European Journal of Physical Education and Sport Science
ISSN: 2501 - 1235
ISSN-L: 2501 - 1235
Available on-line at: www.oapub.org/edu

10.6084/m9.figshare.3382816 Volume 1 | Issue 2 | 2016

THE IMPACT OF STABILITY AND COGNITIVE YOGA EXERCISES ON CERTAIN KINEMATICS OF GAITING AND LIFE QUALITY AMONG ACTIVE ELDER WOMEN

Neda Ghadimi[1]*, Mina Bikdeli[1], Fatemeh Royatvand Ghiasvand[2], Behnaz Ganji Samin[3], Elham Shirzad[4]

[1]MSc Sport Pathology, Karaj Branch, Islamic Azad University, Karaj, Iran
[2]MSc Sport Biomechanics, Karaj Branch, Islamic Azad University, Karaj, Iran
[3]Ph.D Sport Pathology, School of Physical Education and Sport Sciences, Tehran University, Tehran, Iran
[4]Department of Sport Biomechanics, School of Physical Education and Sport Sciences, Tehran University, Tehran, Iran

Abstract:

The purpose of this research was to discuss the effects of stability and cognitive yoga exercises on certain kinematics of gaiting and life quality among active elderly women. The population of this research includes 100 women aged between 61 and 88 years who inhabit in Karaj's Kahrizak nursing home. Among the population, 30 individuals matched our research criterions and therefore, they were selected as the sample of the research in a random sampling method. The age of subjects ranged between 63 to 83 years. In addition, their height ranged between 139.5 to 160 cm and also their weight ranged between 48 to 88 kilograms. Kinematics of gaiting was evaluated beforehand to participation in exercise protocols. Afterwards, the subjects of the experimental group were administered 24 sessions of exercise and after the exercises, the kinematics of gaiting was measured again. On the other hand, the control group also undertook morning exercises under the supervision of the coach of the facility. The collected statistical data were processed with independent and dependent t-tests and also for the purpose of assuring a normal data distribution, the Shapiro test was performed at a confidence level of P= 0.05. Results indicated that after eight weeks of performing stability and cognitive yoga trainings, the lengths of the right and left paces and also the pace speed were significantly improved and increased among elderlies. The variables of life quality, stance time and swing time and pace frequency were also significantly

increased among the experimental group. However, this increase was not significant compared with the control group.

Keywords: yoga, kinematics, gaiting, life quality, elderly

Introduction

Elderly is the absolute destiny of every human being on earth. Among the consequences of growth of age and entering the elderly ages, it can be referred to reduced moving speed, function weakness and disorders and reduction of strength with an increasing trend of 1% per year (from the fourth quarter of life on) (Ghasempoor, 2013). Previous studies have shown that almost 50 percent of the negative outcomes of elderly ages are mostly related to lack of physical activity. According to previous researches, having a negative attitude towards physical activity during the elderly ages, the age grading for exercising in addition to retirement and reduction of income may result in lack of efforts for physical activity among elderlies. In other words, as people age, their tendency for engaging in sports activities diminishes (Shojaei, 2007).

Falling down is one of the elderlies' major cause of death. In such a way that more than 11 thousand people die annually because of falling sown. Nowadays spread of falling down in elderlies has become a serious problem for their health. 35 to 45 percent of healthy people more than 65 years of age experience falling at least once a year (Azimzadeh et.al, 2012). In addition, by an increase in age not only the number of fallings grows, but also the intensity of damages increases (Denoronba Ribera Daniel, 2011). The serious damages caused by falling down include femoral fracture, subdural and hematoma bleeding, bruise, torsion joints, muscle cramps, death, psychological effects. Fear of falling down causes the loss of self-confidence and restriction in performance (Hassani Mehraban et.al 2011).

World Health Organization has defined life quality as a person's understanding of life, values, goals, standards and interests. Also in the recent years the implication of life quality concept is used as an important indicator in medical and nursing researches about life to evaluate decision making personal health and judging the society's general health and finding the major problems in the different aspects of people's lives which is the reason for security, preservation and an crease in health rate and welfare and personal life quality (Hekmatpour et.al, 2012; Jafarzadeh et al. 2010).

