Original Article

Relationship between Lifestyle and Quality of Life in Older Adults -Yazd City, Iran

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A B S T R A C T

Introduction: Recent medical and health care improvement caused a remarkable increase in humans' life expand and subsequent increase in aging population. Beside life expectancy, quality of life is at the same importance, so the study aimed to explore the relation between quality of life and lifestyle among older adults in Yazd.

Methods: The cross-sectional study was carried out on 270 elderly people over 60 years old. A cluster random sampling was used to recruit the participant from 10 selected clusters in the Yazd city with at least 27 participants from each cluster. 12 item Short Form Health Survey and Iranian Elderly Lifestyle Questionnaire was used for data collection. Data analyzed with descriptive frequency distribution and also χ^2, and Pearson correlation coefficient tests using SPSS software.

Results: The mean score of quality of life was 69.06 ± 20.97 (range 0-100) and the mean score of lifestyle was 161.91 ± 13.95 (range 42-211). Quality of life and lifestyle had statistically significant relation with age, sex, education level, marriage status, retirement status, having job, income source, digestive problems, depression, joint pain, osteoporosis, hypertension, fall and sleep disorder. There was also a direct association between lifestyle and quality of life.

Conclusion: Results indicated that most of the participants are at a desirable level of lifestyle and quality of life. However quality of life is in relation with some demographic factors and chronic conditions that must be addressed in interventional programs aimed at increasing the quality of life among aging population.

Keywords: Quality of life, Lifestyle, Aging, Yazd

Introduction

Health and medical advances in recent century have caused reduction of mortality particularly infant mortality rate and also reduction of fertility and then an increase in life expectancy and growth of elderly population (1). Iran, according to the latest census conducted in 2011, has about 8.9 percent population of over 60 years old that indicates Iran is an adult nation, and is expected, with the current growth, to

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turn into an elderly nation in the near future (2). Regarding the rapid growth of elderly population and their role in transferring their experiences to family and community, they should be addressed since the purpose of life is not only a long life but its quality is also important, so in order to increase the quality of life (QOL), information about current status of QOL and lifestyle is required(3). QOL group in WHO defines QOL as individual perceptions from his position with respect to the culture and value system in which he lives and it is influenced by his goals, expectations and standards (4,5). As many factors may affect QOL, so addressing them are necessary in order to promoting that. Amongst some most important are psychological factors and lifestyle. Many studies attended to the factors that affect the QOL including health status, family factors, personal relationships, role performance and recreational activities (6).

Successful aging or elderly QOL includes adequate conditions in physical, mental, social, economic and religious dimensions (7). Although aging is associated with a drop in QOL but the effects of other variables should not be ignored. Seniors who need help in activities of daily living had lower level of QOL and in fact possess many symptoms that require nursing care (8). Furthermore, undesirable status of health aspects in developing countries such as Iran, which do not have favorable social and welfare infrastructures, significantly affects the aging QOL (9).

Although a healthy lifestyle should be started from the womb, but never is too late for a change of the lifestyle which lead to good health and QOL, because of the fact that a healthy lifestyle play an important role in promoting QOL, increasing life expectancy and improving physical and mental health (10). Due to specific conditions and diseases in aging, for assessing lifestyle in this age period, in addition to nutrition, physical activity, leisure and recreation activities, some other issues such as smoking and alcohol consumption avoidance, stress management status and health protective measures also should be studied (11). However, according to World Health Organization estimations, 70-80% of deaths in developed countries and 40-50% of deaths in developing countries are due to lifestyle-related diseases (12). Previous studies have shown that there is a significant relationship between QOL and age, education level, marital status and disability (13-17). Many studies reported that elderly men have a higher QOL level than elderly women (17-19). In the other hand, lifestyle also is related to variable such as age, gender, education level and marital status (20-23). Several studies revealed the relation between lifestyle and QOL dimensions (24-28). A study by Feizi et al., showed that higher level of lifestyle is associated with a higher level of QOL and also a higher level of life satisfaction (29). Although several studies are done about QOL, its dimensions and factors affecting it, but the relation of QOL and lifestyle in Iran is less addressed. So regarding the importance of these two constructs in aging, the study aimed to determine the relationship between lifestyle and QOL among elderly people in Yazd city, Iran.

