

PARENTS' KNOWLEDGE AND AWARENESS TOWARD UNINTENTIONAL HOME INJURIES IN CHILDREN AND SAFETY MEASURES IN MAKKAH, SAUDI ARABIA

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Abstract

Aim: Unintentional children injuries at home are the leading cause of deaths or disability. Safety practice is the most effective strategy to prevent home related injury or death. These injuries and accidents in children are particularly fatal because most of these injuries can be prevented with awareness and appropriate practices. This study aimed to detect the availability of safety preventive measures at home for children, and to examine whether factors such as parents' educational level and household income of the family are associated with better safety practices.

Methodology: This was a quantitative descriptive cross-sectional study conducted amongst 344 parents and guardians about the availability of safety measures at home for children aged 2-18 years old in Makkah region. A self-administered questionnaire was used to collect data. Item includes demographic characteristics, parents' personal precautions, home precautions, and common home related injuries.

Results: Parents' knowledge and awareness of personal home safety precautions were higher than average >60. Burns were the highest home related injury found by 11.6% of participation. Toxicity was the lowest home injury by 0.9%. Two thirds 67.4% of the respondents were not exposed to any type of injury. There was a moderate positive correlation between family household income and parents' preventive practice.

Conclusion: In the current study, parents' preventive practice related to unintentional child home injuries was higher, however, they applied the procedures of personal precautions more than the home precautions.

Keywords: Unintentional child injuries. Home injuries. Child safety. Parents. Prevention

Introduction

Over the recent decades, child deaths due to injuries have increased in contrast to the reduction in child death due to chronic and infectious diseases (World Bank Group, 2021). Approximately 35,408 of child cases occur in a year, resulting in 36.8% bone fractures, 31.6% body distortion, and 5.3% child disability (Ghailan et al., 2021). This could be due to the fact that parents focus more on children infectious diseases and give less attention to modern life threats and almost complete negligence to child safety in the home/domestic. Home accident is

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defined as "any unintentional damage to any part of the body" (Ray et al., 2012, p. 174). Children are vulnerable to injuries and most of them are accidental. The leading causes of unintentional injury vary by age. Many factors involve where some of them are preventable, by modifying the child's environment (e.g., use of stair gates) and having parents engage in safety practices (e.g., keeping matches or lighters out of reach of children) (Schnitzer, 2006).

Several factors increase the risk of unintentional child home injuries. These include the child's age, gender, and developmental stage. Young children, especially those between one and four years, are at a higher risk because they are curious, mobile, and cannot recognize danger. Boys are more likely to sustain injuries than girls due to their higher activity level and risk-taking behavior. Additionally, children with disabilities or chronic health conditions are more susceptible to injuries (Santagati, Vezzosi, & Angelillo, 2016). Tarrago (2000) reported that in the United States, the most leading causes of death associated with unintentional injury in children aged 1 to 9 years are motor vehicle, drowning, burn and choking. Home safety practices by mothers were relatively better preventable to childhood injuries (Kadke, Chunduri, & Kudpi, 2020). Parental adherence to children's home injury preventive measures is higher with age and educational level (Hazazi, Mahmoud & Al Ali, 2021). A study conducted in China, reported that unintentional injury-related death has decreased in urban compared to rural areas, with most common injuries include suffocation, traffic and drowning (Yu et al., 2023).

A range of factors associated with child home injuries in low-income and middle-income countries, including poor housing conditions, inadequate child supervision, unsafe storage of hazardous chemicals, lack of child-resistant packaging, and unsupervised access to sharp or blunt objects. In addition, risk factors such as poverty, parental education, and child health status have been shown to be associated with an increased risk of child home injuries (Banerjee et al., 2016; Khan et al., 2013; Nouhjah, Kalhori, & Saki, 2017).

In a systematic review, lower socioeconomic status (SES) and deprivation of the family was associated with increased injury risk at home (Mahboob, Richmond, Harkins, & Macpherson, 2021). Family income is significantly related to home injuries. Relationship between lower income level and home accident in children is connected to increase the incidence of home injuries (Akturk & Erci, 2016; Uskun, Yıldırım, Yürekli, Çelik, & Tarcan, 2022). Parental education may influence child injury prevention behavior, injury risk perception, and safety knowledge, which are key determinants of unintentional home injuries. Studies have shown that parents with lower education levels have worse knowledge of child injury prevention strategies, such as safe storage of hazardous chemicals,

appropriate supervision, and childproofing (Inbaraj et al., 2020). These parents may know how to identify safety hazards and implement injury prevention measures, reducing the risk of unintentional home injuries.

