Original Article

The Relationship Between their Risks of Falling and Functional Independence Levels of Elders Living at Home

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Abstract

Background: The increase in the elderly population is accompanied by several changes and problems associated with old age.

Objective: This study aims to identify the relationship between the risks of falling and functional independence levels of elders living at home.

Methods: A total of 600 elders aged 65 years or above registered to 12 family health centers located in a city center in the Central Anatolian Region of Turkey participated in the research. A personal information form, the Modified Barthel Index, and the Falls Behavioral Scale for the Elderly were used as the data collection tools in the research. By using the Statistical Package for Social Science 22.0, the collected data were evaluated with descriptive tests, arithmetic means, the Mann-Whitney U test, the Kruskal-Wallis H test, the Pearson correlation analysis, and the linear regression analysis.

Results: It was found that the elderly had a mean age of 72.0±5.99 years, and 0.8% of them were severely dependent, whilst 79.3% of them were fully independent. Furthermore, it was identified that 30.3% of the elderly had a history of falling in the previous year. The correlation between the mean scores obtained by the elders from the Modified Barthel Index and Falls Behavioral Scale for the Elderly was not statistically significant (p>0.05).

Conclusion: Even if there was no statistically significant relationship between the functional independence levels of elderly living at home and their risks of falling, advanced age increased functional dependence and decreased risky behaviors leading to falls.

Key words: Aged; accidents, home, accidental falls, functional independence, nursing

Introduction

Along with the decrease in fertility and mortality rates and the extension of life expectancy at birth, the elderly population has begun to grow across the world (https://data.tuik.gov.tr). Particularly chronic diseases, as a consequence of structural and functional changes that take place in organs and systems along with aging, are detected more frequently in the elderly (Yesil & Eyigor, 2015). Chronic diseases restrict elders' functionalities, increase the degree of their dependency by making it harder for them to perform daily life activities independently, and affect the quality of their lives negatively (Kim, Choe & Chae, 2009). Elderly people who fail to perform their daily activities independently can continue their lives by getting help from someone else or by becoming fully dependent on someone else (Ozkan & Kars, 2018). The functional dependence that is a condition of being dependent on someone else is the case in which an "elder is incapable of fulfilling his/her basic daily life activities (having a bath, eating and so on), instrumental daily life activities (housekeeping, shopping and so on) alone" (Sonmez et al., 2007). Along with the

effect of circumstances of functional dependence and the loss of senses that are experienced by the elderly, they have accidents and injure themselves more frequently. As the elderly generally spend time at home, accidents observed in old age come to fore mostly as 'home accidents' (Cinarli & Koc, 2015). Falls are at the top of home accidents that are commonly discerned in old age and often end in injury and death (Daghan, Arabaci & Hasgul, 2017).

Even though falling is not peculiar only to old age, it is a significant public health problem, and its frequency goes up along with age and has given rise to mortality and morbidity in elders (Oden & Yavuz-Van Giersbergen, 2021). In two different studies carried out in Turkey, the prevalence of falls for the elderly was found to be 32.1% in the last six months and 19.8% in the last year (Cevizci et al., 2015; Metin-Akten & Akin, 2017). In a study by Metin-Akten and Akin (2017), it was identified that, of the elders who were reported to have fallen in the last year, 30.5% had mild and 10% had severe injuries (Metin-Akten & Akin, 2017). In the study conducted by Gazibara et al. (2017), it was stated that the frequency of falling was 15.8% for elders and that these falls occurred most frequently while walking (Gazibara et al., 2017). Again, in the same study by Gazibara et al. (2017), it was found that 28.6% of individuals who fell had a fear of falling, and due to the fear of falling, 16.1% of them had given up an activity they were doing (Gazibara et al., 2017). In addition, it is put forward that the elderly getting assistance in meeting their self-care needs and having functional dependence had a higher risk of falling in comparison to the elderly who lived independently (Cevizci et al., 2015; Metin-Akten & Akin, 2017).

