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RELATIONSHIP BETWEEN THE HEALTH LITERACY LEVEL OF MOTHERS AND DOMESTIC ACCIDENTS

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ABSTRACT

Aim: The aim of this study was to determine the relationship between the health literacy level of mothers and domestic accidents and to investigate other situations related to domestic accidents, if any.

Methods: Our study was a descriptive study. A face-to-face survey technique was used in the study. The Newest Vital Sign (NVS) scale was used to assess health literacy. The accident history of the children in the last one year was ascertained from the mothers.

Results: Among 250 women invited 202 people agreed to participate in the research. Forty-nine mothers (24.30%) stated that their children had a home accident that did not require hospital admission in the last year. Twenty-two mothers (10.90%) stated that they had a home accident requiring outpatient admission to the hospital in the last year, and only 2 mothers (1.00%) had a home accident that required hospitalization. As a result of multivariate logistic regression analysis, it was determined that a one-unit increase in the age of the mother reduces the risk of an accident by 4%, while an increase in the number of children to be cared for increases the risk of an accident 1.58 times.

Conclusions: In this sample, one out of every four children is exposed to a domestic accident. While the age of the mother reduces the risk of domestic accidents, the number of children increases the risk of domestic accidents. Simple domestic accidents are on the rise with low health literacy. Family physicians and pediatricians should strive to reduce home accidents with the training they could provide. It should not be forgotten that the risk of accidents is higher for the children of mothers with low health literacy in these trainings.

Keywords: Mother, child, domestic accident, health literacy, NVS.

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Introduction

The World Health Organization defines an accident as "an unexpected event that occurs suddenly against the will of the person and causes bodily and/or mental damage" (1). Accidents that occur in the house, in the garden or around the house are defined as home accidents (2). Home accidents are an important public health problem due to their frequent occurrence and risks of death or disability. An important aspect of these accidents is that they can be prevented if necessary precautions are taken (3, 4).

Looking at the frequency of home accidents, different results are seen. The frequency of having a home accident is closely related to the age group in which the study was conducted and the time taken. In three different studies in which home accidents in the last two weeks were questioned in our country, Kılıç et al. reported the frequency of home accidents as 14.10%, Boztaş 18.00% and Karatepe 19.65% (3, 5).

According to studies conducted in our country and in the world, the most common type of home accident is falling (3, 5-8). This is followed by injuries with sharp things and burns. When the studies examining the accident types are examined, it is seen that the frequency of the accident types changes depending on the season in which the study was conducted, the type of residence and environmental factors. In a study conducted in Iran, burns were the most common type of accident (9).

When the causes of home accidents are examined, the age of the child is important. It has been shown that children under the age of 5 are more likely to be involved in accidents (3, 10, 11). Again, the child's gender being male has been shown to be a risk factor for home accidents (12). It is known that the frequency of accidents for children increases as maternal age and maternal education level decrease. Safety measures taken by families at home reduce the incidence of home accidents (13).

When a doctor wants to give medical information to a person, the ability to understand, interpret and act accordingly is called health literacy. It is extremely important for people to access the health information they need in order to continue their lives in a healthy way, to understand this information and to organize their lives in accordance with this information (14). In the definition of health literacy made in our country, it is stated that "it refers to the cognitive and social skills that determine the ability and motivation of people to reach and understand information and use this information in a way that promotes and maintains a healthy life" (15).

Studies show that people's health literacy levels are related to work accidents and traffic accidents. It is seen that people with a high level of health literacy are exposed to fewer work accidents and traffic accidents (16-18). The aim of our study was to determine the relationship between the health literacy level of mothers and domestic accidents and to investigate other situations related to domestic accidents, if any.

Methods

This study was carried out between March 2022 and April 2022, with people registered at the Eşref Dinçer Family Health Center in Gemlik, Bursa. These people were offered to participate in the study during family health center visits. Participants were asked to complete the Newest Vital Sign (NVS) scale. 250 people were offered to participate in the study, and 202 people agreed to participate in the research.

Bursa City Hospital approved the academic study titled "The relation of mothers' health literacy level with domestic accidents" with the decision number 2019-KAEK-140 2022-01/17 dated 09.02.2022.

