

HOME ACCIDENTS AND MOTHERS MEASUREMENTS IN PRESCHOOL CHILDREN

OKUL ÖNCESİ ÇOCUKLARDA EV KAZALARI VE ANNELERİN ALDIKLARI ÖNLEMLER

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Özet

Bu çalışma çocukların yaşadığı ev kazalarını, ilişkili faktörleri ve ebeveynlerin kazalara yönelik aldıkları önlemleri belirlemek amacıyla gerçekleştirilmiştir. Çalışma İzmir'de ki dört devlet anaokulunda gerçekleştirilmiştir. Çalışma Kapsamındaki okullarda toplam 510 öğrenci olup, örnekleme 447 öğrenci alınmıştır. Çalışmada Ebeveyn bilgilendirme formu ve 0-6 Yaş Çocuk Annelerinin Ev Kazalarına Yönelik Aldıkları Önlemleri Tanılama Ölçeği kullanılmıştır. Çocukların 226'sı (%50.6) kız, 221'i (% 49.4)' erkektir. Çalışmaya katılan çocukların yaş ortalaması 5,1 + 0,8'dir. Çocukların % 36,5'inin (n= 163) kaza geçirdiği rapor edilmiştir. Annelerin ölçek puan ortalamaları 90,7+ 46,1 olarak saptanmıştır. Ölçekten en yüksek puanı dokuzuncu, 30. ve altıncı maddeler almıştır. Anne ve baba eğitim düzeyine göre çocukların kaza geçirme durumları arasında anlamlı fark olduğu belirlenmiştir (p=.050, p=.002). Annelerin yaş gruplarına göre ölçek puan ortalamaları arasında anlamlı bir fark saptanmamıştır (p=.430). Çocuklar yönelik güvenli bir ortamın yaratılması amacıyla okul öncesi çocuğu olan ebeveynlerin kazalardan korunma ve ilk yardım konusunda eğitilmeleri önerilir. (Anatol J Clin Investig 2010;4(1):15-21).

Abstract

This study aims to specify incidents of home accidents in children and relevant factors and security measures taken by parents against home accidents. The study was carried out in four government pre-schools in İzmir, Turkey. We managed to get through the study with only 447 students out of 510 totals (%87,6) as other students dropped out of the kindergartens for several reasons. Parental Information Form and Definitive Scale for Measurements Taken by Mothers Against Home Accidents for 0-6 Years Old Children were used in this study. 226 girls (50,6%) and 221 boys (49,4%), participated in the study with an average age of about 5,1 ± 0,8. 36,5% of children (n=163) are reported to have had an accident. Scale mean scores of mothers were determined as 90,7 + 46.1. Ninth, 30th and sixth items have received the highest score. There appears to be a meaningful relationship between mothers' and fathers' educational status and incidents of accidents (p=.050, p=.002). There wasn't statistically relationship among mothers age group (p=.430). It is highly suggested that parents of preschool children be educated on security measures and first aid in order to ensure a safe environment for children. (Anatol J Clin Investig 2010;4(1):15-21).

Introduction

Accidents, in developing countries and developed countries alike, are one of the leading causes of infant death and it is imperative to accept them as a public health problem since they frequently occur in early childhood and cause death and vital injuries. Moreover, accident-related deaths are reported to be four times likelier than the others [1-2]. World Health Organization defines accident as "an unexpected and an unintended event causing physical and mental injuries" [1-2].

Accidents and Children: Children, being less aware of danger, are one of the most vulnerable groups, which can be explicated with the ongoing development of neuromotor, cognitive, physical, socio-psychological and sensory skills. Having

deficiencies in motor systems, comparatively unbalanced gait, slowness in reactions, limited visual field, underdeveloped skills of locating voices, inability to perceive two stimuli concurrently, hyperactivity, inclination to copy their parents' behaviors, curiosity towards learning new things, children inevitably become the primary victims of accidents [1].