Methods

Procedures

The cross-sectional study carried out on 270 samples aged 60 years and over in Yazd city, Iran (CI = %95, SD = 16.5) (3). A cluster random sampling method was used for selection of participants from 10 geographical clusters in urban areas, 27 people each. The eligible elders were asked to participate into the study voluntarily and take part in a private interview at their homes for completing the questionnaires. They were informed about the goals of the study and informed consent was obtained before the (in case of illiteracy, assisted) completion.

Instruments

Data collection tools included 12 item Short Form Health Survey (SF12) and Iranian Elderly Lifestyle Questionnaire. SF12 measures two general aspects of physical and mental health in 4 domains for each aspect. Physical aspect included 4 domains, two items for functional performance, two items for role limitation due to physical problems, one item for pain and one item for general health domain. Mental aspect included 4 domains, one item for life domain, one item for social function, two items for role limitation due to affective problems and two items for general mental health domain. The possible score range for two aspects and all domains are from zero to 100.

Iranian elderly lifestyle questionnaire is a 46 items scale which developed by Eshaghi et al. (11). It includes 5 domains, 1.prevention domain in 16 items (possible score range from 14-78). 2. Exercise and recreation in 5 items (possible score range from 5-21). 3. Nutrition in 13 items (possible score range from 13-52). 4. Stress management in 5 items (possible score range from 5-25) and 5. Relation in 5 items (possible score range from 5-35). Then the total score is categorized to 3 classes. A score from 42 to 98, 99 to 155, and 156 to 211 is labeled as undesirable, moderate and desirable lifestyle respectively.

Data analysis

The data were analyzed using descriptive distribution and χ^2, Pearson correlation coefficient tests via SPSS software.

Results

Mean age of the participants was 69.12 ± 7.21, and 50.4% being female. The mean score of QOL and lifestyle was 69.06 ± 20.97 (0-100) and 161.91 ± 13.95 (42-211) respectively. Lifestyle score of the most of the participants (71.2%) was at desirable level. QOL and lifestyle significantly correlate to demographic, financial and physical status of the participants (Table 1 and 3).

Those with mental disorders, cardiovascular diseases, sensory impairments, anorexia, and risk factors for falls had significantly lower QOL and lifestyle level than others (Table 2 and 4). A positive correlation was found between all lifestyle domains and QOL (Table 5). In general, lifestyle domains predicted 69% variance in QOL, that except for domains of stress and relationships, the others were statistically significant. From the domains studied, exercise and recreation domain ($\beta = 0.388$) was the strongest predictor of QOL level (Table 6).

Table 1. Distribution of mean and S.D. of QOL score in terms of demographic variables in the study elderly people

Variable	Quality of Life	Mean	S.D.	p
Age	60-69	74.57	19.77	< 0.001
	70-79	61.69	21.60	
	≥80	61.08	16.52	
Gender	Male	73.64	20.21	< 0.001
	Female	64.55	20.80	
Education	Illiterate	58.44	19.97	< 0.001
	Primary school	74.30	17.38	
	Elementary school	75.19	21.27	
	Diploma	90.52	10.04	
	Academic education	95.31	8.67	
Marital status	Married	71.56	21.38	< 0.007
	Widow(er)	62.64	18.65	
	Divorced	67.18	-	
Retirement	Yes	73.49	19.16	< 0.001
	No	64.01	21.86	
Current occupation	Employed	84.01	16.72	< 0.001
	Housewife	61.08	20.36	
	Unemployed	70.17	19.56	
Insurance	Yes	69.89	20.24	0.04
	No	60.93	26.19	
Source of income	Current job	88.16	9.32	< 0.001
	Retirement	68.86	20.34	
	Children	60.93	6.88	
	Supportive institution	47.13	17.70	
	Selling or renting properties	59.89	24.42	
Type of habitation	Ownership	69.07	21.55	0.71
	Rental	71.87	11	
	Children	63.02	4.90	
Disability	Yes	43.22	27.76	0.002
	No	69.65	20.48	

Table 2. Distribution of mean and S.D. of QOL score in terms of common diseases and conditions in the elderly people