Eliminating the risk of falling in the elderly and enabling them to have functional independence are important to ensure that their quality of life is enhanced and that they have a healthy old age (Ozturk et al., 2017). Therefore, in home settings where the elderly live, primary healthcare workers should evaluate them in terms of degree of functional independence, home accidents, and risk of falling. Among primary healthcare workers, nurses have the opportunity to evaluate the elderly through home visits by observing and interviewing them at the setting where they live, to make environmental arrangements for the elderly to avoid home accidents and falls, and to provide the elderly and their families with training to enhance the elderly's functional independence levels and help them to avoid falls. No study that directly explored the relationship between the elderly's functional independence levels and their risks of falling was found in Turkey in the relevant literature. Therefore, this research was conducted to identify the relationship between the risks of falling and functional independence levels of elders living at home.

The research questions guiding the study are:
• What are the characteristics of the elderly living at home regarding their fall?

• What is the functional independence status of the elderly living at home?

• Is there a relationship between the functional independence of the elderly living at home and the risk of falling?

• What is the effect of the functional independence levels of the elderly people living at home on their falling behaviors?

Methods

Research type: This research is of descriptive type.

Design and sample: This is a cross-sectional study. The research was conducted from 25 March-25 June 2019 at 12 family health centers located in the Central Anatolian Region of Turkey. The study sample was designated as 600 elderly people (aged≥65 years) as per the formula employed to estimate the frequency of events when a population is known. Stratified sampling was used as the sample selection method, and each family health center was considered a stratum. The number of elders to be assigned from each stratum to sample was designated in proportion to the total number of elders registered to the relevant family health center, and hence, from a total of 18,700 elderly registered to 12 family health centers, 600 elderly people who satisfied the criteria for being included in the study were selected for the research sample.

Data collection tools: The research data were collected by using a personal information form, the Modified Barthel Index, and the Falls Behavioral Scale for the Elderly.

Personal information form: This form was prepared by researchers by scanning the literature (Huri & Kayihan, 2014; Sahin et al., 2016; Gokcek et al., 2019); it includes questions about sociodemographic characteristics of the elderly, their home environment, and their fall or accident status.

Modified Barthel Index (MBI): The MBI was developed by Mahoney and Barthel, and the validity and reliability study for the index was performed in Turkish by Kucukdeveci et al. (2000). The index consists of 10 items, and the minimum and maximum possible scores are 0–100 points, respectively (0: fully dependent; 100: completely independent). In most studies where the index was used, 60 was set as the cutting point, and a score above 60 points elucidates that respondents can perform functions independently. Scores of 0–20, 21–61, 62–90, 91–99, and 100 points successively show that a respondent has total dependence, severe dependence, moderate dependence, mild dependence, and independence.

Falls Behavioral (FaB) Scale for the Elderly: FaB was developed by Clemson et al., and the validity and reliability study for scale was performed in Turkish in 2013 by Eksi-Uymaz and Nahcivan. The scale is composed of 30 items and 10 dimensions. These dimensions are cognitive adaptations, protective mobility, avoidance, awareness, pace, practical strategies, displacing abilities, being observant, changes in level, and getting to the phone. Each item is scored from one to four points; hence, the FaB Scale is a four-point Likert-type measure. The responses that are given to each item in the area, 'Never', 'Sometimes', 'Often', and 'Always', and are scored consecutively as 1, 2, 3, and 4 points. The minimum and maximum scores to be obtained from the overall scale and its dimensions are respectively 1-4 points, and high scores obtained from the scale show that a respondent has safe or protective behaviors against falling, whereas low scores indicate that a respondent has risky behaviors toward falling. Six items on the scale are reverse-scored (items 7, 8, 9, 10, 19, and 23). As the score obtained from the overall scale goes up, the respondent's awareness of falling increases.

