Research Article

Study of various demographic factors associated with burn cases

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Abstract

Introduction: Burn injury is very common and affects approximately one per cent of the general population every year. The vast majority of burn injuries are minor although painful. In contrast, a small number of individuals receive massive, deep burns that are accompanied by permanent disfigurement or death. **Amis and Objective:** To study of various demographic factors associated with burn cases reported in tertiary care institute. **Materials and Method:** The present retrospective descriptive study was conducted to study the various risk factors associated with burn patients. The study was conducted in the department of surgery at Mahatma Gandhi Institute of Medical Sciences, Sevagram. For the purpose of study retrospective data was collected from 1st April 1999 to 31st March 2003. All the patients who sustained burns and admitted to Kasturba Hospital during this period were included in this study. During the study period total 714 cases of burn were admitted in the institute. The case records were obtained from the medical records department and details of the patients were recorded in the given standard proforma. The details about age, sex, marital status, educational status, occupation and socioeconomic status were recorded. Detailed history including place, time of burn, nature and type of burn, and other relevant conditions were retrieved from the case records. **Results:** Most of the burn injuries were accidental (92.57%). 88.93% were flame burn. Maximum number of the patients presented within 6 hours of sustaining burn injury (58.6%). Maximum number of the patients was between 21 to 40 years of age (53.64%). Female: Male sex ratio in our study was 1.73: 1. 480 out of 714(67.23%) burn patients were married. Most of the patients in our study were uneducated (62.32%). Maximum numbers of patients in our study were housewives. 70.31% of the patients in our study were from low socio-economic status. **Conclusion:** Thus we conclude that accidental burn due to flames was the most common type of burn. Majority of the burn cases were young married women who were housewife. Illiteracy and lower socioeconomic status was also seen common in burn cases.

Keywords: accidental burn, housewife, illiterate.

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INTRODUCTION

Burn injury is very common and affects approximately one per cent of the general population every year. The vast majority of burn injuries are minor although painful. In contrast, a small number of individuals receive massive, deep burns that are accompanied by permanent disfigurement or death[1]. Although dramatic incidents of fire-related deaths in public spaces, such as schools, cinemas, and makeshift tents, have received substantial media coverage in India; much less awareness exists of the high frequency of these deaths within the domestic environment. An important demographic feature of injuries and deaths caused by domestic fire events is that a large proportion of victims are young women.[2,3,4] Various local studies have suggested that, among women, these injuries result from kitchen accidents,[5,6,7] self-immolation,[8,9] and different forms of domestic violence,[4,10] which could include dowry related harassment that leads to death. A dowry death is the killing of a young woman by members of her conjugal family for bringing insufficient dowry, and is commonly executed by first dousing the woman with kerosene and then setting her alight. Some studies further suggested that fire-related homicides are often disguised as accidents and suicides.[11,12] The present study was

conducted to study the various demographic factors associated with burn cases.

AMIS AND OBJECTIVE

To study of various demographic factors associated with burn cases reported in tertiary care institute.

MATERIALS AND METHOD

The present retrospective descriptive study was conducted to study the various risk factors associated with burn patients. The study was conducted in the department of surgery at Mahatma Gandhi Institute of Medical Sciences, Sevagram. For the purpose of study retrospective data was collected from 1st April 1999 to 31st March 2003. All the patients who sustained burns and admitted to Kasturba Hospital during this period were included in this study. During the study period total 714 cases of burn were admitted in the institute. The case records were obtained from the medical records department and details of the patients were recorded in the given standard proforma. The details about age, sex, marital status, educational status, occupation and socioeconomic status were recorded. Detailed history including place, time of burn, nature and type of burn, and other relevant conditions were retrieved from the case records. Details about clinical examination including assessment of general condition of the patient, area of burn, depth of burn and systemic examination were recorded from the case sheet. The findings of the patients of were confirmed by follow-up and examination wherever possible. The collected information was entered in excel sheet and was analyzed by using appropriate tables and graphs.

RESULTS

Table 1: Distribution according to nature and type of burn

Variable		No. of patients	Percentage
Nature of burn	Accidental	661	92.58
	Homicidal	22	3.08
	Suicidal	31	4.34
Type of burn	Flame	635	88.94
	Scalds	47	6.58
	Electrical	32	4.48
	Chemical	0	0
Presentation to hospital	< 6 hrs	419	58.68
	7-12 hrs	248	34.73
	>12 hrs	47	6.58

It was observed that most of the burn injuries were accidental (92.57%) followed by suicidal attempt (4.34%) and only 3.08% were homicidal burns. Out of 714 burn patients, 88.93% were flame burn. While scalds were 6.58% and electrical burns only 4.48%. There were none of the patients in our series who sustained chemical burn Maximum number of the patients presented within 6 hours of sustaining burn injury (58.6%) followed by within 7-12 hours (30.7%) and only 6.58% patients presented after 12 hours of the burn injury.