Descriptive Data: Age, marital status, education status, employment status, monthly income status, number of children, place of residence, smoking status, information on alcohol use, chronic disease history, regularly used drugs and domestic accidents that have occurred in the last year were questioned.

NVS Scale: This scale was developed by Weiss et al. as an assessment tool to be used in English and Spanish. For adaptation to Turkish, the validity and reliability study was conducted by Çiftçi et al. The Cronbach alpha value of the English test is 0.76, and it is 0.70 in Turkish. The test consists of a total of six questions. The scale is based on the participant's ability to read, understand and interpret a food label. One point is awarded for the correct answer to each question. The application time of the scale is approximately 3-6 minutes. The scale is evaluated according to the correct answer given by the individuals. If there are fewer than 4 correct answers, it is understood that the person has a low level of health literacy. If there are five or six correct answers, it is evaluated as "low health literacy probability" (19).

Statistical Analysis

Conformity of the age variable to normal distribution was examined with the Shapiro Wilk test. According to the normality test result, age, number of children and NVS score were reported together with median (minimum: maximum) values. Intergroup comparisons of NVS scores were performed using Mann Whitney U and Kruskal Wallis tests. In case of general significance after Kruskal Wallis test, subgroup analyses were carried out using Dunn-Bonferroni test. The relationship between NVS score and age and number of children was analyzed by correlation analysis and Spearman correlation coefficient was calculated. Risk factors that were thought to have an effect on the risk of having an accident in the last year were analyzed by logistic regression analysis. SPSS Program (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) was used for statistical analysis and $p<0.05$ was considered statistically significant.

Results

Table1. Descriptive Characteristics of Study Participants

	n=202
Age (years)	40 (18:74)
Marital status	
Married	179 (%88.60)
Single	23 (%11.40)
Education Level	
Lower than high school	94 (%46.50)
High school	62 (%30.7)
Higher than high school	46 (%22.80)
Working Status	
Yes	76 (%37.60)
No	126 (%62.40)

Number of Children	2 (0:6)
1	48 (%27.76)
2	108 (%53.46)
3	34 (%16.83)
4	10 (%4.95)
5 *6*	1 (%0.49) 1 (%0.49)
Income rate	
Low	17(%8.4)
Average	157(%77.7)
High	28(%13.9)
Occupation	
Village/Small town	9(%4.50)
Town center	181(%89.60)
City center	12(%5.90)
Cigarette usage	
Yes	32 (%15.80)
No	170 (%84.20)
Alcohol usage	
Yes	6 (%3.00)
No	196 (%97.0)
Chronic Disease Status	
Yes	41 (%20.30)
No	161 (%79.70)
Chronic drug usage	
Yes	38(%18.80)
No	164(%81.20)
Classification of home accidents in the last year for the participants	
Those who haven't had a domestic accident in the last year	130 (%64.40)
*Those who have had an accident in the last year that didn't require hospital admission**	49 (%24.30)
*Those who have had accident requiring outpatient hospital admission in the last year**	22 (%10.90)

Those who have had an accident requiring hospitalization in the last year	2 (%1.00)

Data are expressed as n (%) and median (minimum: maximum). *Two different accidents occurred in the same case.

The median age of the participants in the study was 40 years (minimum: 18-maximum 74). 88.60% of the participants were married and 11.40% were single or divorced women (Table1). When the distribution of the participants according to their education level is examined, 46.50% received less than high school education, 30.7% graduated from high school, and 22.80% received higher education. When the working status of the participants is examined, it is seen that the rate of participants who stated that they are working is 37.60%, and the rate of those who are not working is 62.40%. When analyzed according to income level, it is seen that the economic status of 77.7% of the participants is at a medium level, 8.40% is at a low level and 13.90% is at a high level. 6.93% of the participants in the study stated that they did not have children. Considering all participants (n=202), the median value of the number of children was calculated as 2 (0:6). 16.83% of the participants had one child, 53.46% had two children, 16.83% had three children, 4.95% had four children, 0.49% had five children and 0.49% had six children. When the place of residence of the participants was examined, it was determined that 4.50% lived in a village or town, 89.60% lived in the district center and 5.90% lived in the city center. When the smoking status of the participants was examined, it was determined that 15.80% of them smoked and 84.20% of them did not smoke. When the alcohol use status of the participants was examined, it was determined that 3% used alcohol and 97% did not use alcohol. When the chronic disease states of the participants were examined, it was determined that 20.30% had a chronic disease and 79.70% did not have a chronic disease. When the regular drug use status of the participants was examined, it was determined that 18.80% used a regular drug and 81.20% did not use a regular drug. When the participants were examined in terms of home accidents experienced in the last year, 64.40% stated that they had not experienced any home accidents. 24.30% stated that they had a home accident in the last year that did not require hospital admission, 10.90% stated that they had a home accident that required outpatient admission to the hospital in the last year, and 1.00% had a home accident that required hospitalization.