Implementation of the research: The research was conducted from 25 March-25 June 2019 at 12 family health centers located in the Central Anatolian Region of Turkey. By visiting the health centers during working hours in the daytime on weekdays before the research was launched, the researcher did interviews with family doctors, explained the purpose of the research to them, and received permission from them to do the research. Next, the researcher obtained a list of names and contact information of elders aged 65 years or above from each family practitioner working at the family health centers. Elders were selected from these lists by using a simple random sampling method until the total number of elders to be assigned from each family health center to the research sample was reached. Subsequently, the researcher phoned the elders selected for research, informed them of the research, and asked their verbal consent participate. The appointments for interviews with the elderly who volunteered to take part and who had no psychiatric or cognitive problems were scheduled on the day when the elderly were available at the family health center where they were registered. The researcher applied the survey and scales to the elderly by using the face-to-face interview method in a suitable room at the health center on the appointment day. Completing the survey and scale forms took each elderly person an average of 25-30 minutes.

Data analysis: The data obtained in the research were analyzed using the Statistical Package for Social Science (SPSS) 22.0. The elderly's demographic data were expressed as numbers and percentages. The Kolmogorov-Smirnov test was utilized to check whether the data were normally distributed. In the case of data with normal distribution, Pearson's Moments Multiplication Correlation Coefficient was used for identifying the linear relationship between two continuous variables. To compare the difference between groups, Tukey's Post Hoc test was utilized if the homogeneity assumption was verified, and Dunnett's T3 Post Hoc test was used if the homogeneity assumption did not hold. In the case of data with non-normal distribution, the Mann-Whitney U and Kruskal-Wallis H tests were utilized to evaluate differences between groups. To identify the relationships of elderly's scale scores with their socio-demographic characteristics, health status, and their characteristics in relation to falling and functional independence status, the t-test was used. One-way analysis of variance was conducted to control the homogeneity of variances. To find out about the effect of the elderly's independence levels on their behaviors toward falling, linear regression analysis was utilized.

Ethical considerations: Prior to the research implementation, approval was obtained from the Provincial Health Directorate and the University Non-Interventional Clinical Research Ethics Committee (Ethics Decision No: 2019-01/05). The principles of the Declaration of Helsinki were complied with. The elderly were informed, and verbal and written consent forms were obtained. The present study is taken from the Research Project approved by the Sivas Cumhuriyet

University Non-interventional Clinical Research Ethics Committee, with Code of Ethics 2019-01/05.

Results

The mean age of the elderly who participated in the study was 72.0±5.99 years, and 51% of them were women. Of the elderly, 89.5% had a minimum of one chronic disease and had medications that they were supposed to use constantly, 12.8% used auxiliary devices, and 3.8% were confronted with physical obstacles in areas for walking at home (wet floor and so on) (Table 1). In research, it was identified that the elders had a mean MBI score of 98.37±6.33 points, and hence, they had mild functional dependence in fulfilling their daily life activities. Moreover, it was found that the elders' mean FaB Scale score was 3.90±2.84 points, and they had highly safe behaviors and high-level awareness of falling. Additionally, it was discerned that elders obtained the highest mean scores from the FaB Scale dimensions of cognitive adaptations (3.68±0.32) and getting to phone (3.52±0.96) and the lowest mean scores from the FaB Scale dimensions of being observant (1.68±1.76) and displacing abilities (1.65±0.82).

In the research, it was found that 30.3% of the elders had a history of falling in the last year; the mean number of their falls in the last year was 1.48±0.87. Of the elders who fell in the last year, 68.7% fell due to environmental factors and 52.2% had a health problem in association with falling. Additionally, 43.2% of the elders who had health problems associated with falling had fractures and tissue injuries due to falling. Moreover, 0.8% of the elders were severely dependent, 5.3% were moderately dependent, 14.5% were mildly dependent, and 79.3% were independent (Table 2).

In research, it was identified that there was no statistically significant relationship between elders' mean MBI and FaB Scale scores ($p>0.05$), and the elders' levels of independence in fulfilling activities did not affect their behaviors toward falling. On the other hand, it was discerned that the elders' mean MBI scores had statistically significant correlations with the mean scores obtained from the FaB Scale dimensions of cognitive adaptations ($r=0.360$; $p=0.000$), changes in level ($r=0.167$; $p=0.000$), getting to the phone ($r=0.102$; $p=0.012$), protective mobility ($r=-0.158$; $p=0.000$), and practical strategies ($r=-0.171$; $p=0.000$). The research findings show that, as the elders' levels of independence increased, they had safe behaviors against falling in terms of cognitive adaptations, changes in level, and getting to phone; however, in terms of protective mobility and practical strategies, they exhibited risky behaviors toward falling (Table 3).