Table 2: Distribution of various demographic factors associated with burn cases

Variable		No. of patients	Percentage
Age (Yrs.)	0-20	234	32.77%
	21-40	383	53.64%
	41-60	78	10.92%
	61-80	17	2.38%
	81-100	2	0.28%
Sex	Male	261	36.55%
	Female	453	63.45%
Marital Status	Married	480	67.23%
	Unmarried	234	32.77%
Education	Uneducated	445	62.32%
	Primary	153	21.43%
	Secondary	90	12.61%
	Higher Secondary	26	3.64%
Occupation	Housewives	315	44.12%
	Labors	155	21.71%
	Students	108	15.13%
	Business	37	5.18%
	Unemployed	91	12.75%
	Others	8	1.12%
S/E Status	Low	502	70.31%
	Middle	140	19.61%
	High	72	10.08%
Total		714	100.00%

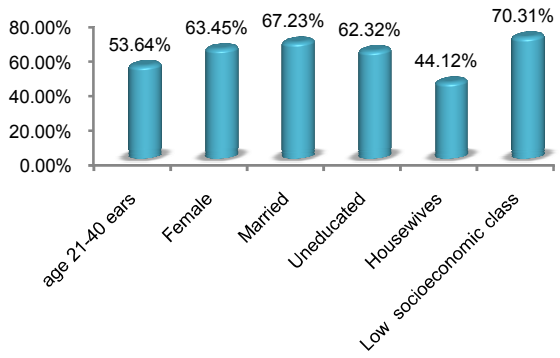

Figure 1: various demographic factors associated with burn cases

Out of 714 patients maximum number of the patients were between 21 to 40 years of age (53.64%) and 32.77% patients were below 20 years. There were only 2(0.28%) patients were above 80 years of age and 2.38% percent patients were between 61-80 years of age. Female: Male sex ratio in our study was 1.73: 1 i.e. females outnumbered males (63.45% and 36.55% respectively).

480 out of 714(67.23%) burn patients were married and the percentage of married females was more than the married males. Most of the patients in our study were uneducated (62.32%) and only 3.64% patients had their education up to higher secondary level, while 21.43% patient had their education up to primarily level and 12.61% patient had their education up to secondary level. As shown in the table maximum numbers of patients in our study were housewives (44.12%) followed by labors (21.7%), students (15.13%) and unemployed (12.75%). 70.31% of the patients in our study were from low socio-economic status followed by middle income group (19.61%) and only 10.08% of the patients were from high income group.

DISCUSSION

Accidental burns were most common in the present (92.57%), followed by suicidal burns (4.43%) and himocidal burns (3.08%). Similar pattern of higher burns due to accidents was also reported by Jajoo *et al*[13], Varma *et al*[14] and Batra *et al*[15]. It was observed that 88.93% patient's sustained burns due to flames followed by scalds (6.58%) and electrical burn (4.48%). None of the patients in present study had chemical burns. Dubey *et al*[16] (86%), Gupta *et al*[17] (71%), Ghulliani *et al*[18] (58%) and Dandpat *et al*[19] (70%) also reported flame burn as the most common type in their studies. Maximum number of the patients presented within 6 hours of sustaining burn injury (58.6%) followed by within 7-12 hours (30.7%) and only 6.58% patients presented after 12 hours of the burn injury. The first six to eight hours after sustaining burn injury are most critical as most of the pathological changes occur during this period. Hence patient must receive initial treatment during this period. More the delay in getting treatment, higher will be the mortality.[13,14,20] It was seen that the majority of our burn patient (53.64%) were in 21 -40 years of age group. 32.7% patients were below 20 years. Similar findings were also reported by I Galal *et al*[21] and Gulhani *et al*[18]. However, Subrahmanyam *et al*[20] and Batra *et al*[15] reported higher incidence of burn (79.4% and 43.5% respectively) as compared to the present study. The Male: Female ratio in the presents study was 1:1.73. Thus female preponderance was observed in the present study. C.N. Malla *et al*[22], Gulliani *et al*[18], Varma *et al*[14], M. Subrahmanyam *et al*[20], I Gallal *et al*[21], Batra *et al*[15] also observed female predominance in their study. It was seen that 480 out of 714(67.23%) burn patients were married and the percentage of married females was more than the married males. Similar pattern of higher incidence of burn in married people was also reported by Varma *et al*[14], subrahmanayam *et al*[20] and Batra *et al*[15]. Married women are more involved in burn accidents. This could be due to dowry problems, domestic instability, chronic illnesses, adultery and negligence. Problems of unmarried female are different and burns are usually accidental or suicidal. Most of the burn injuries in our study occurred in illiterate persons (62.32%), followed by persons who were educated up to primary level. It was least in those who had their education up to higher secondary level. Similar pattern of higher incidence of burns in illiterate people was reported by Varma *et al*[14]. In the present study housewives sustained burns more than the other workers (44.11%), which is similar to as reported to Subrahmanyam *et al*[20], (47.4%). Housewives are more commonly involved in burns as they stay home and are involved in household work i.e. cooking. It was seen that 10.08% patients were form higher income group and 19.60% patients were from middle income group. Most of the patients in the present study (70.30%) belonged to lower socio-economic group. similar pattern of higher incidence of burn in lower socio-economic group was also reported by Subrahmanyam *et al*[20] (86.8%).

CONCLUSION

Thus we conclude that accidental burn due to flames was the most common type of burn. Majority of the burn cases were young married women who were housewife. Illiteracy and lower socioeconomic status was also seen common in burn cases.

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