

The Prevention of Non-traumatic Home Accidents Among Children Aged 0-6 Year

0-6 Yaş Arasındaki Çocuklarda Travma Dışı Ev Kazalarının Önlenmesi

Murat Doğan (0000-0003-2954-3845), Mehmet Adnan Öztürk (0000-0001-5397-1239)

Erciyes University Faculty of Medicine, Department of Pediatric Emergency, Kayseri, Turkey



Abstract

Introduction: Home accidents are a general problem of societies and most of them are preventable. The aim of this study is to investigate the factors affecting the non-traumatic household and the prevention of accidents in the 0-6 age group.

Materials and Methods: We evaluated 335 non-traumatic home accident cases between January 2018-December 2019. The data were collected through a questionnaire developed in the light of the literature. In this form, questions were asked about the characteristics of the children and their families and how the home accident happened.

Results: Home accident occurred more frequently in boys. The most common type of home accident was taking medication (45.8%), followed by corrosive substance ingestion (28%), foreign body ingestion and aspiration (26.2%). Most of the cause of home accident was due to family reasons (neglect/inattention). There was a positive correlation between the level of education of parents and home accidents. Neglect/inattention-related home accident increased significantly with the increase in maternal age, the rate of non-working parents and the low level of education of the parents ($p<0.001$).

Conclusions: As a result of our study, we found that the majority of home accidents were not due to the neglect and inattention of the parents. We think that almost all home accidents can be prevented by education. In order to prevent home accidents in children 0-6 years of age, families and child minders should be educated about the developmental characteristics of children, home accidents risk factors, home accidents safety measures and home environments.

Öz

Giriş: Ev kazaları toplumların genel bir sorunudur ve çoğunluğu önlenebilir niteliktedir. Bu çalışma; 0-6 yaş grubu çocuklarda travmatik olmayan ev kazalarını etkileyen faktörlerin ve kazaları önleme yöntemlerinin araştırılması amacıyla yapılmıştır.

Gereç ve Yöntem: Ocak 2018-Aralık 2019 tarihleri arasında travma dışı ev kazası nedeniyle başvuran 335 olgu değerlendirilmiştir. Veriler literatür ışığında geliştirilen bir soru formu aracılığıyla toplandı. Bu formda çocuklara ve aileye ait özellikler ve çocukların ev kazası geçirme durumu ile ilgili bilgileri sorgulayan sorular yer aldı.

Bulgular: Çalışmamızda ev kazası erkek çocuklarda daha fazlaydı. Ev kazasının tipi olarak en sık ilaç içme (%45,8) saptanmış olup sonrasında sırasıyla korozif madde içimi (%28), yabancı cisim yutma ve aspirasyonu (%26,2). Ev kazalarının büyük çoğunluğu aile kaynaklı nedenlerdi (ihmal-dikkatsizlik). Anne yaşı artışı, çalışmayan anne oranı artışı ve anne ve babanın eğitim düzeyi düşüklüğüyle ihmal/dikkatsizliğe bağlı ev kazası anlamlı şekilde artmaktaydı ($p<0.001$).

Keywords

Children, home accident, education

Anahtar kelimeler

Çocuklar, ev kazası, eğitim

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Address for Correspondence/Yazışma Adresi
(Sorumlu Yazar):

Murat Doğan MD, Erciyes University
Faculty of Medicine, Department of Pediatric
Emergency, Kayseri, Turkey

Sonuç: Çalışmamızın sonucunda ev kazalarının büyük çoğunluğunun çocuklardan kaynaklanmadığını ebeveynlerin ihmal ve dikkatsizliklerinden kaynaklandığını tespit ettik. Ev kazalarının neredeyse tamamının eğitim ile önlenebileceğini düşünüyoruz. Bu yüzden 0-6 yaş grubu çocuklarda ev kazalarını önlemek için ailelere ve çocuklara bakım veren kişilere çocukların gelişimsel özellikleri, ev kazaları risk faktörleri, ev kazaları güvenlik önlemleri konusunda eğitim verilmeli ve ev ortamları daha güvenli hale getirilmelidir.