Importance of the research

Child home injuries are a major cause of morbidity and mortality worldwide, particularly in low-income and middle-income countries (LMICs). Injuries can occur at any time, and can happen in any room in the home. According to the World Health Organization (WHO), injuries are responsible for approximately 950,000 child death annually, with home injuries being the most common type reported (WHO, 2008).

The factors contributing to unintentional home injuries are multifactorial, including the physical environment, socioeconomic status, parental supervision, and educational level, among other determinants. The literature highlighted a range of factors associated with child home injuries, including poor housing conditions, inadequate child supervision, unsafe storage of hazardous chemicals, lack of child-resistant packaging, and unsupervised access to sharp or blunt objects (Mack, Liller, Baldwin, & Sleet, 2015). In addition, risk factors such as poverty, parental education, and child health status have been shown to be associated with increased risk of child home injuries.

Aim of the research

The aim of the current study is:

- To detect the availability of safety measures at home for children aged 2-18 years old in the Makkah region.
- To examine whether factors like parents' educational level and family household income are associated with better safety practices.

Hypotheses of the research

- H01: There is a correlation between parents' educational level and safety practice.
- H02: There is a relationship between family household income and safety practice.

Method

This was a descriptive cross-sectional study about the availability of safety preventive measures at home for children aged 2-18 years old in the Makkah

region. The study included 344 parents and guardians of children between 2 - 18 years old in Makkah region. If participants selected to click on the link, the survey loaded with a full information sheet describing the study aims in detail. Completion of informed consent questions were required for the survey questions to load.

Participants completed a self-administered questionnaire, distributed via a social media platform, was available for 6 weeks. Items included demographic backgrounds (sex, nationality, child age group, educational level, household income, and geographical region), personal precautions, home precautions, and most common home injuries. All participants gave informed consent prior to inclusion in the study. Respondents of children between 2-18 years old completed the questions in the questionnaire. All the data was stored on the computer and was analyzed using SPSS (version 24). Frequency distribution and the appropriate statistical test were used. All collected data was kept confidential.

Results

(Table 1)

Out of 344 participation, 68% were female and 32% male. About 74.1% were Saudi and 25.9% Non-Saudi. The highest level of participants were in age group 6-11 around 40.1% compared to other groups. Regarding educational level, 52.9% and 15.7% of parents had a bachelor degree and higher degree (master and PhD level), respectively. The average household income for the participants was 62.2% with above average and financially cable families. The majority of respondents 89.2% were from Makkah region (Table 2).

The majority of the participations (>90%) were aware about keeping the cleaning tool and sharps tool out of children reach. 62.2% of families were familiar with emergency number in case of any accidental incidence. While 77.6% were aware about separating the electricity tools when not in use (Table 3).

Most of the participants, more than 70% to 80% did not have fire precautions such as fire extinguisher and alarm, respectively. While 58% did have a first aid kit in their houses (Table 4).

Table 1: Sociodemographic data of the study participants.

Variable	Number n=(344)	Percentage (100%)
Sex	Male	110 32%
	Female	234 68%
Nationality	Saudi	255 74.1%
	Non-Saudi	89 25.9%
Child age group	2-5	106 30.8%
	6-11	138 40.1%
	12-18	100 29.1%
Education	Primary school degree	10 2.9%
	High school degree	98 28.4%
	Bachelor degree	182 52.9%
	Higher degree (Master & PhD)	54 15.7%
Household income	Below average	50 14.5%
	Middle income	80 23.3%
	Above average	110 32%
	Capable	104 30.2%
Region	Makkah region	307 89.2%
	Out of Makkah region	37 10.8%

Table 2: Personal precaution regarding to participations.

Question	Yes n=344 (%)	No n (%)
Do you keep cleaning tool out of children's reach?	323 93.9%	21 6.1%
Are all family members familiar with emergency numbers?	214 62.2%	130 37.8%
Have you kept the sharps tool out of children's reach?	316 91.9%	28 8.1%
Are all types of electricity separated from the main usage (when not use)	267 77.6%	77 22.4%

Table 3: Home precaution regarding to participations.

Question	Yes n (%)	No n (%)
Is there a fire extinguisher at home?	93 27%	251 73%
Are there a fire alarms at home?	35 10.2%	309 89.8%
Is there a first aid kit at home?	200 58.1%	144 41.9%

Table 4: Common home injuries regarding to participations.

Variable	Number n=344	Percentage n (%)
None	232	67.4%
Burns	40	11.6%
Fracture	16	4.7%
Burns with fracture	10	2.9%
Bleeding	7	2%
Toxicity	3	0.9%
Other (electricity injury, drowning)	36	10.5%

Table 5: Hypotheses testing.