20 to 30 percent of the people who fall down face average to serious damages which includes cuts, hip fracture and head damages and these damages make it difficult for these people to live an independent life. Falling down is the most common

reason in brain damages and early death. In 2010, twenty two thousand and nine hundred people passed away because of falling down. Based on the statistics, deaths caused by falling down were 41 percent more in men than women. In 2012 the direct medical expenses related to falling down were estimated over 30 billion dollars (Centers for Disease Control and Prevention, 2012).

It has been reported that exercise therapy for the lower body causes ability improvement and capacity of muscle power production and flexibility which have an important role in gaiting (Sadeghi et al. 2011).

Falling usually means a sudden change in position which ends by falling on the ground which is the main reason for fractures which causes physical consequences especially people with Osteoporosis (Vertebral fractures of the spine, pelvis, leg bone, wrist and disablement, losing physical ability and death), mental effects (losing self-confidence, self-esteem, reduction of life expectancy, reliance on other people, change of life style to inactivity and exorbitant caution), financial issues (spending high medical costs) and becoming crippled (Sadeghi et.al 2008).

Yoga is suitable to prevent and control special diseases which are more common in the elderlies and enables the person to make connections to their inner selves and this is the time when the person accepts themselves as the very way they are and in leads to a positive viewpoint to life. Yoga exercises with awareness of physical condition, respiratory condition, stress release and preventing joint stiffness help maintaining balance and can delay the phenomenon or process of aging in body tissues or even invert its track. Elderlies mostly have lack of awareness about their respiratory levels, body structure changes by aging, flexibility decreases, diseases are cured slower and diseases like diabetes, heart failures, high levels of cholesterol and respiratory problems happen (Ashtiani 2007). Another important point is that in many books and articles related to elderlies doing activities such as swimming; jogging, gardening, tai chi exercises, etc. have been insisted. Because a small percentage of elderlies turn to jogging, swimming and other kinds of sports after they are inflicted with cardiovascular problems or other serious illnesses (Raymond Harris 2000).

Considering that in our country because of cultural and social factors and financial problems elderlies turn to these exercises less, the necessity of performing yoga as one of the best actions that most of elderlies can perform in any time and place with decreasing the damage risk becomes clear. Considering that elderlies population has a faster growth compared to the general population (elderly's population growth rate is 1.9 percent, which is considerably more than 1.2 general population growth rates) (Salmand Website).

Considering that preventing posture weaknesses and improving gating pattern causes preventing probable falling down of the elderlies and helping them toward a better performance of daily chores, the researcher has tried to clarify the probable impact of yoga and special exercises on improving gaiting factors and life quality and by generalizing it prepare the background of encouragement to start or continue the physical activities in this valuable group of society. It is hoped that the results of this research would be effective in presenting movement patterns for the elderlies, become considered as a preventing factor of elderlies' serious damages which may cause death or medical expenses, be used in nursing homes and sports federations and by recognizing strength and weaknesses help the coaches and experts in preparing more inclusive programs.

Most of the common exercise ways which have been used in the previous researches to eliminate these problems of elderlies include physical exercises and activities such as stretching exercises, strength trainings, and aerobic endurance or a combination of these exercises. The purpose of researches about aging is to increase the beneficial and effective years of age and by exercising and organized movements expands the active period in the aging time. Yoga exercises can have a positive effect on flexibility and improving the range of motion in joints and maintain balance. Now, with respect to the aforementioned content, the present research is aimed at providing an answer to the question that if an eight-weeks program of stability and cognitive yoga exercises can have any significant impact on certain kinematics of gaiting and quality of life among active elderly women through making a connection between the human mind and body or not?

Material and Methods

This research is a semi-experimental study and the selected design includes a pretest, posttest and a control group.

The population of the present research includes 100 elderly women aged between 60-85 years who inhabit in Karaj, Kahrizak nursing home. Among the population, 30 individuals were identified as matches with research criterions and therefore, under a random sampling method, the aforementioned 30 individuals were selected as the sample of the study.

