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Evaluating the related factors to health-improvement style and the value of health among middle aged women referring to comprehensive health centers of Isfahan in 2016

Evaluar los factores relacionados con el estilo de mejora de la salud y el valor de la salud entre las mujeres de mediana edad que se refieren a los centros de salud integrales de Isfahan en 2016

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ABSTRACT

Introducction. *The present study was conducted to evaluate the related factors to health-improvement lifestyle and value of health among middle aged women.* ***Material and Methods:*** *The present study was a descriptive-correlational research that was conducted with participation of 278 middle aged women who referred to the health centers of Isfahan and were selected randomly in 2016. Data were collected using demographic characteristics questionnaire, Walker's Health Promoting Lifestyle Profile II (HPLPII) and a researcher-made questionnaire for the value of health that were completed by the participants. Data were analyzed using SPSS software with Pearson correlation coefficient test, linear regression analysis, Mann-Whitney test and Wilcoxon test.* ***Results:*** *According to the results of the present study there was a direct relation between the score of value of health and the total score of lifestyle and the scores all of its domains ($p < 0.05$). There was a significant relation between the employment of middle aged women and the domains of personal relationships and spiritual growth lifestyle and also between background diseases and physical stress and stress management of the health-improvement lifestyle ($p < 0.05$). Also a significant relation was observed between the age of the middle aged women and the value of health and the domain of responsibility of the heath-improvement lifestyle ($p < 0.05$).* ***Conclusions:*** *To enhance the level of the health-improvement and value of health lifestyles among this group of women it is necessary to pay attention to matters such as support, facilitation and personal-social factors in the healthcare programs for these women.*

Key words: *Life Style; Women's Health; Social Determinants of Health.* ***Source:*** *DeCS-BIREME).*

RESUMEN

Introducción. El presente estudio se realizó para evaluar los factores relacionados con el estilo de vida de mejora de la salud y el valor de la salud entre las mujeres de mediana edad. **Material y Métodos**: El presente estudio fue una investigación descriptiva-correlacional que se realizó con la participación de 278 mujeres de mediana edad que remitieron a los centros de salud de Isfahan y fueron seleccionadas al azar en 2016. Los datos se recopilaron mediante el cuestionario de características demográficas, Walker's Health Promoting Lifestyle Profile II (HPLPII) y un cuestionario realizado por un investigador para el valor de la salud que fueron completados por los participantes. Los datos se analizaron utilizando el software SPSS con prueba de coeficiente de correlación de Pearson, análisis de regresión lineal, prueba de Mann-Whitney y prueba de Wilcoxon. **Resultados:** De acuerdo con los

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resultados del presente estudio, hubo una relación directa entre la puntuación del valor de la salud y la puntuación total del estilo de vida y las puntuaciones de todos sus dominios (p <0,05). Hubo una relación significativa entre el empleo de mujeres de mediana edad y los dominios de las relaciones personales y el estilo de vida de crecimiento espiritual y también entre las enfermedades de fondo y el estrés físico y el manejo del estrés del estilo de vida para mejorar la salud (p <0,05). También se observó una relación significativa entre la edad de las mujeres de mediana edad y el valor de la salud y el dominio de la responsabilidad del estilo de vida de mejora de la salud (p <0,05). Conclusiones: Para mejorar el nivel de mejora de la salud y el valor de los estilos de vida de salud entre este grupo de mujeres, es necesario prestar atención a cuestiones tales como el apoyo, la facilitación y los factores personales y sociales en los programas de atención médica para estas mujeres.

Palabra Clave: Estilo de vida, Salud de la Mujer, Determinantes Sociales de la Salud (**Source:** *DeCS-BIREME*).