According to linear regression analysis conducted to find out about the power of MBI scores to predict the FaB Scale scores, it was identified that the mean scores obtained from the FaB Scale dimensions had a statistically significant relationship with the mean MBI scores ($R=0.440$, $R^2=.193$; $p<0.05$), and elders' levels of independence accounted for 19% of their behaviors toward falling. Besides, it was discerned that the mean MBI score had a highly statistically significant predictive effect on the mean scores obtained by elders from the FaB dimensions of cognitive adaptations, being observant, changes in level, and getting to the phone (Table 4).

In the study, it was determined that elderly in the 65-74 age group, married elderly compared with the older age group, singles, and elderly who use assistive devices, have a higher level of functional independence than those who do not ($p<0.05$) (Table 5).

Table 1. Elders' Descriptive Characteristics (n= 600).

Descriptive characteristics	n	%
Mean age 72.0 ± 5.99 years (Min: 65; Max: 95 years)		
Age group		
65–74 years	414	69.0
75–84 years	156	26.0
85 years or above	30	5.0
Gender		
Female	307	51.2
Male	293	48.8
Education level		

Illiterate	182	30.3
Primary school	338	56.3
Secondary school	52	8.7
Higher education	28	4.7
Marital status		
Married	443	73.8
Single	157	26.2
Employment status		
Not working	592	98.7
Working	8	1.3
Perceived economic status		
Income below expenses	206	34.3
Income equaling expenses	357	59.5
Income above expenses	37	6.2
Family type		
Nuclear family	478	79.7
Extended family	122	20.3
Persons with whom the participant elderly lives		
Living alone	65	10.8
Living with relatives (spouse, children, grandchildren and so on)	535	89.2
Having any chronic disease		
Yes	537	89.5
No	63	10.5
Using any medication constantly		
Yes	537	89.5
No	63	10.5
Using any prosthesis		
Yes	57	9.5
No	543	90.5
Using any auxiliary device		
Yes	77	12.8
No	523	87.2
Type of auxiliary device used by the participant elderly (n = 77)		
Walking stick	63	10.5
Wheelchair	5	0.8
Spectacles	4	0.7
Walker	3	0.5
Crutch	2	0.3

Table 2. Elders' Characteristics in Relation to Falling and Functional Independence Status (n = 600).

Elders' characteristics in relation to falling	n	%
History of falling in the last year in old age		
Yes	182	30.3
No	418	69.7
Number of falls in the last year (n = 182)[a]		
Mean number of falls in the last year 1.48 ± 0.87 fall(s) (Min: 1; Max: 4)		
1 fall	123	67.6
2 falls	13	7.1
3 falls or more	46	25.3
Reason for falling (n = 182)[a]		
Environmental factors	125	68.7
Vertigo	22	12.1

Balance disorder or weakness	20	11.0
Postural hypotension	6	3.3
Vision problem	4	2.2
Hearing problem	2	1.1
Fainting	3	1.6
Having any health problem associated with falling (n = 182)[a]		
No	87	47.8
Yes	95	52.2
Type of health problem experienced in association with falling (n = 95)[a]		
Fracture	41	43.2
Fear of falling	1	1.1
Tissue injury	41	43.2
Pain	12	12.6
Elders' characteristics in relation to functional independence status as per the MBI		
Dependence status		
Full dependence	-	-
Severe dependence	5	0.8
Moderate dependence	32	5.3
Mild dependence	87	14.5
Independence	476	79.3

[a] Percentages were calculated on the basis of numbers (n).