Data collection instruments included:

1. Demographic data collection forms;

2. Agreement forms which discussed exercising and video capturing methods in pre and posttest stages. In addition, individuals used to fill the forms after studying them;
3. The form of exclusion or inclusion criterions which were filled with the help of an aiding physician;
4. Forms of collecting data related to posttest and pretest including health status, pace length, pace speed, pace frequency, pace swing time and pace stance time;
5. The SF-36 questionnaire; a self-reporting questionnaire which is mainly developed for investigation of status of life and health. This questionnaire was developed by Ware and Sherburne and includes 36 components and also evaluates 8 contexts including physical performance, social performance, physical role playing, emotional role playing, mental health, liveliness, physical pain and general health status.
6. A Sony ZR200 full-HD video capturing camera with a shutter speed of 250ms and ability for capturing up to 120 frames per second;
7. The software of Kinovea 2013 for analysis of data.

After making the necessary arrangements with the nursing home of Karaj, Kahrizak, a number of 30 healthy elderlies were selected under availability random sampling methods. The test subjects were first approved by expert physicians for making presence in exercises and tests, after wards, the questionnaires of demographic information and sports information were handed to participants along with an agreement form. Among the selected 30 samples, 15 individuals were randomly assigned to the experimental group and also the other 15 individuals were assigned to the control group. At the pre-test phase, each participant filled out the SF-36 questionnaire for the purpose of evaluation of life quality. Afterwards, each subject's height and weight was measured and furthermore, for the purpose of completion of gaiting kinematics measurements, the subjects were asked to perform a gaiting test on a ceramic floor. The distance between the camera and the route was 5 meters and each subject was also asked to gait through a five meter rout with bare feet and while having their under body parts marked with certain markers. The subjects wore black dresses and had markers on their external ankle, heel and fifth foot bone, and the greater trochanter of femur and epicondyle; and while they walked in natural and with deliberate speeds, they were filmed.

With respect to the research design which included a posttest, pretest and a control group, and next, the extent of changes between the posttest and pretest were examined and evaluated for the purpose of discussing the effects of stability and cognitive yoga exercises on the dependent variables of our research. Afterwards, the

amount of changes was calculated through the application of the independent t-test. In addition, for the purpose of comparing the impacts of stability and cognitive yoga exercises on the time-location parameters of the right and left paces, firstly the amount of changes was calculated and then (positive changes were regarded as an increase in the post-test and also negative changes were regarded as an increase in post-test), by the application of the correlated t-test, the results were compared with each other. It is worth mentioning that hypotheses related to gait parameters were each discussed in three sections. The first section was dedicated to the impact of stability and cognitive yoga exercises on parameters of the right step, the second section was concerned with the same parameters regarding the left step and also the third section was concerned with a comparison between the impacts of stability and cognitive yoga exercises on left and right paces. In addition, in all hypotheses, the pre-test values of dependent variables were compared with the values of the same variables in post-test for both the control and experimental groups through the application of the correlated t-test. With respect to the fact that we require descriptive and inferential statistics in order to be able to interpret the obtained results, therefore the entire results of tests are shown here in addition to related descriptive statistics. The entire analyses are performed with the SPSS v20.0 software at a significance level of 0.05.

Results

Table 1 shows the descriptive statistics related to personal characteristics of subjects including height, weight and age for both the control and experimental groups

Table 1: The descriptive statistics related to personal characteristics of subjects in both experimental and control groups

(height (CM	(weight (KG	(age (year	group
151/07 ± 8/04	65/00 ± 11/66	69/47 ± 4/84	experimental
150/20 ± 4/00	65/50 ± 11/85	69/53 ± 5/93	control

Hypothesis testing

One period of stability and cognitive yoga trainings have no impact on components of life quality (physical performance, limited operability due to physical health problems, limited operability due to mental health problems, energy and fatigue, feeling of being well, social performance, pain, general health and total life quality) among active elderly women.