INTRODUCTION

Middle-agedness is a natural process and a normal period during an individual's life span which occurs during the fourth decade of life and is considered as one of the evolutionary stages of human's life[1,2]. This age is associated with special physiologic and physical body changes; the most significant ones are creation of wrinkles on the skin, weakness associated with physical aging, weight gain, and negative mood and the most important outcomes are feeling lack of control over life, reduced feeling of worthiness and usefulness, low quality of life and increased psychological and mental diseases[3]. These changes would go through a process that, during the path, social experiences and feedback would affect individuals' understanding and sense of it and this could change the attitude of this age group toward health-oriented behaviors for the middle-aged group[2,4]. The latest global statistics have shown that, currently, 59% of the middle-aged and elderly population of the world are living in the developing countries and until 2030, this population would raise to 70%[5,6] and according to the latest conducted demographic studies and statistics in Iran the trend of middle-agedness and elderliness is increasingly growing in our country and as it has been predicted, in 2050, the middle-aged and the elderly population would form more than 20% of the country's population[6,7]. The middle-aged period in women, along with its specific physical changes and special issues (menopause and end of fertility), by creating a new viewpoint, could lead toward a unique understanding in middle-aged women of this period and cause health-related changes in their lifestyle[2]. The manner of women's understanding and experiencing of these changes, could be associated with positive and negative biological, psychological and social outcomes for them. However, middle age is an appropriate time for women to create positive health-related behavioral changes because during this period they could understand the importance of health and could have significant advances toward having a healthier life[8,9]. On the other hand, it seems that, the value of health, which means worthiness of health for the individual (if individual's health would be valuable for him/her, he/she would show healthy behaviors), could also, in relation to health for the individual, would become prior to other values[10]. Meaning that, a range in which people care about their own health and consider it important as a permanent belief health value, which would prefer a specific health-improving behavior as a replacement behavior[11].

Any research intervention on health lifestyle would be associated with decreased negative outcomes and increased useful effects for the middle-aged group[4,12]. Due to the fact, before performing any kind of intervention, it is necessary to identify the status of lifestyle and its related factors, it has become the main axis of the current researches in this field and for this age group[13]. Results of studies have suggested that performing and following health-improving behaviors would increase hope for life, improve the level of health and quality of life during the middle age period and also would decrease the rate and intensity of the diseases and their related care costs[14-17]. Increased level of awareness about any of the affecting factors on the women's lifestyle during this period of life, separately and independently, could become a significant predictor of the multiple chronic diseases or the causes of mortality[18-20]. That could be used for purposive programing toward the physical, mental and social health of the middle-aged women. Results of the conducted studies about health-related lifestyle and the value of health among the middle-aged group have shown the difference between the socioeconomic status of middle-aged women and their lifestyle[2,21,22]. Also the importance of the effect of lifestyle on the concept of health has been considered and emphasized by the researchers in the fields of the health of the middle-aged and the elderly[12,23,24].

Considering the importance of the mentioned matters including the importance of possible influencing factors on the health-related lifestyle status and the importance of the concept of value of health and lack of any similar studies in this field in Iran, the present study was conducted to identify the affecting personal-social factors on health-improving lifestyle and value of health among middle-aged women; so that along with

increasing the awareness and knowledge about the relations between any of these factors with health-related lifestyle and value of health, the necessary conditions would be provided for interventions for improving the level of health in this age group.

MATERIAL AND METHODS

Design, setting, and participants

The present study was a descriptive-correlation research and the studied samples were all the middle-aged women who referred to health centers Number one and two of Isfahan during 2016 (from December 2016 to January 2017) who were enrolled in the study using simple randomized sampling method (by drawing numbers from the lists of the centers). In the present study the inclusion criteria were being aged from 30 to 59 year old, having a medical file at the studied health center, being able to at least read and write, being able to answer the questions of the questionnaires and not being pregnant. The middle-aged who were not willing to continue the study or were not able to answer more than 2 questions of the questionnaires were excluded from the study. The sample size in the present study was calculated based on the formula.

$$n = \frac{(Z_1 + Z_2)(1 - r^2)}{r^2} + 2$$

to be at least 190 sample (Z1: 95% confidence coefficient which was 1.96, Z2: 80% confidence interval which was 0.84, r: correlation coefficient estimation between the score of lifestyle and the score of value of health which was considered at least 0.2). Due to the possibility of sample loss caused by not completing the questionnaire 10% was added to the samples; so 190 + 19 = 209 samples were selected for the study, but considering the availability of the samples, 300 samples were enrolled in the study.