FaB Scale											
	r	-									
	p										
Cognitive adaptations	r	.377	-								
	p	0.00**									
Protective mobility	r	.656	.017	-							
	p	.000**	.671								
Avoidance	r	.544	.083	.295	-						
	p	.000**	.041*	.000**							
Awareness	r	.382	.256	.062	.355	-					
	p	.000**	.000**	.127	.000**						
Pace	r	.340	.046	.242	.108	.100	-				
	p	.000**	.260	.000**	.008*	.014*					
Practical strategies	r	.527	.056	.511	.210	.063	.172	-			
	p	.000**	.170	.000**	.000**	.125	.000**				
Displacing abilities	r	-.205	-.114*	-.324	-.079	-.218	-.302	-.211	-		
	p	.000**	.005	.000**	.052	.000**	.000**	.000**			
Being observant	r	.173	-.159	.085	.048	-.142	-.018	.118	.126	-	
	p	.000**	.000**	.037*	.243	.000**	.657	.004*	.002*		
Changes in level	r	.506	.208	.096	.012	.073	-.054	.076	-.041	-.062	-
	p	000**	.000**	.018*	.763	.075	.189	.062	.311	.127	
Getting to	r	.228	.182	-.018	-.012	.132	.345	.095	-.165	.008*	.068

the phone	p	000**	.000**	.666	.761	.001**	.000**	.020*	.000**	.837	.098
MBI	r	.038	.360	-.158	-.071	.001	-.025	-.171	.032	-.013	.167
	p	.359	.000**	.000**	.084	.975	.547	.000**	.435	.759	.000**

Table 3. The Relationships of the Elderly's Mean Modified Barthel Index (MBI) Score with The Means of Scores Obtained by Them From The Falls Behavioral Scale for The Elderly (Fab) and its Dimensions.

Table 4. Linear Regression Analysis to Predict the Effect of Elders' Independence Levels on Their Behaviors Toward Falling.

Variable	B	SE	Beta	t	p
Constant	**83.327**	**2.963**		**28.120**	**0.000**
FaB Scale	**-11.715**	**5.078**	**-0.590**	**-2.307**	**0.021**
Cognitive adaptations	**7.656**	**1.193**	**0.505**	**6.419**	**0.000**
Protective mobility	1.095	0.874	0.144	1.252	0.211
Avoidance	1.365	0.821	0.136	1.663	0.097
Awareness	0.384	0.764	0.031	0.503	0.615
Pace	0.784	0.442	0.111	1.776	0.760
Practical strategies	0.049	0.701	0.005	0.071	0.944
Displacing abilities	0.591	0.403	0.076	1.467	0.143
Being observant	**0.612**	**0.217**	**0.170**	**2.817**	**0.005**
Changes in level	**2.047**	**0.629**	**0.356**	**3.252**	**0.001**
Getting to the phone	**0.638**	**0.304**	**0.097**	**2.102**	**0.036**
R = 0.440　　　　R²=.193　 $F_{(9,24)}$= 12.805　　**p= 0.000**					

B: Regression coefficient, SE: Standard error, Beta Coefficient: Effect of explanatory variables on dependent variable, t = independent samples t-test, p: Significance level

Table 5. Means of Elderly's Falls Behavioral Scale for The Elderly (FaB) and Modified Barthel Index (MBI) Scores as per Their Certain Characteristics.

		MBI Mean ± SD	Test	FaB Scale Mean ± SD	Test
Age	65–74 years	98.73 ± 5.63	F = 7.367 **p = 0.001**	2.80 ± 0.30	F = 13.139 **p = 0.000**
	75–84 years	98.22 ±6.27		2.91 ± 0.32	
	85 years or above	94.20 ± 12.11		3.02 ± 0.32	
Gender	Female	98.37 ± 5.78	t =-0.008 p = 0.994	2.91 ± 0.29	t =5.651 **p = 0.000**
	Male	98.37 ± 6.88		2.76 ± 0.32	
Education level	Illiterate	98.29 ± 4.71	F = 1.326 p = 0.265	2.93 ± 0.30	F = 14.389 **p = 0.000**
	Primary school	98.11 ± 7.65		2.83 ± 0.32	
	Secondary school	99.75 ± 0.65		2.70 ± 0.31	
	Higher education	99.50 ± 1.93		2.61 ± 0.24	
Marital status	Married	98.53 ± 6.72	MU =-28.891 **P = 0.000**	2.81 ± 0.31	MU = 26.252 **p = 0.000**
	Single	97.92 ± 5.06		2.93 ± 0.33	
Person with whom the elder lives	Living alone	98.20 ± 5.01	t = 0.229 p = 0.819	2.96 ± 0.33	t = 3.301 **p = 0.001**
	Living with relatives	98.39 ± 6.48		2.83±0.31	