According to Piaget's Theory of Cognitive Development, children are unable to protect themselves from the accidents in preoperational symbolic stage (from ages 2 to 4) [1-2]. Children may happen to have an accident while trying to copy behaviors of their parents and/or people they live with. In preoperational sensory period from ages 4 to 7, children may avoid behaviors

that have resulted in accidents earlier but they are still considered to be under risk because they seem to be unable to transfer their past experiences to changing occasions. Besides, children may also have accidents simply because they can not foresee the results of their actions or they can not figure out cause and effect relationships [1-5].

According to the results of epidemiologic studies, accidents usually occur to children aged between 1 to 5 years old [1, 6-9]. Mothers' age, educational and socioeconomic status, the numbers of people the child lives with at home and environmental factors have been found to be influential in the occurrence of injuries [1, 10-12]. Scholer et al. (1997) reported that 0-4 years old children of young mothers who are undereducated and have more than one child are more likely to die in accidents [2]. In various studies, it has been noted that accidents may occur in spring and summer months more frequently and boys are under much greater risk [1-3,6-12].

Childhood accidents are traffic accidents and home accidents which are the leading causes of childhood injuries such as drowning, falls, burns, foreign object aspirations, poisoning. Because 0-6 years old children tend to spend much time at home than any other place, they may be exposed to numerous hazards, which usually take place in kitchens, living rooms and bathrooms [10,13-15].

Accidents all over the world are one of the leading health problems. Therefore, various programs have been developed to prevent accidents. For protection from accidents, primarily to protect individuals from accidents is necessary to keep. The most important way to protect against accidents in the primary prevention is to educate society. Especially parents and teachers to be educated about prevention of accidents and first aid will reduce accidents [1-2]. Ertem et al (2001) were identified that families in the rural region was inadequate level of knowledge about home accident and home environment in terms of the accidents were found to be unsafe. Education that prepared for protection from accidents carried out by mostly nurses [12]. Corrarino, Walsh & Nadel (2001) found that education about accident given by public health nurses was successfully and families increase their security measures after the stated education [16].

This study aims to specify incidents of home accidents in children and relevant factors and

security measures taken by parents against home accidents.

Materials and Methods

Study Design

A cross-sectional screening study was carried out in 2006 with a sample of preschool children at four public kindergartens in İzmir, Turkey.

Participants and setting

Schools, which provided pre-school education to 4-6 year old children, were grouped according to their socio-economics levels and randomly sampled then. Schools A (n=50) and D (n=90) were for medium-high and Schools B (n=50) and C (n=320) for medium-low socio-economics levels. Total number of students sampled added up to 510. Authors except those students, either dropped the school or cut the classes for different reasons during the study, reached the rest 447 (87.6%). There was an equal distribution of boys and girls (221:226)

Data Collection Tool

1. Parental Information Form comprises 8 questions, which address to the likelihood of accidents as well as demographic inquiry and it was prepared by the researchers in accordance with the recent literature.

2. Definitive Scale for Measurements Taken by Mothers Against Home Accidents for 0-6 Years Old Children was developed by Cinar in 1999 in order to identify the attitudes of mothers who have 0-6 years old children toward measurements against home accidents. A five-point Likert Scale is used in the scale which consists of 40 items including 34 positive and 6 negative statements each of which is scored from 1 to 5, 5 (always), 4 (often), 3 (sometimes), 2 (rarely), 1 (never). Statements number 6, 9, 23, 26, 30 and 40 are the negative ones and their scores are calculated inversely from the present values based on the same scale.

The minimum score is 40 and the maximum is 200, which shows the maximum level of measures taken by mothers in order to protect children from home accidents. The respondents are supposed to complete the scale between 15-20 minutes. The Cronbach alpha internal consistency coefficient is 0.75.

"Approval forms", "parental information forms" and "definitive scales for measurements taken by mothers against home accidents for 0-6 years old children" were sent to parents via kindergarten managements in order to ask for parental permission and inform the parents about the content of the study.

Data Analysis

The data were evaluated with SPSS 11.0 statistic software. Descriptive data were analyzed using percentage, arithmetic average and chi-square test.