Data collection instruments

Data were gathered using demographic characteristics questionnaire, Health-Promoting Lifestyle Profile II by Walker et al (HPLPII, 1987) and health value research-made questionnaire. Questions about demographic information included age, occupation, educational level and background disease of the studied middle-aged. Health-Promoting Lifestyle Profile II (HPLPII) would evaluate health-promoting lifestyle by focusing on innovative works and individual's perception toward maintaining or increasing the level of well-being, self-actualization and personal satisfaction. This questionnaire contains 52 questions in 6 aspects including nutrition (9 items), physical activity (7 items), responsibility toward health (12 items), stress management (8 items), interpersonal relationships (5 items), and spiritual growth (11 items); which is scored based on a 4-point Likert scale (1: never, 2: sometimes, 3: mostly, 4: usually). Both questionnaires contain multiple-choice questions that were scores using a Likert scale of never, sometimes, mostly and usually, and for statistical comparison were scored from 0 to 4. If the score of the question was between 0-1.33 the item was undesirable, if it was between 1.33-2.66 it was semi-desirable and if it was between 2.66-4 it was desirable. Then to evaluate the total status of the item in each aspect between the groups, the desirability score was calculated on the basis of 100; in a way that the achieved score was multiplied by 100 and then was divided by the product of the multiplication of the number of question to the maximum score that each item could achieve (which was 4). In the total status of the health-promoting lifestyle, if the score was between 0-33 the item was undesirable, if the score was between 33-66 it was semi-desirable and if it was between 66-100 it was desirable[25]. Content validity and reliability of this questionnaire was first evaluated by Walker et al[25] and then by Ritchey and Kerr (1990)[26].

Reliability was approved using test retest method with a correlation coefficient higher than 0.75. In Iran the validity of this questionnaire has been evaluated by Mohammadi eidi et al (2011) using exploratory factor analysis and its reliability has been approved using ICC correlation with a Cronbach's α of 0.82 for the whole questionnaire and 0.75-0.91 for each of the aspects of the questionnaire[27]. The value of health researcher-made questionnaire contained 17 questions that was designed based on the 4-question questionnaire by Lou et al (1986)[28], which was also used by Abbaszadeh et al in 2012[29]. The items of the questionnaire were scored based on the Likert scale, never (0 score), rarely (1 score), sometimes (2 scores) mostly (3 scores) and always (4 scores). The method of scoring for the value of health questionnaire was similar to the Health-Promoting Lifestyle Profile II. The validity of the value of health researcher-made questionnaire was approved by the opinion of the experts in a way that the opinions of 15 academic members who were expert in fertility, midwifery and nursing, were achieved. Then, with the comments from the assistant and advisor professors, suggested modifications and questions were added to the questionnaire and the questionnaire was again sent for 4 experts and final approval was obtained. To approve the reliability of the questionnaire, Cronbach's α coefficient was used. In a pilot study, 20 eligible middle-aged women who referred to another health center, other than those that were selected for the study, were enrolled and the developed questionnaire was completed by them. The reliability of the questionnaire was approved with a Cronbach's α of 0.7.

After the researcher received confirmation for performing the study from the research council of the

nursing and midwifery faculty and after gaining necessary permission from the research deputy of the nursing and midwifery faculty, she referred to the health deputy of Isfahan. The recommendation letter has been sent to the health deputy through automation system and then was sent to the health centers Number one and two of Isfahan. In this study, eight centers were selected from the Isfahan health center number one and six centers were selected from the Isfahan health center Number two using simple random sampling (drawing) from the list of the centers. After the researcher deliver her recommendation letter to the manager of the center and introduced herself and explained the goals of the study and the questionnaires and received their consent, she was introduced to the health care personnel of the center or the base. Then, after explaining the goals of the study and the manner of completing the questionnaire and gaining verbal consent, the questionnaires were distributed among eligible middle-aged women based on the inclusion criteria who were introduced by the health care personnel and they were asked to accurately complete the questionnaires and leave no questions without answer. After completing and gathering the questionnaires, gathered information were analyzed using SPSS software version 22 and descriptive and inferential statistical tests of Pearson correlation coefficient, linear regression analysis, Mann-Whitney test and Wilcoxon test.

Ethical Considerations

This study has been approved by the ethics committee of the Isfahan University of Medical Sciences and has been adapted from the research project No. 395754. Before enrolling in the study, participants completed written informed consent forms. The manner of completing the questionnaires was explained for the participants before the study and all the participants were allowed to withdraw from the study at any desired time.

Data analysis

After completing and gathering the questionnaires, gathered information were analyzed using SPSS software version 22 and descriptive and inferential statistical tests of Pearson correlation coefficient, linear regression analysis, Mann-Whitney test and Wilcoxon test.

