

Evaluation of Mothers' Awareness of Home Accidents and First Aid Self-Efficacy: A Cross-Sectional Study

Annelerin Ev Kazalarına Yönelik Farkındalıkları ve İlk Yardım Öz-Yeterlilik Düzeylerinin Değerlendirilmesi: Kesitsel Bir Çalışma

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Abstract

Objective: This study was conducted to determine the relationship between the levels of awareness regarding household accidents among mothers of children aged 0–3 years and their self-efficacy in providing first aid for such accidents, as well as to identify the factors influencing these variables.

Materials and Methods: The sample for this cross-sectional observational study consisted of 258 mothers with children aged 0–3 years. Data were collected using the “Demographic Information Form”, the “Home Accidents Awareness Scale for Mothers (MAHAS)”, and the “First Aid Self-Efficacy Scale for Home Accidents (FASHA)”. Descriptive statistics, independent samples t-test, one-way ANOVA, Pearson correlation, and simple linear regression analyses were performed.

Results: The mean age of the mothers was 30.75±4.69 years, and the mean age of the children was 20.21±11.88 months; 51.6% of the children were male. The mean total “MAHAS” score for mothers was 4.62±0.37, and the mean total “FASHA” score was 46.88±12.21. A weak positive correlation was found between awareness of home accidents and first-aid self-efficacy ($p=0.002$). Mothers’ first-aid training status, parental education level, and family income level were significantly associated with first-aid self-efficacy and several subdimensions of home-accident awareness ($p < 0.05$). According to the regression analysis, mothers’ awareness of home accidents (MAHAS) was a significant predictor of first aid self-efficacy (FASHA) ($R^2=0.302$; $F=108.45$; $p<0.001$).

Conclusions: The findings suggest that improving parental awareness and expanding practical first-aid training opportunities may help prevent childhood home accidents and strengthen emergency response skills.

Keywords: Child, first-aid, home accidents, mothers, self-efficacy

Öz

Amaç: Bu çalışma, 0–3 yaş grubu çocuğa sahip annelerin ev kazalarına yönelik farkındalık düzeyleri ile ev kazalarında ilk yardım öz-yeterlilikleri arasındaki ilişkiyi incelemek ve bu değişkenleri etkileyen faktörleri belirlemek amacıyla gerçekleştirildi.

Materyal ve Metot: Bu kesitsel gözlemsel çalışmanın örneklemini 0–3 yaş grubu çocuğa sahip 258 anne oluşturdu. Veriler Tanıtıcı Bilgi Formu, Anne Ev Kazaları Farkındalık Ölçeği (AEKFÖ) ve Ev Kazalarında İlk Yardım Öz-Yeterlilik Ölçeği (EKİYÖYÖ) kullanılarak toplandı. Verilerin analizinde tanımlayıcı istatistikler, bağımsız örneklem t-testi, tek yönlü varyans analizi (ANOVA), Pearson korelasyonu ve basit doğrusal regresyon analizleri kullanıldı.

Bulgular: Annelerin yaş ortalaması 30,75±4,69 yıl, çocukların yaş ortalaması 20,21±11,88 ay olup çocukların %51,6’sı erkektir. Annelerin AEKFÖ toplam puan ortalaması 4,62±0,37, EKİYÖYÖ toplam puan ortalaması ise 46,88±12,21 olarak bulunmuştur. Ev kazalarına yönelik farkındalık ile ilk yardım öz-yeterliliği arasında pozitif yönde zayıf bir korelasyon bulunmuştur ($p=0,002$). Annelerin ilk yardım eğitimi alma durumu, ebeveyn eğitim düzeyi ve gelir düzeyi ile öz-yeterlilik ve bazı farkındalık alt boyut puanları arasında anlamlı ilişki bulundu ($p<0,05$). Regresyon analizine göre, annelerin ev kazalarına yönelik farkındalık düzeyi (MAHAS), ilk yardım öz-yeterliliğinin (FASHA) anlamlı bir yordayıcısıdır ($R^2=0,302$; $F=108,45$; $p<0,001$).

