Identifying Falls Efficacy and Number of Falls in Older Adults of Turkish Population

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Abstract

The aim of the study was to investigate the fear of falls in older adults while conducting the reliability analyzes of Falls Efficacy Scale- I for Turkish version living in Mugla and secondary aim was to study relationship between fear of falls (FES-I Score), gender and number of falls. All participants were living in the community and aged 65 years or over (N=100) included as voluntarily to this study. The FES-I questionnaire which is a self-report questionnaire, providing information on level of concern about falls for a range of activities of daily living, contains 16 items scored on four point scale of 1-4, was used for research aim. Internal reliability of the FES-I was evaluated by calculating the Cronbach's alpha coefficient for the whole scale. Independent sample test and correlation tests were used for statistical analysis. There were relationship between falls self efficacy, gender and number of falls. Therefore, there was significant differences between genders in FES-I scores and number of falls. In conclusion, Identifying fear of falling may be important to decrease inactivity in older age. Some exercise promotions may help to this people who are seeking be active by decreasing fear of falling and number of falls.

Key Words: Falls Efficacy Scale, Older adults, Number of falls, Reliability, Turkish

1. Introduction

During the past century, the number and proportion of older adults among the world population has increased due to socio-economic developments and better medical services (Lord et al., 1991). Although the majority of the population in Turkey is young, with the general increase in life expectancy, the older adult population is growing rapidly as it is in other European countries. In particular, in Turkey the percentage of individuals over the age of 60 increased from 5.9 % to 8.2 % from 1950 to 2000. Furthermore, it has predicted that the elderly will become a majority of the population with the next 30 years (NISBO magazine, 2003). Although this general increase in lifespan can be considered a positive development, there are a number of serious problems that can develop in the elderly. One of the common is falls (Howland et al., 1993). Fall-related injuries and deaths in older adults are a major health problem worldwide (Carter et al., 2001). It is estimated that nearly one third of elderly persons fall each year. Of those who fall, 50% do so repeatedly. Most fall result in bruises, strains, sprains, and psychological distress (McElhinney et al., 1998).

Falls can occur in simple daily activities as while walking or climbing stars (Tinetti et al., 1994). History of falls is determinant for future (Izumi et al., 2002) falls and this repeated falls can be reason for fear of falling in these age groups. Moreover, fear of falling increases with age or following a history of falls in the elderly. One of the major consequences of falling amongst the elderly is impaired self-efficacy in performing some daily activities. Falls efficacy is defined as "the degree of confidence a person has in performing activities essential to daily living without falling" (Tinetti et al., 1990). Fear of falling may lead some future consequences like inactivity for daily life, avoidance regular daily activities and this can be result in decreasing quality of life (Tinetti et al., 1994; Izumi et al., 2002; Carter et al., 2001).

Using some scales measuring for fear of falling and determining falls self efficacy for this population may identify risks for falling. Furthermore, understanding of falls self efficacy can be reason for motivating this people for being active to decrease fear of falling and giving self-confidence in daily activities. In literature, there are some studies reporting that falls self efficacy is related with the balance performance and the functional mobility in the elderly people (Kumar et al., 2008; Maki et al., 1991). Although the results of these studies suggest that to screen of fear of falls and falls self efficacy, there is quite limited research to understand spreading of fear of falls in the older community. The falls self efficacy (FES-I) scale was used in many country to measure fear of falls (Yardley et al., 2005; Kempen et al., 2007), while lack of enough study in Turkey. For this reason the aim of the study was to investigate the fear of falls in older adults living in Mugla.

2. Method

Participants

All participants were living in the community and aged 65 years or over (N=100). The subjects were included in this study lived at home or in residential house, able to walk without any assistive device and were able to provide informed consent. The subjects were excluded if they had any neurological diagnoses and had no surgical procedure during last a year. Participants were recruited for face to face structured interviews.

Instruments

The FES-I questionnaire which is a self-report questionnaire, providing information on level of concern about falls for a range of activities of daily living, contains 16 items scored on four point scale of 1-4, where "1" indicates not at all concerned while "4" indicates very concerned. This scale translated into different European languages according to a standardized translation protocol. Demographic data was collected through self report (Table 1).