RESULTS

In this study, from the 300 studied middle-aged women, eventually 287 questionnaires were analyzed (13 questionnaires were incomplete). According to the results of the present study, the mean age of the studied middle-aged women was 40.5 ± 8.04 years. Most of the studied middle-aged women were housewife (195 women, 85%), with an educational level of under diploma (120 women, 41.8%), and diploma (78 women, 27.2%). 79 middle-aged women (27.5%) had underlying diseases (diabetes, hypertension, other diseases). According to (Table 1), the mean score of value of health in women was 59.6 and the total score of lifestyle was 57.9 (out of 100). Among the aspects of lifestyle, the highest score belong to aspect of interpersonal relationships (67.6) and the lowest score belonged to the aspect of physical activity (39.4).

Table 1. Average lifestyle score by area and health value in middle-aged women study.

Score		Mean ±SD	Minimum score	Maximum score
Health value		13.8±59.6	6	87
Total lifestyle score		14.7 ±75.9	3	96
Responsibility	Lifestyle areas	18.1±35.1	3	100
physical activity		19.9±93.4	0	94
Nutrition		16.3±46.9	0	100
Interpersonal relationships		17.4±76.6	5	100
stress management		17.7±85.7	3	100
Spiritual growth		17.4±36.7	0	97

From the different aspects of lifestyle, respectively, the scores of aspects of responsibility ($p < 0.001$), interpersonal relationships ($p < 0.001$) and physical activity ($p = 0.01$) had the highest predictive value for the score of value of health and relatively, other aspects had no significant predictive value ($p < 0.05$) (Table 2).

Table 2. Predictive value of health value score in terms of lifestyle domains score.

Lifestyle areas	Standardized coefficients	Raw coefficients	t	P-value
Responsibility	0,29	0,38	5,92	< 0,001
physical activity	0,09	0,13	2,61	0,01
Nutrition	0,02	0,024	0,42	0,67
Interpersonal relationships	0,23	0,29	5,04	< 0,001
stress management	0,034	0,044	0,7	< 0,48
Spiritual growth	0,028	0,036	0,56	< 0,58

As shown in (Table 3), among the related factors to health-promoting lifestyle and value of health, a significant relation was observed between occupation with the aspects of interpersonal relationships and spiritual growth ($p < 0.05$).

Table 3. Relationship between demographic variables with lifestyle score and health value in middle-aged women studied.

Row	Total lifestyle score	Spiritual growth	stress management	Interpersonal relationships	Nutrition	Physical activity	Responsibility	Health value
Test statistics	9.29	16.49	8.51	13.32	7.29	2.51	5.22	4.33
Degree of freedom	5	5	5	5	5	5	5	5
P-Value	0.09	0.006	0.13	0.02	0.2	0.77	0.38	0.5
Age of middle-aged women								
Age correlation coefficient	-0.09	-0.08	-0.02	-0.03	-0.01	0.80-	0.13-	-0.14
P-value	0.1	0.16	0.66	0.54	0.07	0.13	0.02	0.01
Level of Education								
Test statistics	5.76	3.85	4.74	1.67	3.78	6.28	8.31	3.69
Degree of freedom	4	4	4	4	4	4	4	4
P-Value	0.21	0.42	0.31	0.79	0.43	0.17	0.08	0.44
Underlying diseases								
Mann Whitney test	8609.5	9046	8346.5	9604	9006.5	8331	8619	8753
Wilcoxon	15279.5	15716	15016.5	16274	15676.5	15001	15289	15423
Z	-1.85	-1.22	-2.24	-1.041	-1.28	-2.26	-1.84	-1.65
P-Value	0.06	0.22	0.02	0.67	0.1	0.02	0.06	0.09

Meaning that the highest level of interpersonal relationships and spiritual growth belonged to employed women and the lowest level of interpersonal relationships belonged to unemployed women. There was a significant relation between age with the value of health and the aspect of responsibility; meaning that by aging, the value of health and level of responsibility were decreased in the participants. Also, there was a significant relation between underlying diseases with the aspects of physical activity and stress management of health-promoting lifestyle ($p < 0.05$). In a way that both of the items were higher in women with no underlying diseases compared to other women.