Table 2: Results of the correlated t-test for comparing the pretest and posttest values of life quality for both groups

comparing the posttest and pretest	changes	posttest	pretest	group	variable
t_{14} = 7.686, sig = 0.000*	16/00 ± 8/06	71/33 ± 18/07	55/33 ± 20/48	experimental	physical perfromance
t_{14} = 6.077, sig = 0.000*	14/67 ± 9/35	74/67 ± 17/06	60/00 ± 19/36	Control	
t_{14} = 5.002, sig = 0.000*	38/33 ± 29/68	71/66 ± 32/55	33/33 ± 39/71	experimental	limited operability due to physical health problems
t_{14} = 2.882, sig = 0.012*	30/00 ± 40/31	70/00 ± 41/40	40/00 ± 44/11	Control	
t_{14} = 5.995, sig = 0.000*	51/06 ± 32/99	86/62 ± 21/13	33/55 ± 40/76	experimental	limited operability due to mental health problems
t_{14} = 2.823, sig = 0.014*	33/11 ± 45/43	86/44 ± 30/77	53/33 ± 51/64	Control	
t_{14} = 8.589, sig = 0.000*	19/03 ± 8/58	68/80 ± 18/28	49/77 ± 19/62	experimental	energy and fatigue
t_{14} = 5.325, sig = 0.000*	17/00 ± 12/36	75/67 ± 18/16	56/67 ± 17/18	Control	
t_{14} = 6.644, sig = 0.000*	18/07 ± 10/53	66/40 ± 21/09	48/33 ± 26/77	experimental	feeling of being well
t_{14} = 4.955, sig = 0.000*	21/33 ± 16/68	75/20 ± 20/35	53/87 ± 14/33	Control	
t_{14} = 6.542, sig = 0.000*	23/67 ± 14/01	83/33 ± 14/72	59/67 ± 22/14	experimental	social performance
t_{14} = 3.995, sig = 0.001*	17/67 ± 17/12	78/33 ± 20/30	60/67 ± 20/19	Control	
t_{14} = 5.407, sig = 0.000*	20/67 ± 14/80	66/67 ± 23/71	46/00 ± 26/09	experimental	pain
t_{14} = 2.467, sig = 0.027*	10/33 ± 16/22	56/17 ± 18/56	45/83 ± 19/83	Control	
t_{14} = 8.073, sig = 0.000*	15/80 ± 7/58	78/67 ± 13/16	62/87 ± 18/74	experimental	general health
t_{14} = 3.007, sig = 0.009*	11/00 ± 14/17	72/33 ± 18/31	61/33 ± 14/45	Control	
t_{14} = 10.650, sig = 0.000*	25/33 ± 9/21	74/18 ± 15/51	48/86 ± 19/62	experimental	**total life quality**
t_{14} = 6.321, sig = 0.000*	19/39 ± 11/88	73/35 ± 16/72	53/96 ± 19/38	Control	

Results of the correlated t-test for comparing the values of posttest and pretest for the components of physical performance, limited operability due to physical health problems, limited operability due to mental health problems, energy and fatigue, feeling of being well, social performance, pain, general health and total life quality does not show any significant difference between the posttest and pretest values for both the control and experimental groups. Therefore, it can be stated that stability and cognitive exercises have no impact on quality of life among active elderly women.

Second hypothesis

Null hypothesis: one period of stability and cognitive yoga exercises does not have a significant impact on the pace length profile and length of the left and right steps in left and right paces among active elderly women.

Table 3: Results of the correlated t-test for making a comparison between length of left pace and length of the left and right steps in the left pace of the posttest and pretest values for both groups

posttest and pretest comparison	geschan	posttest	pretest	group	variable
t_{14} = 9.825, sig =0.000*	0/126 ± 0/049	0/696 ± 0/09	± 0/11 0/570	experimental	left pace lenght
t_{14} = 1.306, sig = 0.213	0/014 ± 0/041	0/622 ± 0/05	± 0/04 0/609	Control	
t_{14} = 6.282, sig =0.000*	0/076 ± 0/047	0/359 ± 0/04	± 0/06 0/283	experimental	lenght f the left step in left pace
t_{14} = 0.258, sig = 0.800	0/002 ± 0/030	0/309 ± 0/03	± 0/02 0/307	Control	
t_{14} = 6.289, sig =0.000*	0/050 ± 0/031	0/337 ± 0/06	± 0/05 0/287	experimental	lenght of the right step in left pace
t_{14} = 1.058, sig = 0.308	0/011 ± 0/043	0/313 ± 0/05	± 0/03 0/301	Control	

