

ORIGINAL ARTICLE

Association of Incidences of Burns and Place of Occurrence - An Investigative Approach among the Victims of Domestic Violence

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ABSTRACT

Background: Burn injuries are the trauma to live human tissue as result of some burning source including fire, flame, heat, electricity or some chemical. The interrelated intricate complexity of the place of occurrence and incidents of burns had long been a scope of interest to medical and medicolegal personnel.

Aim: To investigate the association of incidences of burns with their place of occurrence.

Methodology: The research data has been collected from the victims of domestic burn presenting in the Accident and Emergency Department (AED) Jinnah Hospital Lahore and filtered at the medicolegal clinic of Alama Iqbal Medical College Lahore. A total of 250 burns of domestic violence were registered from January 2018 to August 2018 and were included in the study after fulfilling the exclusion and inclusion criteria. Observation research method was carried out with descriptive cross-sectional study design by applying quantitative questionnaire as a data collection tool. The study population consisted of the rural and urban areas of the area of drainage of the said research settings.

Results: The study revealed highly significant association with medium of burns and place of occurrence grossly taking place at home with scalds as most frequent medium with 0.000 significant p value. Single or unmarried population was strongly associated with p value 0.004 facing burn injuries at home. Professional population versus amateur had also shown strong association for place of occurrence as home for burn injuries with p value 0.021 though less marked in professional population. The study concludes that scalds as commonest medium, single unmarried persons involved more than married ones and home of the victim was an easy target for the perpetrators.

Conclusion: The study revealed strong association of medium of burns, marital status and proficiency of the population for incidence of burns frequently had home setting as a place of occurrence.

Keywords: Burns, Domestic Violence, Place of Occurrence, Incidences of Burns

INTRODUCTION

Any exposure deliberate or unintentional to heat, chemicals, radiations, friction or electricity causes burns to human tissue and if it is due to some domestic conflict then can be placed under the domain of domestic violence¹. This violence may range from trivial burns of ordinary nature to considerable physical or psychological disability may amount to life extinction for the individual being affected^{2,3}. Burns are subject to some eminent source readily available to cause trauma^{4,5}. The first and foremost is availability of the burning sources like kitchen at place of residence say home⁵ or the work place say some chemical shelved somewhere⁶. Likewise the mentioned places are the two most commonly reported places of occurrence both accidental or unintentional and domestic violence or intentional injuries due to burns⁷.

The domestic violence is due to the pattern of a behavior a person who wants either gain and maintain the power over another person or abuse one out of jealousy^{8,9}. In the other instances it can be due to a self-devised way of punishing the victim for a perceived wrong doing or to keep them threatened for not abandoning the relationship⁹. This is most commonly observed among intimate relations like that of marriages etc. commonly occurring at home or residence⁹. Still others can exploit it as a way to assert the dominance and reinforce the power over the other partner frequently reported at work place^{8,10}. Still motive can vary from the perpetrator's end frequently associated with abuser's desire to control or intimidate the other party or to seek some sort of revenge or to quench the thirst of aggression due to any reason³. Regardless the actual motive behind the act the burns due to domestic violence can cause serious physical and social harm and victims deserve help to escape the trauma. To cut short,

burns due to domestic violence can occur when one person in a relationship uses fire or a hot object to harm or control another person^{3,11,12}.

Different modes are in place for occurrence of burns due to domestic violence. For the violence occurring at home the women's tradition work place domain i.e. the kitchen where scalds and burns are result of hot liquids and flames. It stands convenient for the abuser both for himself to access the hot liquids or flame source as a weapon and the availability of the victim there and then⁹. The second to home is the place of work where the criminal in-charge frequently use some chemical like corrosives to meet the criminal objectives of harming the victim¹³. Scalds are the choice of causing burn in domestic violence primarily because of its ability to be inflicted with convenience and secondarily because that leaves no visible bruise or scar. Despite that abuser's stronger urge for revenge or to control over the person he may use to pour boiling water, hot liquids, corrosives or chemicals resulting into permanent disfigurement and scarring¹⁴.

