MEDICAL RECORDS-International Medical Journal

Research Article



Frequency of Home Accidents of Children Between 0-6 Years and Levels of Diagnosis of Mothers' Safety Measures

0-6 Yaş Arası Çocukların Ev Kazalarının Sıklığı ve Anne Güvenlik Önlemlerinin Tanı Düzeyleri

Mehmet Yavuz Ozbey¹, Dilek Ener²

¹Kahta State Hospital, Clinic of Pediatrics, Adıyaman, Turkey ²Kahta Public Health Center, Adıyaman, Turkey

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Abstract

Aim: Children are vulnerable to home accidents and injuries due to their inability to protect themselves developmentally, and they need the protection of their parents. In the study, it was aimed to investigate the frequency of home accidents of children aged 0-6, the most common types of accidents, and the knowledge levels of mothers on Diagnosing Safety Precautions for Home Accidents.

Material and Method: The study is a cross-sectional and descriptive study and was conducted with 380 parents who applied to the pediatric outpatient clinic in December 2021. The "Scale of Diagnosing the Safety Precautions for Home Accidents of Mothers with 0-6 Age Group Children" was used in the questionnaire form. In the analysis of the relations between the variables, independent groups t-test, the One-way Anova test, the Pearson correlation test, Chi-Square test and Logistic Regression Analyze were applied.

Results: The frequency of children who had home accidents was 11.3%. The most common type of accident is falling. The mean score of the Mothers' Scale for Diagnosing Safety Measures for Home Accidents was 155.9±15.2. Identification of Safety Precautions scores are higher in mothers who graduated from college, those whose children had a home accident, and those who received first aid knowledge. The most important factors affecting the accident at home are the number of children and the caregiver.

Conclusion: Home accidents, one of the preventable risk factors, are critical health problems. Providing information about all home accidents, especially falls, should be among the priority health targets.

Keywords: Home accidents, safety measures, unwanted injuries

Öz

Amaç: Çocuklar, gelişimsel olarak kendilerini koruyamadıkları için ev kazalarına ve yaralanmalara karşı savunmasızdır ve ebeveynlerinin korumasına ihtiyaç duyarlar. Araştırmada 0-6 yaş arası çocukların ev kazalarının sıklığı, en sık görülen kaza türleri ve annelerin Ev Kazalarında Güvenlik Önlemlerini Tanılama konusundaki bilgi düzeylerinin araştırılması amaçlanmıştır.

Materyal ve Metot: Araştırma kesitsel ve tanımlayıcı tipte bir çalışma olup, Aralık 2021 tarihinde çocuk polikliniğine başvuran 380 ebebeyn ile yapılmıştır. Anket formunda Çocuklar" kullanılmıştır. Değişkenler arasındaki ilişkilerin analizinde bağımsız gruplar t-testi, One-way Anova testi, Pearson korelasyon testi, Ki-Kare testi ve Lojistik Regresyon Analizi uygulanmıştır.

Bulgular: Ev kazası geçiren çocukların sıklığı %11.3 idi. En sık görülen kaza türü düşmedir. Annelerin Ev Kazalarına Yönelik Güvenlik Önlemlerini Tanılama Ölçeği puan ortalaması 155.9±15.2'dir. Üniversite mezunu, çocuğu ev kazası geçiren ve ilkyardım bilgisi alan annelerde Güvenlik Önlemlerini Belirleme puanları daha yüksektir. Evde kazayı etkileyen en önemli faktörler çocuk sayısı ve bakıcıdır. **Sonuç:** Önlenebilir risk faktörlerinden biri olan ev kazaları kritik sağlık sorunlarıdır. Düşmeler başta olmak üzere tüm ev kazaları hakkında bilgi vermek öncelikli sağlık hedefleri arasında yer almalıdır.

Anahtar Kelimeler: Ev kazaları, güvenlik önlemleri, istenmeyen yaralanmalar

INTRODUCTION

According to the World Health Organization; Situations that cause physical and mental harm that occur suddenly and outside a person in an unplanned manner are defined as 'accidents'. Injury is defined as "physical damage resulting from the sudden exposure of the human body to amounts of energy exceeding the physiological tolerance threshold or the deficiency of one or more vital elements" (1). Injuries are among the leading causes of death and disability. All types of injuries have common root causes, socioeconomic and environmental determinants. The leading types of unintentional injuries are traffic accidents, drowning, poisoning, burns and falls (2).

