

# Determining the mothers' first-aid self-efficacy in-home accidents in Turkey

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**Citation:** Can D, Bayer N. Determining the mothers' first-aid self-efficacy in-home accidents in Turkey. EUR J ENV PUBLIC HLT. 2023;7(3):em0141. <https://doi.org/10.29333/ejeph/13376>

## ARTICLE INFO

Received: 31 Mar. 2023

Accepted: 09 May 2023

## ABSTRACT

**Aim:** This study aims to determine the first-aid self-efficacy of mothers with children aged 0-4 years.

**Methods:** This descriptive study is conducted in a university hospital in Ankara, Turkey with 403 mothers who have children aged 0-4 years. The questionnaire method has been used to collect data in the study. The questionnaire consists of two parts. In the first part of it "the socio-demographic characteristics form" and in the second part of it "the first-aid self-efficacy scale", which is used to determine the mothers' first-aid self-efficacy, were included. The analysis of the research data is performed with SPSS statistical program.

**Results:** The age range of the participants in the study is 19-46 years and the mean age is  $29.41 \pm 7.40$  years. 46.2% of the mothers are 19-28 years old, 93.3% are married, 39.2% are graduated from high school, and 54.8% are housewives. 86.3% of the mothers state that they have not had the first-aid training and 42.9% of them state that they have encountered a situation requiring the first-aid resulting mostly (60.1%) in an injury. The mean score of the scale is  $30.90 \pm 9.50$ .

**Conclusions:** In our study, it is found that the first-aid self-efficacy of mothers is low. The mothers with an undergraduate degree have higher first-aid self-efficacy than the ones who graduated from a primary school and those who had the first-aid training have higher first-aid self-efficacy than the ones who did not receive the first-aid training. To increase the first-aid self-efficacy of mothers, the first-aid trainings should be organized by public/private health institutions and non-governmental organizations, practices should be made on models and repeated periodically. It is suggested that more centers and fathers to be included in these trainings in the future.

**Keywords:** home accident, mother, emergency, first-aid, self-efficacy

## INTRODUCTION

Children's home accidents are major public health problems requiring urgent intervention. Especially in 0-4 age period, since the inside of a house and its surroundings are the main living space of children, home accidents are of particular importance [1]. The 0-4 year age group is age group with the highest rate of accidents inside the home not only because children in this age group spend most of their time at home, are curious about exploring and learning their environment, constantly moving, sensitive, and open to environmental risks, have the habit of putting everything into their mouths, but also because their living spaces are not organized according to their characteristics and they do not yet have enough developmental skills to protect themselves from accidents [2].

Home accidents are frequently seen worldwide and account for 25% of accidents during childhood [3]. It is reported that home accidents during childhood constitute 18%-25% of all

accidents in Turkey [2]. Falls, bumps, burns, and poisoning are the most important causes of morbidity and mortality in-home accidents [4]. According to World Health Organization, more than 2,000 children die every day because of accidents and for this reason, millions of children are hospitalized and treated every year [5].

Home accidents, often involving children, occur suddenly. Also these accidents, sometimes, openly occur due to the precautions not taken and carelessness. While such accidents are sometimes very small and insignificant, they can occasionally be serious or even life-threatening, and thus the first-aid should be applied [6]. In general, mothers are the first to see a home accident and provide the first-aid. In case of an accident and injury, the mother's knowledge, attitudes and behaviors via the first-aid as the first person to respond at home affect the child's future life [7]. However, when mothers encounter accidents, they often get panic and take their children to the hospital without properly implementing the first-aid requirements [8]. In fact, the very first minutes after

the incident are of great importance, so, the first-aid should be applied immediately within the time following the accident [9]. A qualified and skillful the first-aid increases the success of the post-event treatment and reduces the death rates by 20%. For this reason, there is a need for trained and conscious first-aiders, and the first-aid trainings should cover the entire society [10].

Self-efficacy is the individual's judgment and belief about himself/herself regarding the extent to which he/she can be successful in overcoming difficult situations that he/she may encounter with in the future [11]. The first-aid self-efficacy refers to the belief that a person can perform the first-aid practices. While people with high self-efficacy continue to do a task steadfastly until it is completed, people with low self-efficacy give up early and even avoid practicing [12, 13]. It is, also, expected that the self-efficacy of people at the accident site and especially mothers in child accidents will be high in terms of the first-aid. In this study, it's aimed to determine the first-aid self-efficacy of mothers with children aged 0-4 years.

In this study, answers were sought for the following questions:

1. What are the mothers' first-aid self-efficacy levels?
2. Is there a difference in the first-aid self-efficacy levels of mothers according to socio-demographic characteristics?