Variable	Quality of Life	Mean	S.D	p	Variable	Quality of Life	Mean	S.D	p
Digestive Problem	Yes	62.59	18.59	0.001	Atrophy, malnutrition	Yes	48.43	24.35	0.27
	No	72.86	21.62			No	69.30	20.78	
Depression	Yes	48.68	20.10	0.001	Orodental problems	Yes	60.41	33.06	0.20
	No	75.76	17.04			No	69.36	20.46	
Lipid disorder	Yes	64.31	18.78	0.001	Anorexia	Yes	28.38	19.92	0.003
	No	72.91	21.37			No	69.99	20.09	
Respiratory disease	Yes	61.60	20.01	0.16	Cardiovascular diseases	Yes	60.15	13.91	0.001
	No	69.58	21.03			No	71.39	21.59	
Sleep disorder	Yes	55.31	19.93	0.001	Cancer	Yes	57.69	11.57	0.13
	No	74.86	18.60			No	69.37	21.09	
Audio-visual impairment	Yes	52.50	19.91	0.001	Diabetes	Yes	66.43	17.82	0.091
	No	72.38	19.60			No	71.32	21.63	
Arthritis	Yes	64.76	20.15	0.001	Urinary incontinence	Yes	44.53	24.41	0.32
	No	84.29	16.66			No	69.62	20.23	
Osteoporosis	Yes	54.10	20.83	0.001	Fall	Yes	44.29	20.02	0.001
	No	73.95	18.27			No	71.37	19.55	
Hypertension	Yes	65.34	19.60	0.001	House accidents	Yes	51.15	17.90	0.001
	No	74.59	21.10			No	70.73	20.48	

Table 3. Distribution of mean and S.D. of lifestyle score in terms of demographic variables in the study elderly people

Variable	Lifestyle	Mean	S.D	p	Variable	Lifestyle	Mean	S.D	p
Age	60-69	165.40	13.29	0.001	Current occupation	Employed	169.98	14.31	0.001
	70-79	157.63	13.71			housewife	155.31	12.43	
	≥80	151	9.65			unemployed	162.38	12.73	
Gender	Male	163.46	13.34	0.06	Insurance	Yes	161.78	13.75	0.63
	Female	159.81	14.55			No	163.50	16.64	
Education	Illiterate	153.38	13.37	0.001	Source of income	Current job	169.57	10.89	0.018
	Primary school	164.44	9.99			Retirement	16..89	12.92	
	Elementary school	163.71	6.30			Children	159.33	12.17	
	Diploma	180.54	11.60			Supportive institution	159	16.95	
	Academic education	183.12	7.77			selling or renting properties	-	-	
Marital status	Married	162.08	14.14	0.51	Type of habitation	ownership	162.19	14.15	0.25
	Widow(er)	159.57	11.21			Rental	158.88	6.72	
	Divorced	161.91	13.95			children	147	0	
Retirement	Yes	164.74	14.18	0.001	Disability	Yes	120.50	13.53	0.001
	No	157.60	14.31			No	162.32	13.40	

Table 4. Distribution of mean and S.D. of lifestyle score in terms of common diseases and conditions in the elderly people

Variable	Lifestyle	Mean	S.D.	p	Variable	Lifestyle	Mean	S.D.	p
Digestive problem	Yes	156.38	12.80	0.001	**Hypotension**	Yes	142.82	14.80	0.001
	No	165.22	13.65			No	162.84	13.14	
Depression	Yes	151.43	12.79	0.001	**Orodental problems**	Yes	158.11	17.39	0.40
	No	165.74	12.53			No	162.09	13.80	
Lipid disorder	Yes	161.09	12.05	0.41	**Anorexia**	Yes	145	10.03	0.039
	No	162.66	14.65			No	162.25	13.83	
Respiratory disease	Yes	154.50	16.01	0.12	**Cardiovascular diseases**	Yes	155.47	8.56	0.001
	No	162.37	13.80			No	163.33	14.56	
Sleep disorder	Yes	152.98	12.98	0.001	**Cancer**	Yes	163.67	1.15	0.82
	No	165.62	12.63			No	161.89	14.05	
Audio-visual impairment	Yes	150.54	15.83	0.001	**Diabetes**	Yes	160.27	13.58	0.27
	No	163.68	12.80			No	162.68	14	
Arthritis	Yes	159.54	13.59	0.001	**Urinary incontinence**	Yes	120.50	3.53	0.001
	No	168.45	13.14			No	162.32	13.40	
Osteoporosis	Yes	152.54	16.58	0.001	**Fall**	Yes	146.36	15.97	0.001
	No	164.12	12.50			No	162.78	13.35	
Hypertension	Yes	158.84	13.88	0.001	**House accidents**	Yes	152.60	16	0.007
	No	165.21	13.38			No	162.64	13.56	

Table 5. Correlation between the domains of lifestyle and QOL

Domains of lifestyle	QOL
prevention	0.521**
exercise	0.722**
nutrition	0.146*
stress	0.550**
relationships	0.690**
lifestyle	0.732**