Prevention of domestic violence whatever the modality may be is an essential and integral aspect of the burn care¹⁵. Right from legislation to measures adopted for practicing fire safety and controlled on the counter sale of potential chemicals can be set standards for reduction in the incidences of burns due to domestic violence irrespective of its place of occurrence¹². Next to that lies in the hands of healthcare professional to extend appropriate care, prevention strategies and support¹. This will eventually lead to best possible outcomes of burn incidences and also can improve quality of life of the unfortunate victim^{16,17}.

MATERIALS AND METHODS

The research data has been collected from the victims of domestic burn presenting in the Accident and Emergency Department (AED) Jinnah Hospital Lahore after Ethical Committee approval and filtered at the medicolegal clinic of Alama Iqbal Medical College Lahore. A total of 250 burns of domestic violence were registered

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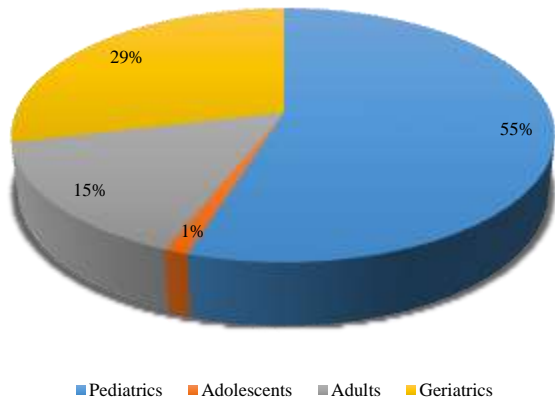
from January 2018 to August 2018 and were included in the study after approval of Ethical Review Committee after fulfilling the exclusion and inclusion criteria.

All the participants were made the part of research project after due deliberation of the informed consent and strict application of inclusion and exclusion criteria. It was made sure that the case must have been a genuine victim of domestic violence otherwise it was excluded. Observation research method was carried out with descriptive cross-sectional study design by applying quantitative questionnaire as a data collection tool. The study population consisted of the rural and urban areas of the area of drainage of the said research settings.

RESULTS

Age: The study included 250 cases of burns due to domestic violence of all the age groups who presented for treatment in the study settings. All the study participants were classified into different age groups for better understanding of the different age classes. There were 137 unfortunate victims of burns from pediatric age bracket where the age limit was less than 12 years. The pediatric age contributed to all the sample size. Next to pediatric age bracket was category of adolescents from age 13 years to 25 years and those were just 3 out of total research participants making just 1% of the entire population under study. There were 38 adults having age from 26 years to 50 years and hence having contribution of 15% of the research participants in the study. Those of above 50 years of age were categorized as elders and they were 72 among all other participants. This age group formed the second highest contribution amounting to 29% after 55% contribution from pediatric age group as shown in Fig.1.

Figure 1: Age Distribution



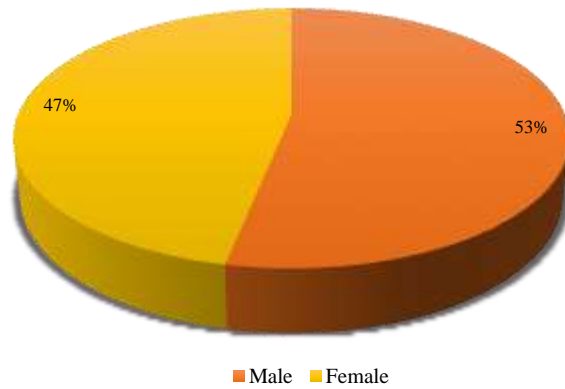
Gender: The study included 250 cases of burns due to domestic violence out of which 133 were males and 117 were females making it 53% and 47% contribution respectively as shown in the figure 2.

The association of incidences of burns at place of occurrence was cross-examined with medium of burns, gender, marital status and proficiency of the victims of burns is described in detail as under.

Medium of Burns: The medium of burns considered in the study were scalds, dry flame burns, electrocution and chemical burns. The analysis of medium of burns was cross-analyzed with that of place of occurrence and gross significance with 0.000 p value was observed¹⁷. There were 134 cases of scalds out which only four occurred at work place and rest of the 130 scalds were reported at home. Second highest domestic burn medium was dry flame burns of 91 cases^{18,19}. Only 1 case was reported to have occurred at

work place and remaining 90 were reported at home. The 24 electrocution cases of domestic violence in study was stratified as having 20 taking place at home only 4 occurring at the place of work. The solo chemical case was reported at the place of work²⁰.

