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Evaluation of the knowledge, attitudes, and behaviors of mothers of children admitted to the emergency department due to home accidents: A descriptive study from Northwest Syria

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Abstract

Accidents that occur in the home or its surroundings are called home accidents. Our aim in this study was to identify the causes of admissions due to home accidents and to assess the awareness and attitudes of mothers. This descriptive and cross-sectional study was conducted in the emergency departments of Çobanbey and Azaz Vatan hospitals. Eighty-one mothers that have an average age of 30.02±7.56 years participated in the study. 53.1% (n=43) of the children admitted due to home accidents were males and the number of applicants in the 0-6 years age group was 54 (65.8%). The most common reason for admission was falls (53.1%, n=43), followed by burns (21%, n=17). It was found that the majority kept toxic substances such as rat poison and pesticides out of the reach of children (98.8%, n=80), warned their children to stay away from water wells (92.6%, n=75), and kept ignitable substances such as matches and lighters out of the reach of children (90.1%, n=73). In addition, 92.6% (n=75) left a teapot on the stove, 88.9% (n=72) left electrical appliances in the outlet, and 80.2% (n=65) reported that children could light the stove by themselves. The mean score calculated in the questionnaire on mothers' awareness and attitude toward home accidents was 15.44±3.40. It is very necessary to carry out studies on health systems with national and international cooperation in victimized regions such as the northwest of Syria and to inform families about accident risks and safety measures.

Keywords: Children, home accident, injury, Syria

Introduction

The World Health Organization defines an accident as an event "that occurs unwillingly and causes physical and mental damage by a sudden external force [1]. Accidents that occur in the home or its surroundings are called home accidents [2]. According to the World Health Organization (WHO) data, falls, burns, and poisoning are the leading causes of morbidity and mortality in-home accidents. Therefore, home accidents are among the most serious health problems worldwide [3]. Children, especially preschool-aged children, are at high risk for home accidents because of their lack of awareness of hazards, curiosity to learn new things, tendency to imitate their parents, and sensitivity and openness to environmental hazards [4, 5].

Falls, burns, choking and blockage with solids, drowning in water, poisoning, etc., cause unintentional home accidents [4]. The types and frequency of home accidents vary depending on

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the age of the children. The home accidents that cause the most injuries in children under five years of age are falls, burns, and poisoning, respectively [2].

According to WHO, for every death from unintentional injuries, there are 34 hospitalizations and 1000 emergency room visits1. In developed countries, the mortality rate of children due to accidents is very low. Children in low- and middle-income countries account for 95.0% of injury-related deaths [6].

It is indisputable that adults are responsible for ensuring that children live in an accident-safe environment, taking protective measures, and supervising the safety of their living spaces [3]. Parents are often aware of the risk of injury at home but do not routinely consider it in their daily interactions [1]. Home accidents are closely related to variables such as region, mode of transportation, building structure, family structure, socioeconomic-sociocultural status, and psychosocial status. In underdeveloped and developing countries, injuries from falls, burns, and poisoning are twice as common as in developed countries [7]. Although prevention of home accidents is an important issue, especially in developed countries, it is observed that families in low socioeconomic status countries have poor knowledge about protection against accidents and children are at higher risk of accidents [5]. Countries are conducting studies to determine the nature and causes of accidents so that they can develop protection programs appropriate to their socioeconomic and sociocultural structures. However, in regions such as northwestern Syria, where unrest has prevailed for more than a decade, establishing an adequate monitoring system does not seem possible. Our aim in this study was to identify the causes of admissions due to home accidents and to assess the awareness and attitudes of mothers in this region, where difficult living conditions prevail.

