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Pattern of unintentional burns: A hospital based study from Pakistan

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ABSTRACT

Background: Burns are major cause of morbidity and mortality in developing countries. Better understanding of the nature and extent of injury remains the major and only available way to halt the occurrence of the event. The present study was conducted to determine the prevalence of by self and by other unintentional burn, their comparison and the possible mode of acquisition by obtaining the history of exposure to known risk factors.
Methods: A cross-sectional questionnaire based survey was conducted in Burns Centre of Civil Hospital Karachi, Pakistan and 324 hospitalized adult patients with unintentional burns were consecutively interviewed during August 2013 to February 2014. Information was collected on socio-demographic profile. The source of burn, affected body part and place of injury acquisition in terms of home, outside or work were also noted. Logistic regression model was conducted using SPSS software.
Results: Out of 324 patients, 295 (91%) had unintentional burn by self and 29 (9%) had unintentional burn by others. Male gender were 2.37 times and no schooling were 1.75 times more likely to have self-inflicted unintentional burn. Lower limb and head and neck were less likely to involve in unintentional burn by self.
Conclusion: The burden of unintentional burn by self was considerably higher. Male gender and no schooling were found more at risk to have unintentional burn by self.

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1. Introduction

Burns is the fourth leading cause of death from unintentional injuries [1]. Unfortunately, due to poverty, substandard living conditions, overcrowding and illiteracy, burns are much more prevalent in low and middle income countries (LMICs) [2,3].

In hospitalized patients, among all burn cases, predominance of unintentional burns has been reported by many studies [4–6]. A study conducted in Iraq reported that among all burn cases, 93% of cases were unintentional [5]. Similarly, studies from Pakistan revealed prevalence of unintentional burns as 84.6–99.23% [4,6,7].

In spite of limited resources in LMICs, the management of burn in these countries is much more difficult due to apathetic behavior of the people. Most of the uneducated families have faith in alternative system of medicine and utilize it with superstition, taboos or with weird religious rituals which make management and treatment of burn complicated [8]. These circumstances highlight the significance of primary prevention

Table 1 – Baseline characteristics of patients based on unintentional burn categories (n = 324).

Variables	Category	Unintentional burn		p-Value
		By self (n = 295)	By other (n = 29)	
		n (%)	n (%)	
Age, years	≤25	175 (59.3)	19 (65.5)	0.516‡
	>25	120 (40.7)	10 (34.5)	
Gender	Male	260 (88.1)	20 (69)	0.009†,*
	Female	35 (11.9)	9 (31)	
Marital status	Single	131 (44.4)	0 (0)	0.003†,*
	Married	159 (53.9)	14 (100)	
	Divorced	5 (1.7)	0 (0)	
Educational status	No schooling	124 (42)	19 (65.5)	0.015†,*
	Primary or above	171 (58)	10 (34.5)	
Mechanism of burn	Flame/fire	97 (32.9)	14 (48.3)	0.089†
	Scald/contact	40 (13.6)	5 (17.2)	
	Electric	114 (38.6)	10 (34.5)	
	Chemical	44 (14.9)	0 (0)	
Upper limb	Yes	244 (82.7)	20 (69)	0.069†
	No	51 (17.3)	9 (31)	
Lower limb	Yes	133 (45.1)	6 (20.7)	0.011†,*
	No	162 (54.9)	23 (79.3)	
Head and neck	Yes	122 (40.7)	1 (3.4)	<0.001†,**
	No	175 (59.3)	28 (96.6)	
Place of burn	Home	136 (46.1)	9 (31)	<0.001†,**
	Work	132 (44.7)	10 (34.5)	
	Outside	27 (9.2)	10 (34.5)	

All categorical variables are expressed as n (%).
* p-Value <0.05.
** p-Value <0.0001.
‡ Fisher-exact test.
† Chi-square test applied.

of burn in LMICs, particularly unintentional burns as which are mostly preventable [1,9,10].

Although studies have been conducted on burns and its risk factors, but majority of the studies were retrospectively reviewed observational studies and restricted to the pediatric burn patients only. For the same reason this study was designed to identify the determinants of risk factors which leads to unintentional burns in adults hospitalized patients.

2. Methodology

2.1. Data collection procedure

A cross sectional questionnaire-based survey was conducted in Burns Centre of Civil Hospital, Karachi, Pakistan after getting approval from the Institutional Review Board (IRB) of Dow University of Health Sciences (DUHS). The data were prospectively collected from all hospitalized patients with more than 18 years of age presented with unintentional burn from August 2013 to February 2014. Patients with intentional burn (suicidal, homicidal), mentally retarded and unconscious patients were excluded from the study. The population of interest consisted of hospitalized patients with unintentional burn. Risk factors like age, gender, marital status, educational

status, source of burn, affected body part and place of injury acquisition in terms of home, outside or work were evaluated. Percentage of total body surface area (TBSA) burns was also noted.

2.2. Statistical analysis

Data were entered and analyzed by using SPSS version 21. Frequency and percentages were computed for all the qualitative variables like age categories, gender, marital status, educational status, mechanism of burn and place of injury. Chi-square and Fisher-exact test were applied to assess significant association between various qualitative variables

Table 2 – Age and gender specific relationship of study sample (n = 324).

	Total	Males	Females
	n (%)	n (%)	n (%)
Mean ± SD†	25 (22–31)	25 (22–31)	25 (19–25)
<25	194 (59.9)	160 (57.1)	34 (77.3)
25–45	103 (31.8)	98 (35)	5 (11.4)
>45	27 (8.3)	22 (7.9)	5 (11.4)

† Age vs. gender p-value 0.038.