Section: Community Medicine

Original Research Article

UNINTENTIONAL DOMESTIC INJURIES AMONG UNDER 5 CHILDREN ATTENDING PEDIATRIC OPD OF URBAN HEALTH TRAINING CENTRE, JOBRA, CUTTACK: A CROSS-SECTIONAL STUDY

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Received *: 17/09/2024*
Received in revised form *: 05/11/2024*
Accepted *: 19/11/2024*

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DOI: 10.70034/ijmedph.2024.4.128

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2024; 14 (4); 683-688

ABSTRACT

Background: Injuries among the children are an emerging public health problem. Accidental injuries are one of the leading causes of death, hospitalization, and disability across the World. Under-five children are more at risk for domestic accidents because of their normal curiosity, impulsiveness, and desire to master new skills and children imitate adult behavior from an early age, and boys are more likely to have accidents than girls. AIM: To estimate the prevalence of unintentional domestic injuries among under 5 children attending pediatric OPD at Urban Health training centre of SCB MCH, Jobra, Cuttack.

Materials and Methods: This is a Facility based cross-sectional study was conducted in the Urban Health Training Centre (UHTC), SCB MCH Cuttack, Jobra from November 2021- January 2022. Under 5 children attending pediatric OPD with their parents/caregivers willing to give consent were included. Under 5 children with history of any psychiatric illness, Intentional/self-inflicted injuries, Assaults, outdoor accidents were excluded. Interview of the study participants were conducted using a pre-designed, pre-tested, semi-structured questionnaire, translated in local language (Odia).

Results: The present study revealed a prevalence of 37 (36.63%) domestic unintentional injuries among under 5 children. Most common injuries reported were falls (62.16%)followed by sharp injuries (27.02%) among both males and females. Most common place of occurrence of injuries in the house reported were living room, followed by kitchen and bathroom. Most of the injuries were reported in afternoon followed by evening. Out of total 37(36.63%) injured under 5 children, 26(70.2%) received first aid at home within 1 hour of injury in the form of Band aid, anti-septic ointment, Dettol, cold compress etc, remaining 11 (29.72%) were rushed to UHTC, Jobra for first aid and treatment within 24 hours of injury.

Conclusion: Falls were the most common mechanism of injury in both the areas and majority of the injuries took place at home and its premises. Factors like child's gender and place of residence affected the occurrence of unintentional injuries in children. This shows that the understanding of such factors is crucial in developing and implementing childhood prevention strategies.

Keywords: Children, Urban health training centre, Unintentional domestic injuries.

INTRODUCTION

Injuries among the children are an emerging public health problem. Accidental injuries are one of the leading causes of death, hospitalization, and disability across the World. In developing countries, injuries are one of the major causes of death in children between age group of 1 and 5 years.[1] Injury among the children can happen anywhere: the road, home, or playground. Studies on childhood injuries have observed that majority of the accidents occur inside the home.[2] According to the World Health Organization (WHO), injury-specific mortality rate in the under-five age group was 73 per 100,000 population and 3654 years of life was lost per 100,000 population (WHO 2015).[3]

Under-five children are more at risk for domestic accidents because of their normal curiosity, impulsiveness, and desire to master new skills and children imitate adult behavior from an early age, and boys are more likely to have accidents than girls.[4] Most injuries take place in or near a child's home where unsafe play areas and play things may often be found. Age, sex, and economic factors are important determinants of injury's incidence and severity.[5]

Although home is the place which is safe and secure for the children, unfortunately, home is where many injuries and deaths occur. The main causes of accidents in the home are falls, burns, drowning, suffocation, choking, poisoning, and cuts.[5] They learn to walk, run, jump, and explore the physical environment by falling which is the normal part when growing, and most falls are of little consequence, but some goes beyond the resilience of a child's body, making them the fourth largest cause of unintentional injury death for children.[6] Any form of injury can lead to significant physiological, psychological, social, environmental, and financial burden, thereby affecting the day-to-day routine of children as well as their families.[7]

The advent of modernization in the developing world has posed a threat to the young ones. Most of the parents fail in their responsibility of caring for their children. Varied circumstances such as employment or any other task involvement predisposes the young children to vulnerable circumstances.[8] With the above background, this study was conducted in urban field practice area of Jobra, Cuttack. The main objective of the study was to determine the frequency and prevalence of accidents and to identify the associated risk factors among the under-five children.