Translation of the Falls Efficacy Scale International (FES-I)

A questionnaire is translated into Turkish language by three translators and then translated back into English language by an independent translator who is native to the original questionnaire. Turkish and English language versions were then compared and reviewed so that an agreed version that matches the original one was created.

Statistical Analysis

Internal reliability of the FES-I was evaluated by calculating the Cronbach's alpha coefficient for the whole scale, by checking whether every item increased the Cronbach alpha coefficient, and by examining Pearson's correlations between items. Mean and standard Deviations were computed for FES-I scores items and independent samples test and Correlations tests were used by Using SPSS 16 statistical packages.

3. Results

The mean age of participants was 70.3 years (SD 5.8) with an age range of 60–85, and 31 were women. Of the 100 people who reported (26.0%) had not fallen in the last 6 month, 26 (26.0%) had fallen once or more than once (Table 1).

Table 1. Descriptive characteristics of the sample (n=100)

Males (n)	31
Females (n)	69
Age (years)	70.3±5.8
Height (m)	1.65±6.2
Weight (kg)	75.2±11.2
Total FES-1 score	36.7 ±11.9

Internal reliability of the FES-I was 0.95. All items contributed positively to the reliability of the scale and the individual item ICC ranged from 0.93to 0.96. Our findings confirm that the FES-I has at least as good internal and test–retest reliability as any existing measure of fear of falling.

Table 2. Pearson Correlation between FES-1, Gender and Number of falls

	FES-I	Gender	Number of falls
FES-I	-	-,305[**]	-,269[**]
Gender	-,305[**]	-	,342[**]
Number of falls	-,269[**]	,342[**]	-

[**]. Correlation is significant at the 0.01 level (2-tailed).

Pearson correlation was revealed that there were negative correlation between FES-I score, gender and number of falls, while there was positive correlation between gender and number of falls.

Table 3. Independent Samples Tests of FES-1 score and Number of falls

	Gender	N	Mean	Std. Deviation	t	p
FES-I score	Female	31	42.12	15.03	3,1	0.02
	Male	69	34.30	9.34	2,6	0.01
Number of falls (in last year)	Female	31	1.51	0.50	-3,6	0.00
	Male	69	1.84	0.36	-3,1	0.00

There were significant differences between female and male FES-I scores and number of falls ($p \geq 0.01$, $p \geq 0.05$). Females FES-I means score is 42.12 while females FES-I score is 34.30. Males' numbers of falls are greater than females.

4. Discussion

The results from the present study show that the FES-I has good internal reliability in community-dwelling older people in Turkey. According to Ulus et al. (2012), the FES-I scale has good internal consistency, with a Cronbach alpha coefficient reported of .94. In the current study, the Cronbach alpha coefficient was .95.

It was found that female`s mean of FES-I score was greater than males. In the study of performed Ulus et al.(2008) was founded similar founding (female, FES-I score=31.58±9.25 and Male, FES-I score=23.92±8.25). On the other hand, in this present study, number of falls was greater than females in males. Similar findings were reported for studies that investigated fear of falling (Tinetti et., 1992; Parry et al., 2001).

Kato et al. (2008) studied a study to investigate the relation of the Falls Efficacy Scale (FES) to quality of life (QOL) among nursing home residents. They found FES score as 45±22.3, while it was found as 36.7±11.9. This difference may be related with age difference of participants of their study (age, mean: 85.6±6.1).

In this study, as a secondary analysis, we conducted correlation analysis with FES-I, gender and number of falls. Friedman et al. (2002) found that fear of falling is related with previous falls. In this study, it was found that Fear of falling was related with both number of falls it means previous falls and gender. There are a number of studies were reported that being a multiple faller significantly increases fear of falling that may cause activity restriction (Fletcher et al., 2004; Camargos et al., 2010).

In conclusion, FES was related to number of falls. Gender differences are important in FES-I score. Identifying Falls Efficacy and testing reliability and correlating it with number of falls were the key point of this study. In further studies, with including the large population can be research other factors like exercise, balance, illnesses etc.

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