Comparative statistics were evaluated using chi-square test, variance analysis and Mann-Whitney U test. Level of statistical significance was accepted $p < .05$.

Results

Demographic status

Out of 510 in total, 447 children (87.6%), 226 girls (50.6%) and 221 boys (49.4%), participated in the study with an average age of about 5.1 ± 0.8 . There were 93 in age 4 group (20.8%), 188 in (42.1%) and 166 in age 6 group (37.1%). 39.6% of mothers ($n=177$) graduated from high school, 38.7% ($n=173$) from college and 21.7% ($n=97$) from primary school. On the other hand, 46.5% ($n=208$) of fathers were college graduates, 35.3% ($n=158$) high school and 18.1% ($n=81$) primary school.

36.5% of children ($n=163$) are reported to have had an accident, while 63.5% of children ($n=284$) are found not to have any. Among those who had an accident, 38.5% ($n=87$) are boys and 34.4% ($n=76$) are girls. There wasn't a meaningful relationship found between children's sex and incidents of accidents ($X^2 = .813$ $p = .367$). 33 children in age 4 group (35.5%), 71 children in age 5 group (37.8%) and 59 children in age 6 group (35.5%) are found to have had an accident. There isn't a meaningful relationship between children's ages and incidents of accidents ($X^2 = .237$ $p = .888$).

While 40.2% of children whose mothers are primary school graduates are noted to have had an accident, 29.5% of children whose mothers have university degrees are told to have been involved in an accident. There appears to be a meaningful relationship between mothers' educational status and incidents of accidents ($p = .050$).

While 53.1% of children whose fathers are primary school graduates are found to have been involved in an accident, 34.1% of children whose fathers have university degrees are told to have had an accident. As seen in table 3, a meaningful relationship between fathers' educational status and incidents of accidents has been observed.

Incidents of accidents in children weren't considered to be related to mother's age, father's age, children's birth order and medical history.

28% of children had a history of fall, which is followed by burns (7.6%). 3.2% of all children ($n=14$) have been hospitalized for accident-related reasons, 3.7% ($n=8$) of whom are girls and 2.7% ($n=6$) of whom are boys. There couldn't be found a meaningful relationship between children's sex and accident-related hospitalization ($X^2 = .376$ $p = .540$). Four children in age 4 group (4.3%), 3 children in age 5 group (1.6%) and 7 children in age 6 group (4.3%) are reported to have been hospitalized due to accident-related reasons. There isn't a meaningful relationship between children's ages and incidents of hospitalization ($X^2 = 2.515$ $p = .284$).

Incidents of hospitalization are compared to mother's age and educational status, father's age and educational status, children's birth order and medical history and no meaningful relation is revealed. 3.8% ($n=17$) of children (3 children in age 4 group, 7 children in age 5 group and 7 children in age 6 group) are reported to have accidents quite often, 96.2% ($n=430$) of children are not. There is no meaningful relationship between children's ages and frequent occurrence of hospitalization ($X^2 = .166$ $p = .921$). 4.9% ($n=11$) of boys and 2.7% ($n=6$) of girls are noted to have been involved in accidents frequently and no meaningful relationship between children's sex and frequent occurrence of hospitalization could be found ($X^2 = 1.415$ $p = .234$). Moreover, no meaningful relation is reported between frequent occurrence of hospitalization and mother's age and educational status, father's age and educational status, children's birth order and medical history.

Whereas mothers in age 23-27 group acquired $X=88.1$ in total, those in 38-47 group received $X=98.1$ in total. In the light of the scores acquired by mothers, it is evident that as the mothers' age rises up, measures against home accidents increase in number accordingly.

The scores of mothers were compared to mother's age and educational status, father's age and educational status, children's birth order and medical history and no particular relationship is noted ($p > .05$).

Scale mean scores of mothers were 90.7 ± 46.1 and mothers' score were found inadequate. The highest scoring items from the scale were nine, thirty, six, forty and twenty-three respectively.

