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Unintentional Injuries In Children: Are Our Homes Safe?

Ahmad Vaqas Faruque and Muhammad Arif Mateen Khan

ABSTRACT

Unintentional injuries are a leading cause of death in childhood globally. Injuries lead to emotional trauma and financial burden for children, parents, and society. Here are the frequencies of unintentional injuries in children presented to the emergency and paediatric surgery clinics of the Aga Khan University Hospital, Karachi, Pakistan, from January to December 2012. A retrospective chart review of children aged 0 day to 14 years presented with falls, burns, foreign body ingestion or inhalation, poisoning, fingers caught in doors, electrocution injuries and drowning, was conducted. A total of 165 children were included. Domestic injuries were frequently occurring injuries in our set-up which could be prevented by doing small adjustments to make the home safe for children.

Key Words: *Injury. Unintentional injury. Domestic injury. Children.*

An injury is the physical damage that results when a human body is suddenly subjected to intolerable levels of energy. Childhood injuries are a leading cause of death in the world.¹ Injuries lead to emotional trauma and financial burden for children, parents, and society. Although children less than 14 years are 45% of population in developing countries;¹ but still in Pakistan data regarding injuries in children less than 14 years, age, is very scarce. Home is the place of childhood where children spend most of their time.² Most of these injuries result in mild to moderate accidents, but still it is believed that some injuries are under-reported, possibly because of the current medical system and being more common in low socioeconomic group.³

There are two broad arms of injury classification: intentional and unintentional injuries. Further divide it in road traffic injuries and domestic injuries; later include all the injuries that occur in home as home is the most common place of injury (53%).⁴ Rehmani *et al.* mentioned the most frequent mechanism of injuries were falls from height (44%), burns (7.7%), and foreign body (6.5%).⁴ The common site of injuries were head and face (28%), trunk (3%), upper limb (25%), and lower limb (30%).⁴ According to a recent review, the most common risk factors for domestic injuries are low maternal education and overcrowding.⁴

The United Nations Convention on the Right of Child states that the child has a right to the highest attainable level of health and a right to safe environment. Injuries are the leading cause of death and accounts for more than 5 million deaths per year. A bulk of these injuries

occur in developing countries. Among those, childhood injuries are the fourth leading cause. Very limited work about domestic injuries is done in the developing countries. The aim of this study was to determine the burden of domestic injuries in children.

After taking approval from the Hospital Medical Record Team, a retrospective chart review of record from January to December 2012 was conducted, at The Aga Khan University Hospital. It included all children who presented to the emergency / paediatric surgery clinics with domestic injuries including fall, burns, foreign body ingestion or inhalation, poisoning, fingers caught in doors, electrocution, and drowning. Injuries occurring outside home settings and in road traffic accidents were excluded. Cases of injury were identified by means of the International Classification of Diseases, 9th Revision (ICD-9) codes listed on hospital discharged records. Data was analyzed on SPSS version 16. Categorical variables were reported in terms of percentages and frequencies.

A total of 3,023 admissions were identified; 419 were identified as trauma/injury victims and 165 children were included in the study who matched the inclusion criteria. The age ranged from 0 day to 14 years. The most common age of presentation was 1 - 3 years. There were 131 (79%) boys and 34 (21%) girls. The commonest mechanism of injury was fall 64 (39%), followed by foreign body injuries 60 (36%). Head and neck was the most common site of injury 64 (39%) followed by extremities which were 49 (30%). The commonest place of injuries was bedroom 61 (37%) cases followed by living room 43 (26%) cases (Table I).

One hundred and fourteen out of 165 (69%) of mothers were illiterate compared to literate mothers which were 51/165 (31%). Domestic injuries were more common in children of working mothers 93/165 (56%) as compared to non-working mothers. Most of the children (92%) were admitted and majority of them (99%) were discharged in stable condition. The mortality rate was 1% as there

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Table I: Frequencies of various mechanisms domestic Injures.

Variables	n (Percentage)
Mechanism of injury	
Fall	64 (39%)
Foreign body	60 (36%)
Corrosives	16 (10%)
Burns	13 (08%)
Doors	10 (06%)
Electrical appliances	02 (01%)
Site of injury	
Head and neck	64 (39%)
Extremities	49 (30%)
Thorax	29 (17%)
Abdomen	13 (08%)
Neck	08 (05%)
Pelvis	02 (01%)
Place of injuries	
Bed room	61 (37%)
Living room	43 (26%)
Kitchen	32 (19%)
Stairs	22 (13%)
Bath room	07 (04%)
Level of mother's education	
Illiterate	114 (69%)
Literate	51 (31%)
Working mothers	93 (56%)
Non-working mothers	72 (44%)

Table II: Different modes of injuries according to age.

Mode of injury	0 - < 5 years	5 - 14 years
	N = 117	N = 48
Foreign body	58 (50%)	02 (04%)
Fall	30 (26%)	34 (71%)
Corrosives	12 (10%)	04 (08%)
Burns	10 (08%)	03 (06%)
Doors	06 (05%)	04 (08%)
Electrical appliance accidents	01 (01%)	01 (02%)

were two deaths; both had history of fall with severe head injuries.

The children were divided in to two groups, one before 5 years and other after 5 years, and both the groups had different presentations (Table II). Domestic injuries, especially foreign body accidents, were more common in pre-school children 52/117 (50%) as compared to school going children as they have more time to spend at home. Similarly, there were higher proportion of head injuries in children less than 5 years as their head to body ratio is larger. On the contrary, school-going-age children of more than 5 years of age were highly influenced by their surrounding as the commonest way of presentation was fall from height (34/48, 78%, Table II).

Overall fall (39%) was the most common mechanism of injury. This is consistent with a previous study,⁵ followed

by foreign body ingestion or inhalation, corrosive injury and burn. Infant walker was a strong contributor of toddlers, fall. Foreign body injuries, i.e. ingestion or inhalation was the other frequent mode of presentation of domestic injuries in this study (36%). The commonly ingested foreign body was coin followed by beetle nut inhalation, possibly because of easy access.

Bedroom (37%) followed by living room (26%) was found to be commonest place of injury. This is contrary to the western literature where the most common place of injury is kitchen, probably because in our society, children used to be with mothers, who were usually spending their daily domestic activities in these places at home.

These injuries are a real burden to our economy as it is one of the largest non-communicable diseases. With a growth in industries and technological advancement, occurrence of injuries especially among children are showing an ascending trend. By providing better education to family and parents, the overall burden of childhood injuries can be decreased. It is suggested that public awareness, regarding this very important and partially neglected aspect of injuries, should be provided through the media, and safety talks should be encouraged. Parents should be aware of safety guidelines with an emphasis regarding the safety kit formation and its use.

It is not a population-based study as only those cases were recorded that came to the Hospital Emergency and Paediatric Surgery Clinics. Although it is a retrospective study but the authors believe that its findings have important implications both for the health authorities and the government. There is a need for standardization of data so that all the injuries should be documented in a uniform format. Parents should be encouraged not to leave their children unattended. One should realize that child injury would be the last thing in child's mind but should be first in parents'.

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