Results have shown that the changes in profile of the left pace length among the experimental group is significantly higher than the changes in control group. In addition, there existed a significant difference between the posttest and pretest values of length of left pace and length of the left and right steps in the left pace among the experimental group subjects. However, these changes were not significant for the pretest and posttest values of the control group. Therefore, yoga cognitive and stability exercises lead to a significant increase in length of left pace and length of the left and right steps in the left pace. In other words, it can be stated that stability exercises have a significant and increasing impact on the profile of the left pace length.

Third hypothesis

Null hypothesis: one period of stability and cognitive yoga exercises does not have a significant impact on the pace speed in both the left and right paces among active elderly women.

Table 4: Results of the correlated t-test for comparing the pretest and posttest values of right pace speed for both groups

posttest and pretest comparison	changes	posttest	pretest	group	variable
t_{14} = 5.481,sig = 0.000*	0/056 ± 0/039	0/234 ± 0/04	0/177 ± 0/05	experimental	right pace speed
t_{14} = 0.852, sig = 0.409	0/007 ± 0/034	0/202 ± 0/03	0/194 ± 0/03	control	

Results of the correlated t-test indicated that there existed a significant difference between the posttest and pretest values of pace speed among the experimental group, however the differences were not significant for the control group and on this basis, it can be said that the aforementioned exercises lead to an improved right pace speed.

Table 5: Results of the correlated t-test for comparing the pretest and posttest values of left pace speed for both groups

posttest and pretest comparison	changes	posttest	pretest	group	variable
t_{14} = 5.838, sig = 0.000*	0/0433 ± 0/029	0/223 ± 0/02	0/180 ± 0/04	experimental	left pace speed
t_{14} = 0.776, sig = 0.451	0/007 ± 0/034	0/196 ± 0/03	0/189 ± 0/03	control	
t_{14} = 0.779, sig = 0.449	1/06 ± 5/26	30/09 ± 5/72	29/03 ± 5/31	control	

Results of the correlated t-test indicated that there existed a significant difference between the posttest and pretest values of pace speed among the experimental group, however the differences were not significant for the control group and on this basis, it can be said that the aforementioned exercises lead to an improved left pace speed.

Fourth hypothesis

Null hypothesis: one period of stability and cognitive yoga exercises does not have a significant impact on the pace frequency in both the left and right paces among active elderly women

Table 6: Results of the correlated t-test for comparing the pretest and posttest values of right pace frequency for both groups

pretest and posttest comparison	changes	posttest	pretest	group	variable
$t_{14} = 1.636$, sig = 0.124	11/45 ± 27/11	± 17/77 252/35	± 26/80 240/90	experimental	right pace frequency
$t_{14} = 0.505$, sig = 0.621	4/90 ± 37/57	± 32/66 247/40	± 35/35 242/50	control	

Results of the correlated t-test indicated that there existed no significant difference between the posttest and pretest values of right pace frequency among the experimental group, and also the differences were not significant for the control group and on this basis, it can be said that the aforementioned exercises have no impact on right pace frequency among both the control group and experimental group subjects.

Table 7: Results of the correlated t-test for comparing the pretest and posttest values of left pace frequency for both groups

posttest and pretest comparison	changes	posttest	pretest	group	variable
$t_{14} = 0.598$, sig = 0.560	4/97 ± 32/18	250/48 ± 15/50	245/52 ± 31/50	experimental	left pace frequency
$t_{14} = 0.448$, sig = 0.661	4/30 ± 37/26	246/62 ± 37/54	242/31 ± 33/62	control	

Results of the correlated t-test indicated that there existed no significant difference between the posttest and pretest values of left pace frequency among the experimental group, and also the differences were not significant for the control group and on this basis, it can be said that the aforementioned exercises have no impact on left pace frequency among both the control group and experimental group subjects.