Introduction

Home accidents are accidents that occur within the house or in any part of the house (garden, pool, garage, balcony). It is still an important health problem because it is common in the world and can cause death and disability (1,2). We do not know the prevalence of home accidents in Turkey. According to studies, the frequency of home accidents in our country is between 16-25% (2,3). Especially children in the 0-6 age group; spend most of their time at home. They are vulnerable to environmental risks due to the desire to explore the environment, curiosity, the desire to take everything and act constantly. Due to the fact that the living areas are not organized for children and they do not have enough developmental skills to protect themselves from accidents, they cause the highest rate of accidents in the home environment (4). In this study, we aimed to determine the causes of home accidents in children aged 0-6 and the factors affecting them and to determine the methods of protection from home accidents.

Materials and Methods

Patients were evaluated between January-December 2019 who were admitted to pediatric emergency department due to non-trauma home accident (drug drinking, corrosive substance intake, foreign body aspiration, etc.) The universe of the study consisted of children aged 0-6 years. Patients who were healthy were accepted to the study and those with chronic diseases were not accepted. The data were collected through a questionnaire developed in the light of the literature (5,6). In this form, questions were asked about the characteristics of the children (age, gender vb) and their families (Number of children, family types, house type, accident location, education stage, working status vb) and how the home accident happened. Consent was obtained from all families for study. The study was approved by the ethics committee (2017/41).

Written consent was obtained from patients before the study.

Statistical Analysis

While descriptive statistics for continuous variables were expressed as Mean, Standard Deviation, and Median, Minimum-Maximum values, categorical variables were expressed as number and percentiles. Data were given as median (minimum-maximum). Kolmogorov Smirnov test was used to determine whether numerical data belonging to the variables were compatible with the normal distribution. Chi-square test was used to determine the relationship between the groups and categorical variables. A significant p value of <0.05 was considered. SPSS 26.0 statistical package software was used for calculations.

Results

In our study, 335 patients with a non-traumatic home accident in the age range of 0-6 were evaluated. Median age of the patients in the study was 34 (7-72) month. The home accident was observed in children between 24-48 months (46.5%). Boys (58.6%) had more home accidents than girls (41.4%). Most of the cases had a nuclear family structure (67.7%). In families with tree or more children, home accidents were more frequent (65.8%). The majority of the house type was the apartment (68%). The most common type of home accident was taking medication (45.8%), followed by ingestion of corrosive substance (28%), foreign body ingestion and aspiration (26.2%). Home accidents occurred most frequently in the living room (60%), followed by kitchen (24.4%), bathroom (11%), bedroom (2.9%) and garden (1.7%). At the time of the incident, the children were with their mothers mostly (64.1%), fathers and mothers (28.3%), other family elders (2.3%) and fathers (1.4%) watched this. 68% family expenses were higher than income and 32% family expenses were less than income. Most of the parents (82.1%) stated that the cause of the home

accident was due to family (negligence-carelessness) and the rest thought (17.9%) there were child-related (mischief / curiosity) reasons (Table 1). Most of the mothers in the study (95.6%) were not working and 97.9% of the fathers were working. As the mother (56.1%) and the father's age (54.9%) were smaller, the incidence of accidents increased (Table 2). As the age of the mother and the rate of non-working parents increased and the level of education of the family decreased, the home accident due to carelessness increased significantly ($p<0.001$). In the core family type and in the presence of increased number of children, family-related home accidents increased significantly ($p<0.001$). Child-related (mischief / curiosity) home accidents were greater in the extended family type (Table 3). Most mothers (88.7%) stated that it was possible to protect them from home accidents. All families said they were ignorant of home accidents.

Discussion

Home accidents are a major health problem of our age due to their frequent occurrence, death and disability. Parents' knowledge, attitudes and behaviors about obtaining safety measures for home accidents are important because accidents affect the child's future life and hence the public health. As there is no regular recording system for home accidents around the world, the incidence of accidents is not known certainly. According to the studies in our country, the incidence of home accidents varies between 1-25 % and accidents are the fourth most common cause of child deaths. The most common home accident in our country is falling and then burns (2,3,5). Our study is one of the very rare studies investigating non-traumatic home accidents in children in the literature. Usubütin et al. (7) reported that the most common accidents of under five year-old children were falling (68.5%) and burning with hot water (15.7%). In our study, the most common type of home accident was taking medicine (45.8%) followed by corrosive substance ingestion (28%), foreign body swallowing and aspiration (26.2%). Traumatic home accidents (falling, burning vs) were not included in our study.