Figure 2: Gender Distribution



Association of Incidences of Burns and Place of Occurrence:

Risk Factors	Place of Occurrence			P value
	Home (n=240)	Work Place (n=10)	Total (n=250)	
Medium of Burns				
Scalds	130	4	134	0.000
Dry	90	1	91	
Electricity	20	4	24	
Chemical	0	1	1	
Gender				
Male	127	6	133	0.660
Female	113	4	117	
Marital Status				
Single	168	2	170	0.004
Married	71	8	79	
Divorced/ Widowed	1	0	1	
Proficiency				
Amateur	166	2	168	0.021
Professional	74	8	82	

Gender: There were 133 males participating in the study. Out of which 6 suffered burn at work place and 127 suffered burns injuries at home. The remaining 117 were females among which 113 were exposed to burns at home and remaining only four sustained burn injuries at place of work as site of occurrence and the association turned out to be insignificant with 0.660 p value which emphasizing on the association of place of occurrence and gender involved^{21,22}.

Marital Status: The association of the marital status was analyzed. There were 170 unmarried unfortunate victims of burns with 2 suffering burns at work place and remaining 168 had burn injuries while they were at home. There were 79 married victims of burns of domestic violence out which just 8 faced burn injuries at the place of work and 71 came across the burn injuries while they were at home²³. The only widowed burn victim suffered burn injuries at home. The analysis revealed 0.004 p value showing grossly significant association of marital status with that of place of occurrence²⁴.

Proficiency: The proficiency of all the 250 victims of burns was analyzed by dichotomy of those being well educated or professional versus those of amateur category. Surprisingly a wide majority of the entire population amounting to be 168 were amateur having domestic burns and still more surprisingly just 2 suffered burn injuries at the place of work and rest 166 had injuries while they were at homes²⁵.

Out of 82 professionals 8 suffered burn injuries of domestic violence nature at their place of work and there 74 unfortunate victims of burns who sustained burn injuries at home. The analysis revealed a grossly significant association of the professional versus amateur facing burn injuries in relation the place of occurrence of the incidence with 0.021 p value^{26,27}.

DISCUSSION

In our study place of residence or say home was found to be a common setting for burn injuries of domestic violence and very infrequently reported setting was the work place where burn injuries of domestic violence was reported²⁸. The ratio was 240 to 10 of burn injuries occurring at home and work place respectively. Probably the work place was most secured zone or due to the fear of interference by colleagues or general public had restrained the abuser to make it a place of choice to go for crime. Instead the study revealed commonest setting was home for the purpose^{29,30}.

The most frequent medium of burns was scalds followed by dry flames burns again supporting the common setting of home where the traditional domain of female is kitchen. It also provides ample opportunity for choosing hot liquids or dry flame of the stove etc. for meeting the perpetrator's objective to make the victim suffer through the domestic burns³⁰. Electrocutation was least common and chemical burns were reported to be rare. The study revealed that single or unmarried population was more prone to domestic violence as compared to that of married couples with 0.004 grossly significant p value^{30,31}. The gender involvement was revealed to be insignificant with p value 0.066 in current study³¹.

Proficiency when was analyzed of the cases of burns under study the significance was very high. There were wide majority of the population participating as amateur i.e.168 versus with just 82 professionals. Among both the categories the frequent place of occurrence was home as compared to the work place with quiet significantly higher incidence of occurrence at work place among professional victims of burns due to domestic violence¹³.

Preventing domestic burn injuries requires a proactive approach from both state and sufferers point of view. The state should implement enforce legislation, effective comprehensive safety protocols, provide training on proper handling incidence and ensure a safe working environment. The general public in the wake of such incidence should take steps to prevent burn injuries by following safety guidelines, using protective gear, and reporting any unsafe conditions or equipment or expected perpetrators^{15,32}.

CONCLUSION

The study conclusively reveals that for domestic violence of burns the abuser's first choice is the home or place of residence setting to commit the crime. The most frequent medium of burns was scalds followed by dry burns of flame or any hot object while electrocution of was infrequent and chemicals as very rare medium of burns. The unmarried or single population was frequent target of burns and gender predilections were found to be insignificant. Common population of amateur category suffer way more domestic burns as compared that of professional population and significance was found grossly considerable.

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