Fifth hypothesis

Null hypothesis: One period of stability and cognitive yoga exercises, have no impact on swing time of one gait cycle of left and right paces of active elderly women.

Table 8: Results of the correlated t-test for comparing the posttest and pretest values of right pace swing for both groups

Posttest vs. pretest	changes	posttest	pretest	group	variable
t_{14} = 2.003, sig = 0.051	4/72 ± 8/47	34/52 ± 3/09	29/79 ± 8/52	Exp.	Right pace swing time
t_{14} = 0.666, sig = 0.517	0/89 ± 5/22	31/98 ± 3/97	31/09 ± 2/95	ctrl	

Results of the independent t-test and the correlated t-test indicate that the swing time was changed for both the experimental and the control groups, however the difference is not statistically significant and therefore, the aforementioned exercises had no significant effects on these parameters.

Table 9: Results of the correlated t-test for comparing the posttest and pretest values of left pace swing for both groups

Posttest vs. pretest	changes	Post-test	Pre-test	group	variable
t_{14} = 4.164, sig = 0.001*	3/40 ± 3/17	34/58 ± 2/78	31/19 ± 3/65	Exp.	Left pace swing time
t_{14} = -0.478, sig = 0.640	-0/323 ± 2/62	33/19 ± 3/07	33/51 ± 2/05	Ctrl.	

Results of the independent t-test and the correlated t-test indicate that the swing time was changed for both the experimental and the control groups, however the difference is not statistically significant and therefore, the aforementioned exercises had no significant effects on these parameters.

Sixth hypothesis

Null hypothesis: one period of stability and cognitive yoga exercises have no impact on stance time of one gait cycle of left and right paces of active elderly women.

Table 10: Results of the correlated t-test for comparing the posttest and pretest values of right pace stance time for both groups

Posttest vs. pretest	changes	Post-test	Pre-test	group	variable
t_{14} = -2.001, sig = 0.051	-4/72 ± 8/47	65/48 ± 3/09	70/21 ± 8/52	Exp.	Right pace stance time
t_{14} = -0.666, sig = 0.517	-0/89 ± 5/22	68/02 ± 3/97	68/91 ± 2/95	Ctrl.	

Results of the independent t-test and the correlated t-test indicate that the stance time was changed for both the experimental and the control groups, however the difference

is not statistically significant and therefore, the aforementioned exercises had no significant effects on these parameters.

Table 11: Results of the correlated t-test for comparing the posttest and pretest values of left pace stance time for both groups

Posttest vs. pretest	changes	Post-test	Pre-test	group	variable
t_{14} = -4.164, sig = 0.001*	-3/40 ± 3/17	65/42 ± 2/78	68/81 ± 3/65	Exp.	Left pace stance time
t_{14} = 0.478, sig = 0.640	0/323 ± 2/62	66/81 ± 3/07	66/49 ± 2/05	Ctrl.	

Results of the independent t-test and the correlated t-test indicate that the stance time was changed for both the experimental and the control groups, however the difference is not statistically significant and therefore, the aforementioned exercises had no significant effects on these parameters.

Discussion and Conclusions

With respect to the results obtained from the current research, it can be concluded that as a result of having a stable nature and including an instruction phase and emphasis on body symmetry; yoga exercises can lead to the following changes:

