

INJURIES AND VIOLENCE WITH ASSOCIATED FACTORS PRESENTING AT EMERGENCY DEPARTMENTS OF TERTIARY CARE HOSPITALS IN PESHAWAR

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ABSTRACT

Background: A number of intentional & unintentional injuries are affecting lives of people daily. Road traffic accidents, falls, occupational injuries, intentional attacks, terrorism and domestic violence are eliminating lives as if they hold no price. Study objectives are determining various patterns of injuries presenting at emergency departments of tertiary care hospitals of Peshawar and factors contributing towards them.

Method: A cross sectional study was conducted in three tertiary care hospitals of Peshawar, namely Lady Reading hospital, Khyber Teaching hospital and Hayatabad Medical Complex. Study tool as questionnaire was used to determine the outcome of injuries presenting at emergency departments on sample size of 300 patients. Data was analyzed in excel & SPSS.

Results: The results showed that 58.7% suffered unintentional injuries while 41% suffered intentional injuries and 0.3% were self-inflicted. These were mostly among age group 15-25 and 26-35, mostly males. The major contributing factors were lack of protective measures (48%) and poor road conditions (3%) in road traffic injuries. Fractures and cut wounds were most common especially in younger age groups.

Conclusion: It was concluded that injuries reported as unintentional injuries were highest. It was contributing majorly towards morbidity and mortality of people, especially laborers and students. Lack of preventive measures was the highlighted risk factor in these injuries. Intentional injuries were also making major contribution and reflected social, cultural and psychological to be responsible.

Key Words: Injuries, Violence, Intentional, Unintentional

INTRODUCTION

Injury is defined as wound or trauma, harm or hurt, usually applied to damage inflicted on the body by an external force.¹ It may be intentional or unintentional. If intentional, it may be self-inflicted e.g. suicide or inflicted by another e.g. assault and homicide. The harm can be caused by an external force such as a collision with an object, energy such as heat, electricity, etc., external or internal contact with a harmful substance like poisoning, etc. and the absence of an essential element such as oxygen and heat.² A number of factors like social and cultural factors are found responsible.³

Injury is one of the leading causes of mortality and disability worldwide. It is an important public health problem that is often overlooked in the developing world. The burden of injuries as part of non-communicable diseases is increasing and currently accounts for nearly half of the global burden of disease among all ages.⁴ More than 20 million people are severely injured

on the roads each year.⁵ Five million people worldwide lose their lives annually as a result of trauma and injury⁶. Globally, in 15-44 age range, the leading causes of fatal injury are traffic collisions, personal violence, explosions, self-harm, drowning, and fire.⁷ In developed worlds incidence of injuries is declining,⁷ unfortunately in developing countries people with lower economic backgrounds are at a higher risk of injury as their living, working, traveling, and going to school occurs in unsafe environments.⁸

In first national injury survey of Pakistan, it is found that overall incidence of injury every year is that for every 1000 persons there are 41 injuries cases. Road traffic accidents are reported to be one of the major causal factors for injury having yearly incidence of 15 injuries for every 1000 persons.⁹ Injuries occurring in children in road traffic accidents are common in uneducated mothers when compared to non-injured controls.¹⁰ Violence is a major mechanism of injury in Pakistan.⁵ A study of blast injuries during in Karachi reported highest number of victims in 2010.¹¹

Public of Pakistan are victims of explosions and blasts,¹² this study is conducted to identify patterns and factors associated with injury and violence in local context. The goal of the study is to identify the risk factors, and potential prevention strategies that can decrease the related morbidity and mortality.

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The objectives of the study are;

1. To determine the patterns of injuries and violence presenting at emergency departments of tertiary care hospitals in Peshawar
2. To evaluate different factors responsible for intentional and unintentional injuries
3. To determine the outcome of the injuries presenting at emergency department

METHODOLOGY

A cross sectional observational study was carried out to determine different types and patterns of injuries reported at emergency tertiary care hospitals of Peshawar. i.e. Lady Reading Hospital, Khyber Teaching Hospital and Hayatabad Medical Complex.