* P < 0.05
** P < 0.01

Table 6. Regression analysis of lifestyle domains as the predictors of QOL

Predictor	β	t	p	R^2
Constant			0.001	
Prevention	0.001	-0.002	0.99	
Exercise	2.98	6.92	0.001	0.69
Nutrition	-0.99	-2.91	0.004	
Stress	0.138	0.33	0.74	
Relationships	-0.093	-0.08	0.93	

Discussion

The present study aimed to determine the relationship between lifestyle and QOL in the elderly people in Yazd. QOL score implied good level (69.06 ± 20.97) that was consistent with previous studies (15, 30, 31). QOL decreased with age, as opposed to morbidity rate of chronic diseases, disabilities, and physical limitations. The mean score of QOL was higher for men than women, which supported the results of some previous studies (17-19). This can be explained by the fact that elderly women develop more chronic diseases and illnesses than men (32) and their expectation from health and life condition is higher than men, as a result, the women are more dissatisfied with their QOL.

The mean score of QOL was high in people with academic education compared to the illiterate and those with primary school education, which was consistent with other studies (10, 14, 17-19, 30, 33). Well educated people particularly those with academic education, have more expanded awareness of health and its effectiveness to have a healthier lifestyle, hence better QOL.

With respect to QOL and marital status, mean score of QOL was higher in married elders compared with single ones, which confirmed the findings of other studies (14, 17, 30). Since one of the potential risks threatening health in old age is isolation and loneliness, supportive environment and enabling the elderly people to cope with this problem should be taken into account (15). The married elderly have the strong support from their spouse which will affect their QOL.

In terms of retirement, the results found higher mean score of QOL in retired elders. After a long

working period, the retired elders are able to participate in their desired activities or jobs leading to improved morale and QOL.

Also there was a statistically significant association between QOL, and development of digestive problems, depression, lipid disorder, sleep disorders, audio-visual impairment, osteoporosis, arthritis, hypertension, anorexia, cardiovascular diseases, fall and house accidents. As expected, those with these conditions had lower QOL than those who did not. As development of chronic diseases is both the cause and effect of unfavorable lifestyle, the elderly with poor lifestyle are more prone to develop chronic diseases and vice versa.

Mean and standard deviation of lifestyle score was 161.91 ± 13.95, implying optimum level. More than 70% of the elders were at a desirable lifestyle status that is in agreement with the results of Najimi et al. and Mahmoodi et al. (23, 33), while 67% of the subjects in a study by Heshmati et al. and 56% in Nasirzadeh et al. had moderate lifestyle level (20, 22) and even Rakhshani et al. reported majority of participants much less than moderate level (30). Lifestyle was, likewise, significantly associated with age, education level, and current occupational status , as Rakhshani et al. also indicated this association with gender, age, and education too (30).

Considering age, the older subjects had an unfavorable lifestyle. In other words, the elderly people developed more chronic diseases and difficulties with increasing age leading to disabilities and limitations and, subsequently, unhealthy lifestyle.

Despite controversial debate on the correlation between gender and lifestyle, in accordance with previous results, the findings showed no significant variance among the subjects (20, 33). Lifestyle score was slightly lower in elderly female though that could be attributed to that the elderly women in Yazd may care about their lifestyle as much as their male counterparts. However, in other studies (23, 30) elderly men had higher lifestyle score than women that means the elderly men pay more attention to their lifestyle and practice health promoting behaviors. The discrepancy may be attributed to cultural diversities.

With regard to lifestyle and marital status, surprisingly, the findings showed no statistically significant difference between the married and non-married people, which was consistent with the results of Najimi et al. and Nasirzadeh et al. (22, 33) but not with some other studies (20-23). It could be explained that family members, especially children, in Yazd, may provide adequate and regular support in, i.e., meal preparation, financial issues, house holding and social connection for their single parents.

The results also revealed that the domains of lifestyle significantly coincided with QOL. Although Naghibi pointed out that nutrition had less correlation with QOL compared with other domains of lifestyle (35), in other studies, nutrition was considerably related to QOL (35-37). This is probably due to the fact that nutrition was not of high importance to participants. Among the domains of lifestyle, however, exercise had the highest correlation with QOL, being confirmed by various studies (35-37). High level of physical activity yields to increased QOL, therefore, the more the person is physically active, the more he is satisfied with life. Feizi et al. also stated that physical activity could positively affect not only physical aspect of QOL, but also other aspects (29). Accordingly, appropriate planning and interventions particularly in physical activity can help in improving QOL of the elderly people and finally their health outcomes.