Sonuç: Bulgular, ebeveynlerin ev kazalarına yönelik farkındalık düzeylerinin artırılmasının ve uygulamalı ilk yardım eğitimlerinin yaygınlaştırılmasının, çocukluk çağı ev kazalarının önlenmesine ve acil durumlarda uygun müdahale becerilerinin geliştirilmesine katkı sağlayabileceğini göstermektedir.

Anahtar Kelimeler: Anneler, çocuk, ev kazaları, ilk yardım, öz yeterlilik

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INTRODUCTION

Home accidents are recognized as a significant public health issue worldwide and in Türkiye during early childhood due to children's developmental characteristics and environmental risks.¹ According to World Health Organization (WHO) data, injuries cause approximately 4.4 million deaths annually and account for 8% of all deaths.² In Türkiye, home accidents rank second after traffic accidents, accounting for approximately 25% of all accidents, with 45.4% of these accidents occurring among children aged 0–6.¹

Although the home environment is generally considered safe for children, accidents such as falls, burns, drowning, and injuries from sharp or piercing objects are among the leading causes of morbidity and mortality in children aged 0–3.^{1,3} During this period, children's rapid motor development, increased interaction with their environment, and limited risk perception are among the primary factors contributing to an increased risk of home accidents.⁴ Parental supervision and the organization of a safe home environment have been identified as important factors in reducing the risk of childhood injuries.^{1,3}

In the preschool period, household accidents are often linked to inadequate home safety conditions.⁴ Since children aged 0–3 years have not yet developed the behavioral competencies to avoid injuries, it is primarily the parents' responsibility to ensure a secure environment.⁵ Within Turkish social and cultural norms, mothers typically bear the main caregiving role, and variables including maternal education level, family structure, number of children, and socioeconomic status may influence the occurrence of these accidents.^{6,7}

Prompt first aid intervention is essential to prevent mortality and long-term disability.^{1,3} The literature reports that timely and appropriate first aid interventions significantly reduce mortality and complication rates.^{7,8} However, it is noted that parents often panic in the face of accidents and tend to seek immediate medical attention at a healthcare facility rather than following the appropriate steps for intervention.⁹ Recent studies indicate that parents have limited knowledge of the correct intervention steps, particularly in emergencies such as burns, drowning, falls, and poisoning.^{10,11}

Although home accidents are common among children aged 0–3 in Türkiye, limited research has examined mothers' awareness of home accidents together with their first-aid self-efficacy.^{12–14} Previous studies have mainly focused on parental knowledge, safety attitudes, preventive behaviors, or first-aid knowledge separately.^{12–14} Moreover, although Şen et al. reported a relationship between maternal safety attitudes and first-aid self-efficacy among mothers of children aged 0–6 years,⁵ insufficient evidence exists for mothers of children aged 0–3 years, who constitute a particularly high-risk group.⁴

Within this context, Bandura's Social Cognitive Theory defines self-efficacy as an individual's belief in their capability to successfully perform actions required to manage specific situations.¹⁵ Based on this perspective, mothers who are more aware of home accident risks may feel more confident in their ability to perform appropriate first-aid interventions.

Therefore, this study aimed to evaluate mothers' awareness of home accidents and first-aid self-efficacy and to examine the relationship between these variables and selected sociodemographic characteristics among mothers of children aged 0–3 years.

MATERIALS AND METHODS

Ethical Considerations: To conduct the study, written permission was obtained from the Ethics Committee of the Faculty of Medicine at Trakya University (TÜTF-GOBAEK 2025/152) and the Kırklareli Provincial Health Directorate. Before distributing the questionnaire and scales, the purpose of the study was explained to the mothers, and their written and verbal informed consent was obtained. They were informed that they should not write their names on the questionnaires and scales and that the collected data would be used for scientific purposes. Written and verbal informed consent was obtained, and participants were informed of their right to withdraw from the study at any time. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Study Design and Setting: This cross-sectional observational study was conducted with mothers of children aged 0–3 years who visited the pediatric outpatient clinic of a public hospital in Türkiye between August 1, 2025, and December 30, 2025. The questionnaires and scales were completed anonymously by volunteer mothers in a quiet area of the outpatient clinic while waiting for their child's appointment, and took approximately 8–10 minutes to complete. Participants were informed that their responses would remain confidential and would not affect the healthcare services they received. This study was reported in accordance with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines.¹⁶

Research Questions: Based on the study objectives, the research questions were as follows:

1. Is there a relationship between mothers' home accident awareness and first aid self-efficacy levels?
2. Do sociodemographic characteristics affect mothers' home accident awareness and first aid self-efficacy?
3. Do mothers' home accident awareness significantly predict their first-aid self-efficacy levels?

