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INVESTİGATİNG THE FEAR OF FALLİNG İN ACTİVE AND NON-ACTİVE ELDERLY PEOPLE RESİDENT AND NON-RESİDENT OF NURSİNG HOMES

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ABSTRACT

This comparative study was conducted using field method. Subjects of this study included all elderly people who were residents of nursing homes (Tehran) and residents of family homes (Tehran). The sample of study included 45 people selected randomly using convenient sampling method and elderly people in each group aged 60 to 80 years. Additionally, active elderly people were selected purposefully, according to the score obtained from daily living activities questionnaire and public walking continuously in one recent year, and non-active elderly people included those who did not obtain the desired score in daily living activities questionnaire and did not perform public walking or did not it continuously in one recent year. Measuring instruments consisted of fear of falling in the elderly people questionnaire, everyday activities questionnaire, and Berg Balance Scale. Cronbach's alpha coefficient was obtained 0.75 for fear of falling questionnaire, and it was obtained 0.98 for Berg Balance Scale. For the analysis of data, single sample t test, Pearson correlation and regression test at the 0.05 level were used through SPSS 20 software. The results showed that fear of falling is more or less equal in women with a mean of 87.9 and men with mean of 89.7. In addition, fear of falling in elderly people living in nursing homes (with mean of 84.9) is more than that in elderly people living in family homes (with mean of 91.7), and fear of falling in active people with mean of 123.2 is more than that in non-active people with mean of 63.7.

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Introduction

Ageing is critical period of human life and paying attention to issues and needs of this stage of life is a social necessity. Considering specific needs of this period and paying attention to health promotion behaviors are important issues which are neglected usually. All human beings have the right to have healthy aging, and this emphasizes the importance of the phenomenon of ageing and prevention of problems. More than half of the world's elderly population (59%) is living in the developing countries currently. However, it is estimated that this rate to reach by 71% in the year 2030 (1). About 60 percent of health care costs, 35% of hospital discharges, and 47% of hospitalization days belong to elderly people. Due to the rapid increase in the number of elderly people, the issue of elderly people health and providing their welfare and well-being in the