Table2. Relationship between general characteristics of the mothers and their health literacy

	NVS Score
Marital status	
Married (n=179)	2(0:6)
Single/ Divorced (n=23)	2(0:6)
p-value	0.621

Education Level *	
Lower than high school (n=94)	1.5(0:6)
High school (n=62)	2.5(0:6)
Higher than high school (n=46)	5(1:6)
p-value	**<0.001**
Working Status	
Yes(n=76)	3(0:6)
No (n=126)	2(0:6)
p-value	**<0.001**
Cigarette usage	
Yes (n=32)	2(0:6)
No (n=170)	2(0:6)
p-value	0.536
Alcohol usage	
Yes (n=6)	1(0:5)
No(n=196)	2(0:6)
p-value	0.217
Chronic Disease Status	
Yes (n=41)	2(0:6)
No (n=161)	2(0:6)
p-value	0.758
Chronic Drug Usage	
Yes (n=38)	2(0:6)
No (n=164)	2(0:6)
p-value	0.982
No home accidents in the last 1 year	
yes(n=130)	2(0:6)
no (n=72)	2(0:6)
p-value	0.066
In the last year, there has been an accident that did not require hospital admission	
Yes(n=49)	2(0:6) mean 1.96
No (n=153)	2(0:6) mean 2.67
p-value	**0.038**

Required outpatient hospital admission in the last 1 year	
Yes(n=22)	2(0:6)
No (n=180)	2(0:6)
p-value	0.532
Required hospitalization in the last 1 year	
Yes(n=2)	5(4:6)
No(n=200)	2(0:6)

There is an inverse relationship between age and NVS score (RS= -0.26; p<0.001). Accordingly, a decrease in NVS scores is predicted with increasing age (Table2).

NVS scores did not differ according to marital status (p=0.621). NVS scores differed according to education level (p<0.001). In the subgroup analyses carried out to determine the level of education that makes a difference in NVS scores, it was determined that those with a higher education level had higher NVS scores than high school graduates and those with less than high school education (p=0.019 and p<0.001). It was determined that the median NVS scores of high school graduates were higher than the participants with less than high school education level (p<0.001). When the working status of the participants was examined, it was determined that the NVS scores of the participants differed (p<0.001). The median NVS scores of the working participants were higher than the non-working participants. There was a negative significant relationship between the number of children and age (rs=-0.30; p<0.001). Accordingly, it is predicted that NVS scores will decrease with an increase in the number of children, or NVS scores will increase with a decrease in the number of children.

No difference was observed between smoking and NVS scores (p=0.536). Similarly, there was no difference in NVS scores in the alcohol user and non-alcoholic groups. (p=0.217). There was no difference in NVS scores between the participants with and without chronic disease (p=0.758). NVS scores did not differ between the participants who stated that they used drugs regularly and those who did not use drugs regularly (p=0.982).

There was no difference in NVS scores between the participants who stated that they had not experienced an accident in the last year and those who stated that they had an accident in the last year (p=0.066). NVS scores for 49 people who had an accident that did not require hospital admission in the last year were compared to the other 153 people. The mean and standard deviation values were also reported because the median minimum and maximum values were the same for both groups. If we look at the average values in the interpretation of this, the NVS score level of 49 people who had an accident that did not require hospital admission was lower than the other 153 people (p=0.038). There was no difference in NVS scores between the groups that did or did not experience a domestic accident requiring outpatient hospital admission in the last year (p=0.532). Finding only two cases of domestic accident requiring hospitalization was not sufficient for statistical analysis.

