup>20</sup> in Jaipur and study of Golshan A<sup>21</sup>. The rural population was the major population involved in the burn with 70.05%. This difference in the occurrence of burn in rural and urban population is due to the high number of illiterates, low socioeconomic status, lack of safety measures in rural population in comparison to urban populations. As per the 2011 census, India, the literacy rate of rural population was 68.91% in comparison to urban population literacy rate of 84.98%

Married people had higher incidence of burn with 144 cases (81.36%, n=177) in comparison to that of single or unmarried population. These kinds of results were also noted in other studies like Gandhari Basu at JNM hospital<sup>19</sup>, West Bengal; Bhagwan B Darshan of KMC, Mangalore in South West Coastal region<sup>17</sup>; Gupta M study in Pink city<sup>20</sup>; Ashok K Gupta study in Punjab<sup>22</sup>. As noticed earlier, highest number of burn cases occurred in the age group of 20-40years, and as this group contained a number of married people, burn incidence was more in married people.

A seasonal variation in incidence of burn cases was noted. Total number of burn cases were more in winter season (October – March) with 50.85%, whereas summer season had 49.15% cases (April- September). Usage of flame, heaters, camp fires and other modes of heat to keep surrounding and oneself warm during winter increases the susceptibility of population for burn accidents. Maximum incidents occurred in the months of January and March (10.16%) and minimum during the month of October (5.64%).

Flame burns (145 cases; 81.92%; n=177) formed the majority of cases in our study;



followed by electric burn (19 cases; 10.73%; n=177) and scald burns (13 cases; 7.34%; n=177). No cases of inhalation and chemical burns were recorded. Kumar et al<sup>23</sup> of South West India (82.2%), Hashmi M, et al<sup>24</sup> of Karachi (62%); 51% in Mzezewa S, et al<sup>16</sup> of Harare; Singh, D<sup>14</sup> study (83%); 94.1% in Kumar V<sup>15</sup> study of Manipal had flame burn as a major form of burn. In all types of burns, accidental burns were the most common form (140 cases; 79.09%; n=177). Kumar et al<sup>23</sup> studied had 80% accidental burn; Hashmi M, et al<sup>24</sup> had 72 %; Kumar V<sup>15</sup> of KMC, Manipal had 75.8%; Mehmet Tahir Gokdemir et al<sup>25</sup> of Turkey had 69.3%; all these studies had similar results in comparison with our study. The carelessness among the house wives while cooking is the major cause of accidental burn. Wearing of loose fitted clothing while cooking, improper maintained LPG cylinders and stove, absence of any service of LPG in the recent 5 years, improperly planned kitchen, closed kitchen, preoccupied and disturbed mind leading to decreased concentration while cooking were the most common causes of accidental burns in house wives. In cases of occupational and electrical burns unavailability of safety precautions and lack of interest among the individuals to consider precautions while working were the main cause of accidental burns. In residence, the kitchen is a place in common for both the male and female population where they are routinely exposed to flame, thus increasing the chances of incidence of burn in the kitchen. Residence (kitchen) was the common place where the incidence of burn occurred in our study. All the suicidal burns occurred in the residence (100%; n= 36). The similar findings were noted in the studies of Hashmi M, et al<sup>24</sup>; Gandhari Basu et al at JNM Hospital<sup>19</sup>, West Bengal; Gupta, M<sup>20</sup> studies in pink city study had 82.65% burns in the kitchen.

Electrical burns accounted for only 10.72% (19 cases). Males were commonly involved 89.47% (n=19). All electrical burns, low voltage was the common source of electric burn (52.63%, n=19). Incidences of electrical burns in adult males were high compared to female population due to patterns of distribution of work. Males are exposed to electric machineries at working places because of which there is a higher incidence of occupational hazard in the form of electrical burn.

## CONCLUSION

Suicidal burns were noted in only 36 cases out of 177 cases, just accounting for 20.33% of cases. All the suicidal burns occurred by flame and all these burns occurred in residence. In suicidal burns, 66.66% cases were accounted by females. LPG was the most common source involved in suicidal burn. Domestic conflicts as a predisposing factor were present in all the cases of suicidal burns. Family burden, household's conflicts, emotional and financial instability and domestic violence faced by females predisposes the females for the increased incidence of suicidal tendency among the women. As per statistics, family problems and marriage related issues accounts for the major cause of suicides in India.<sup>26</sup>

68.92 % cases had major burns (>40% TBSA). Maximum number of cases had burns in the range of 60-80% TBSA (49 cases, 27.68%). Females had maximum number of major burns [69 cases (38.98%) had burns > 40% TBSA]. Usage of hands and upper limbs in house hold works and in occupation predisposes them for a majority of burns. In this study, cent percent involvement of the upper limbs in burns followed by facial burns (76.83%) cases was noted.

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