Study Participants: The sample size was calculated using G*Power 3.1.9.7.¹⁷ The calculation was based on a simple linear regression model (Fixed model, R^2 deviation from zero), considering the effect of mothers' home accident awareness (MAHAS) on first-aid self-efficacy (FASHA). An effect size of $f^2 = 0.06$ was selected based on Cohen's recommendations for a small-to-moderate effect size and informed by previous studies that examined the relationship between mothers' home accident awareness and first-aid self-efficacy.^{5,12} With a significance level of $\alpha = 0.05$, statistical power of 80% ($1 - \beta = 0.80$), and one predictor variable, the minimum required sample size was 234 participants. To account for potential data loss and incomplete responses, 258 mothers were included, exceeding the minimum required sample size and ensuring adequate statistical power.

The study included mothers with children aged 0–3 years who volunteered to participate, had no communication difficulties, and had no mental or psychological issues. Mothers who did not volunteer to participate, had communication difficulties or mental/psychological issues, or who filled out the data collection forms incompletely or incorrectly were excluded from the study.

Study Instruments: Data for the study were collected using the “Demographic Information Form,” the “Home Accidents Awareness Scale for Mothers (MAHAS),” and the “Self-Efficacy Scale for First Aid in Home Accidents (FASHA).”

Demographic Information Form: Prepared by researchers through a literature review, this questionnaire consists of 13 questions covering the sociodemographic characteristics of children and their mothers (including the mothers' and fathers' age and educational status, employment status, family type, income level, children's age and gender, etc.), as well as their experience with home accidents and first aid knowledge (whether the child has experienced a home accident, type of accident, location of the accident, people present during the accident, affected body part, and mothers' first aid training status, etc.), totaling 21 questions.^{4,10,11}

Home Accidents Awareness Scale for Mothers (MAHAS): This scale, developed by Gülbetekin and Güdücü Tüfekçi,¹⁸ was used to assess mothers' awareness of household accidents involving children aged 0–3 years. The scale consists of 55 items rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with no reverse-scored items. It comprises four subscales: Awareness of Falls, Awareness of Burns, Awareness of Drowning and Poisoning, and Awareness of Cutting and Drilling Tool Injuries. Total and subscale scores are calculated by averaging the relevant item responses, ranging from 1 to 5, where higher scores indicate greater awareness. The original validation study reported a Cronbach's alpha of 0.968,¹⁸ and in the current study, the scale demonstrated high reliability with a Cronbach's alpha of 0.92.

First Aid Self-Efficacy Scale in Home Accidents (FASHA): Developed by Wei et al., this scale assesses mothers' self-efficacy in performing first aid during household accidents. The Turkish version was validated by Altundağ et al.¹⁹ The scale contains 12 items rated on a five-point Likert scale, producing total scores between 12 and 60, with higher scores reflecting greater first aid self-efficacy. In the Turkish validation study, Cronbach's alpha was 0.86, whereas in the present study, the scale demonstrated excellent internal consistency with a Cronbach's alpha of 0.94.

Statistical Analyses: Analyses were performed using IBM SPSS Statistics version 23.0. Before conducting the analyses, the dataset was screened for missing values, potential outliers, and violations of normality assumptions. Normality assumptions were evaluated using skewness–kurtosis values, histograms, and Kolmogorov–Smirnov tests. Since the data demonstrated normal distribution, parametric statistical tests were used. Descriptive statistics were presented as mean $\pm$ standard deviation, frequency, and percentage distributions. Independent-samples t-tests and one-way ANOVA were used to compare scale scores across categorical sociodemographic variables. Post-hoc analyses were conducted using Tukey tests where appropriate. To explore the relationships between mothers' awareness of home accidents and their first-aid self-efficacy, a Pearson correlation analysis was conducted. In addition, simple linear regression analysis was performed to assess whether mothers' home accident awareness could predict first-aid self-efficacy. Statistical significance was accepted as $p < 0.05$.