Material and Methods

Study Design

The research was planned as descriptive and cross-sectional and conducted using face-to-face interviews with the mothers of pediatric patients admitted to the emergency departments of Cobanbey and Azaz Vatan hospitals in Syria due to home accidents between the dates of 01/06/2021-01/09/2021. On the specified dates, 134 individuals were admitted due to home accidents. A total of 81 individuals who agreed to participate and met the inclusion criteria were enrolled in the study. The Ethics Committee of Hatay Mustafa Kemal University for Noninterventional Research (meeting date: 06/05/2021, number of decisions: 18), the relevant hospital administrations, and SIG approved the study. In addition, the study was conducted by the "Declaration of the World Medical Association on the Ethical Principles of Helsinki".

Location of the study

The study was conducted in the emergency departments of Çobanbey and Azaz Vatan hospitals. Turkey established these hospitals in 2018 and 2020 as part of humanitarian aid [8, 9, 10]. The staff of these hospitals consists of local Syrian doctors and medical personnel, while Turkish health personnel provides the consultation [11, 12]. Patients are admitted to these two hospitals from the centers of Azaz and Cobanbey, as well as from small settlements connected to these centers.

Selection of participants

Mothers of children aged 0-18 years who were admitted to the emergency departments of Azaz Vatan Hospital and Cobanbey Hospital for home accidents were included in the study. Mothers who refused to participate in the survey, who were under 18 years of age, or who had known mental disabilities or psychiatric disorders were excluded from the study. In polygamous families, the biological mother of the enrolled child was included in the study.

Data Collection

Our questionnaire was prepared in Turkish after a literature review on household accidents and translated into Arabic by sworn translators. The questions were reviewed for relevance, simplicity, and importance by Syrian specialist physicians selected for their experience and expertise in the relevant fields. After a pilot study with 20 subjects, the necessary corrections were made and the questionnaire was finalized. In the first part, the form for sociodemographic data of the participants was used, and in the second part, a questionnaire with 24 questions about the awareness of the mothers and the precautions they took. The sociodemographic data form included questions on age, gender, education level, income, number of children, place of residence, type of house and family, and history of home accidents. The home accident awareness and attitudes questionnaire asked 24 questions about home precautions and attitudes toward home accidents from the literature. They were asked to answer yes or no to the questions. The correct answer was scored as "1" and the incorrect answer was scored as "0". It was predicted that the higher the total score, the higher the awareness of home accidents. The score to be obtained on the scale ranged from 0 to 24.

Statistical Analysis

Statistical analyses of the study were performed using Statistical Package for Social Sciences version 28.0 software for Windows (IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp., USA). Descriptive statistics of the variables are given as mean±standard deviation, median (Min-Max), and n (%).

Results

A total of 81 subjects participated in the study. The frequency and percentage values of the responses given by the participants are shown in Table 1. The mean age of the mothers was 30.02±7.56 years. Twenty-two (27.2%) of the mothers were illiterate, and 33 (40.7%) had primary school graduates. The median number of children in the family was 3. The most common number of children in participants' families admitted to the emergency

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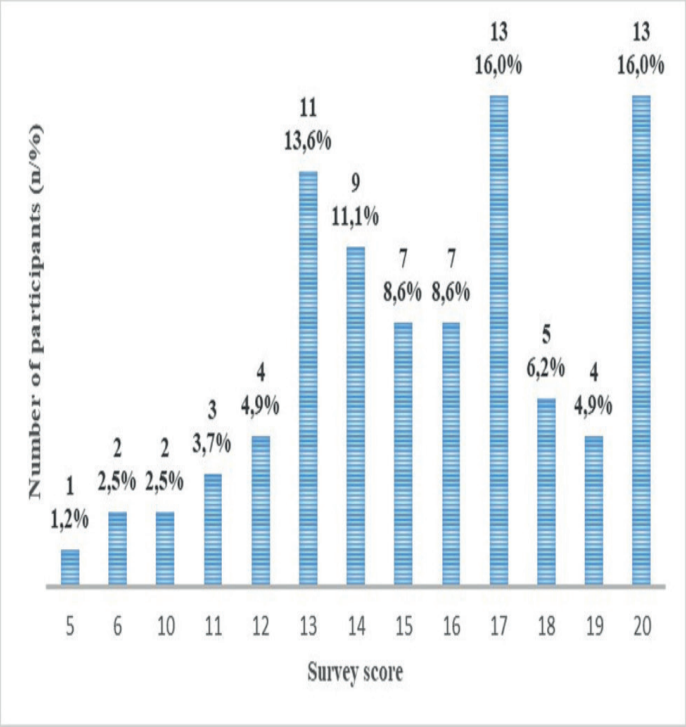
department for a home accident was three. Fifty-two (64.2%) of the participants were first-time mothers between the ages of 16 and 20.