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community find new and wider dimensions (2). Modern science does not focus merely on prolong life, but it focuses on this issue that additional human life years should be spent healthy both physically and mentally, and if such conditions are not provided, scientific advances for longer life will be ineffective and risky (3). Due to the disorders that an individual's different body systems are faced with them by increasing age, especially due to movement restrictions, these factors can have a negative impact on the falling of the elderly people (4). One of the common problems in elderly people is falling. According to available statistics, about 30% of people aged 65 years old experience the falling and this statistics in nursing homes is more than 3 times. Approximately 1,800 elderly people living in nursing homes die due to falling annually. In addition, 70% of fallings happen at home, which 10 percent of them are related to climbing stairs. In more than 50 percent of fallings, environmental risk factors such as low light, the lack of railings, sliding carpet, wires and cords and small appliances on the floor, sight errors when passing through floors, stairs, escalators, etc. are involved (3). Falling is an event resulted in unwanted placement of person on the ground due to reasons other than loss of consciousness, seizures or strokes (5). At least a third of people aged over 65 years experiences falling and two third of death causes are related to falling in the elderly people. In America, 72% of deaths caused by falling happen in 13% of people aged over 65 years, and 25% of deaths caused by falling occur in the first 6 months (4). The falling not only affects their lives and causes loss of their independence and physical, psychological, social and economic consequences, but also has important impacts on health systems of society (6). Due to serious complications and threats caused by falling and its risk factors, this issue has been widely and comprehensively studied. In most studies, the causes of falling are divided into two groups of internal and external risk factors: external risk factors (factors caused by environmental conditions), including the use of psychotropic drugs and hypnotics, environmental conditions such as low light in traffic areas, the level reliance movement and sliding, uneven surfaces, cumbersome applicants, and other cases. Internal factors include weakness in lower extremity muscles, reduced sense of vibration, reduced mental ability and reduction in sensory information, slowness in motor responses, and so on. A review of studies shows that most of the studies related to aging focus on falling in the elderly people (7). In this regard, several studies have been conducted on risk factors, the reason and rate of prevalence of falling, and ways to prevent it. In all these studies, much emphasis is seen on the modification and improvement the environment where elderly people live (7). The prevalence of falling in elderly people shows that falling in home has lower prevalence compared to falling in nursing homes and hospital. Falling for any reason has some problems that some of these problems and consequences include fear of falling, cuts, fractures (especially in hip), bleeding, bruising and embolism. One of the most important consequences is restrictions in performing daily activities and loss of self-confidence and fear of falling in the future, which sometimes leads to elderly people dependency to others and ultimately it leads to their referring to nursing home. On the other hand, fear of falling has meaning different from falling, and fear of falling is seen in people who have not fallen so far. (5) (1993) consider fear of falling as concerns about falling eventually leads to avoiding to perform daily activities. According to research conducted by Tidiksar , fear of falling refers to avoiding activity due to fear of falling. Fear of falling increases with age increase and it is higher in elderly women. Risk factors for fear of falling are the same risk factors of falling, including female gender and older age. History of falling is one of the most important factors in the fear of falling. Fear of falling creates different problems for the elderly people, including: depression, dissatisfaction with life, reduced social activities and reduced quality of life, which all these factors can result in repeated falls and affects the level of performance of them.. However, researchers agree that the fear of a falling has a multi-dimensional etiology and suggest that the severity of this problem may be even more than "falling" in the elderly people and therefore it deserves more attention (5). Regular physical activity as one of the most important health-promoting behavior in elderly people prevents and delays various chronic diseases and premature deaths, and its importance has been raised out as a means to sustain the independence in elderly people through various studies (8). Domestic studies have shown that the level of physical activity in elderly people aged 60 years and older is 57.01 in women and 66.06 in men, which represents a reduction in their health-related quality of life (9). It seems that in elderly people, fear of falling leading to low self-esteem and self-efficacy, can be considered as a barrier to proper physical activity. In this regard, we can refer to research of (10) which demonstrated that core stability exercises might improve postural control and thus rate of falling in the elderly people. (11) showed that falling in elderly people is associated with a history of chronic diseases such as stroke and Parkinson, vision status, use of antidepressants. (12) showed that 0.58% of elderly people have low-intensity physical activity, and 34.5% of them have moderate-intensity physical activity, and only 7.3% of them have high-intensity physical activity. The findings also suggest that physical activity has a significant and negative correlation with the fear of falling.(13) showed that there is a significant difference between mean changes in fear of falling in elderly people in yoga training group (-3.10) and the control group (0.93). In other words, yoga leads to a significant reduction in the fear of falling in elderly people. In addition, there is a significant relationship between men and women gender and fear of falling rate. It means that yoga in women compared to men leads to further reduction in the fear of falling in elderly people. (13) reported that lower extremity strength trainings reduce the risk of falling in elderly women. (14) examined the effect of 12-week Tai Chi exercise program on physical fitness and preventing from falling in the elderly people. He reported that Tai Chi exercises can reduce the rate of falling in the elderly people. (15) in their study examined 78 elderly people aged over 64 years living in the society with independence, and the results showed that the rate of fear has negative and significant relationship with everyday activities. According to the views and information presented above, we realized the importance of falling in the elderly people, and taking into account the incidence of falling and the consequences of falling in the elderly people such as hip fractures, fear of falling and limitations in daily activities and

considering the process of costly and time-consuming recovery and rehabilitation and sometimes lack of desired response to treatment which ultimately leads to the dependence of the elderly people, the objective of this study is to examine the challenge of fear of falling in elderly active and non-active people living in nursing homes compared to that in active and non-active elderly people living in family homes.

Methodology

Subjects of this study included all elderly people who were residents of nursing homes (Tehran) and residents of family homes (Tehran). The sample of study included 45 people selected randomly using convenient sampling method and elderly people in each group aged 60 to 80 years. Additionally, active elderly people were selected purposefully, according to the score obtained from daily living activities questionnaire and public walking continuously in one recent year, and non-active elderly people included those who did not obtain the desired score from daily living activities questionnaire and did not perform public walking or did not it continuously in one recent year. Inclusion criteria of the study included normal hearing, no history of diseases such as Parkinson, MS, dizziness, no history of stroke or heart attack in the past year, lack of need for assistive devices such as canes and walkers for walking or standing. After considering all exclusion criteria and selecting the samples and being ensured of the inclusion of samples to process of study, subjects completed the specified questionnaire. Questionnaires included fear of falling questionnaire, everyday activities questionnaire, and Berg Balance Scale.
Fear of falling questionnaire: it was used to assess the fear of falling that its reliability was reported 75% by using Cronbach's alpha, and its internal correlation coefficient was reported 99% and its validity has also been confirmed.
Berg Balance Scale: to measure functional balance, this scale was used that its reliability was 98% in elderly people and the validity of this scale was confirmed by study conducted . The questionnaire of fear of falling in the elderly people has 16 questions and it aims to assess the level of fear of falling when doing different everyday activities. To obtain the overall score of the questionnaire, the total scores of every questionnaire were aggregated. Higher scores indicate a higher fear of respondent from falling and vice versa. This score in the range from 0 to 130 (13).
Berg Balance test contains 14 steps that these steps include various activities. These activities include: 1-rising from the status of sitting on a chair, 2-standing without support 3- motionless sitting on the chair without support, 5- transferring, -6-motionless standing with closed ayes 7- motionless standing with open ayes and paired feet, 8- access to the front by hands in the standing position horizontally 9-removal of objects from the ground 10-returning to sides to look at the back 11-one round of complete rotation, l12- in turn placement of one foot on stool successively 13- Standing in situation in which one leg is in front of the other foot, 14 standing on one leg. It is scored from 0 to 4 in which 4 means complete ability and score of zero means the inability to implement activities. Thus, total test score is 56 (15)