RESULTS

The sociodemographic and household accident characteristics of the participants are presented in Table 1. The mean ages of mothers, fathers, and children were 30.75 ± 4.69 years, 32.87 ± 5.70 years, and 20.21 ± 11.88 months, respectively; 51.6% of the children were male. Approximately half of the mothers (50.8%) and fathers (51.6%)

had a bachelor's degree or higher, and 53.9% of mothers were employed. Falls were the most common type of household accident (37.2%), and the head and neck were the most frequently affected body region (21.7%). More than half of the mothers (57.0%) had received first aid training, most commonly from a hospital or healthcare facility (30.6%).

Table 1. Sociodemographic characteristics and household accident features of mothers and children (n=258).

Characteristics		Data
Child age, months, Mean $\pm$ SD (Min-Max)		20.21 $\pm$ 11.88 (0–36)
Mother's age, years, Mean $\pm$ SD (Min-Max)		30.75 $\pm$ 4.69 (20–46)
Father's age, years, Mean $\pm$ SD (Min-Max)		32.87 $\pm$ 5.70 (22–50)
Number of children		1.60 $\pm$ 0.73 (1–4)
Sex, n (%)	Girl	125 (48.4)
	Boy	133 (51.6)
Mother's educational level, n (%)	Illiterate	3 (1.2)
	Primary–Middle school	30 (11.6)
	High school	94 (36.4)
	Bachelor's degree or higher	131 (50.8)
Father's educational level, n (%)	Illiterate	3 (1.2)
	Primary–Middle school	43 (16.7)
	High school	79 (30.6)
	Bachelor's degree or higher	133 (51.6)
Mother's employment status, n (%)	Employed	139 (53.9)
	Unemployed	119 (46.1)
Family income, n (%)	Income equal to expenses	145 (56.2)
	Income is less than expenses	34 (13.2)
	Income greater than expenses	79 (30.6)
Family type, n (%)	Extended family	48 (18.6)
	Nuclear family	203 (78.7)
	Broken/Separated family	7 (2.7)
Child's special health condition, n (%)	Yes	54 (20.9)
	No	203 (78.7)
History of household accidents, n (%)	Yes	133 (51.6)
	No	125 (48.4)
Type of accident, n (%)*	Fall	96 (37.2)
	Collision	34 (13.2)
	Burn	24 (9.3)
	Risk of drowning	20 (7.8)
	Sharp object injury	2 (0.8)
	Poisoning	1 (0.4)
	Kitchen	50 (19.4)
Location of accident, n (%)*	Living room	66 (25.6)
	Bedroom	42 (16.3)
	Bathroom	10 (3.9)
	Garden	12 (4.7)
	Balcony	2 (0.8)
	Yes	108 (81.3)
	No	25 (18.7)
Affected body area, n (%)*	Head/Neck	56 (21.7)
	Face	24 (9.3)
	Trunk	17 (6.6)
	Feet	16 (6.2)
	Arm	21 (8.1)
	Hand	16 (6.2)
	Leg	15 (5.8)
	Yes	147 (57.0)
First aid training, n (%)	No	111 (43.0)
	Hospital/Healthcare facility	79 (30.6)
Reported source of first-aid training/information, n (%)*	Turkish Red Crescent	18 (7.0)
	Internet	25 (9.7)
	Book/Brochure	22 (8.5)
	Family elders	13 (5.0)
	Other (School, Driving Course, Public Education)	30 (11.6)

*: Multiple responses were allowed; SD: Standard deviation; Min-Max: Minimum–maximum.