The median monthly income of the families was $100. The median number of people living in the households was 6 (3-14). 53.1% (n=43) of children admitted to the emergency department were male. The mean age of the children was 5.04±3.88 years. Fifty-four (65.8%) applicants were 0-6 years old. Twenty-four (29.6%) patients had previously presented to the emergency department because of an accident at home. The most common reason for admission was a fall (53.1%, n=43), followed by burns (21%, n=17).

When analyzing the responses to the awareness and attitude questionnaire, it was found that the majority kept toxic substances such as rat poison and pesticides out of the reach of children (98.8%, n=80), warned their children to stay away from water wells (92.6%, n=75), and kept ignitable substances such as matches and lighters out of the reach of children (90.1%, n=73). In addition, 92.6% (n=75) left a teapot on the stove, 88.9% (n=72) left electrical appliances in the outlet, and 80.2% (n=65) reported that children could light the stove by themselves (Table 2). The mean score calculated in the questionnaire on mothers' awareness and attitude toward home accidents was 15.44±3.40, with the lowest total score of mothers participating in the study being 5 and the highest being 20 (Graph 1).



Graph 1. Distribution of the number of people according to their scores in the survey

Table 1. Socio-demographic characteristics of participants

Questions of the Questionnaire	n(%)
Total number of children in the family	
1	11(13.6)
2	12(14.8)
3	25(30.9)
4	14(17.3
5	13(16.0)
6+	6(7.4)
Age at first motherhood	
16-20	52(64.2)
21-25	22(27.2)
26+	7(8.6)
Place of residence	
City	25(30.9)
County	42(51.9)
Village	13(16.0)
Other	1(1.2)
Family Type	
Nuclear Family	66(81.5)
Extended Family	15(18.5)
Employment Status	
Full-time	9(11.1)
Irregular	8(9.9)
Unemployed	64(79.0)
Caregiver of the Child	
Self (with support from Grandmother)	40(49.4)
Self (alone)	27(33.3)
Caregiver	1(1.2)
Nursery	1(1.2)
Other	12(14.8)
Heating method	
Diesel stove	13(16.0)
Coal stove	59(72.8)
Self-built stove with barrels or other material	1(1.2)
Electric heater	4(4.9)
Other	4(4.9)
Reason for admission to the hospital	
Fall	43(53.1)
Burn	17(21.0)
Poisoning	9(11.1)
Sharp object injury	7(8.6)
Foreign body (ear, nose)	5(6.2)
Have you ever applied to the emergency room because of a home accident?	
Yes	24(29.6)
No	57(70.4)

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Table 2. Responses to the awareness and attitude questionnaire on home accidents