Received: 08.02.2022 Accepted: 13.05.2022 Corresponding Author: Mehmet Yavuz Ozbey, Kahta State Hospital, Clinic of Pediatrics, Adıyaman, Turkey E-mail: mehmetyavuzozbey@yahoo.com Unwanted injuries experienced by children is also an important global health problem (3,4). Home injuries, which have an important place in accidents, can be defined as events that occur in a house (children's room, living room, kitchen, bathroom, etc.) or in an environment that belongs to it (garden, garage, etc.) (5).

Home accidents can occur in all age groups, but children and the elderly are more susceptible to these accidents. Children are not at the mental and physical level to protect themselves from accidents. Children aged 0-6 have a sense of curiosity because of their desire to explore their world. They cannot evaluate actions that may lead to injury due to their inability to protect themselves developmentally (6). Children are particularly vulnerable to injury and need special attention to avoid injury. Therefore, it is the responsibility of adults to take protective measures to prevent injuries and to provide a safe living space (7). Injuries and violence are a major cause of death and burden of disease in all countries; however, it is not evenly distributed among or within countries. Some people are more vulnerable than others, depending on the circumstances in which they were born, raised, worked, lived and aged. Broad societal determinants of health, such as inadequate adult supervision of children, poverty; Unsafe housing, easy access to alcohol, drugs, firearms, knives and pesticides are factors that increase the risk of accidents for children (8).

Home accidents are preventable events. Among the causes of home accidents, the situation in the home is as important as individual mistakes. The impact of accidents on children's health is greater than is thought. A child who has a home accident loses his/her balance in terms of psychological, physical and social aspects. More can result in accidents, illness, disability and even death. Exposure to any trauma, especially in childhood, can increase the risk of mental illness and suicide; smoking, alcohol and substance abuse; chronic diseases such as heart disease, diabetes, cancer and enfections (9). Health problems such as respiratory tract diseases and otitis media may develop due to mechanical obstruction as a result of home accidents (10). For these reasons, preventing injury and violence, including breaking intergenerational cycles of violence, contributes to significant health, social and economic gains. Analysis of the costs and benefits of a variety of selected injury and violence prevention measures shows that investments are made in measures that deliver great societal benefit. For example, regarding child injury prevention, it was found that every \$1 invested in smoke detectors saves \$65, and an investment in child seats and bicycle helmets saves \$29. The social benefits of injuries prevented by home modifications to prevent falls are estimated to be at least six times the cost of the intervention (9).

In the WHO European Region, approximately 42,000 children and young people under the age of 20 die each year as a result of unintentional injuries (1). According to statistics, 72 children die every day in Europe due to home

accidents. In the UK alone, 30% of deaths occur as a result of unwanted injuries at home (7). It has been reported that home accidents constitute approximately 18-25% of all accidents in childhood in Turkey, and it is the second most common reason for referral to emergency services after traffic accidents (11).

Inadequate knowledge, attitudes and behaviors of parents about children's safety, problems under the supervision of children, and lack of regulations to ensure child safety in the home are among the factors of in-home accidents (12). Home injuries, easy arrangements that can be made at home, and regular training for mothers who spend a lot of time with their children can be prevented by raising their awareness (13).

Adults are responsible for taking protective measures and providing safe living spaces, as children are particularly vulnerable to injury and need special attention to avoid injury. It should be especially taken into consideration when providing education to mothers about protection from home accidents, and the developmental characteristics of their children in this period should be explained. Knowing, predicting, and perceiving the accident risks of individuals responsible for child care, primarily mothers, and their awareness of being protected from accidents are important in terms of the accident risks that children may encounter (6). In the study, it was aimed to investigate the frequency of home accidents, and the knowledge levels of mothers on Diagnosing Safety Precautions for Home Accidents.