The study continued from 17th of June 2014 to 17th of July 2014. Ten days out of this duration were spent in each hospital. Convenient sampling method was used and a total of 300 patients were studied. From each emergency department 100 patients were included. Inclusion criteria was those patients presenting with traumatic injury, in case if they were not able to, then relatives accompanying were asked. Exclusion criteria was all patients with medical illnesses were excluded. Data collection was done using questionnaire which was designed in light of objectives. For data analysis SPSS version 21 & Microsoft Excel were used. Frequencies, descriptive and cross tables were generated.

RESULTS

Demographic data

The demographic in table-1 shows 77% males and 23% females. The mean age of patients was 28 years with (standard deviation=17.7) (range=92). Rest of the details is in Table 1.

Pattern of injuries

Data analysis shows that 76.7% of people were in conscious state, 22% in unconscious state and 1.3% were expired when brought to the emergency department. While enquiring about the patterns of injury we found that 58.7% (n=178) were unintentional cases while intentional cases were 41% (n=131) and 0.3% (n=1) were self-inflicted. Place when injury was inflicted 27.3% of presenting patients were at home, 19% were in streets, 31.19% were on roads, 15% were at their respective work stations, 6.7% at other places while 0.7% were at unknown places. In order to know about the activities of the patients at the time of injury the response was; 33% were in fight, in traveling there were 22.3%, in the state of working there were 11.7% people, 1.3% were busy in studies, 6.7% of the sample were doing sports, people doing other actions were 19.3%, while the people in unknown activities were 5.7%. The study shows that 91.3% of the persons were living with their families, there were 4.7% people who were living alone, 2% were in hostels and in remaining 1.7% place was unknown.

The cause of injury reported at emergency department were that 24.3% were traffic injuries, victims of gunshot injuries were 15%, persons affected by explosions were 48.3% of the sample, there was approximately similar percentage i.e. 0.3% for both drowning and sexual assaults, 5.7% were unknown cases while there were 6% in other manners of infliction. This was also observed that there were no cases of poisoning reported among the sample. After studying the nature of the injury and violence, it was found that cut wound injuries were 29.7%, fractures were 35.3%, and bruises were 20.7%. There were 10% of burn cases, unknown injuries were 0.3% and other nature of injuries was 4%.

Regarding risk factors associated with the injuries and violence the response was that having no protective measures was of 48%, poor road conditions account 3%, epilepsy was 0.3%, and intoxication was 0.3% while unknown risk factors were 48.3%. In order to know about any previous traumas suffered by the injured and affected individuals the response was 3.54% were having similar traumatic injuries in the past, 4.18% suffered other injuries while cases with no such history were 91.7%.

Among patients presenting at emergency department; 63.7% were admitted in the hospitals while 33.3% were discharged. Rest of the 2.3% was reported dead. Regarding severity of the injuries; 54% were severe, moderate injuries were 19% and 27% were having mild form of injuries. Past history of some kind of injury was found in 7-8% of population showing victims had no tendency of risking their lives.

When data was compared between occupation and place of incident, it was found that most of the injuries occurred in immediate surroundings like on work place in case of laborers and at home in case of house wives and minors. Second major place of injuries was road traffic accidents. While regarding activity involved at time of injury was various like working, travelling, sports and other. Intentional injuries were common in 16-25 & 26-35 age group. Unintentional injuries were common in <15 age group & 16-25 age group. However, >55 age group also observed significant number of injuries. As victims crossed the age of 35, frequency of both intentional and unintentional injuries decreased.

When nature of injury was compared with age group, it was found that fractures & cut wounds were most common in <15 age group. Fractures, bruises and cut wounds were also common in 16-25 age group. Age group >55 mostly observed fractures. As the incidence of injuries were common in <15 & 16-25 age group, they were of severe type. Similarly, two third of patients were admitted and one third were discharged. The admitted patients were mostly minors and between age groups 16-25. There was no significant relation between educational level and cause of injury. There was no relation found between risk factors and severity of injury.