## MATERIALS AND METHODS

### Sample

This descriptive study is conducted in March 2023 in a university hospital in Ankara, Turkey. The sample consists of mothers with children aged 0-4 years who applied to the pediatrics outpatient clinic and pediatric emergency department. The sample size was calculated by power analysis (G\*power version 3.1.9.6) and it was found that the sufficient sample size will be 280 when the power of the test is 95% at 95% confidence interval with an error rate of 0.05. The study was conducted with 403 participants by using convenience sampling method.

### Inclusion criteria

1. Being a mother with children aged 0-4
2. Volunteering to participate in the research
3. To have the level of cognition to understand and answer the questions
4. To have communication skills.

### Exclusion criteria

1. Not being a mother with a child between ages of 0-4
2. Not volunteering
3. Not having the level of cognition to understand and answer the questions
4. Lack of communication skills.

### Data Collection Method

Questionnaire method has been used to collect data in the study. The questionnaire consists of two parts.

### Data Collection Tools

#### *Socio-demographic characteristics form*

In this section, there are nine questions prepared by the researchers about age, marital status, educational status, employment status, income status, number of children, whether to receive the first-aid training and to apply the first-aid.

#### *The first-aid self-efficacy scale in home accidents*

The scale developed by [14] in 2013 is adapted into Turkish by [13] in 2020. It consists of 12 items and a single dimension including the responses that a mother can apply in case of home accidents. In the first-aid self-efficacy in home accidents scale, the statements are scored on a five-point Likert scale. Four points represents "completely agree" (100% certainty) and zero point represents "completely disagree" (0% certainty) situation. The score ranges between 0-48 and a higher score indicate a higher self-efficacy level. Also, higher scores indicate better self-efficacy in implementing the first-aid. According to the explanatory factor analysis applied, the factor loads of the items of the scale are above 0.30, and the scale explains 39% of the total variance as a single factor in the Turkish adaptation study [13]. While Cronbach's alpha value of the scale was 0.89 in the original study, it was 0.86 in the one adapted into Turkish [13, 14]. Within this study, the Cronbach's alpha value is 0.88. The questionnaire is completed in approximately 15 minutes.

### Statistical Analysis

The analysis of the research data is performed with the statistical program, SPSS (version 21, Chicago, IL, USA). Arithmetic average, standard deviation, and frequency analysis are used to analyze the descriptive statistics in the study. The normal distribution of the research data was analyzed with Skewness and Kurtosis values. Since Skewness and Kurtosis values were in the range of  $\pm 2$ , it was seen that there was a normal distribution [15]. Independent samples t-test was used to compare two independent groups and one-way ANOVA and post-hoc Tukey test were used to compare three or more groups. Statistically,  $p < 0.05$  was accepted as significant.

## RESULTS

Socio-demographic characteristics of the participants are presented in **Table 1**. The age range of the participants in the study is 19-46 years and the mean age is  $29.41 \pm 7.40$  years. 46.2% of the mothers are 19-28 years old, 93.3% are married, 39.2% are graduated from high school graduates, and 54.8% are housewives. 51.6% of the participants have only one child and 47.1% of them have an income that equal to their expenses. While 86.3% of the mothers state that they have not had the first-aid training, 42.9% states that they have encountered a situation requiring the first-aid resulting mostly in an injury.

**Table 1.** Socio-demographic characteristics of the participants

Socio-demographic characteristics	n	%
<b>Age (year)</b>		
19-28	186	46.2
29-35	133	33.0
36-46	84	20.8
<b>Marital status</b>		
Married	376	93.3
Single	27	6.7
<b>Education level</b>		
Primary school	26	6.5
Middle school	73	18.1
High school	158	39.2
University	146	36.2
<b>Working status</b>		
Housewife	221	54.8
Working	182	45.2
<b>Number of children</b>		
1	208	51.6
2	126	31.2
≥3	69	17.2
<b>Income status</b>		
Expense more than income	115	28.6
Income equals expense	190	47.1
Income more than expenses	98	24.3
<b>Have you received any training/course in first-aid?</b>		
Yes	55	13.7
No	348	86.3
<b>Have you encountered &amp; applied a situation that requires you to provide first-aid?</b>		
I encountered, I applied	106	26.3
I encountered, I did not apply	67	16.6
I did not encounter	230	57.1
<b>If you encountered a situation that required the first-aid, what was situation? (n=173)</b>		
Airway obstruction	38	22.0
Epilepsy	3	1.7
Syncope	5	2.9
Injury (bump, fall, etc.)	104	60.1
Other	23	13.3