Although having stressful life as well as personal relationship could not able to show remarkably predictive effect, other lifestyle domains were well predictors for QOL, which was in agreement with Rakhshani et al. (30). Considering lifestyle as leading role in maintenance and promotion of health, the results are not unexpected and publicizing health promoting lifestyle activities can result in improved health and QOL.

Conclusion

The results revealed that various factors could influence the quality of life of the elderly people. Recognizing these factors and taking actions toward their socialization has especial importance. Also, regarding significant and positive correlation between lifestyle and QOL, lifestyle interventions could improve QOL of the elderly people.

Study limitations

The limitations of this study were self-reported data and lack of cooperation of some subjects or their families.

Conflict of interest

The authors declare that there was no conflict of interests.

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References

1. Khooshemehri G, Kaviani M, Asmari M, Rajabian H, Naserkhaki V. Comparison of quality of life for elderly men and women elderly nursing home resident by Alborz Province in 1390. Alborz Medical University Journal. 2013; 2 (1): 19-24. [Persian]

2. Statistical Center of Iran. Statistical Yearbook of Yazd. 2014. Available from: http://salnameh .sci.org.ir/AllUser/DirectoryTree Complete.aspx

3. Sajadi H, Beiglarian A. Quality of life of elderly woman at Hospice Charity Kahrizak Payesh. 2006; 5(2):105-8. [Persian]

4. Fayers PM, Machin D. Introduction in: quality of life assessment, analysis and interpretation. London: John Wiley and Sons; 2000.

5. King CR. Overview of quality of life and controversial issues. In: quality of life from nursing and patient perspective. New York: Jones and Bartlett publishers; 2003.

6. Matsuo M, Nagasawa J, Yoshino A, Hiramatsu K, Kurashiki K: Effects of activity participation of the elderly on quality of life. Yonago Acta Medica. 2003; 46: 17-24.

7. Akamatsu K, Saito A, Wada T, Ishine M, Rois-Cruz M, Okamiy T, et al: Analysis of comprehensive geriatric assessment of elderly residents in a social welfare home for the aged compared with those in residential care home in an urban area in Jjapan. Geriatrics and Gerontology International. 2005, 5(1): 553-8.

8. Vahdaninia M, Gashtasbi A, Montazeri A, Maftoon F. Health-related quality of life in the elderly. Payesh. 2003; 4(2): 113-20. [Persian]

9. DarvishpoorKakhki A, AbedSaeedi J, Delavar A, Saeed-O-Zakerin M. Instrument development to measure elderly health-related quality of life (EHRQoL). Hakim Research Journal. 2012; 15(1): 30-7. [Persian]

10. Hekmatpou D, Shamsi M, Zamani M. The effect of healthy lifestyle education programs on promotion of physical activity in elderly of Arak. Bimonthly Official Publication Medical Daneshvar. 2012; 19 (98): 33-42. [Persian]

11. Eshaghi SR, Farajzadegan Z, Babak A. Design of Lifestyle questionnaire for the elderly. Payesh. 2009; 9(1): 91-9. [Persian]

12. Park JE. Park K. Park's textbook of preventive and social medicine. [ShojaeeTehrani H, Trans]. Tehran: Samat Publication; 2004.

13. Abdollahi F, Mohammadpour R. Health related quality of life among the elderly living in nursing home and homes. The Journal of Mazandaran University of Medical Sciences. 2013; 23 (104): 20-5. [Persian]

14. Alipour F, Sajadi H, Forouzan A, Nabavi H, Khedmati E. The role of social support in the anxiety and depression of elderly. Iranian Journal of Aging. 2009; 4(11): 53-61. [Persian]

15. Habibi Sola A, Nikpour S, Sohbatzadeh R, Haghani H. Quality of life in elderly people of west of Tehran. Iranian Journal of Nursing Research. 2008; 2(6, 7): 29-35. [Persian]

16. Habibi A, Nemadi-Vosoughi M, Habibi S, Mohammadi M. Quality of life and prevalence of

chronic illnesses among elderly people: a cross-sectional survey. Journal of Health. 2012; 3(1):58-66. [Persian]

17. Ahangari M, ArjmandHesabi M, Kamali M. Quality of life in the elderly, members of the Academy of Elder Tehran. Iranian Journal of Aging. 2007; 2(1): 182-9. [Persian]