Table3. Results of multivariable logistic regression analysis

	Wald	p-value	OR	%95 (CI)	
				Lower	Upper
Age	4.55	**0.033**	0.96	0.92	1.00
NVS Score	1.97	0.160	0.88	0.74	1.05
Number of children	5.48	**0.019**	1.58	1.08	2.33
Chronic disease presence	0.03	0.871	0.93	0.39	2.20
Income (moderate)	0.72	0.398	0.62	0.21	1.87
Income (high)	1.10	0.295	2.07	0.53	8.13
Married	0.22	0.640	1.31	0.42	4.10
Housewife	0.96	0.327	0.71	0.35	1.41
Model χ^2=24.08; **p=0.002**					
Hosmer and Lemeshow Test: p=0.851					

OR: Odds Ratio, Confidence Interval: CI

In order to determine the risk factors affecting the occurrence of accidents in the last year, variables were primarily included in the univariate logistic regression analysis, and the variables that met the p<0.25 condition were included in the multivariate logistic regression analysis as a result of the analysis. The analysis result is given in Table 3 and it was determined that the regression model obtained was significant (p=0.002) and compatible with the data set (p=0.851). As a result of the analysis, it was determined that a one-unit increase in the age of the mother reduces the risk of an accident by 4%, while an increase in the number of children to be cared for increases the risk of an accident 1.58 times. It was determined that the other variables included in the table did not affect the occurrence of accidents in the last year.

Discussion

The incidence of domestic accidents was 35.64% in this sampling. It was determined that a one-unit increase in the age of the mother reduces the risk of an accident by 4%, while an increase in the number of children to be observed increases the risk of an accident by 1.58 times. NVS scores are not associated with domestic accidents in general but simple accidents were more prevalent among mothers with low health literacy.

The frequency of home accidents varies between societies. In studies conducted in Turkey, home accidents ratios ranging from 16.5% to 37.9% have been obtained (20). In the literature, different accident frequencies have been reported abroad. The prevalence of non-fatal injuries among the children aged 5-14 years in the previous 12 months was reported as 17.0 per 1000 subjects in China (21). Bhuvaneswari et al. found that the prevalence of home injury was found to be 39.7% in a year in India (22). It was estimated that 20-25% of children and adolescents in the United States experience an injury requiring medical attention each year (23). The main reason for the difference between the studies is that the definition and size of the accident are not clear. In this respect, we evaluated hospital admission and hospitalization as a criterion in distinguishing the severity of the accident while conducting our research. Although admission to the hospital due to the accident is related to the anxiety of the parents, it still helped us to make the necessary distinction regarding the severity of the accident.

Education level was found to be associated with health literacy in most studies. According to the Turkish Health Literacy Survey, the health literacy score increases as the education level increases (24). Although every individual with a high level of education does not always show the necessary sensitivity about their health, education is generally accompanied by good health literacy. Individuals with good health literacy benefit from health services more accurately. Within the scope of health literacy, there are also measures taken to protect health. Since educated people generally live in better conditions and have higher incomes, they are more sensitive about protecting their health and have wider opportunities. When the literature is examined, a relationship between health literacy and accidents is also seen (16-18). The NVS scale, which we used to evaluate health literacy, shows that the person can understand and interpret what they read, and attention and mathematical skills are good. The NVS scale is widely used to assess health literacy. In our opinion, it is normal for there to be domestic accidents, which can be considered insignificant in not requiring hospital admission, to be observed in the children of mothers with low NVS scores. To the best of our knowledge, this research is the first health literacy research on domestic accidents.

In the literature, the risk factors for domestic accidents have been reported as male sex, young maternal age, number of elder siblings and urban settlement (25-28). Similar to these reports, the decreasing maternal age and the increasing number of children were determined as risk factors for domestic accidents. It may be thought that mothers with a small number of children are able to focus more on their children. In our study, health literacy was found to be inversely related to trivial domestic accidents, but it was not found to reduce the risk of domestic accidents. Perhaps different results can be achieved in larger samples.

In conclusion, one out of every three children is exposed to a domestic accident. While higher age of the mother reduces the risk of domestic accidents, a greater number of children increase the risk of domestic accidents. Simple domestic accidents are on the rise with low health literacy. Family physicians and pediatricians should strive to reduce home accidents with the training they could provide. It should not be forgotten that the risk of accidents is higher for the children of mothers with low health literacy in these trainings.

Disclosure of conflict of interest

None of the author has any conflict of interest to disclose

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