MATERIAL AND METHOD

The research is a cross-sectional and descriptive study. The research was carried out in Kahta district of Adıyaman province in November-December 2021. The universe of the study consisted of parents with children aged 0-6 years who applied to the outpatient clinic of Kahta State Hospital. 380 parents were included in the study with a 95% confidence level and 0.05 margin of error. A questionnaire form, which is a data collection tool, was used, and the data were collected through face-to-face interviews. Consent form was obtained from the participants.

Survey form; sociodemographic information and "Scale for Diagnosing Safety Measures for Home Accidents of Mothers with 0-6 Age Group Children". The sociodemographic information form created by the researchers consists of 21 questions. "Scale for Diagnosing Safety Measures for Home Accidents of Mothers with 0-6 Age Group Children" is a five-point Likert-type scale consisting of 40 items. The Cronbach Alpha coefficient of the scale, which was developed by Çınar et al. (2003) and whose validityreliability studies were conducted, was reported as 0.82. With this scale, the safety measures taken by the mothers to protect the child from falling, burning, poisoning and suffocation, which are the most common home accidents in the home environment, were evaluated. While the answer always gets 5 points, mostly 4 points, sometimes 3 points, rarely 2 points, never 1 point in items with positive statements, the scoring is reversed in 6, 9, 23, 26, 30 and 40 items with negative statements. The minimum score of the scale is 40, and the maximum score is 200. High scores indicate that the mother takes precautions to protect her child from home accidents at a higher level (14).

Statistical analysis

Descriptive data are shown as Descriptive data are shown as frequency, percentage, mean/standard deviation. Quantitative data were analyzed with the Kolmogorov-Smirnov test, and it was determined data were distributed by the normal distribution. In the analysis of the relations between the variables, t-test in independent groups, the Oneway Anova test, the Pearson correlation test and Logistic Regression Analyze were applied. The Chi-Square test was used to compare qualitative data. A p-value of <0.05 was considered significant for statistical significance.

Permission for the study, dated 16/11/2021 and numbered 2021/09-29, was obtained from the Non-Invasive Ethics Committee of Adıyaman University Faculty of Medicine.

RESULTS

380 parents participated in the study, 32.6% of them were mothers, 66.1% were fathers and 1.3% were caregivers. The mean age of mothers was 32.2±4.4, and fathers were 35.6±6.0. The descriptive features of the research group are shown in Table 1.

According to Table 1, 28.4% of the mothers are college/ university graduates and 41.1% of the fathers are high school graduates. 28.2% of mothers are working. While 32.1% of the families have 2 children, 55.8% of the children are between 2-5 years old. 45.8% of the families participating in the research live in an apartment. The primary caregivers of children are 65.5% mothers, 18.4% relatives and 12.9% caregivers. Table 2 presents the descriptive features of home accidents experienced by children.

According to Table 2, the frequency of children who had a home accident is 11.3%. The average number of accidents for those who had a home accident is 2.0. It was most frequently spent at home (43.8%) in the living room and next to non-mother caregivers (62.8%). The most common type of accident (37.4%) is falling by slipping or tripping over household items. As a result of these accidents, 13 children received inpatient treatment and received treatment for an average of 5 days. Table 3 shows the distribution of home accidents by age of children.

According to Table 3, the most common home accident in the 1-year-old group is falling from a height, the most common home accident in the 2-3 and 5-year-olds is falling by slipping or tripping, the most common home accident in the 4-year-old group is falling by tripping or slipping, and hitting things. The most common home accident in the 6-year-old group cuts. While the average age of incidence in falling from a height, tripping and falling, hitting objects, electric shock, and burning with hot water varies between 2 and 3 years, it is between 4 and 6 years old for the danger of drowning, falling of large objects and incisions. Table 4 shows the child's home accident status according to some characteristics of the family.