Aim & Objectives:

1. To estimate the prevalence of unintentional domestic injuries among under 5 children attending pediatric OPD at Urban Health training centre of SCB MCH, Jobra, Cuttack
2. To explore the sociodemographic profile of the study subjects
3. To study the type and pattern of unintentional domestic injuries among under 5 children attending pediatric OPD at UHTC, Jobra.

MATERIALS AND METHODS

This is a Facility based cross-sectional study was conducted in the Urban Health Training Centre (UHTC), SCB MCH Cuttack, Jobra from November 2021- January 2022.

Inclusion Criteria: Under 5 children attending pediatric OPD with their parents/caregivers willing to give consent were included.

Exclusion Criteria: Under 5 children with history of any psychiatric illness, Intentional/self-inflicted injuries, Assaults, outdoor accidents were excluded

Study Tool: Interview of the study participants were conducted using a pre-designed, pre-tested, semi-structured questionnaire, translated in local language (Odia).

Sample Size: A sample size of 101 study participants was calculated using the formula: n= 4pq/d2, taking the prevalence of domestic injuries as 64.4% from a previous study,[5] absolute precision of 10% and nonresponse rate of 10%.

Health centers provide basic services including wound care and pain medication. For conditions that need advanced management, patients are referred to the nearest district hospital. These hospitals are staffed with a higher cadre of health care providers, including nurses with more advanced training and general practitioners. If further specialized care is needed, the patient is referred from the hospital to the respective national referral hospitals.

We extracted demographic data, clinical characteristics, details on care provided, and outcomes (including hospitalization, discharge, and referral) from patients. Patient files from the hospitals undergo regular quality audits by data managers as part of the process of monthly reporting to the Urban health training centre. Additionally, to ensure the highest data quality possible, we trained data collectors on extracting and entering data from medical charts to the database, which contained embedded validation criteria and range.

Data Analysis: Data was entered in MS Excel and analyzed using SPSS version 21.0. Results were expressed in percentages. The chi-square test was applied to find out the association. A p value of <0.05 was considered statistically significant.

RESULTS

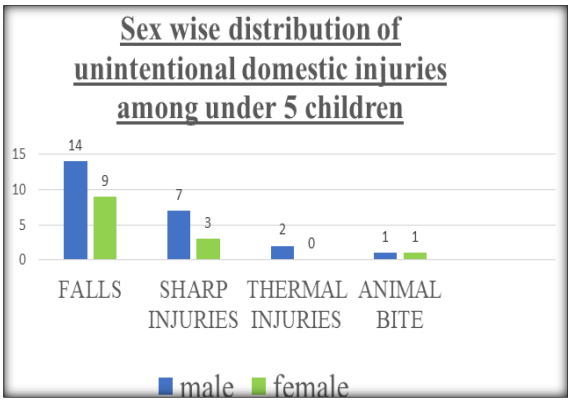

Figure 1

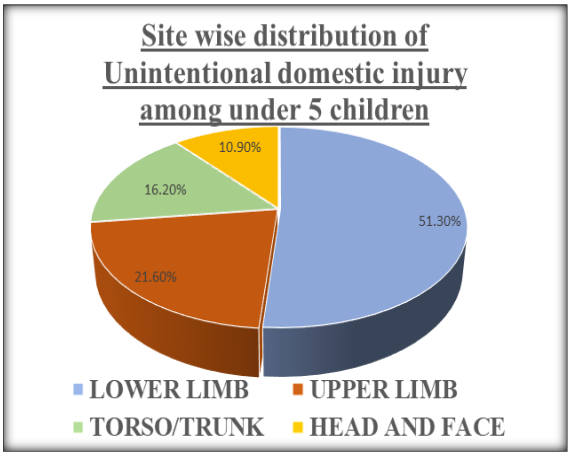

Figure 2

Table 1: Socio-demographic Profile of Caregivers

VARIABLE	FREQUENCY	PERCENTAGE(%)
OCCUPATIONAL STATUS		
Professional	03	2.97
Semi-Professional	07	6.93
Clerical/Shopkeeper/Farm	09	8.91
Skilled Worker	08	7.92
Semi-skilled Worker	11	10.89
Unskilled Worker	14	13.86
Unemployed	**49**	**48.51**

Table 2: Socio-demographic profile and history of unintentional domestic injury among under 5 children