Having any chronic disease	Yes	98.36 ± 6.53	t = 0.141 p = 0.888	2.87 ± 0.30	t = -6.054 **p = 0.000**
	No	98.48 ± 4.29		2.62 ± 0.37	
Using any medication constantly	Yes	98.35 ± 6.56	t = 0.211 p= 0.833	2.87 ± 0.30	t = -5.923 **p = 0.000**
	No	98.52 ± 4.19		2.63 ± 0.35	
Using any auxiliary device	Yes	94.05 ± 12.85	t =3.355 **p = 0.001**	3.06 ± 0.32	t =-6.991 **p = 0.000**
	No	99.01 ± 4.34		2.81 ± 0.30	

KW = Kruskal-Wallis H test, MU = Mann-Whitney U test, t = independent samples t-test, F = One-way analysis of variance (ANOVA) test, p = p-value (p< 0.05)

Discussion

It was found that 30.3% of the elders had a history of falling in the last year; the mean number of their falls in the last year was 1.48±0.87. Of the elders who fell in the last year, 25.3% had three or more falls, 68.7% fell due to environmental factors, and 52.2% had a health problem in association with falling. Additionally, 43.2% of the elders having health problems in association with falling had fractures and tissue injuries due to falling. Previous studies indicate that injuries occurring in association with falling are at the top of non-fatal home accidents that the elderly had in the last year (Daghan, Arabaci & Hasgul, 2017; Joseph & Bagavandas, 2019). In a similar vein to the findings of the current research, several studies found that the percentages of elderly falling in the last year ranged between 24.9% and 40% (Deniz-Safak et al., 2019; Oliveira, Nossa & Mota-Pinto, 2019; Cevik et al., 2020; Telatar et al., 2020; Kilic, Ata & Hendekci, 2021). The research finding on the percentage of elders falling in the last year is in conformity with findings of most studies in the relevant literature. On the other hand, a study performed with the elderly found that the percentage of elderly falling in the last year was 19.8%, which was well below the figure obtained in the current research (Gazibara et al., 2017). It is considered that this difference between the findings of the current study and the study by Metin-Akten and Akin (2017) might be connected to the fact that the elderly included in the samples of these two studies lived in different regions and environmental conditions.

Of the elders, 0.8% were severely dependent and 79.3% were independent. It was also found that they had a mean MBI score of 98.37±6.33 points, and hence, they had mild functional dependence in fulfilling their daily life activities. In previous studies, the elderly's mean Barthel Index scores ranged from 79.64±16.92 to 82.6±24.2 points, and the elderly were moderately dependent (Sahin et al., 2016; Gokcek et al., 2019). In another study that utilized the same measurement tool and was performed with elders aged 75 years or above, it was discerned that 24.7% of elders were dependent on someone else for fulfilling their daily life activities (Cinarli & Koc, 2015). Unlike the findings of the current study, a study that used another measure to identify the degree of dependence in fulfilling daily life activities found that 0.6% of elders were dependent (Deniz-Safak et al., 2019). In another study, it was identified that nearly one-fourth of elders were semi-dependent (Telatar et al., 2020). It is supposed that differences between findings on dependence levels in the relevant literature and the current study might be linked to the fact that elders in these studies had different demographic characteristics (for instance, different mean age), lifestyles, and chronic disease status. The findings in the relevant literature and the current research demonstrate that, along with aging, elders had functional dependence, though to varying degrees. It was found that the elders' levels of fulfilling activities independently had no relationship with their behaviors toward falling.