Table 1. Descriptive characteristics o	f the research grou	р
n=380	Number	%
The people interviewed		
Mother	125	32.9
Father	250	65.8
Caregiver	5	1.3
Mother's educational status		
Illiterate	3	0.8
Literate	8	2.1
Primary school graduate	102	26.8
secondary school graduate	54	14.2
High school graduate	105	27.6
College/University	108	28.4
Father's educational status		
Illiterate	1	0.3
Primary school graduate	16	4.2
Secondary school graduate	57	15
High school graduate	156	41.1
College/University	150	39.5
Number of working mothers	107	28.2
Number of working fathers	353	92.9
Perception of income status		
Good	123	32.4
Middle	227	59.7
Bad	28	7.4
Number of children		
1	112	29.5
2	122	32.1
3	91	23.9
4	46	12.1
5 and above	9	2.4
Age range of children		
0-1.9	45	7.7
2-4.9	328	55.8
5-6	215	36.6
Family type		
Nuclear family	219	57.6
Large family	161	42.4
Number of individuals living in the hou	ise	
≤5	215	56.6
6-9	155	40.8
≥10	10	2.8
Type of house you live in		
Apartment	174	45.8
Detached house with garden	205	53.9
Child caregiver		
Mother	249	65.5
Caregiver	49	12.9
Relative	70	18.4
Nursery	10	2.6

The number of those who received any information about first aid before was 49 (12.9%). Those who received information from the health personnel were 22.5%, and those who received information from the school were 77.5%. The number of people who stated that there were times when they left their child alone at home was 11 (2.9%).

Feature Sayı % Children who had a home accident 43 11.3 Number of home accidents (n=43) 1 1 time 9 21.0 Two times 10 23.3 Three times 17 39.5 4 times 5 11.6 5 times 1 2.3 6 times 1 2.3 Places of Home Accidents (n=43) 2.3 Places of Home Accidents (n=43) 2.3 Children's room / Bedroom 21 26.2 Stairs, Garden 12 15.0 Kitchen 8 10.0 Bath 4 5.0 Person next to the child at the time of the accident (n=43) 30.2 Other (Father, Grandfather, Grandmother etc.) 27 62.8 Hospitalized Due to Home Accident (n=43) 13 30.2 Type of accident 20 22.0 Burning into household items 34 37.4 Falling by slipping or tripping on household items 34 3.3	Table 2. Descriptive characteristics of children's h	ome accid	ents
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Items such as irons/TVs falling on it22.2Cutting tool injury22.2Poisoning00.0	Electric shock	3	3.3
Cutting tool injury22.2Poisoning00.0	Danger of drowning	3	3.3
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5	Cutting tool injury	2	2.2
Iron burn 0 0.0	Poisoning	0	0.0
	Iron burn	0	0.0

Table 3. Types of home accidents by age of children

The number of mothers participating in the study is 125. The scores of 125 mothers in the study group from the "Scale for Diagnosing Safety Precautions for Home Accidents of Mothers with 0-6 Age Group Children" ranged between 128-196. The mean score of the scale is 155.9 ± 15.2 . The difference between the scores the mothers got from the scale in terms of different variables is shown in Table 4.

According to Table 4, the scale scores of the mothers who graduated from college or university compared to those from primary school graduate mothers, mothers whose children had a home accident compared to those who did not, and the mothers who received information about first aid were significantly higher than those who did not, the scale scores of diagnosing safety measures for home accidents were significantly higher.

When the correlation between some features and the scale score is examined with the Pearson correlation test; there is a significant inverse correlation between the scale score and the number of children in the family and the number of people living at home (-0.21 and -0.24, respectively). Mothers with many children have lower scores on the scale for diagnosing safety measures for home accidents. Mothers with many people living in their homes have lower scores for diagnosing safety measures for home accidents.

When the child's home accident status according to some characteristics of the family is examined by Chi-square analysis, the incidence of accidents is significantly higher in mothers over 30 years old, in mothers who do not work, and in cases where the primary caregivers are close relatives. No significant relationship was found in terms of accident incidence according to the education level of the mother or father, family type, housing type and economic status. Regression analysis was performed to determine the factors affecting the occurrence of home accidents among these factors, and the results are shown in Table 5.

In the logistic regression analysis, the factors affecting the accident at home are the number of children and the caregiver. As the number of children increases, the risk of having an accident increases 1.64 times. Children cared for by relatives have a 2.99-fold increased risk compared to those cared for by their mother.