Factors such as age, gender, socio-economic status, educational status, home and family type, environmental conditions, carelessness, curiosity, naughtiness play a role in accident formation (3,5,8,9). The age of children is an important factor in accidents.

In the studies, it was found that the incidence of accidents was high in children under six years of age and the frequency of home accidents increased with the

Table 1. Demographic characteristics of children and families with home accidents

Features	Number (n)	Percent (%)
Age (month)		
0-24	77	22.9
24-48	156	46.5
48-72	102	30.6
Gender		
Girl	139	41.4
Boy	196	58.6
Number of children		
1	75	22.3
2	40	11.9
3 and above	210	65.8
Family type		
Nuclear	227	67.7
Extended	108	32.3
House type		
Apartment	228	68
Detached house	107	32
Home accident type		
Taking medication	153	45.8
Corrosive material	94	28
Foreign body ingestion	88	26.2
Accident location		
Living room	201	60
Kitchen	82	24.4
Bathroom	37	11
Bedroom	10	2.9
Garden	5	1.7
Caregiver		
Mother	215	64.1
Father	5	1.4
Mother-father	95	28.3
Family elders	8	2.3
Others (elder sister, caretaker)	12	3.9
Cause of accident		
Family-Based (Neglect/Inattention)	275	82.1
Child-sourced (Mischief, Curiosity)	60	17.9

decrease in age (3,10). In our study, the most common home accident age group was 24-48 months (46.5%) and was consistent with the literature. We think that young children spending more time at home, having more interest in the environment and not sufficiently developed manual skills increase the risk of home accidents in pediatric age group. The reason why home accidents are more common in men is that they are more active and more curious (8,9,11). Similarly to the other studies in our study, the majority of children (58.6%) who had a home accident were males. During home accidents, firstly mothers or fathers and mothers are with the children (11-13). In our study, it was generally found that the children were with their mother (64.1%) during home accident, it followed by mother-father togetherness (28.3%). In the researches, it was determined that the most common house area where the children had a home accident was the hall / living room (6,12,13). Alasya et al. (13) formed the

first three places in the study hall, kitchen and garden. Parallel to the previous studies, in our study the first three areas in which 0-6 age group children suffered a home accident were identified as living room, kitchen and bathroom. The fact that the living room is the most time-consuming area for children and families can explain how home accidents occur most frequently here.

Different results were reported in studies investigating the relationship between the type of home and accident incidence. In some studies, more home accidents have been found in children living in the apartment than in a detached house (14). In our study, home accidents usually occurred in the apartment (68%). We think that the risk of non-traumatic home accidents is higher in the apartment because the children living in the apartment spend most of their time in the home environment. The number of people in the home affects the frequency of accidents, because as the number of people in the home increases (large family), the child's attention is more distracted. It has been determined that there are more home accidents among children living in large families in our country (6,8,15,16). Baysal et al. (9) found that the number of people in the home and the frequency of home accidents showed a positive correlation. Evgin et al. (14) reported that the level of defining the risk of home accidents of the mothers in the nuclear family was found to be higher than in the large families. It is thought that the frequency of home accidents increases as the time allocated to the children in the large family decreases, the attention of the person responsible for the child is distributed to more than one person and he / she cannot watch the child adequately. For our study home accidents are more common in nuclear families. We think that this result is due to the fact that the number of children in the nuclear families in our study is over three and therefore the distraction of the mother is more. In our study, home accidents in the nuclear family were generally family-induced (neglect / carelessness), and home accidents in the large family were often child-induced (mischief/curiosity). In the nuclear families, the home accident was higher because the individuals had less experience about home accidents. As the maternal age decreases, it is known that children are at greater risk for accidents due to the mother's inexperience (17). Erdem et al.