The mean total score of the Self-Efficacy Scale for First Aid in Home Accidents (FASHA) was 46.88 ± 12.21 , and the mean total score of the Home Accidents Awareness Scale for Mothers (MAHAS) was 4.62 ± 0.37 . The mean subdimension scores of MAHAS were as follows: Awareness of Falls 4.60 ± 0.43 , Awareness of Drowning and Poisoning 4.62 ± 0.45 , Awareness of Burns 4.62 ± 0.39 , and Awareness of Cutting and Drilling Tool Injuries 4.71 ± 0.48 (Table 2).

Table 2. Distribution of total and subdimension scores of MAHAS and the FASHA (n=258).

SCALES		Mean $\pm$ SD (Min-Max)
Overall Home Accidents Awareness Scale for Mothers (MAHAS)	Total score of MAHAS	4.62 ± 0.37 (3.31–5.00)
	Awareness of falls	4.60 ± 0.43 (3.05–5.00)
	Awareness of drowning and poisoning	4.62 ± 0.45 (2.88–5.00)
	Awareness of burns	4.62 ± 0.39 (3.08–5.00)
	Awareness of cutting and drilling tool injuries	4.71 ± 0.48 (2.25–5.00)
FASHA	Total Score of FASHA	46.88 ± 12.21 (16–60)

MAHAS: Home Accidents Awareness Scale for Mothers; FASHA: Self-Efficacy Scale for First Aid in Home Accidents; Values are presented as mean $\pm$ standard deviation (SD) and minimum–maximum (Min–Max) ranges where applicable.

A significant positive correlation was found between the FASHA total score and Awareness of Falls ($r = 0.232$; $p = 0.007$), Awareness of Drowning and Poisoning ($r = 0.253$; $p = 0.003$), Awareness of Burns ($r = 0.224$; $p = 0.009$), and the MAHAS total score ($r = 0.260$; $p = 0.002$). This indicates that higher maternal awareness of home accidents is associated with higher first-aid self-efficacy (Table 3).

Table 3. Correlations between mothers' FASHA and MAHAS total and subscale scores (n=258).

Variables		Awareness of Falls	Awareness of Drowning and Poisoning	Awareness of Burns	Awareness of Cutting and Drilling Tool Injuries	MAHAS Total
FASHA Total	r	0.232	0.253	0.224	-0.095	0.260
	p	0.007	0.003	0.009	0.270	0.002

r: Pearson correlation analysis; $p < 0.05$ considered statistically significant.

The comparison of scale scores according to mothers' sociodemographic characteristics and children's history of home accidents is presented in Table 4. A statistically significant difference was found only between the child's history of home accidents and the Awareness of Cutting and Piercing Tool Injuries subscale ($p = 0.015$), with higher scores among mothers whose children had not experienced home accidents. Significant differences were observed in the Awareness of Drowning and Poisoning subscale ($p = 0.044$) and the total FASHA score ($p < 0.001$) according to first-aid training status, with higher scores among mothers who had received training. Regarding maternal education level, significant differences were found in the Awareness of Falls ($p = 0.001$), Awareness of Drowning and Poisoning ($p < 0.001$), Awareness of Burns ($p = 0.017$), Awareness of Cutting and Piercing Tool Injuries ($p = 0.017$), total MAHAS score ($p < 0.001$), and total FASHA score ($p = 0.022$), with post-hoc analyses showing higher scores among mothers with high school and bachelor's education compared to those with primary or middle school education. For paternal education level, significant differences were found in the Awareness of Burns subscale ($p = 0.002$), total MAHAS score ($p = 0.044$), and total FASHA score ($p = 0.021$). Post-hoc analyses showed that Awareness of Burns scores were highest in the high school group, followed by the primary–middle school and bachelor's degree groups. Total MAHAS scores were higher in the high school group compared to the primary–middle school group, while total FASHA scores were highest in the bachelor's degree and above group. (Table 4). Significant differences were also observed by family income status in Awareness of Falls ($p = 0.018$), Awareness of Drowning and Poisoning ($p = 0.031$), and Awareness of Burns ($p = 0.009$), with higher scores in families whose income exceeded expenses (Table 4).

Table 4. Mothers' awareness of home accidents and first aid self-efficacy by sociodemographic factors and child accident history (n = 258).