- Cognitive and stability yoga exercises have a meaningful and significant impact on life quality among elderlies. However, there exists an overlap between the stability and cognitive yoga exercises and other exercises and the type of exercise does not determine the quality of life among elderly women.
- In terms of stability and cognition, yoga trainings significantly increase the length of both paces. In addition, these exercises significantly increase the lengths of left and right steps. However, the effect of these exercises on the left and right pace lengths and the left and right steps associated with each pace is equal. In this regard, it can be said that these exercises lead to a symmetrical increase in both pace lengths and therefore inhibits certain walking or gaiting disorders among elderlies. On this basis, the aforementioned exercises could be used for increasing pace lengths.
- Possible reasons of improvement in pace and step lengths: the effect of the so-called exercises on the under body parts leads to strengthening of the core muscles and is followed by improved underbody performance, improved movement range, increased flexibility and leg muscle strength.
- Stability and cognitive yoga exercises have shown to have a significant increasing impact on both left and right pace speeds. However, the obtained results also

indicate that there exists no significant difference between the changes of control and experimental groups. Therefore, the so-called exercises will lead to an improved symmetrical pace length and inhibits certain gaiting disorders which are caused by a lack of symmetry in paces. In addition, undertaking the aforementioned exercises reduces the risk of falling down among elderlies. Therefore, these exercises could be undertaken for increasing pace speed.

- Stability and cognitive yoga exercises increase pace frequency. However, these changes were not significant and therefore, it cannot be stated that the so-called exercises have been successful in significant improvement of pace frequency. One possible reason for constancy of pace frequency could be that the exercises administered by the researcher had a little impact on muscular strength and contraction speed. It seems that by manipulation of intensity and time of exercise, a significant improved pace frequency could be obtained which currently requires further research
- For the purpose of improvement of gaiting cycle and also for the purpose of reducing the stance time and increasing the swing time and closure of the mentioned times to normal time scales, the so-called stability and cognitive yoga exercises have been proven useful and these exercises can reduce time related disorders in terms of taking steps; in addition these exercises can reduce the risk of falling down among elderlies. Therefore, it is recommended to consider for cognitive and stability yoga exercises in elderlies' exercising protocols.

References

1. Alipur F, Sajjadi H, Foruzan A, Biglarian A. (2010). Role of social quiet on elder's quality of life. Soc Welfare Quart. 4(33): 147-65 [in Persian].
2. Dickson VV, Howe A, Deal J, McCarthy MM. (2012). The relationship of work, self-care, and quality of life in a sample of older working adults with cardiovascular disease. Heart & Lung: The Journal of Acute and Critical Care. 41(1): 5-14.
3. Ghasempoor, Hamed. (2012). Effect of 8 weeks of training, muscular endurance in the water and land on some parameters of gait kinematics among older men. Senior thesis, University of Al-Khwarizmi, Alborz unit [in Persian].
4. Granacher, U., Muehlbauer T., Zahner, L., Golhofer, A., Kressing, RW. (2011). Comparison of traditional and recent approaches in the promotion af balance and strength in older adults. Sports Medicine. 1, 41(5). 377-400

5. Hassani Mehraban A, Mackenzie M, Byles J. (2011). A self-report home environment screening tool identified older women at risk of falls. Journal of Clinical Epidemiology. 64:191-9
6. Heidari M, Shahbazi S. (2012) Effect of Self-Care Training Program on Quality of Life of Elders. Iran Journal of Nursing. 25(75): 1-8.
7. Hekmatpour, Davood, Shamsi, M., Zamani, Majid. (2013). The effect on the quality of life of elderly healthy lifestyle education programs in Arak. Journal of Medical Sciences, Vol. 16, No. 3 (serial number 72), 11-1 [in Persian].
8. Jafarzade FM, Vashani B, Vahedian Shahroudi M. (2010). The Quality of Life of the Elderly in Sabzevar, Iran. Asrar, Journal of Sabzevar School of Medical Sciences. 17(3): 213-7. [Persian]
9. Raymond Harris, Lawrence Frankel, Sarah Harris. (2001). Fitness and Health after 50 years, Jila Snoopy, publishing and sports science, with the support of the Cultural Affairs Bureau of Investigation and Physical Education Organization [in Persian].
10. Sadeghi, Heydar, Yadegari-poor, Mohammad, Ghasempour, Hamid, Shojaedin, Sadr al-Din. (2012). The effect of eight weeks of training, a combination of water - land on lower limb strength and walking speed in older men. Journal of Aging, Vol. 7, No. 27, 66-59 [in Persian].