VARIABLE	FREQUENCY	PERCENTAGE(%)
AGE		
<20 years	8	7.92
20-35 years	**87**	**86.1**
>35 years	6	5.94
RELATIONSHIP OF CARE GIVER WITH CHILD	**62**	**61.38**
Mother	33	32.67
Father	06	5.94
Others		
RELIGION		
Hindu	**59**	**58.4**
Muslim	42	41.58
TYPE OF FAMILY		
Nuclear	**58**	**57.4**
Joint	39	38.61
Three Generation	04	3.96

Table 3

VARIABLE	TOTAL	DOMESTIC INJURIES PRESENT n = 37 (%)	DOMESTIC INJURIES ABSENT n=64 (%)	CHI SQUARE, P VALUE
SEX OF THE CHILD				
Male	**57**	**30 (81.08)**	27 (42.18)	5.413 , **0.019**
Female	44	13 (35.13)	31 (48.43)	
AGE OF THE CHILD				
0- <6 months				
6m- <1 year	08	01 (2.7)	07 (10.93)	5.06 , 0.166
1- < 3 years	14	03 (8.1)	11 (17.18)	
3- 5 years	38	14 (37.83)	24 (37.5)	
	41	**19 (51.35)**	22 (34.37)	
BIRTH ORDER OF THE CHILD				
1	43	12 (32.43)	31 (48.43)	4.28, **0.03**
>1	**58**	**28 (75.67)**	30 (46.87)	
VARIABLE	TOTAL	DOMESTIC INJURIES PRESENT n= 37 (%)	DOMESTIC INJURIES ABSENT n= 64 (%)	CHI SQUARE, P VALUE

TYPE OF FAMILY				
Nuclear	58	22 (5.94)	36 (56.25)	0.28, 0.86
Joint	39	14 (37.83)	25 (39.06)	
Three generation family	04	01 (2.70)	03 (4.68)	
RELIGION				
Hindu	59	20 (54.05)	39 (60.9)	0.45, 0.49
Muslim	42	17 (40.47)	25 (39.06)	
SOCIOECONOMIC STATUS(MODIFIED BG PRASAD)				
Upper	02	00 (0)	02 (3.12)	3.40, 0.49
Upper Middle	16	04 (10.81)	12(18.75)	
Lower Middle	21	08(21.62)	13(20.31)	
Upper Lower	54	23(62.16)	31(48.43)	
Lower	08	02(5.4)	06(9.375)	

Table 4

VARIABLE	FREQUENCY	PERCENTAGE(%)
SOCIOECONOMIC STATUS(MODIFIED BG PRASAD)		
Upper	02	1.98
Upper Middle	16	15.84
Lower Middle	21	20.7
Upper Lower	**54**	**53.46**
Lower	08	7.92
EDUCATIONAL STATUS		
Professional	03	2.97
Graduate/Post Graduate	07	6.93
Intermediate/Diploma	**55**	**54.5**
High School	23	22.77
Middle School	09	8.91
Primary School	03	2.97
Illiterate	01	0.99

DISCUSSION

The main aim of the study was to explore the epidemiology of unintentional injuries in Urban health training centre, Jobra, Cuttack. It was seen that out of the total children in this study, male child 57 and 44 were female child had sustained some form of unintentional injury in the past months. The finding was consistent with the findings from South India and South Africa where the prevalence of unintentional injury was higher in rural than the urban area.[9,10] Such differences might be due to differences in environmental, infrastructural, economic and cultural related factors in both the areas.[11,12]

However, the prevalence of unintentional injury was lower in Tamil Nadu (12.9%) than that of this study whereas it was higher in a similar study from Dharan.[13] The studies from Bangladesh and Thailand also reported injury rates lower than this study which might be due to the difference in case definitions. As the treatment options are limited in a country like Nepal, the injury cases included in this study were regardless of their treatment status whereas, in Bangladesh and Thailand those injuries were only included where treatment was sought.[14,15]

As per CDC, falls were the leading cause of non-fatal injury among all age groups of children in the US.[20] Similarly, falls comprised of more than half of total injuries in Tamil Nadu, urban and rural areas of Ujjain, India and Makwanpur, Nepal. [16-18] More than half of the children in this study had fallen from stairs which could have been prevented by simply ensuring railings for staircases and parapet walls in terraces.[19] However, studies from Bangladesh and China revealed that drowning was the main cause of childhood mortality which might be due to the fact that households in these areas are surrounded by numerous ponds, ditches and rivers.[20] A large number of children in the household and lack of parental supervision while playing also poses a risk of drowning in the children of these regions.