Characteristics		Awareness of Falls (Mean±SD)	Awareness of Drowning and Poisoning (Mean±SD)	Awareness of Burns (Mean±SD)	Awareness of Cutting and Piercing Tool Injuries (Mean±SD)	Total Home Accident Awareness (Mean±SD)	Total First Aid Self-Efficacy (Mean±SD)
Child's History of Home Accidents	Yes	4.51± 0.49	4.53 ± 0.33	4.56 ± 0.40	4.64 ± 0.55	4.54± 0.40	45.7 ± 12.3
	No	4.70 ± 0.34	4.71 ± 0.31	4.69 ± 0.36	4.79 ± 0.39	4.71 ± 0.31	48.0± 12.0
	t	-0.669	1.850	1.056	2.458	0.827	1.531
	p	0.504	0.066	0.292	0.015	0.409	0.127
First Aid Training Status	Yes	4.65 ± 0.43	4.70 ± 0.42	4.65 ± 0.38	4.67 ± 0.54	4.66 ± 0.36	53.2 ± 7.0
	No	4.55 ± 0.44	4.56 ± 0.49	4.60 ± 0.41	4.65 ± 0.40	4.58 ± 0.39	38.6 ± 12.7
	t	1.89	2.02	0.78	1.74	1.56	5.12
	p	0.059	0.044	0.44	0.086	0.097	p < 0.001
Mother's Education Level	Primary–Middle School ^a	4.44 ± 0.48	4.44 ± 0.41	4.55 ± 0.39	4.74 ± 0.39	4.49 ± 0.37	37.03 ± 13.40
	High School ^b	4.67 ± 0.37	4.67 ± 0.41	4.70 ± 0.32	4.79 ± 0.44	4.68 ± 0.32	43.51 ± 12.17
	Bachelor's Degree and Above ^c	4.61 ± 0.46	4.64 ± 0.48	4.60 ± 0.43	4.67 ± 0.53	4.62 ± 0.40	51.61 ± 9.66
	F	7.813	12.589	4.160	4.160	13.111	3.862
Father's Education Level	p	0.001	<0.001	0.017	0.017	<0.001	0.022
		b>a, c>a	b>a, c>a	b>a, c>a	b>a	b>a, c>a	c>b>a
	Primary–Middle School ^a	4.50 ± 0.46	4.49 ± 0.40	4.58 ± 0.40	4.78 ± 0.35	4.53 ± 0.38	38.84 ± 12.77
	High School ^b	4.70 ± 0.35	4.66 ± 0.31	4.71 ± 0.29	4.78 ± 0.44	4.70 ± 0.29	45.04 ± 12.39
Family Income Status	Bachelor's Degree and Above ^c	4.59 ± 0.46	4.64 ± 0.53	4.60 ± 0.43	4.66 ± 0.54	4.61 ± 0.40	50.83 ± 10.09
	F	2.929	2.579	6.304	0.159	3.158	3.902
	p	0.055	0.078	0.002	0.853	0.044	0.021
		-	-	b>a>c	-	b > a	c > b > a
Family Income Status	Income = Expenses ^a	4.61 ± 0.46	4.63 ± 0.41	4.64 ± 0.35	4.73 ± 0.47	4.63 ± 0.35	45.94 ± 12.01
	Income < Expenses ^b	4.50 ± 0.44	4.43 ± 0.47	4.51 ± 0.50	4.62 ± 0.57	4.49 ± 0.43	47.18 ± 13.19
	Income > Expenses ^c	4.66 ± 0.39	4.70 ± 0.50	4.66 ± 0.41	4.74 ± 0.48	4.68 ± 0.37	48.49 ± 12.14
	F	4.058	3.517	4.779	2.697	0.240	2.279
Family Income Status	p	0.018	0.031	0.009	0.069	0.787	0.104
		c>a>b	c > b > a	c > b > a	-	-	-

Data are presented as Mean ± SD; Independent samples t-test (t) was used for comparisons between two groups; One-way ANOVA (F) was applied for comparisons among three or more groups; Post-hoc analyses for variables with significant differences were performed using Tukey's test; MAHAS: Home Accidents Awareness Scale for Mothers; FASHA: Self-Efficacy Scale for First Aid in Home Accidents; p < 0.05 was considered statistically significant.

