Etiological And Demographic Profile Of Burn Injury In Kashmir Valley

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Citation

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Abstract

Background: Changing trends in etiology and demography of burn injury due to mechanization and modernization of society of Kashmir.
Purpose: To evaluate the etiological and demographic profile of burn injury in Kashmir valley.
Material and methods: A prospective study on 1000 consecutive patients admitted in the burn unit was conducted over a period of five years. A data collected after detailed history with regard to age, sex, residence, type, cause and place of burn, and a thorough general and systemic examination. Estimation of the burn surface area was done as per the Lund-Browder chart and the clinical assessment of the depth was carried out. Data collected was tabulated and subjected to statistical analysis.
Results: The mean age of patients was 21.91±11.54 years. 79% patients were from rural and 21% from urban dwellings. Females (59%) were more commonly affected than males (41%). The most common type of burn were flame burn in 72% of cases followed by, scald in 22%. The most common place of burn was home 87% followed by workplace in 10% of cases, 87% of burn occurred accidently, 9% suicidal and 4% were homicidal in nature.
Conclusion: We conclude that accidental flame burn injury is more common in Kashmiri rural young women who have more domestic involvement and spend most of time near fire.

INTRODUCTION

Fire was, perhaps, man's first double-edged sword, for, throughout history, it has both served and destroyed mankind. From time to time, fire leapt out at man and caused what remains today one of the most painful of human experiences, the burn. A burn occurs when some or all of the different layers of cells in the skin are destroyed by a hot liquid (scald), a hot solid (contact burns) or a flame (flame burns). Skin injuries due to ultraviolet radiation, radioactivity, electricity or chemicals, as well as respiratory damage resulting from smoke inhalation, are also considered as burns. The injury represents an assault on all aspects of the patient, from the physical to the psychological. It affects all ages, from babies to elderly people, and is a problem in both the developed and developing world. All of us have experienced the severe pain that even a small burn can bring. However the pain and distress caused by a large burn are not limited to the immediate event. The visible physical and the invisible psychological scars are long lasting and often lead to chronic disability. Burns are a major problem in the developing world. Over two million burn injuries are thought to occur each year in India (population 500 million), but this may be a substantial underestimate. Mortality in the developing world is much higher than in the developed world. Most burns are due to flame injuries. Burns due to scalds are the next most common. The most infrequent burns are those caused by electrocution and chemical injuries.[1] Burns and death due to burns continue to remain an important public health and social problem in India. The incidence is particularly high among the ''young married females''[2,3] belonging to lower socio-economic groups[4].

MATERIAL AND METHODS

This prospective study was conducted over a period of five years from 1 st June 2006 to 31 st May 2011 in the Department of Surgery Government Medical College on 1000 consecutive patients admitted in the burn unit. A detailed history was taken with regard to age, sex, residence, type, cause and place of burn, and a thorough general and systemic examination was performed and appropriate investigations were done as required. Estimation of the burn surface area was done as per the Lund-Browder chart and the clinical assessment of the depth was carried out. Data collected was tabulated and subjected to statistical analysis.

RESULTS

The mean age of patients was 21.91±11.54 years. The youngest patient was 8 months and the oldest was 60 years of age and 92.30% patients were in the age group of 16-30 years.

79% patients were from rural and 21% from urban dwellings. Females (59%) were more commonly affected than males (41%) as shown in table 1. The most common place of burn was home 87% followed by workplace in 10% of cases (table 2), 87% of burn occurred accidently, 9% suicidal and 4% were homicidal in nature (table 3). The most common type of burn were flame burn in 72% of cases followed by, scald in 22% (table 4). Flame burn was most common in all age groups except in children of age less than 15 years in whom scald was most common (table 5).

Figure 1

Table 1: Demographic Profile

			Residence		Total
			Rural	Urban	
Sex	Female	N	460	130	590
		% within Sex	78.0%	22.0%	100.0%
	Male	N	330	80	410
		% within Sex	80.5%	19.5%	100.0%
Total		**N**	**790**	**210**	**1000**
		% within Sex	**79.0%**	**21.0%**	**100.0%**

Chi sq 0.09 p value .76

Figure 2

Table 2: Distribution of patients with respect to place of burn

			Place			Total
			Home	Work Place	Other	
Sex	Female	Count	580	0	10	590
		% within Sex	98.3%	.0%	1.7%	100.0%
	Males	Count	290	100	20	410
		% within Sex	70.7%	24.4%	4.9%	100.0%
Total		Count	870	100	30	1000
		% within Sex	87.0%	10.0%	3.0%	100.0%

Chi sq 17.32 and p value of <0.001

Figure 3

Table 3: Distribution of patients with respect to cause of burn

		Cause			Total
		Accidental	Suicidal	Homocidal	
Females	Count	480	70	40	590
	% within Sex	81.4%	11.9%	6.8%	100.0%
Males	Count	390	20	0	410
	% within Sex	95.1%	4.9%	.0%	100.0%
Total	Count	870	90	40	1000
	% within Sex	87.0%	9.0%	4.0%	100.0%