Table 2. Parents' education and working status

Features	Number (n)	Percent (%)
Mother's educational status		
Primary School	82	24.4
Middle School	118	35.2
High School	108	32.2
University	27	8.2
Father's Education Status		
Primary School	84	25
Middle School	116	34.6
High School	112	33.4
University	23	7
Mother Working Status		
Working	15	4.4
Not working	320	95.6
Father Working Status		
Working	328	97.9
Not working	7	2.1
Mother's age (year)		
18-30	188	56.1
30 and above	147	43.9
Father's age (year)		
18-30	184	54.9
30 and above	151	45.1

reported that the majority of the mothers of children who had home accidents were under 30 years of age (11). In our study, it was determined that the children whose parents between 18-30 years of age had a increased incidence of home accidents. After the age of 30 this rate has decreased. Family accidents due to neglect and carelessness in families whose mothers are older than 30, and the accident caused by mischief and curiosity in children under the age of 30 increases significantly ($p<0.001$). These results suggest that the risk of accidents may be higher in younger parents' children due to their inexperience and ignorance. Therefore, informing young parents about home accidents has an important role in preventing accidents. As the number of children increases, it may be thought that the mother's time to devote to the child may decrease and therefore the frequency of the children's home accident may be high, but there are different results about it (16,18). In our study, as the number of children increased, the rate of home accidents, neglect and carelessness increased significantly ($p<0.001$). This may be due

to the fact that the number of children increases, the attention of the family can be easily distributed and the time spent with the children will decrease.

In many studies, it was found that families with low socio-economic status had more home accidents and parents had low knowledge about home accidents risk (14,18). Children of poor families are more risky in terms of home accidents because they do not have adequate care and support. In addition, poor families cannot sufficiently benefit from home accident prevention education and quality health services. In the majority of the families in our study (68%), the expenses of the house were higher than their incomes and thus we found that their socio-economic status was low.

Working status of parents also affects the causes of home accidents. 82% of the causes of home accidents in mothers who are not working are neglected/careless. Neglect and careless have never been identified as the cause of home accident in working mothers ($p<0.001$). The education situation is of great importance for the risk of accident. In families with low education,

Table 3. Factors affecting the causes of home accidents

	Negligence/carelessness	Mischief/curiosity	Total (n)	p
Family type				
Nuclear	227	0	227	<0.001
Large	48	60	108	
Number of children				
<3	100	0	100	<0.001
≥3	175	60	235	
Mother's age (year)				
<30	128	60	188	<0.001
≥30	147	0	147	
Working mother				
Yes	0	15	15	<0.001
No	275	45	320	
Mother's education				
Primary education	200	0	200	<0.001
High School	75	33	108	
University	0	27	27	
Father's education				
Primary education	200	0	200	<0.001
High School	75	37	112	
University	0	23	23	

the risk of home accidents is high (9,10,15,17,19). Our study was consistent with the information in the literature and the frequency of home accidents was higher in families with low levels of education. Family-related causes such as neglect / carelessness were more common in families with low levels of education and there were child-related reasons such as mischief and curiosity in families with high levels of education ($p<0.001$).

Home accidents; it can be prevented by simple arrangements to be made within the home and by training to be given to mothers (19,20). In a study investigating the effect of education on mothers to prevent childhood home accidents, the level of knowledge of mothers after education was found to be higher, and the difference between pre- and post-education was statistically significant (21). King et al. (22) conducted home visits to prevent childhood home accidents, and in the majority of participants (63%), they found an improvement in their knowledge, behavior and practice after the training. Publication of written and visual media (posters, brochures, radio, television, etc.) on the prevention of home accidents in children should be given. Thein et al. (23) reported that the media played an important role in preventing home accidents. None of the parents in our study had received training in terms of home accidents and did not find any written or visual reports of home accidents in social media environments. As a result of our study, we found that the majority of home accidents were not caused by children, due to the neglect and negligence of the parents. We thought that almost all of the home accidents can be prevented by education. Therefore we recommend training to mothers / families and caregivers to prevent home accidents about developmental characteristics of children in the 0-6 age group, risk factors for home accidents, safety measures to prevent home accidents and first aid applications.

Ethics

Ethics Committee Approval: The study was approved by the Ethics Committee (2017/41) according to the principles of the Declaration of Helsinki.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Conflict of Interest: The authors have no conflict of interest to declare.

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