Table 5. Types	of nome accide	into by age of c	muren						
Age	Falling from height	Sliding and falling	Striking objects	Electric shock	Drowning	Danger Burning with hot water food	Falling of large objects	Incision	Total
1	6	1	4	-	-	1	-	-	12
2	9	14	4	1	1	3	-	-	32
3	4	11	5	2	1	2	-	-	25
4	1	4	4	-	-	-	-	-	9
5	-	3	2	-	1	1	1	-	8
6	-	1	1	-	-	-	1	2	5
Total	20	34	20	3	3	7	2	2	91*
Mean Age	2.5	3.0	3.1	2.7	4.0	2.6	6.0	6.0	3.4
* 79% of 43 ch	ildren had more	than one accid	ent						

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Table 4. The difference between the scores of the mothers in terms of different variables					
	n	Mean.± SD	t/F	р*	
Age group					
<30	45	155.8±14.1	0.05	0.959	
≥30	80	155.9±15.8			
Mother's Education					
Primary / secondary education*	49	151.6±13.3*	4.54	0.013	
High school	26	155.1±15.8			
College/University*	50	160.5±15.5*			
Mother's working status					
Working	48	160.2±15.7	2.55	0.120	
Not working	77	153.2±14.3			
Income status					
Good	44	157.8±15.9	0.54	0.582	
Middle	68	155.1±14.9			
Bad	12	153.7±15.4			
Number of children					
1	44	158.1±13.8	1.67	0.178	
2	49	156.9±15.5			
3	22	152.6±17.5			
4	10	148.0±11.3			
Family type					
Nuclear family	71	158.1±14.6	1.91	0.058	
Large	54	152.9±15.5			
Housing type					
Apartment	65	158.4±15.7	1.96	0.053	
Garden-detached house	59	153.1±14.3			
Children's home accidents					
Had a home accident	19	163.4±17.7	2.38	0.019	
No home accident	106	154.5±14.4			
Getting information about first aid					
Informed	19	166.2±13.7	3.55	0.001	
Not informed	105	153.6±14.2			
t-test in independent groups, the One-way Apoya test *Logistic Regres	ssion Analyza				

t-test in independent groups. the One-way Anova test *Logistic Regression Analyze

* the scale scores of the graduated from university significantly higher than the primary school

Table 5. Factors affecting the situation of having a home accident							
	В	S.E.	p*	0.R	95% C.I.for O.R		
Constant	-3.10	1.330	0.020	0.05			
Maternal age	0.03	0.038	0.481	1.03	0.93-1.10		
Mother's working status	-0.95	0.556	0.089	0.39	0.19-2.00		
Number of children	0.50	0.200	0.013	1.64	1.19-2.98		
Child caregiver (Mother is reference	e)		0.046				
Caregiver	-0.15	0.772	0.842	0.86	0.10-2.53		
Close relative	1.10	0.501	0.029	2.99	1.31-10.32		
Nursery	0.65	0.979	0.504	1.92	0.37-29.51		
*Logistic Regression Analyze							

DISCUSSION

The first six years of human life are considered as a period that children are very active. This period is important for occurring home accidents and related injuries. In our study, the frequency of children who had home accidents was 11.3%. In studies conducted in Turkey, the rates of home accidents reported by mothers vary between 15.5% and 70.0%, respectively (12,13,15-20).

In our study, home accidents occurred most frequently (43.8%) in the living room. Similarly, in other studies, the highest number of accidents occurred in the living room and the kitchen (17,21). The reason why home accidents are most common in the living room, living room or kitchen may be because families spend most of their time there. The living room is a resting place for parents and at the same time a play and leisure area for children. As used for various activities, it becomes an accident area for children (22).

The most common type of accident (37.4%) is falling by slipping or tripping over household items. Similarly, in other studies, the most common type of accident was found to be falling (13,16-19,23-25). When the distribution of home accidents according to the age of the children is examined, the most frequent falls are falling from a height in the 1 age group, falling by tripping or slipping in the 2, 3 and 5 age groups, falling and hitting objects in the 4 age group, and cuts in the 6 age group. The average age of incidence for fall, shock, electric shock and burn accidents is between 2 and 3 years, while the average age for drowning hazard, the large object falls and cuts is between 4 and 6 years old.