Chi sq 4.61; p value <0.09

Figure 4

Table 4: Distribution of Patients with respect to type of Burn

			Type of Burn					Total
			Flame	Scald	Chemical	Electrical	Others	
Sex	Female	N	450	130	0	0	10	590
		% within Sex	76.3%	22.0%	.0%	.0%	1.7%	100.0%
	Male	N	270	90	10	20	20	410
		% within Sex	65.9%	22.0%	2.4%	4.9%	4.9%	100.0%
Total		N	720	220	10	20	30	1000
		% within Sex	72.0%	22.0%	1.0%	2.0%	3.0%	100.0%

Chi –sq 5.49 p value o.24

Figure 5

Table 5: Type of Burn with respect to Age

Age (Years)	N	Flame (%)	Scald (%)	Chemical (%)	Electrical (%)	Others (%)
<15	290	100 (34.48)	180 (62.06)	-	-	10 (3.44)
16-30	520	480 (92.30)	20 (3.84)	10 (1.92)	10 (1.92)	-
31- 45	180	140 (77.77)	10 (5.55)	-	10 (5.55)	20 (11.11)
> 45	10	-	10 (100)	-	-	-
TOTAL	**1000**	**720**	**220**	**10**	**20**	**30**

DISCUSSION

In our study majority of patients were found in the age group of 16 to 30 years (n-52) with mean age of 21.91 and standard deviation of ± 11.546. Ranging from 0.8 years to maximum of 60 years. Our observation are in concordance with those of Abdul Rahim khan et al[5] who in their study had observed 20 to 30 years as most common age group affected. Ashish K Jaiswa L et al[6] who found 31.5 % of patients between age group of 21 to 30 yrs, with mean age of 23.95 S D of 16.7 Ashraf et al[7] had most cases around 40 yrs of age with mean of 22.95 S.D of 16.7, ranging from 6 to 81 yrs. Zorgani et al[8] had found 64.9% of patients below 30 years of age. Ali Reza Ekrami et al[9] in their study had observed mean age of burn patient was 19.3 SD ± 17.05 .This may be explained on the basis that younger age group is more involved in day to day activities both at home and work place , as compared to

children and elderly and hence are more susceptible to accidental burn.

In our study females 59% were more commonly affected than males 41%. This is in concordance with reports in the literature. S Ramcharan et al[10] in their study had found females 57.1% while as males 42.9%. Ashish K Jaiswal et al[6] in their study had found females 70.3% and males 29.7%, Anuradha Rajput et al[11] in their study had found females in 60% and males in 40%. This female sex preponderance could be possibly because of their more domestic involvement as they tend to spend most of time near fire.

In our study majority of patients 79% were from rural background while as only 21% from urban dwellings, Ashish K et al[6] in their study had found 67.3% of females and 58% of males from rural background which are consistent with our observations.

In our study (87%) of burn occurred at home and (10 %) at work place and (3%) at other places. Our finding are consistent with the studies of Ashraf et al[7] who in their study had found home (91.4%) as the most common place of burn, S Ramacharan et al[10] who in their study had observed (62%) of burn occurring at home and Ashish K Jaiswal et al[6] who also had observed home (85%) as most common place of burn.

In present study the most common cause of burn was accident (87%), the second common cause was suicidal (9%) and homicidal (4%) Arife Polat et al[12] also had observed 87% of burn injury to be accidental in nature and Ashraf F et al[7] in their study had observed 89.1% of burn injury as un intentional, suicidal 4.3% and homicidal 2.6%.

In our study 72 patients (72%) had flame burns, 22 (22%) had scald burn, a significant association was also observed between age and type of burn. Flame burn were more common in adults while as (62.06%) of burn in children were scalds. These findings are consistent with reports in literature by Ashraf F et al[7], Zorgani A et al[8], Ashish K Jaiswal et al[6] who had reported the similar findings in their studies.

The most common age group injured, most common sex injured and most common cause of burn observed in our study are also correlating with most of the studies published by authors as shown in table 6.

Figure 6

Table 6

Author	Most common age group injured	Most common sex injured	Most common cause
M. Gupta et al[13] (1993)	11-40 years	Males	Flame
Abdolaziz Rastegar Lari et al[14] (2000)	Under 15 years	Females	Flame
Mohammad Reza et al[15] (2001)	Under 19 years	Females	Flame
Gaurav Mukerji et al[16] (2001)	>6-14 years	Upto 6 years-Males >6-14 years-Females	Upto 6 years-Scalds >6-14 years-Flames
Mostafa Saadat et al[17] (2005)	Accidental=mean age 19.4 years Suicidal =mean age 24.9 years	Females	Accidental =Scalds Suicidal =Flame

CONCLUSION

We concluded in our study that accidental flame burn injury is more common in Kashmiri rural young women who have more domestic involvement and spend most of time near fire.

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