Results

This study is comparative conducted using field method. Statistical techniques of this study consist of a single sample t-test, Pearson correlation test, and regression test used at the level of 0.05 and by using SPSS 20 software.
Table 1 statistical characteristic of the scores of fear of falling separately for groups

Groups		n	mean	SD	Skewness	Minimum	Maximum
gender	Female	47	87.9	37.9	-0.5	130	5
	Male	43	89.7	36.3	-0.5	130	20
residence	Nursing home	39	84.9	42.7	-0.38	130	5
	Family home	51	91.7	32.0	0.41	130	25
Action	active	38	123.2	7.4	-0.91	130	105
	Non-active	52	63.7	28.5	0.14	130	5
	Total	90	88.2	36.9	-0.47	130	5

Data of table 1 relate to score of fear of falling in the two groups separately in terms of gender and residence. By observing

the table, the following cases can be extracted: fear of falling is more or less equal in women with mean of 87.9 and men with mean of 89.7. The rate of distribution of the scores in men did not show significant difference. Additionally, Skewness of scores in men and women is negative. This means that rate of scores higher than the mean is high in both groups. Fear of falling in nursing home residents with mean of 84.9 is lower than that in the family home residents with mean of 91.7. The distribution of scores in the family home resident group is less than that in nursing home resident group. Skewness scores were also higher in the resident group. It means that the rate of scores higher than mean is high in both groups, but it is higher in the family home resident group. Fear of falling in active people with mean of 123.2 is more than that in non-active people with mean of 63.7. The distribution rate of scores is also higher in active group compared to non-active group, and Skewness of scores is higher in the active group. This means that rate of scores greater than the mean is high in both groups, but it is greater in men compared to women.

Table 2- statistical characteristics of activity scores desperately for groups

Groups		n	mean	SD	Skewness	Minimum	Maximum
gender	Female	47	89.4	13.9	1.2-	100	50
	Male	43	85.3	21.3	2.3-	100	15
residence	Nursing home	39	86.1	16.1	1.2-	100	40
	Family home	51	88.6	19.2	2.1-	100	15
Action	active	38	97.1	4.1	-1.52	100	85
	Non-active	52	80.5	20.7	-0.11	130	5
		Total	87.2	18.6	-1.9	100	15

Data of table 2 relate to score of everyday activities in the two groups separately in terms of gender and residence. It is seen that everyday activities in women with mean of 89.4 are more than those in men with mean of 85.3. The rate of distribution of the scores in women (13.9) is lower than that in men (21.3). Additionally, Skewness of scores in men and women is negative. This means that rate of scores greater than the mean is high in both groups, but it is greater in men compared to women. Daily activity of nursing home resident people with mean of 86.1 is lower than that in family home resident people with mean of 88.6. The rate of distribution of scores in the nursing home resident group (16.1) is less than that in other group (19.2). In addition, Skewness of scores is negative in men and women. This means that rate of scores greater than the mean is high in both groups, but it is greater in home resident group. Daily activity of active people with mean of 97.1 is less than that in non-active people with mean of 80.5. The rate of distribution of scores in the active group (4.1) is less than that in non-active group (20.7), and Skewness of scores is negative in both groups meaning that the rate of scores greater than mean in both groups is high, and it is higher in active group compared to non-active group.

Table 2- statistical characteristics of balance scores desperately for groups

Groups		n	mean	SD	Skewness	Minimum	Maximum
gender	Female	47	41.7	14.3	0.9-	56	9
	Male	43	41.7	14.09	0.9-	56	4
residence	Nursing home	39	39.0	15.7	0.7-	56	4
	Family home	51	42.0	13.7	0.8-	56	8

Action	active	38	50.6	7.3	-1.57	56	27
	Non-active	52	33.5	14.3	0.21-	56	4
Total		90	40.7	14.6	-0.76	56	4

Data of table 3 relate to score of balance scale in the two groups separately in terms of gender and residence. It is seen that score of balance scale in women with mean of 40.7 and that in men with mean of 39.9 is more or less equal. The rate of distribution of the scores in women group (14.2) is lower than that in men (16.2). Additionally, Skewness of scores in men and women is negative. This means that rate of scores greater than the mean is high in both groups, but it is greater in women compared to men. Score of balance scale in nursing home resident people with mean of 0.39 is lower than that in family home resident people with mean of 41.4. The rate of distribution of scores in the nursing home resident group (15.7) is more than that in other group (14.8). In addition, Skewness of scores is negative in both groups. This means that rate of scores greater than the mean is high in both groups, but it is greater in home resident group. Daily activity of active people with mean of 50.6 is less than that in non-active people with mean of 33.5. The rate of distribution of scores in the active group (7.3) is less than that in non-active group (14.3), and Skewness of scores is negative in both groups meaning that the rate of scores greater than mean in both groups is high, but it is higher in active group compared to non-active group.