18. Jadidi A, Farahaninia M, Janmohammadi S, Haghani H. The relationship between spiritual well-being and quality of life among elderly people residing in Kahrizak senior house. Iran Journal of Nursing. 2011; 24(72): 48-56. [Persian]

19. Salarilak Sh, Gorginekaraji L, Amiri S. Quality of life in elderly people Kamyaran city in 2009. Uroomia Medical Journal. 2013; 24(1): 24-9. [Persian]

20. Heshmati H, Asnashari R, Khajavi S, Charkazi A, Babak A, Hosseini SG, et al. Lifestyle of elderly in Kashmar, Iran 2012. Journal of Research Development in Nursing & Midwifery. 2015; 11(1): 39-50. [Persian]

21. Samadi S, Bayat A, Taheri M, Joneid B, Rooz-Bahani N. Knowledge, attitude and practice of elderly towards lifestyle during aging. The Journal of Qazvin University of Medical Sciences. 2007; 11(1): 83-4. [Persian]

22. Nasirzadeh M, Gholami L, Jalilian F, Aligol M, HafeziBakhtiari M, Mahboubi M, et al. Status of lifestyle in Iranian elderly population. Journal of Science and Today's World. 2014; 3(4): 114-16.

23. Mahmudi GH, Niazazari K, Sanati T. Evaluation of lifestyle in the elderly. Family Health. 2012; 1(3): 45-50. [Persian]

24. Potter PA, Perry AG, Stockert P, Hall A. Fundamentals of nursing. Philadelphia: Mosby; 2001.

25. Covinsky KE, Wu AW, Landefeld CS, Connors AF Jr, Phillips RS, Tsevat J, et al. Health status versus quality of life in older patients: does the distinction matter? The American Journal of Medicine. 1999; 106(4): 435-40.

26. Pooladfar R, Ahmadi SA. Relation between high School teacher's lifestyle and their psychological disorder in Isfahan. Psychological Studies. 2006; 2(1-2): 7-18. [Persian]

27. Samimi R, Masrure Rodsary D, Hosseini F, Tamadonfar M. Correlation between life style and general health in university students. Iranian Nursing Journal. 2007; 19(48): 83-93. [Persian]

28. Salyer J, Flattery MP, Joyner PL, Elswick RK. Lifestyle and quality of life in long-term cardiac transplant recipients. The Journal of heart and lung transplantation. 2003; 22(3): 309-21.

29. Feizi A. Study of relationship between stress and different lifestyle dimensions with quality of life in Isfahan's inhabitants aged 19 and older an application of latent class regression on latent

factor predictors. Journal of Health System Research. 2011; 7(6): 1188-202. [Persian]

30. Rakhshani T, Shojaiezadeh D, BagheriLankarani K, Rakhshani F, Kaveh MH, Zare N. The association of health-promoting lifestyle with quality of life among the Iranian elderly. Iranian Red Crescent Medical Journal. 2014; 16(9): e18404.

31. Albockordi M, Ramezani MA, Arizi F. A study on the quality of life among elderly Shahinshahr area of Isfahan province in year 2004. Jundishapur Scientific Medical Journal. 2007; 5(4): 701-7. [Persian]

32. Molarius A, Janson S. Self-rated health, chronic diseases, and symptoms among middle-aged and elderly men and women. Journal of Clinical Epidemiology. 2002; 55(4): 364-70.

33. Najimi A, MoazemiGoudarzi A. Healthy lifestyle of the elderly: a cross-sectional study. Journal of Health System. 2011; 8(4): 581-87. [Persian]

34. Naghibi F, Golmakani N, Esmaily H, Moharari F. The relationship between lifestyle and the health related quality of life among the girl students of high schools in Mashhad, 2012-2013. The Iranian Journal of Obstetrics, Gynecology and Infertility. 2013; 16(61): 9-19. [Persian]

35. Acree LS, Longfors J, Fjeldstad AS, Fjeldstad C, Schank B, Nickel KJ, et al. Physical activity is related to quality of life in older adults. Health and Quality of Life Outcomes. 2006; 4: 37.

36. Shibata A, Oka K, Nakamura Y, Muraoka I. Recommended level of physical activity and health-related quality of life among Japanese adults. Health and Quality of Life Outcomes. 2007; 5: 64.

37. Smith AW, Alfano CM, Reeve BB, Irwin ML, Bernstein L, Baumgartner K, et al. Race/ethnicity, physical activity, and quality of life in breast cancer survivors. Cancer Epidemiology, Biomarkers & Prevention. 2009; 18(2): 656-63.