Mothers whose children are involved in accidents quite often received $X=100.9$ in total, on the other hand, those whose children don't have accidents so often acquired $X=90.3$ in total,

which depicts that the former are more conscientious about the measures against home accidents than the latter.

34.9% of the mothers who participated in the study are found to have taken first aid training; however, 65.1% of all mothers simply have not.

There wasn't significantly difference between mothers' scores who received first aid training and not received first aid training.

21.6% of primary school graduate mothers (n=21) are noted to have taken first aid training, while 46.8% of mothers with a university degree stated that they have. It appears to be a meaningful relationship between first aid training and mothers' educational status ($p=.000$). The analysis of the study data has illustrated no other variables that may influence first aid training of mothers.

Discussion

Majority of children participating in the study were reported to haven't had an accident, it was determined that the accident was more common in boys but no statistically significant difference was found between sex and accident frequency. Unlike this study, issues related to the frequency of accidents in other studies of boys from the girls were observed to be significantly different. It is thought the region's and sample characteristics affect not to statistically significant difference was found the rate of accidents by the gender [1-2,6,8-10,12].

In our study, there was a meaningful relationship between mothers' educational status and incidents of accidents ($p=.050$) (Table 1). The higher education levels of the mothers of children caused to decrease accident frequency. Studies have shown that mothers' educational status certainly have an effect on the occurrences of accident-related injuries [1, 10-12]. An interesting finding might be the meaningful relationship between fathers' educational status and incidents of accidents ($p=.002$) (Table 1). This study results show that parents' education level decreases, the frequency of home accidents was found to increase. This is believed to entail the cultural characteristics of Turkey and patriarchal family structure.

In our study, most common home accidents were found to be burn (Table 2). 3.2% of all children (n=14) have been hospitalized for accident-related reasons and 3.8% of all children (n=17) are reported to have been involved in the accidents frequently. A statistical variable hasn't been observed to explain the phenomenon, which may well be related to the relatively small numbers of children who have been hospitalized

for accident-related injuries, or who have had accidents quite often.

There is no meaningful difference between the incidents of accidents in children and mothers' age, which has been stressed as an important factor in the recent literature[1-2, 10-11], and which is supported by the fact that as the mothers' age rises up, the amount and range of measures against home accidents increase in number accordingly (Table 3). Because as age of mother increased, knowledge and experience of mothers about home accidents are increasing.

Scale general mean scores of mothers were found to be lower (Table 4). A high mean score from the scale which shows the maximum level of measures taken by mothers in order to protect children from home accidents. Our findings show that measured taken by mothers to reduce home accident was not enough (Table 4). It is caused by insufficient levels of parental knowledge and importance about home accident and measures [10-11].

The average score for mothers whose children are involved in accidents quite often is comparatively much higher than those whose children don't have accidents so often. No statistically significant difference was found according to the accident frequency ($p=.051$) (Table 5). It is considered as a cause of no differences between mean scores of mothers that home accidents causing minor injuries in the children, and the mothers did not need to take further measures.

There wasn't significantly difference between mothers' scores who received first aid training and not received first aid training ($p=.146$) (Table 6). Studies have shown that accidents in children of trained mothers were found to decrease the frequency of accidents [17-20]. Findings of these studies do not comply with our research results. Studies results as incompatible because of the lack of educational content is intended or not having the appropriate for groups.

In this study, It appears to be a meaningful relationship between first aid training and mothers' educational status ($p=.000$) (Table 7). the rate of receiving first aid training has increased with the higher the mother education level (Table 7). It is explain that the higher the education level of mothers are better defined risk about home accident and need more information to eliminate the risk. Therefore, more mothers who have high education level are receiving first aid training [1,5,10,12].

In brief, results of our study have shown that one third of the preschool children have had accidents, young mothers are seemingly insufficient in maintaining measures against home accidents, and fathers' educational status has an effect upon the occurrence of accidents. It is highly suggested that,

- Parents of preschool children are educated on security measures and first

aid in order to ensure a safe environment for children.