The mean scores of the participants' responses to the first-aid self-efficacy scale in home accidents are presented in **Table 2**. When the mean scores of the responses are examined, it is found that the mothers have answered the question "I know how to call 112 for help when facing an accident" positively at the highest rate (3.91±0.65). The question with the lowest

**Table 3.** Mean score of the responses given to the first aid self-efficacy scale in home accidents according to socio-demographic characteristics

Sociodemographic characteristics	Mean	SD	p
<b>Education level</b>			
Primary school	26.50	8.15	0.03* 1-4<0.001**
Middle school	28.33	9.36	
High school	29.18	9.23	
University	31.72	9.69	
<b>Have you received any training/course on first aid?</b>			
Yes	36.28	9.12	0.01***
No	26.66	8.59	

Note. SD: Standard deviation; \*One-way ANOVA; \*\*Post-hoc Tukey; & \*\*\*Independent samples t-test

mean (1.25±1.29) is "I can perform cardio rescue (CPR) when a child has no heartbeat." Finally, the overall mean score of the scale is 30.9±9.50.

There is no statistically significant difference ( $p>0.05$ ) in the groups' mean scale scores in terms of their socio-demographic characteristics including age, marital status, employment status, number of children, and income level. When the scale scores are analyzed according to the education level, it is seen that there is a statistically significant difference between university graduates (31.72±9.69) and primary school graduates (26.50±8.15) ( $p<0.001$ ). There is also a statistically significant difference ( $p=0.01$ ) between those who had training/course on the first-aid (36.28±9.12) and those who did not (26.66±8.59) (**Table 3**).

## DISCUSSION

In this study, it is aimed to determine the first-aid self-efficacy of mothers with children aged 0-4 years. Since the first-aid is a life-saving intervention and mothers spend more time at home than fathers and are more active in childcare, it is important to work on determining the mothers' first-aid knowledge and self-efficacy [3]. In our study, the mean first-aid self-efficacy scale score of mothers in home accidents is 30.90±9.50. It was 30.33±9.32 in the study conducted by [14] with parents in Taiwan, 29.00±10.10 in the study conducted by [16] with child caregivers in Hong Kong, and 25.55±9.36 in the study conducted by [13] with mothers in Turkey [16]. The results of our study are similar to the results of the studies in

**Table 2.** Mean scores of the participants' responses to the first aid self-efficacy scale in home accidents

No	Question	Mean	Standard deviation
Q1	I know how to call 112 for help when facing an accident.	3.91	0.65
Q2	I can perform "flush, remove, soak, cover, send" when a child is scalded.	3.05	1.12
Q3	I can perform first aid (Heimlich method) when a child is choking.	1.75	1.26
Q4	I can perform artificial respiration when a child is not breathing.	1.43	1.32
Q5	I can perform cardio rescue (CPR) when a child has no heartbeat.	1.25	1.29
Q6	I can fix the injured area when a child has a bone fracture.	1.56	1.61
Q7	I can address the wounds when a child has abrasions.	3.65	1.10
Q8	I can stop the bleeding when a child has a nosebleed.	3.88	1.44
Q9	I can address the injured area when a child has a muscle strain.	2.25	1.87
Q10	I can perform first-aid when a young child is drowning.	1.39	1.45
Q11	I can perform the correct methods when a child eats something by mistake.	2.49	1.11
Q12	I can judge a child's injury status when an accident happens.	1.86	1.27

Note. Cronbach's alpha=0.88

other countries, and we think that the fact that our study is conducted in Ankara, the capital city of Turkey, which is more developed in terms of education, social, and cultural aspects, is effective in getting higher first-aid self-efficacy score compared to another study conducted in Turkey.

In our study, participants state that they know how to call 112, the emergency call center in Turkey, in case of an accident. It has the highest percentage among the answers to the questions in the questionnaire. The results of the study are similar to the results of the previous studies [13, 14, 16]. In Turkey, people used to call 110 for a fire, 112 for an ambulance, 122 for a disaster or emergency, 155 for police, 156 for gendarmerie, 177 for forest fires, and 158 for coast guard before 2021. In 2021, a single call center was established, and the emergency call number 112 was introduced for all calls. Numerous advertisements, public service announcements, and news were made in print and visual media and the public was informed about this change.

In our study, it is seen that the mothers have the lowest self-efficacy score in administering CPR to the child and they feel themselves inadequate in this regard. The results of the study are similar to those of [13, 16]. In the study [17] in England with parents of 3-12 month-old infants, the first-aid self-efficacy rate of parents is 16.4%, while their self-efficacy in CPR is 15.7%. These results show that the parents lack self-confidence, especially in regard to CPR administration and management [17]. The study [18] suggests that the participants avoid performing CPR especially due to forgetting their first-aid knowledge and low self-efficacy. CPR in children is an emergency application that requires knowledge, experience, skill, and confidence to provide adequate breathing and circulation to a child with cardiopulmonary arrest as a result of an illness, a trauma, or an injury [19]. Since early CPR prevents brain damage and death, and provides the best survival and quality of life, it is of great importance that it is not limited to healthcare personnel, but it should be learned by all people in a society including in particular teachers, public transportation officers, law enforcement officers, parents, and caregivers [20, 21].