DISCUSSION

Our goal is to study the presenting patterns of injuries & violence and factors associated at emergency departments of tertiary care hospitals. Key findings

Table-1: Demographic Data of patients

		Frequency	% age
Age groups	Less than 15	64	21.33%
	16-25	99	33%
	26-35	59	20%
	36-45	32	10%
	46-55	16	05%
	Greater than 55	30	10.3%
Education	Illiterate	152	50.67%
	Primary	79	26.33%
	Secondary	69	23.00%
Occupation	House wife	48	16.00%
	Laborer	131	43.67%
	Job	30	10.00%
	Student	44	14.67%
	Minor	47	15.67%

Table-2: Type of injury compared with age groups

		Type of Injury			Total
		Intentional	Unintentional	Self-inflicted	
Age Groups	<15	9	56	0	65
	>55	8	23	0	31
	16-25	50	48	0	98
	26-35	29	31	0	60
	35-46	1	0	0	1
	36-45	18	11	1	30
	46-55	8	7	0	15
Total		123	176	1	300

Table-3: Age group compared with Nature of Injury

		Nature of Injury						Total
		fracture	bruise	burn	cut wound	any other	Not known	
Age Group	<15	23	15	7	17	3	0	65
	>55	18	5	0	7	1	0	31
	16-25	34	18	10	32	3	1	98
	26-35	20	12	6	19	3	0	60
	35-46	0	1	0	0	0	0	1
	36-45	7	9	5	9	0	0	30
	46-55	4	2	2	5	2	0	15
Total		106	62	30	89	12	1	300

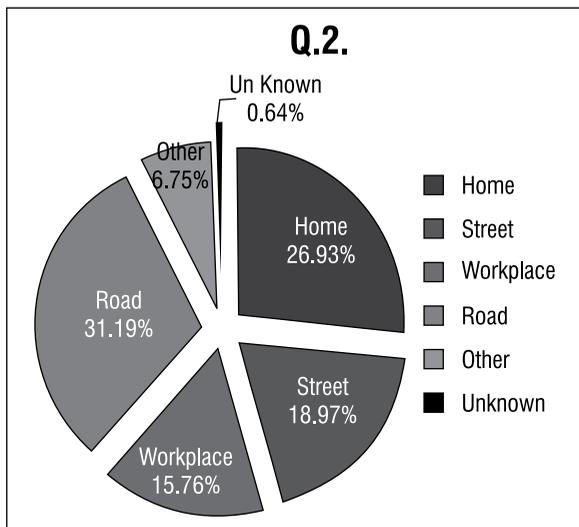


Figure-1: Place of the person at the time of Injury

are that unintentional injuries were more common than intentional injuries. Young age groups are more affected than other age groups.

It is reported in one study that children of age 0-15 presenting at Nottingham emergency unit during February 2006 to February 2007 are 71.8% are having injury related problems.¹³ A similar study is carried out in Pakistan by Dr. Muhammad Hussain¹⁴ which propose that people of age group 21-25 are highly affected i.e. 18%. His study shows the negligence on behalf of youth towards legislation. They are more prone as they lack patience and they have less experience as compare to old aged people. In our study age groups 21-25 and 26-30 are at risk and they mostly come across injuries because of their jobs, as they go out more often and also at their work place. Similarly the analysis which we have taken out from our data shows that 33% of injured people are in the range of age 16-25 years.

During the study it is found that among the affected people, the ratio of male victims is more than the females. In the above study, it is observed that 76% men and only 24% females met accidents¹⁶. Risk factor Pakistan Similarly 77% males are affected as compare to 23% females in our results. It's because males in our community are main bread winners and hence they are easily prone to accidents. Other reasons are more use of smoking, loss of temper, negligent behavior etc.