According to the simple linear regression analysis, mothers' awareness of home accidents (MAHAS) was a significant predictor of their first aid self-efficacy (FASHA), explaining 30.2% of the total variance ($R^2 = 0.302$; $F = 108.45$; $p < 0.001$). The Durbin–Watson value of 2.021 indicated that the assumption of residual independence was met (Table 5).

Table 5. Predictive effect of Mothers' Home Accident Awareness (MAHAS) on First Aid Self-Efficacy (FASHA) (n = 258).

Regression Value	FASHA Total
β	0.550
R	0.550
R²	0.302
Adjusted R²	0.299
F	108.45
p	<0.001*
Durbin-Watson	2.021
VIF	1.00

MAHAS: Home Accidents Awareness Scale for Mothers; FASHA: Self-Efficacy Scale for First Aid in Home Accidents; β : Standardized regression coefficient; Independent variable: MAHAS total score; Dependent variable: FASHA total score; VIF: Variance Inflation Factor. The VIF value of 1.00 indicates no multicollinearity concern. *: $p < 0.05$ was considered statistically significant.

DISCUSSION AND CONCLUSION

Children aged 0–3 are one of the groups most frequently exposed to household accidents due to their developmental characteristics and the fact that they spend most of their day in a home environment. For this reason, it is of great importance for mothers to have a high level of awareness of household accidents and a high level of first-aid self-efficacy to respond to potential accidents. This study aimed to examine the relationship between mothers' awareness of household accidents and their first-aid self-efficacy, and to explore factors that may influence these outcomes.

The study findings indicate that mothers have a high level of awareness regarding household accidents (MAHAS total 4.62 ± 0.37), but their first aid self-efficacy scores are relatively lower (FASHA total 46.88 ± 12.21) (Table 2). This suggests that despite comprehensive awareness, there may be a lack of practical skills. Similarly, in a study by Şen et al.⁴ on the 0–6 age group, it was found that mothers' safety attitude scores regarding household accidents were moderate, and their first aid practices were inadequate.⁴ A study conducted in Taiwan reported that mothers possess a high level of first aid knowledge;²⁰ however, Durna et al.²¹ reported that while mothers' attitudes toward preventing home accidents were good, their first aid knowledge was insufficient (185.51 ± 9.76 for attitude, 9.17 ± 1.79 for knowledge). These results emphasize that knowledge and awareness alone are insufficient; the development of practical skills and self-efficacy is necessary, and highlight the importance of self-efficacy-based training.

Mothers who received first aid training were found to have significantly higher levels of both drowning/poisoning awareness ($p=0.044$) and total self-efficacy scores ($p<0.001$) (Table 4). This finding is consistent with previous studies reporting the positive impact of practical training on practical competence.^{18,22} The findings suggest that first aid training not only imparts knowledge but also enhances mothers' confidence in intervening during emergencies. An important consideration is that first aid training was obtained from various sources, including hospitals, the Turkish Red Crescent, internet-based resources, and other educational institutions. Because the content, duration, and practical components of these training programs were not standardized, differences in training quality may have influenced mothers' levels of awareness and self-efficacy. Future studies should evaluate the impact of standardized first-aid education programs on parental awareness and first-aid self-efficacy. The finding that home accident awareness significantly predicted first-aid self-efficacy ($R^2 = 0.302$; $p < 0.001$) supports the view that greater awareness of home accident risks may contribute to mothers' confidence in performing appropriate first-aid interventions. Although home accident awareness explained 30.2% of the variance in first-aid self-efficacy, a substantial proportion of the variance remained unexplained. In addition, statistically significant positive correlations were observed between first-aid self-efficacy and several home accident awareness dimensions; however, these correlations were weak in magnitude ($r = 0.224$ – 0.260). Therefore, the observed relationship should be interpreted cautiously, as awareness alone may not be sufficient to explain mothers' confidence in performing first-aid interventions. Other factors, including previous experience, practical training opportunities, and individual characteristics, may also contribute to first-aid self-efficacy. Interestingly, awareness of cutting and piercing tool injuries was not significantly associated with first-aid self-efficacy. Compared with emergencies such as burns, drowning, or poisoning, injuries caused by cutting and piercing tools may be perceived as more common and easier to manage, reducing their influence on mothers' perceptions of first-aid competence. This may explain why this awareness dimension differed from the other home accident subdimensions. Furthermore, health behavior models emphasize that knowledge alone is insufficient for behavioral change, and that self-efficacy is critical in initiating and maintaining behavior.^{23,24}