However, as elders' independence levels increased, they more frequently exhibited risky behaviors toward falling in terms of protective mobility and practical strategies. Moreover, in the current research, it was identified that elders' levels of independence accounted for 19% of their behaviors toward falling. In contrast to the findings of the current research, numerous studies put forward that the elderly who were dependent on someone else for fulfilling their daily life

activities had a higher frequency of falling than those who were not dependent (Metin-Akten & Akin, 2017; Cevik et al., 2020; Telatar et al., 2020). In previous studies, it was stated that functional dependence and problems related to the ability to move and maintain balance were among the risk factors that increased elderly's falls (Cevizci et al., 2015; Cevik et al., 2020; Telatar et al., 2020; Tuna et al., 2021). It is considered that the difference between the findings of the studies in the relevant literature and the current study about the relationship between falls and degree of independence in fulfilling daily life activities might be connected to the diverse measurement tools used in these studies. Also, in the current research, as mobility levels increased along with an increase in independence levels, the elderly might have more frequently exhibited risky behaviors toward falling. It was identified that, as elders' independence levels increased, they more frequently exhibited safe behaviors toward falling in terms of cognitive adaptations, changes in level, being observant, and getting to phone. In a study performed with the elderly, it was discerned that there was a medium-level statistically significant positive correlation between cognitive state and physical independence level (Ozkan & Kars, 2018). The linear relationship between cognitive function and the capacity to do a job independently was also reported in another study (Huri & Kayihan, 2014). In the study by Daghan et al. (2017), it was found that the participants who had no home accidents obtained a higher mean Mini-Mental State Exam score than those who had home accidents, even though there was no statistically significant relationship between the Mini-Mental State Exam scores and the state of having any home accident. In a study, it was identified that the elderly who were dependent on someone else for fulfilling their daily life activities had failures in cognitive functions such as attention, perception, and decision-making during self-care activities (Huri & Kayihan, 2014). The research findings are in conformity with findings in the relevant literature and indicate that functional independence supported awareness of falls and enhanced safe behaviors against falling by positively affecting cognitive adaptation and attention. It was discerned that elders at an advanced age had lower levels of functional independence. In support of the findings of the current research, previous studies demonstrate that, as age advanced, functional capacity to fulfill daily life activities decreased, and dependence levels increased (Huri & Kayihan, 2014; Sencan,

Ayas & Saracgil-Cosar, 2016; Oliveira, Nossa & Mota-Pinto, 2019). Contrary to the findings of the current study and other studies in the relevant literature, a study found that there was no statistically significant relationship between age and dependence in fulfilling daily life activities (Deniz-Safak et al., 2019). The findings of the current research and most studies in the relevant literature show that, as age advanced, the elderly gradually became more dependent on someone else for fulfilling daily life activities and had functional losses and shortcomings.

Conclusion: The current research showed that elders had mild functional dependence in fulfilling daily life activities and had highly safe behaviors against falling and high-level awareness of it. Even if there was no statistically significant relationship between elders' functional independence levels and their risks of falling, it was found that elders more frequently had safe behaviors against falling in terms of cognitive adaptations, changes in level, and getting to phone. Since there was a statistically significant relationship between the elders' cognitive levels and their risks of falling according to the current research, the elders' cognitive levels should be more frequently evaluated and initiatives should be taken to alleviate their cognitive shortcomings. Nurses working in primary health care institutions are required to initiate and periodically monitor elderly health (detection of chronic diseases affecting functionality and drugs used, environmental regulations, etc.) similar to maternal and child health follow-ups. Since, as per the current research, elders' functional independence levels account for only a part of their behaviors toward falling, it is recommended that the number of studies and the size of sample groups devoted to this topic be increased.

Limitations of this study: The research results are limited to the self-reports presented in a specific period by elders registered in 12 family health centers in one province of Turkey. The obtained results can be generalized solely to this group.

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