Regarding the occupational status of the affected patients it appeared to be relatively sound that majority belonged to the laborer category i.e. 43%. The first national survey on injuries also depicts that laborers in young age groups are mostly affected by road traffic accidents.⁹ The contributing factors are illiteracy, lack of preventive measures and risky behaviors as is depicted in our study.

In regard to the presenting mental status of the patients at emergency departments, it is observed during our research is that most of the patients are conscious both at the time of the arrival at the hospital as well as after treatment at the time of our data collection i.e. in

our data 76.85% of victims are in conscious state and 21.86% are unconscious when brought to the emergency department. This shows the severity of injuries occurring.

In developed countries fatality suffered by passengers in road traffic accidents is 60%, and at least 20% sustains nonfatal injuries. Fatality in developing countries is far higher, especially in African countries like Ethiopia.¹⁵ The reasons are recklessness driving, not following laws and alcoholism etc. Internationally, in year 2010 road traffic accidents is 8th leading cause of death.¹⁶

In unintentional injuries commonest are industrial. According to an Indian journal, the incidence rate over in year of 2000 was 85.8% while in year 2004 it was 59.1%. Similarly 250 million cases of injuries at work are reported and notified by WHO.¹⁷ It is mainly not following the preventive and safety measures at work places. In our study it is also found that about 43% of the affected patients are laborers and get injured at their work place. In our study, injuries are also reported in person who got injuries while traveling, playing sports or going for educational purposes.

As far the types of injury concerned, unintentional once are more common than intentional once. Among unintentional injuries, road traffic injuries and falls play major part. Health line journal explains 87% of road traffic injuries occurring in Pakistan.¹⁶ Many risk factors responsible for road traffic accidents are recognized in case study in Tanzania and these are driving at night, over speeding, disobeying of traffic rules etc.¹⁸ children presenting at emergency department suffering from falls are 58.6% in one of the WHO pilot study.¹⁹ Similarly the percentage of injured patients of road traffic accidents in our research is very high i.e. 24.12% while others got injuries due to gun shots, explosions, drowning, and poisoning.

Coming to intentional traumas, in Pakistan the common one are bomb blast injuries, fire arm injuries and domestic violence.^{12,20} Khyber Pakhtunkhwa is the most targeted province in the history of terrorism^{23,21}. Hundreds of innocent people die for no reason. And it's mainly because of lack of control from government and law enforcement agencies.²⁰ Apart from above mentioned patterns of injuries only few are reported as self-inflicted. Study states that nature of injury in majority of patients is usually fractures while abrasions and lacerations contributed as minor once.¹⁷ In our study both fractures and cut wounds are reported in abundance as compared to other types.

The risk factors responsible for the injuries are in infinite proportion.²² They are fatigability, lack of energy and muscular power, diseases and loneliness in case of old age. Psychological disturbances, intoxication, poor road conditions, lack of protective measures, negligence in case of road traffic injuries and industrial accidents are also other causes.²³ Imbalance of rights and lack of education in cases of violence and terrorism etc. also occurs.²⁴ Our study shows that the major risk factor is lack of protective precautions i.e. 48.55% among rest.

It is found in our study we find that place of residence in 90.68% of the effected patients are living with their families and rest make up the category of being living as alone or in the hostel.

Limitations

As not all cases are reported at government tertiary care hospitals due to widely available private facilities. Data on domestic violence, burns and even minor road traffic accidents is lacking due to socio- cultural norms.

CONCLUSION

The proportion of unintentional injuries is high as compared to intentional and self-inflicted injuries in Peshawar. The unintentional injuries are in form of traffic accidents, gunshots, and fall from heights, chemical & mechanical injury in industries. The intentional injuries are in form of gunshots; bomb explosions induced burns and cut wounds. The risk factors associated are poor road conditions, illiteracy, lack of preventive measures at workplace and home. The majority of population affected is younger age, males and laborers as compared to females and people on job.

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