	Question	Yes n (%)	No n (%)
1	I keep full water buckets open at home/tent.	38(46.9)	43(53.1)
2	I keep hot water and food containers out of the reach of children.	58(71.6)	23(28.4)
3	I leave electrical appliances plugged in.	72(88.9)	9(11.1)
4	I cook food in a picnic tube at home/tent.	44(54.3)	37(45.7)
5	I keep medicines out of the reach of children.	69(85.2)	12(14.8)
6	I read the label on the bottle before giving medicine to my child.	64(79.0)	17(21.0)
7	I make children under the age of five wear jewelry such as evil eye beads and bracelets.	39(48.1)	42(51.9)
8	I put substances such as dishwashing detergent, descaler, sink opener, and bleach in high places where the child cannot reach them.	64(79.0)	17(21.0)
9	I keep the toilet and bathroom doors closed to protect my children from accidents.	66(81.5)	15(18.5)
10	I keep first aid materials for use in emergency accidents.	55(67.9)	26(32.1)
11	I keep items such as matches and lighters out of the reach of children.	73(90.1)	8(9.9)
12	I take the child out of the room when I light the stove.	27(33.3)	54(66.7)
13	I check the temperature of my child's bath water with my hand or elbow.	72(88.8)	9(11.1)
14	Children can reach boiling water on the stove.	8(9.9)	73(90.1)
15	I allow children to be in the kitchen when I cook.	54(66.7)	27(33.3)
16	I often use diesel fuel to ignite the stove.	48(59.3)	33(40.7)
17	I keep a teapot on the stove.	75(92.6)	6(7.4)
18	My children can light the stove on their own.	16(19.8)	65(80.2)
19	I let the children play on the roof of the house.	32(39.6)	49(60.4)
20	I warn children to stay away from water wells.	75(92.6)	6(7.4)
21	I prevent slippery floor surfaces from getting wet (e.g. bathroom, toilet).	70(86.4)	11(13.6)
22	I leave the children alone on the balcony.	39(48.1)	42(51.9)
23	I can leave my children under 18 alone at home.	55(67.9)	26(32.1)
24	I keep poisonous substances such as rat poison, insecticide, and fly spray out of the reach of children.	80(98.8)	1(1.2)

Discussion

In this study, mothers were found to be most knowledgeable about water wells, poisonous substances, wet floors, and ignitable substances as hazards for home accidents. In contrast, they were least knowledgeable about teapots on stoves, electrical appliances, liquid fuels, open balconies, and cooking stoves in the kitchen.

In our study, more than half of the children admitted due to home accidents were males and the number of applicants in the 0-6 years age group was 54 (65.8%). Looking at the literature, we find that boys have more home accidents in most studies [1, 2, 4, 7, 13]. Similarly, it was found that preschool children had more home accidents [13, 14]. It is believed that preschool children are more prone to home accidents because they spend more time at home and boys are more physically active and adventurous than girls.

In our study, the youngest age of the mothers was 19 years and the oldest was 45 years, and most of the mothers were primary school graduates. Similarly, in studies conducted in different countries, the age of mothers ranged from 20 to 40 years, and most mothers were illiterate or primary school graduates [1, 15, 16]. The majority of our participants had 2 or more children, and families with 3 children had the highest number of emergency department visits due to home accidents. When one examines

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studies on home accidents, one finds that most families similarly have 2 or more children [1, 3, 15, 17, 18]. It is believed that as the number of children at home increases the amount of time and attention mothers devote to children decreases, increasing the rate of home accidents.

Approximately 65% of the participating mothers were 20 years old or younger when they first became mothers, and most of them were not working. In addition, one-third of them were taking care of their children alone, while about half of them were supported by their grandmother or paternal grandmother. Studies conducted in Iraq and Turkey found that most mothers did not work [1, 2, 4, 5]. In the study by Mull et al., it was found that about half of the participants received support from family members [19], and in the study by Yalaki et al., it was found that most mothers took care of the child alone [16]. In contrast to our study, a study conducted in Denmark found that the age of first maternity was mostly 25 years and older, and children born to mothers who had given birth under 25 years were found to be at higher risk of home accidents [18].

