

Prevalence of Unintentional Home Injuries and Awareness of Child Safety among the Parents of Inpatient Children at Sirimavo Bandaranayake Specialized Children's Hospital Peradeniya

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Abstract: Unintentional injuries are estimated to cause 389,000 annual child deaths in Southern Asia resulting in an annual loss of 74 healthy lives per 1000 population. In Sri Lanka, childhood injuries have been reported as the fourth leading cause of child mortality under 5 years. A descriptive cross-sectional study was conducted in Sirimavo Bandaranayake Specialized Children's Hospital-Peradeniya, Sri Lanka with the aims of identifying commonly reported types of unintentional home injuries and to assess the effects of parental factors on awareness of child safety. Under 6-year-old inpatient children and their parents were included in the study. Data were collected from 99 child-parent pairs within one-month period starting from 31st January 2020. An interviewer-administered questionnaire was used to collect data, followed by a simple physical examination of each child. Data were analyzed using Minitab 18 statistical software. Among the participants, majority of the children were male (64.6%). The most common type of unintentional home injury was fall injuries (75.76%). In more than one-third of cases (39.39%), mother was the person who was presented with the child at the time of injury. It was found that unemployed mothers were having significantly higher awareness on child safety and injury prevention compared to mothers who were working ($p=0.005$). The results of this study suggest that falls as the most commonly reported unintentional home injuries which lead to hospital admission among the children under 6 years of age. The findings also reveal that unemployed mothers

were having better awareness on child safety and injury prevention.

Keywords: Unintentional home injuries, parental awareness, child safety

Introduction:

Accidental injuries remain the leading cause of death among children aged 1 to 18 years. Every year, millions of children are permanently disabled or disfigured because of accidents (Laursen, Møller, 2009). Most injury-related deaths occur in low and middle-income countries where knowledge is limited regarding injury prevention (Rezapur et al., 2008). In Sri Lanka, childhood injury has been reported as the fourth leading cause of death among children younger than 5 years (Punyadasa and Samarakkody, 2016). Home accidents have been identified as the largest single cause of death after the age of one year and are among the most severe health problems facing the world today. Unintentional injuries are estimated to cause 389,000 annual child deaths in Southern Asia resulting in an annual loss of 74 healthy lives per 1000 population (Hyder et al., 2008). Unintentional injuries refer to the injuries that are unplanned or unexpected. According to the National Safe Kids Campaign in USA, 40% of deaths and 50% of nonfatal unintentional injuries occur in and around the home (Peden and Oyegbite, 2013). Falls, scalds, and burns, glass-related accidents, poisoning, suffocating and choking, strangulation and blind cords, drowning can be considered as most common home accidents (Fox, 2015). In Sri Lanka, the

available literature on accidents among young children is scarce and therefore this study aimed to find out the prevalence of different types of unintentional home injuries among the children under 6 years of age and assess the relationship between the parental factors and awareness on prevention of unintentional home injuries among parents.

Methodology:

A descriptive cross-sectional study was conducted in Sirimavo Bandaranayake Specialized Children's Hospital (SBSCH), Peradeniya. All the children under 6 years, who were receiving treatment at SBSCH, Peradeniya between 31st January to 29th February 2020 and their parents were included in the sample. The selection of the study subjects was done by the researcher by using the available data in the respective bed head ticket (BHT) of each child. Children who were with a clinical diagnosis of unintentional home injury (or any type of injury which comes under unintentional home injuries) were selected as the eligible participants for the study. After selecting the eligible children, permission to include their children in to the study was obtained from each parent or caregiver. Informed written consent was obtained from the respective parent or guardian before the data collection after explaining the study purpose, data collection methods, time duration for data collection, and confidentiality of personal information. A parental interview was done using a structured interviewer administer questionnaire. The questionnaire consisted of 4 parts socio-demographic characters of the child, description of unintentional injuries, socio-economic characteristic of the parents and parental awareness on child safety. Approximately 20 minutes were taken to fill one questionnaire. Besides the questionnaire, a simple physical examination of each child was carried. The physical examination was carried out with the presence of relevant parent or guardian and the privacy of the