When the factors affecting the child's accident at home according to some characteristics of the family were examined, it was determined that the number of children and the caregiver were factors. This finding is supported by correlation analysis; there is a significant inverse correlation between the scale score and the number of children in the family and the number of people living at home (-0.21 and -0.24, respectively). Mothers with many children have lower scores on the scale for diagnosing safety measures for home accidents. Mothers with many people living in their homes have lower scores for diagnosing safety measures for home accidents. Similarly, in another study, the frequency of home accidents was lower in children living in a nuclear family than in those living in an extended family and the scale scores of those with only one child were found to be higher (22). No significant relationship was found in terms of accident incidence according to mother's age, employment status, education level of mother or father, family type, housing type and economic status. Similarly, studies are showing that accident frequency is not affected despite the increase in maternal education (6,19,26). In some studies, the accident frequency of those whose mothers' education level was "university" was found to be higher than those whose mothers were in "primary school and below" (19,27). This situation may make us think that the training programs are not sufficient in terms of accidents and the importance of home accidents.

In our study, the mean score of 125 mothers in the study group from the "Scale for Diagnosing Safety Precautions for Home Accidents of Mothers with 0-6 Age Group Children" was at a moderate level (155.9 ± 15.2). While this score is higher (163.4 ± 17.7) in those who have had a home accident, it is lower (154.5 ± 14.4) in those who have not. Similarly, in the study of Özmen et al., mothers whose children had an accident in the last year were found to have higher scores on the scale, and it was reported that they might have scored higher on the scale due to their experiences as a result of these accidents (5). Erdem et al. In the study of Karatepe and Akis, the mean score was both higher and, unlike our study, the mean score was found to be higher in those who did not have a home accident (6,19). Similar to our study, Nadeeya and her friends (2016) state that mothers have moderate knowledge and perception scores regarding home injuries and safety precautions (31).

In our study, when the difference between the scores of the mothers in terms of different variables was examined, the scale score of the mothers who graduated from college or university, compared to the mothers who graduated from primary school, the scale scores of the mothers whose children had a home accident were higher than those who did not, and the scale scores of the mothers who received information about first aid were significantly higher than those who did not. In the study of Erdem et al., Rezapur-Shahkolai et al. (2017) found a statistically significant relationship between mothers' knowledge of safety precautions and the severity of children's injuries in their cross-sectional study (32). Alrimawi et al. (2019) state that many environmental factors such as low economic status, the physical environment of the home, social environment (for example, fatalism) and political environment affect mothers' home accident prevention practices (33). In other studies, when the total score values of the mother's education levels are examined, it is stated that the probability of an accident decreases as the mother's education level increases (13,17,25,34). In some studies, it has been determined that the frequency of children having home accidents does not change according to the education level of the mothers (21,35).

There was no significant difference in scale scores according to mother's age, employment status, income status, number of children, family and housing type. In our study, while the frequency of accidents was higher in mothers over the age of 30, no significant difference was found in terms of scale scores according to age. In other studies, the mean score of the scale was found to be higher in mothers under the age of 30 (19,28). On the other hand, in some studies, the scale scores of middle-aged mothers were found to be higher than others (5,29,30). In our study, the scale score also decreases as the number of children increases. This shows that the awareness of the mothers as a result of the experiences they have with their children is more important than the age and number of children. In other studies, no statistically significant difference was found between family type, income status, type of house, number of children living in the house, number of individuals living in the house, number of rooms in the house, child age groups, and mothers' total mean scores (17,25).

CONCLUSION

In our study, the frequency of children having home accidents is 11.3% and the most common is falling. Mothers' knowledge of Diagnosing Safety Precautions for Home Accidents is moderate. The most important factors affecting the accident at home are the number of children and the caregiver. Considering these factors, home accidents should be included in the agenda of health issues as a critical public health problem. Home accidents are preventable situations. Considering that children spend a large portion of their time in the living room, it is also necessary to identify the risk factors involved in this area and to take measures against them to reduce home accident based injuries. Mothers and all other caregivers

are open to any information that may be given. This is an opportunity to raise awareness about home accidents, which are preventable health concerns. Informing mothers about all home accidents, especially falls, through health, educational institutions and communication channels should be among the priority health targets.

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