Within the study, the scale scores of university graduates are statistically significantly higher than those of primary school graduates. The scores obtained from the scale also increase as the level of education increase. In the study conducted by Eldosoky in Egypt among mothers with children aged 0-12 years, university and postgraduate graduates have higher knowledge, attitudes, and behaviors regarding the first-aid in home accidents [22]. Similarly, in the study [23] in Singapore among parents and caregivers with children under 15 and in the study [24] in Turkey among mothers with children aged 0-6 years, it was determined that those with higher education level have higher first-aid knowledge and self-efficacy in home accidents. It is thought that the fact that university graduate mothers attend classes and seminars that include the first-aid practices and principles during their education will increase their first-aid self-efficacy. Moreover, it is evaluated that education has an effect on their personal development in order to act calmly in crisis situations.

In our study, only 13.7% of the participants state that they had training in the first-aid. When other studies conducted in Turkey are examined, it is seen that 20.5% of mothers in the

study [25], 16% of women in the study [26], 51.8% of teachers in the study [27], and 63.2% of university students in the study [28] had the first-aid training. It is considered that the first-aid trainings are included more in the curriculum as the level of education increases.

Within our study, the first-aid self-efficacy is higher among the participants who had training/course on the first-aid than those who had not. Similarly, in the study [29] with nursing faculty students in China, the self-efficacy of those who had the first-aid training was higher. In the study [30] with high school students in Vietnam, it was found that 46% of the students who had the first-aid training and only 26% of those who did not have training had high first-aid self-efficacy. The study [30] also investigates the participants' barriers to practicing the first-aid. The first barrier is fear of making a mistake during the first-aid/damaging the injured person, and the second barrier is lack of the first-aid training [30]. There are similar results in the studies [31, 32] conducted in Malaysia and Hong Kong, respectively. There are research results that training increases knowledge and awareness, and increases self-efficacy [33, 34]. In [35], it was stated that the trainings on the first-aid should be repeated at certain intervals, otherwise the information is forgotten, and it reduces the first-aid self-efficacy.

Our study has some limitations. The limitations of the research are that it is carried out in a single-center manner in a university hospital in Ankara and covers only mothers. This has limited the generalizability of the research results to other populations and settings.

In conclusion, since home accidents are very common in the 0-4 age group, it is very important for mothers to have high first-aid self-efficacy. High self-efficacy positively affects the first-aid performance. The first-aid self-efficacy of mothers who participated in our study is low. Those with university degrees have a higher first-aid self-efficacy than those with primary school degrees and those who had the first-aid training have higher first-aid self-efficacy than those who did not have. In order to increase the first-aid self-efficacy of mothers, the first-aid trainings should be organized by public and private health institutions and non-governmental organizations, practices should be made on models and repeated periodically. The first-aid training in Turkey is carried out as recommended in the first-aid regulation of Ministry of Health. In this regard, the first-aid training covers the general first-aid information, basic life support and the first-aid in airway obstruction, the first-aid in unconsciousness, bleeding, the first-aid in shock and chest pain, the first-aid in injuries, the first-aid in drowning, the first-aid in fractures, dislocations, sprains, emergency transportation techniques, the first-aid in insect stings and animal bites, the first-aid in poisoning subjects. It should cover the subjects of the first-aid in burns, frostbite and heat stroke, and the first-aid in case of foreign body getting into eyes, ears and nose and should last 16 hours. It can be said that the results of this research reveal that the first-aid self-efficacy in mothers should be increased. It is considered that the results will be beneficial for health politicians and professionals to create and implement policies to increase the first-aid self-efficacy in the society. It is recommended to include more centers and fathers in studies in the future.

**Author contributions:** All co-authors have involved in all stages of this study while preparing the final version. They all agree with the results and conclusions.

**Funding:** No funding source is reported for this study.

**Acknowledgements:** The authors would like to thank all mothers for participating in this study.

**Declaration of interest:** No conflict of interest is declared by the authors.

**Ethical statement:** Authors stated that approval was obtained from the Non-Invasive Clinical Research Ethics Committee (Decision No: 2023/37 and Code No: 2023030). Written permission was obtained from the hospital administration, where the study was conducted.

**Data sharing statement:** Data supporting the findings and conclusions are available upon request from corresponding author.

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