The study found that 51.6% of children had experienced at least one home accident, with falls the most common type (37.2%). Similarly, Şen et al.⁴ and Vatansever et al.²⁵ reported falls as the most common type of childhood home accident. A study conducted in Saudi Arabia also identified falls as the most common type of home accident, with a prevalence of 58.2%.²⁶ The high incidence of falls, particularly during early childhood, can be attributed to incomplete motor development and limited awareness of environmental risks.²⁷ Interestingly, mothers whose children had not experienced an accident had higher scores on the sharp-object awareness scale ($p=0.015$), supporting the preventive role of high awareness. This finding suggests that parental awareness may serve as a protective factor, reducing risks in the home environment.

In this study, maternal and paternal education levels were associated with home accident awareness and first-aid self-efficacy scores. Mothers with higher educational attainment demonstrated significantly higher first-aid self-efficacy scores, while educational level was also associated with several home accident awareness dimensions (Table 4). These findings are generally consistent with previous studies reporting positive associations between educational level, health literacy, and health-related behaviors.^{28–31} In contrast, in some countries, a higher risk of home accidents has been reported among children of highly educated mothers.^{21,32–34} This suggests that accidents cannot be explained solely by educational level, but that environmental arrangements and parental behaviors also play a decisive role. However, a non-linear, unexpected pattern was observed in burn awareness by paternal education level. Mothers whose spouses had a high school education demonstrated higher burn awareness scores compared to those whose spouses had a primary or middle school education or a bachelor's degree or above. This finding suggests that the relationship between paternal educational attainment and burn awareness may not be strictly linear. This finding should be interpreted cautiously, as factors beyond educational attainment may influence awareness of specific home accident risks. Further studies are needed to clarify the mechanisms underlying this association. Therefore, educational level should be interpreted together with broader household and behavioral factors when evaluating home accident awareness.

In conclusion, higher awareness of home accidents among mothers is associated with greater first-aid self-efficacy. Strengthening parental awareness may therefore contribute to improved emergency response capabilities in early childhood. Expanding practical first aid training for parents within community-based nursing practices, integrating home safety counseling into routine child health monitoring, particularly for children aged 0–3 years, and developing targeted educational programs that consider socioeconomic characteristics are recommended. In addition, structured parent education programs in family health centers and pediatric clinics may further strengthen preventive child health services. However, the findings should be interpreted in light of certain limitations. This study was conducted in a single hospital in a single province, which may limit its generalizability to populations with different sociocultural characteristics. The use of self-reported data may have introduced response bias, and the exclusive inclusion of mothers limits the perspectives captured. Future studies, including fathers and other caregivers, would provide a more comprehensive understanding of home accident prevention behaviors. In addition, first aid training was reported from multiple sources with potentially different educational content and levels of practical instruction, which may have introduced variability in mothers' awareness and self-efficacy scores. Additionally, although statistically significant correlations were identified between the study variables, the effect sizes were weak, limiting the strength of the observed associations.

Ethics Committee Approval: To conduct the study, written permission was obtained from the Ethics Committee of the Faculty of Medicine at Trakya University (TÜTF-GOBAEK 2025/152) and from the Kırklareli Provincial Health Directorate. Before distributing the questionnaire and scales, the purpose of the study was explained to the mothers, and their written and verbal informed consent was obtained. They were informed that they should not write their names on the questionnaire and scales and that the data collected would be used for scientific purposes; their verbal and written informed consent was obtained, and they were informed of their right to withdraw from the study at any time. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Conflict of Interest: No conflict of interest was declared by the authors.

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