Among all the injuries in both the areas, nearly half of them occurred at home and its premises in this study. Similarly, childhood injury surveillance from Bangladesh, Colombia and Egypt revealed that 56% of the injury occurred at home.[21] Likewise, a house-hold survey in Nepal, also revealed similar findings; 39% of the childhood injuries took place in the home environment.[22] This may be because children spend most of their time in and around home and its premises which reflects the need of home-based injury prevention strategies.

Male child had nearly similar chances of sustaining unintentional injuries as compared to the female child (p=0.019) in this study. Various studies from4Ujjain, and other SEA countries also revealed higher injury rates among male children than females. [23] Similarly, in Makwanpur, Nepal also the injury rate among boys (32.5/1000) was almost double than that of girls (16.8/1000).[23] This may be due to behavioral differences among male and female children. The restless nature of boys makes it difficult to supervise and control them than the girls

of same age group.[25] Also the patriarchal nature of societies in LMCIs allow the male child to explore their environment at an early age increasing the risk of injuries.[26]

This may be due to different environmental and infrastructural factors like housing condition, overcrowding, open fields, school environment and road conditions in rural and urban areas as well as difference in parental perception on childcare and injury prevention. Thus, childhood injury prevention programs should focus on risk factors that apply to both rural and urban areas.[27]

The present study shows that the proportion of impairment resulting from unintentional injuries was higher in urban areas. Unintentional injuries resulted in temporary impairment of all children such as Lower limb injury 51.3% followed by upper limb 21.6%, Torseo/Trunk 16.2% and Head and Face 10.9%. Similarly, studies conducted in various parts of South India and Karachi showed disability proportion among the injured children to be similar to the present study.[28]

However, the nation-wide survey among under 5 children in Pakistan showed that the proportion of Injury was less than this study (3%) and the disability was highest among lowest tertile of community development probably due to lack of proper health care for the injuries.[29] Physical and psychological effects upon the children were also identified as post injury sequel by the study conducted in Makwanpur.[30]

In this study, in nearly one-fifth of the injury cases from both the areas, either parent had lost their work days to take care of the injured child and one of the fathers from the rural area had lost his job permanently as a result of injury to the child. Likewise, the absenteeism of primary caregivers from their work from various parts of South India, to take care of injured child ranged from 1–60 days with a mean of 3 days.[31]

CONCLUSION

Out of total 101, majority of the respondents were in the age group of 20-35 years- 87(86.1%), among which 62(61.3%) were mothers. The present study revealed a prevalence of 37 (36.63%) domestic unintentional injuries among under 5 children. Under 5 males were affected more 30(81.08%) as compared to under 5 females 13(35.13%). Sex and birth order of the child were significant predictors of domestic injuries. Domestic injuries were more common in age group of 3-5 years 19(51.35%) followed by 1-3 years 14(37.83%). Most common injuries reported were falls (62.16%)followed by sharp injuries (27.02%) among both males and females. Most common place of occurrence of injuries in the house reported were living room, followed by kitchen and bathroom. Most of the injuries were reported in afternoon followed by evening. Out of total 37(36.63%) injured under 5 children, 26(70.2%) received first aid at home within 1 hour of injury in the form of Band aid, anti-septic ointment, Dettol, cold compress etc, remaining 11 (29.72%) were rushed to UHTC, Jobra for first aid and treatment within 24 hours of injury. None of the injured under 5 children faced any hospitalization, disability or mortality. 9(24.3%) out of total 37 injured under 5 children had history of > 1 episode of domestic injury in the past 6 months

Recommendations

- Educating and creating awareness about childhood injuries and their preventive measures among caregivers especially mothers, is important to reduce the number of domestic injuries
- Majority of the domestic injuries can be prevented by proper care, supervision, and necessary household and environmental modification as per affordability and feasibility of the family

Limitations

- Study was restricted to Under 5 children attending pediatric OPD only
- Small sample size: Study findings can't be generalized to entire community
- History of injury for past 6 months were considered only--Recall bias
- House conditions and severity of the domestic injuries among under 5 children wasn't assessed
- Child safety practices by caregivers wasn't assessed.

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