children was maintained throughout the examination. Pretest of the study was done with 10 parent-child pairs who were admitted to the SBSCH, Peradeniya due to unintentional home injuries and they were excluded from the final sample. Ethical clearance for the study was obtained from the Ethics Review Committee of the Faculty of Allied Health Sciences, University of Peradeniya (AHS/ERC/2019/074). And the permission to collect data was obtained from the director, SBSCH. Informed written consent was obtained from the participants before data collection after explaining the purpose of the study. Privacy and confidentiality of the collected data were strictly maintained throughout the study. All the data collected were entered into an excel spreadsheet and then analyzed using Minitab 18 statistical software. Descriptive statistics were presented as mean \pm standard deviation (SD) and as percentages. In order to assess the impact of parental factors on parental awareness on child safety, 18 questions from part 4 of the questionnaire were selected. The answers which indicate the parental awareness was good have been given score "1" (one) and answers which indicate poor parental awareness were given score "0" (zero). One-way ANOVA test was carried out to assess the effects of parental factors on the score of parental awareness on child safety (Table 1). Then the analysis was repeated by dividing parents into two groups based on the total score on child safety awareness as; "group 1 = having good awareness on child safety" and "group 2 = having poor awareness on child safety". Accordingly, those who gained scores of equal or above 11 were categorized as group 1 and those who scored 10 or below were categorized as group 2 (Figure 1). A chi-square test was carried out to assess the relationship between 2 parental groups based on awareness score and the maternal employability.

Results and Discussion:

Unintentional home injuries are among the leading causes for hospitalization of young children. In the present study, data were collected from 99 parent-child pairs who were admitted due to unintentional home injuries to the SBSCH, Peradeniya. The mean age of the children was 40.9 ± 15.3 months. Majority of children were males (64.6%). This finding is consistent with the findings of Schwebel in 2014 (Schwebel, 2014). The reason behind this finding might be because of the higher activity level of male children compared to female children. SBSCH is the only one hospital solely dedicated only for children's care in Central Province, Sri Lanka and it accommodates patients from all over the country. Supporting this, the current study sample consisted of residents from urban (37.4%), rural (53.5%), and estate (9.1%) areas with the highest proportion from rural areas. A quasi-experimental study which was conducted by Ihalahewage, Fernando and Weliange in 2018 revealed that burn injuries (31%) as the most common type of injury among the children under five years of age in two villages in Sri Lanka. In contrast, the findings of the current study revealed falls (75.8%) as the most common type of unintentional home injury among the children under 6 years of age. The other types of reported injuries in Ihalagama *et al.*'s study were cut injuries (18.2%), fall (18.2%), animal bites (13.6%), and chemical/invasive things penetrating body (13.6%), while the current study reported burns (4%), animal bite (1%), foreign body ingestion (5.1%), cut injuries (5.1%) and other injuries (5.1%). Among the children who were admitted due to the foreign body ingestion, 80% of the children were ingested small watch batteries. Besides the main types of injuries, crush injury was reported under the category of other injuries. One reason for this difference might be due to the conducting of current study in a specialized children's hospital whereas Ihalagama *et al.*'s study was conducted in the community. Also, the slight difference of age

limits of the two studies might affect the results.

The current study also assessed the risks of home environments such as in kitchen, bedroom, living room, garden, and other places, and the findings revealed that most of the injuries occurred in living room. This was evidently shown from the injury prevalence data of the current study by highlighting living room (46.5%), bedroom (23.2%), garden (20.2%), and kitchen (10.1%) as the places where injuries occurred. Among the accidents which were occurred in living rooms, 76.1% accidents were fall injuries and the mean age of this group (falls in the living room) was 43.9 ± 12.4 months. These findings stressed the need of improving parental awareness on arranging living rooms to maximize the child's safety. It is important to educate the parents to avoid high places inside the living rooms where children can easily climb and not to keep the children in high places/chairs without attention especially when they are having children under 4 years of age. However, the study done by Ihalahewage *et al.* revealed more accidents occurred in kitchen and garden (31.8%), and other places were bed room (23.2%) and living room (13.6%). Ihalahewage *et al.*'s study also revealed that most home injuries (82%) had occurred when someone was near or around the injured child and in consistent, the current study found that more than one third of children were injured while their mothers with them (39.4%). Also, the current study found that 74.8% of parents were aware that there are many chances for their children to meet with severe accidents in their home environments. At the same time, more than half of the parents (60.6%) mentioned that their houses provide some kind of safety to their children to protect against unintentional injuries. Moreover, the present study found that mean score for the parental awareness on child safety was 11.2 ± 1.9 (range 6.0 to 15.0). The results of the one-way ANOVA revealed that none of the

studied parental factors was found to be associated with their awareness on child safety and injury prevention. However, even though it was not reached the level of significance, it has found that mothers who were not employed (11.6±1.9) having a higher mean score of awareness on child safety compared to mothers who were employed (10.9±1.9) ($p=0.059$) (Table 1).