Variable	Correlation factor	significance level
H01 Parents' educational level and safety practice	2.0	0.05*
H02 Family household income and safety practice	0.37	0.05*

Burns were the highest home injury found by 11.6% of participation. While toxicity was the lowest injury at home by 0.9% of participants. Two thirds of the children 67.4% were not exposed to any type of injury in their home.

Hypotheses tests

There was a moderate positive correlation between family household income and parents' personal preventive practice. The more income of the family, the more their tendency to have a better preventive measure of unintentional home injury practice. However, there was no correlation between parents' educational level and parents' safety practice (Table 5).

Discussion

This study aimed to detect the availability of safety preventive measures at home for children, and to examine whether factors like parents' educational level and household income are associated with better practices. Childhood injury is a huge public health problem regarding morbidity, mortality and lifelong disability worldwide. Children are the more vulnerable group for injuries due to their characteristics (Alkhamis & Abdulkader, 2020; Ray et al., 2012). The UNICEF Innocenti Research Centre reported injury as the second common cause of death in younger children less than five years (Linnan et al., 2007).

The current study showed that the prevalence of home injuries was 32.6% accounted for all common unintentional home injuries. Home environment plays a major role on children and families daily live routine in which they live and spend their most time. Unintentional injuries are mostly occurred at home (Paes & Gaspar, 2005). Although, common belief regarding homes as a safe place for children, around 33% of home injuries in children such as falls, burn, cuts, electric shock, and asphyxia happen at home (Schneiderman et al., 2012). For example, Wiseman et al. (2002) reported that newborn babies to 14-year-old children were higher in amount of injuries, 51.9% of the child injuries occurred at home, and the younger the children were with the higher frequency of the home injuries. This reflects interesting findings in the USA, reported by the National Safe Kids Campaign, 40% of the deaths and 50% of the unintentional injuries resulting in death have occurred inside or around the homes.

In addition, the finding illustrated that the poisoning prevention performance got the highest rate, where 93.9% reported keeping cleaning tool out of child reach. Similar patterns was also seen in result reported by Saadati et al. (2020), 94.15% of mothers were found to have an higher poisoning of prevention attitudes. Although, the prevalence of accidental injuries among children under five years differ from area to area, in a study conducted on Southern Indian children reported by 39%, whereas, in another study accomplished in Nepal was found to be 33% (Sharma et al., 2018; Kadke, Chunduri, & Kudpi, 2020).

The findings also showed greater parents' personal precaution measures, 91.9% kept the sharp tools away from children, 77.6% separated the electricity plugs when not in use. In consistent with the results reported by Saadati et al. (2020), where 95.7% kept the meat grinders away from the children, and 52.4% of the homes were prepared with power plugs with protective cover, and 50.5% of the power plugs were put at a high place. However, parents also reported lower home precaution measure. Although, previous studies on parents reflected opposite patterns. It has also shown that parents consider that the risk of accidental injuries cannot be prevented (Morrongiello & Dayler, 1996; Murphy, 2001). Nevertheless, they consider providing children with safe environment in the house would be possible and useful to protect them from such an injuries (Morrongiello & Kiriakou, 2004; Rivara, 1995).

Eventually, the lowest precaution method was related to the prevention of burning, where 27.0% had a fire extinguisher and only 10.2% had a fire alarm. In contrast, the result reported by Saadati (2020) showed that 68.86% of them practice the precaution measures regarding avoiding burning, where 87.8% of the mothers pointed out that they place the hot Kettle or Samovar out of children's reach. The findings also showed that a moderate positive correlation between the family household income and personal safety practice. On the other hand, no significant correlation was found between parents' educational level and parents' preventive practices. Conversely, other studies showed the opposite pattern, mothers with higher levels of education were associated with higher knowledge of prevention toward unintentional home injury (Mustafa et al., 2022; Olutayo, 2013).

Conclusion

Most of the parents participating apply the procedures of personal safety precautions more than the home safety precautions, the finding is also indicated very low level of knowledge and awareness about the importance of home precautions. Moreover, the most common of the accidental home injuries were burns. The majority of respondents are really care about keeping cleaning tool out of child reach. Furthermore, most of home related injuries were preventable and happened due to parents or guardians distraction. The author recommended further studies with more sample size and different region. Also, the study recommends to focus on educational programs to improve home safety which would be valuable in reducing this burden.

Conflict

The author declares that there is no conflict of interest.

Consent

The author declares that 'an electronic version of informed consent was obtained from the participants for publication of this study. A copy of the informed consent is available for review by the Editorial office/Chief Editor/ Editorial Board members of this journal'.

Ethical approval

The author hereby declares that the study was approved by the ethical committee, Umm Al-Qura University, Makah Alumkaramah, Saudi Arabia.

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