Discussion and Conclusion

The results showed that fear of falling in women with a mean of 87.9 is more or less equal with that in men with mean of 89.7. The result of this study in relation to the difference in rate of falling in women and men are in line with results of study conducted by (16), and (17) and (18), which showed the rate of falling in women is more than that in men.(19) reported that the p prevalence of fear of falling among elderly women was higher. In study conducted by (20), a strong correlation between gender and the fear of falling was reported. However, the results of(21) in Sweden in contrast with this study reported that after 6 months follow-up, falling rate in men was three times higher than women. The reason for lack of consistency in results of this study and (21) study could be differences in the study population. In the study of (21) , elderly people aged over 55 years, but in this study, they aged 60 to 80 years. Increased age is associated with physiological and psychological changes leading to increase in the incidence of falling and fear of falling in the elderly people. In addition, the experience of falling can be the most important reason for fear of falling and subsequently problems and limitations in elderly people. The results showed that fear of falling in nursing home residents with mean of 84.9 was lower than that in family home resident people with mean of 91.7. Certain drugs, mental health, chronic diseases and environmental are risk factors for falling, so that(22) and (23) in their study showed that hospitalized patients aged 65 years and older are at greater risk for falling. However, (24) found that only people older than 85 years are at high risk for falling. It seems that elderly people who are residents of the nursing home due to taking sleeping drugs, as well as psychological problems due to being away from family and children, and reduced confidence and less hope for life and the nostalgia and much discomfort are more exposed to falling. The results of the research showed the fear of falling in active people with mean of 1232.2 is more than that in non-active people with mean of 63.7. In a study conducted by (7), relationship was found between the fear of falling and level of activity of the elderly people studied. In addition, the study of(25) showed that elderly people with the less ability to move less have more fear of falling and movement restrictions.

(13) showed that there is significant difference in mean of changes in fear of falling in elderly groups of yoga (-3.10) and that in the control group (0.93). In other words, yoga leads to a significant reduction in rate of fear of falling in elderly people. In addition, (15) studied 78 elderly people aged 64 years and older who had movement independence and they showed that there is a significant and negative relationship between fear of falling and everyday activities. Several studies demonstrate the fear of falling reduces physical activity in people. Fear of falling might lead to cessation of activities, immobility, and functional dependency and it is considered as one psychological variable that leads to decreased physical activity in elderly people (26). It also increases efficiency and independence of elderly people and helps them in controlling various complications of aging and different treatments. As a result, removing barriers to perform physical activity in the elderly people, especially the fear of failure should be considered in elderly health promotion programs. The results showed that everyday activity of women with mean of 89.4 is higher than that in men with mean of 85.3. The results of the present study are in line with result of study conducted by (13).(13) showed significant relationship between gender and exercise and the fear of failure in men and women. The yoga in women compared to men leads to further reduction in the fear of falling in eldely people. Result of study conducted by (9) show that the level of physical activity in female and male 60 years old and older elderly people is 57.01 and 66.06, respectively. According to the World Health Organization report, at least 0.60% of people in the world do not perform the recommended level of physical activity needed for their health (27). Health promoting behaviors are an important factor in preventing diseases. Proper physical activity is one of the most important

health behaviors and insufficient physical activity is the most important causes of chronic disease in all societies. Physical activity at any intensity can improve the quality of life in elderly people. Even if elderly people are not able to exercise at the recommended level, they should have physical activity as possible (4). The results showed that the balance score of the nursing home residents with mean of 0.39 is less than that in people living in the family home with mean of 41.4.
(28) examined the impact of a balance strategic plan in increasing balance function level and mobility among nursing home residents. The results showed that the balance and mobility of the elderly people improved after performing stretching, balance, strength and walking exercises. Results of(29) showed that physical activities reduce the risk of falling and motion and functional restrictions in the elderly people. Due to the physical and psychological conditions of the elderly people living in nursing homes, lack of motivation and interest in the activities and laziness and boredom and fear of coming out of their rooms to perform physical activity, excessive dependence on their caregivers, lack of hope to future and improving physical condition, they are reluctant to perform ordinary exercises in the nursing homes. By performing an exercise plan protocol, their physical conditions, especially their balance, can be increased and the conditions for happiness are provided for them.

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