Table 8: Relationship between parental factors and awareness on child safety and injury prevention

Characteristics		n	Parental awareness mean score \pm SD	p^a
Living area	Urban	37	11.5 \pm 1.7	0.094
	Rural	53	11.2 \pm 1.9	
	Estate		10.0 \pm 2.4	
History of having previous accidents to this child	None	82	11.4 \pm 1.9	0.231
	Once	15	10.5 \pm 1.8	
	Twice	02	11.5 \pm 0.7	
Maternal age	Less than 25 years	05	10.4 \pm 1.5	0.656

	25-34 years	51	11.4 \pm 1.9	
	35-44 years	38	11.2 \pm 1.9	
	Above 45 years	05	10.8 \pm 1.8	
Maternal level of education	Grade 6-O/Level	04	10.5 \pm 3.7	0.671
	Passed O/Level	56	11.1 \pm 1.8	
	Passed A/Level	33	11.5 \pm 1.7	
	Higher education/d degree	06	11.0 \pm 2.0	
Maternal employability	Employed	50	10.9 \pm 1.9	0.059
	Not employed	49	11.6 \pm 1.9	
Father's age	Less than 25 years	03	11.0 \pm 1.0	0.985
	25-34 years	37	11.2 \pm 1.9	
	35-44 years	53	11.3 \pm 1.9	

	Above 45 years	45	06	11.0 ± 1.7	
Father's level of education	Grade 6-10/Level	6-11	11	10.2 ± 2.2	0.231
	Passed O/Level		48	11.3 ± 1.9	
	Passed A/Level		34	11.5 ± 1.7	
	Higher education/degree		06	11.0 ± 2.0	

^a *p* value generated from the one-way ANOVA test.

According to the chi-square test statistics, it was found that mothers who were not employed are having a significantly higher mean score compared to those who were employed ($p=0.005$) (Figure 1).

A community-based descriptive cross-sectional study which was carried out among children aged 1 to 4 years residing in an urban setting of Sri Lanka by Punyadasa and colleague in 2015, found that low monthly income of the family, the children being care by person other than mother, and frequent alcohol consumption of father were significantly associated with the occurrence of unintentional home injuries among children. Even though the current study was not to assess the overall prevalence of injuries among children as it included all injured children, it was found that none of the studied parental factors were associated with parental awareness on child safety and injury prevention other than the maternal employability. This might be due to the mothers who were not employed are having more time to spend with their children

compared to those who are employed. However, the sample size of the current study was limited to 99 child-parent pairs and it may affect the findings of the study.

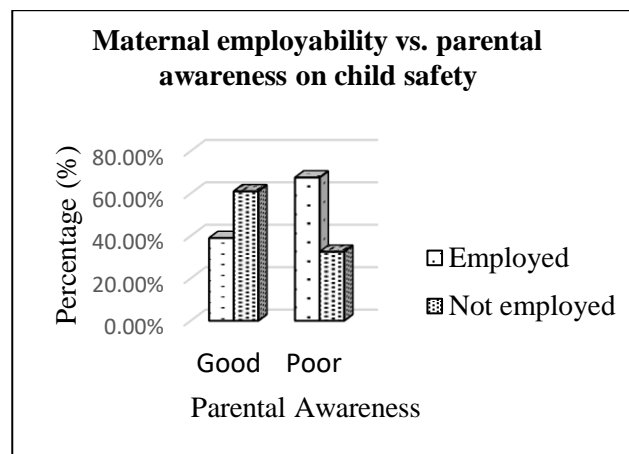


Figure.1: Maternal employability vs. parental awareness on child safety and injury prevention

Conclusion and Recommendations:

In summary, the results of the current study suggest that the most common type of unintentional injury leading to hospital admission among children under 6 years of age was fall injuries. The findings also reveal that unemployed mothers were having better awareness on child safety and injury prevention. However, this study has potential limitations. Small sample size is the major limitation of this study. Besides, these findings may not be able to generalize into the whole Sri Lankan population as it was conducted only with inpatient children at one of the Specialized Children Hospitals in Sri Lanka. As the majority of the unintentional home injury cases were fall injuries, programs to improve the parental awareness on child safety can be implemented at community-level especially through maternal and child welfare clinics. It is recommended to do further studies to assess the parental awareness on child safety and injury prevention and affecting factors, addressing some of the limitations of this study.

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