- Planning program that improves the parents' perception of accident risk
- The most common accident is recommended to give priority to training.
- Health personnel to make home visits, it is recommended to give suggestions for home arrangements and home accidents.
- It is recommended to work again in a larger study sample.

Table 1. Incidents of Accidents in Children in Comparison to Mothers' and Fathers' Educational Status.

	Accident				Total	
	Yes		No		n	%
	n	%	n	%	n	%
Mothers' Education						
Primary	39	40.2	58	59.8	97	100.0
High school	73	41.2	104	58.8	177	100.0
University	51	29.5	122	70.5	173	100.0
Total	163	36.5	284	63.5	447	100.0
	$X^2 = 5.974$		$p = .050$			
Fathers' Education						
Primary	43	53.1	38	46.9	81	100.0
High school	49	31.0	109	69.0	158	100.0
University	71	34.1	137	65.9	208	100.0
Total	163	36.5	284	63.5	447	100.0
	$X^2 = 12.174$		$p = .002$			

Table 2. Incidents of Accidents Types in Children

	Fall		Burn		Poisoned		Choked		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	125	28.0	34	7.6	12	2.7	4	0.9	163	36.5
No	322	72.0	413	92.4	435	97.3	443	99.1	284	63.5
Total	447	100.0	447	100.0	447	100.0	447	100.0	447	100.0

Table 3. Average Score of the Definitive Scale for Measurements Taken by Mothers Against Home Accidents for 0-6 Years Old Children in Comparison to Mothers' Age.

Mother's Age	Scale Point		f	p
	n	$X \pm SD$		
23-27 Age	73	88.1 \pm 46.4	.922	.430
28-32 Age	178	91.6 \pm 47.5		
33-37 Age	129	87.2 \pm 41.7		
*38-47Age	67	98.1 \pm 49.8		
Total	447	90.7 \pm 46.1		

*The numbers are insufficient for the analysis of the age group 43-47 in 43-47 years and 38-42 age groups were combined.

Table 4. Average Score of The Definitive Scale for Measurements Taken by Mothers Against Home Accidents for 0-6 Years Old Children and With The Highest Mean Scores of The Five Items.

	n	X	SD	Min	Max
Average Score	447	90.7	46.1	40	200
Items				X	SD
Item 6. Leave lid open and plugged in my washing machine do				4.04	1.17
Item 9. Hot food and drinks that put the child to place easily accessible				4.71	0.91
Item 23. My child's pacifier or the consideration of the safety pin with beads on the clothes I wear				3.32	1.60
Item 30. Empty plastic boxes and bags of unused leave in the middle do				4.42	1.12
Item 40. My child has an accident do I punish him.				3.64	1.69

Table 5. Average Score of the Definitive Scale for Measurements Taken by Mothers Against Home Accidents for 0-6 Years Old Children in Comparison to Frequency of Occurrence of Accidents.

Frequent accident	Scale for Measurements Taken by Mothers Against Home Accidents Point Average	
	n	X ±SD
Frequent accident	17	100.9 ± 43.9
Not Frequent accident	430	90.3 ± 46.2
Total	447	90.7 ± 46.1

MWU= 2637.0 p=.051

Table 6. Average Score of the Definitive Scale for Measurements Taken by Mothers Against Home Accidents for 0-6 Years Old Children in Comparison to According to the status of mothers receiving first aid training

	Scale for Measurements Taken by Mothers Against Home Accidents Point Average	
	n	X ±SD
Received first aid training	156	95.1 ± 48.4
Not received first aid training	291	88.4 ± 44.5
	t= 1.455	p= .146

Table 7. First Aid Training In Comparison To Mothers' Educational Status.

First Aid Training	Mother Education						Total	
	Primary School		High School		University		n	%
	n	%	n	%	n	%		
Received first aid training	21	21.6	54	30.5	81	46.8	156	34.9
Not received first aid training	76	78.4	123	69.5	92	53.2	291	65.1
Total	97	100.0	177	100.0	173	100.0	447	100

(X² = 19.819 p=.000)

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