The literature has demonstrated that the risk of home accidents increases among individuals living in crowded households in rural or semi-urban areas [5, 16, 18, 19, 20]. Although studies are showing that living in a slum increases the risk compared to living in an apartment [17], it has been shown that the type of house usually does not affect the risk of home accidents [4, 18]. Also in our study, more than half of the applicants lived in rural areas and 75% lived in detached houses or apartments. As the number of people living in the home increases, the interest and attention to the child decrease. The fact that homes in rural areas are older, have more infrastructure deficiencies, and are unsafe environments increase the risk [21]. The fact that the type of home the children lived in did not affect the risk suggests that the most important factor for the occurrence of home accidents is the inadequate safety measures in the home and the parent's knowledge and awareness about accidents.

In this study, it was found that the median number of people in a family is six and the average monthly income of families is $100. According to the World Bank, the minimum per capita income in the world is $221 [22]. In our study, this value was found to be approximately $200. Consistent with the literature, the income level of the applicants with home accidents in our study was quite low. Studies have found that a low socioeconomic level increases the risk of home accidents [17, 18, 20, 23]. The region where our study was conducted is a war zone and the limited economic and social opportunities increase the risk of accidents in this region.

In a study conducted in Turkey, it was found that 67.3% of children had one home accident and 23.5% had two home accidents. In Şekerci's study, it was found that 30.2% of children were exposed to a home accident at least once and the most common cause was falls [24]. In a study that examined home accidents in the European Union, it was found that more than half of the applications were due to falls [14]. A study conducted in the United States reported that the most common cause was falls, followed by burns [19]. Falls are the most common type of accident in children. Burns from hot water most commonly occur in children under 6 years of age [6]. In our study, similar to the literature, it was found that half of our participants had one domestic accident and about a quarter had two domestic accidents, and the most common causes were falls and burns.

Liquid fuels used for stoves pose a risk for life-threatening household accidents due to their flammable, explosive, and combustible properties [25]. In our study, the majority of families were heated with coal and oil stoves. Also, in a study conducted in Iraq, most families used diesel stoves, and very few heated with electric stoves, while in another study, families were indecisive about using electric stoves or did not want to use them [1, 5].

In our study, the majority of mothers indicated that they keep hazardous substances and tools such as chemicals, medicines, and sharp tools out of the reach of children, while they also indicated that they can leave children alone on the balcony and at home. Even though many of them use diesel oil to light the stove and have a teapot on the stove, they indicated that children cannot reach the boiling water on the stove. It can be said that the participating mothers have little awareness of this issue. In the literature, there are different findings on this issue. Similar to our findings, Aktürk et al. found that mothers keep chemicals and sharp piercing instruments in a convenient place and have a teapot on the stove [17]. A study conducted in Egypt on safety measures in home accidents found that most mothers did not store medicines in the proper place [15]. In the study conducted by Nsaif et al. in Iraq, it was reported that very few stored chemicals properly [1]. In another study conducted in Iraq, one-third of mothers reported leaving their children home alone [5]. Parents' level of knowledge and attitude is of great importance in preventing accidents in the home. Most accidents can be prevented by simple precautions. It is believed that the risk of accidents can be reduced by informing families about home accidents, especially in societies with low levels of education such as northwestern Syria.

One limitation of our study is that it reflects only Azaz and Cobanbey regions. Another limitation is that our study was conducted in a limited period and the number of participants was low due to the low access of mothers to hospitals due to the harsh conditions in the region.

Conclusion

Home accidents are a preventable public health problem. To this end, in addition to health system studies, it is very important to inform families about accident risks and safety precautions. In particular, helping families with children aged 0 to 6 years to create a safe home environment and to provide first aid practices in case of any accidents will contribute to accident

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prevention. In areas where inadequate living conditions prevail, such as northwestern Syria, this public health problem should be addressed in collaboration with national and international nongovernmental organizations, and regional projects and systems should be developed.

Conflict of interests
The authors declare that there is no conflict of interest in the study.

Financial Disclosure
The authors declare that they have received no financial support for the study.

Ethical approval
The Ethics Committee of Hatay Mustafa Kemal University for Noninterventional Research (meeting date: 06/05/2021, number of decisions:18), the relevant hospital administrations, and SIG approved the study.

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