DISCUSSION

The present study was conducted to determine the related factors to the lifestyle and their relation to value of health among middle-aged women; results indicated that aspects of responsibility, interpersonal relationships and physical activity of health-promoting lifestyle were the predictive aspects for the status of value of health among the studied middle-aged women. Therefore, considering the definition of each of the aspects of the health-promoting lifestyle, having a sense of responsibility among middle-aged women toward learning personal health, education in the field of health, interest in physical activity and exercise (maintaining a good shape as a part of life or as an activity during leisure time), and the ability for establishing communication with others for having a sense of intimacy and closeness through sharing their thoughts and feelings[30], could indicate the importance of worthiness of health and consequently its more desirable condition among middle-aged women. Other results of the present study showed that employed middle-aged women had a more desirable level in the aspects of interpersonal relationships and spiritual growth of the health-promoting lifestyle while the interpersonal aspect had an undesirable level among unemployed middle-aged women. The aspects of physical activity and stress management of health-promoting lifestyle in healthy women (women with no chronic diseases) had desirable levels. Older women showed relatively undesirable levels in the aspect of responsibility of health-promoting lifestyle and value of health. Few studies have been conducted about the effective factors in these two aspects among middle-aged women and even no studies have been conducted to directly evaluate the relation between health-promoting lifestyle and value of health. However, the role of health-promoting lifestyle as one of the most important criterion for determining the health of the individuals has been suggest. Results of the study by Rashidi and Baharami (2015), in line with the results of the present study, revealed that there was a significant relation between studied elderly women's occupation and educational level with their healthy behaviors in the aspects of responsibility toward health, physical activity, spiritual growth and stress management[6].

Results of the present study were in line with study of Meneguci et al (2015)[12], Dogra et al (2014)[31], De Rezende et al (2014)[32], Gennuso et al (2013)[33], and Chastain et al (2015)[34]. Considering the consistency of the results of the mentioned study with the present study it seems that low educational level or inability to read and write (illiteracy) is one of the most important

obstacles to establishing communication with others because it would cause the individuals to have less access to information and educations in the fields of health. Being able to read and write is a useful and appropriate factor for spending the leisure time reading and increasing the level of knowledge and awareness and consequently improving the level of the health and quality of life in the elderly[6]. It seems that employment of middle-aged women had a direct effect on establishing communication with others for having an intimate and close relationship with others that would cause this age group to receive information from healthcare providers and have a more desirable level in the aspect of health-promoting lifestyle.

The importance of this issue becomes more significant when unemployed women and women with lower educational levels had more undesirable levels of interpersonal relationships. On the other hand, spiritual health has been suggested as the coordinator of other aspects of health improvement[35] which had a more desirable level among women with more desirable levels of health-promoting lifestyle. Definitely, physical activity of healthy individuals is higher than individuals with chronic diseases and considering that the level of stress management was higher in women without any chronic diseases, it could be suggested that middle-aged individuals who are more able to manage their stress would suffer from chronic diseases less than their peers and would also enjoy an appropriate level of physical activity. Older individuals, due to inability to perform many of the personal and social activities, including inability to regularly visiting the healthcare providing centers, could not be informed about the latest scientific-research achievements and suggestions in the field of healthy behaviors. This could also be one of the reason for the consistency between the results of the studies. Also, employed individuals have higher levels of activity and more presence in the society which could have a positive effect on their healthy behaviors[6].

Also, it seems that lower educational levels in older ages have a direct effect on the health-promoting lifestyle in this group. However, results of the present study were not in line with the study of Heshmati et al (2012)[36], Vagetti et al (2013)[37], results of these study indicated no significant relation between personal-social characteristics of middle-aged women with the health-promoting lifestyle and value of health. It seems that differences in the studied populations, especially cultural challenges and differences and using better services and facilities that would lead to better quality of life and better provision of services and eventually health behaviors of the middle-aged individuals would cause these differences in the results of the studies. Personality differences and psychological factors are also important factors that could difference reactions toward choosing a lifestyle by the individual and considering the results of the present study which indicated an undesirable level of value of health among women with a more undesirable level of communication with others and sharing the thoughts and feelings through verbal and non-verbal communication, the importance of this issue would be multiplied.

Considering the relation between the health-promoting lifestyle and value of health among middle-aged women, it is suggested that healthcare provider would emphasize and pay more attention to this matter during consultation, orientation and while providing health-related behaviors. The effort to improve the level of health-promoting lifestyle, healthy behaviors and value of health is a comprehensive measure and requires courageous endeavor many of the decision-makers and especially the professional personnel of the health, care and treatment. Although it is not easy to improve the level of health and value of health, increasing our knowledge about the effective factors and determining the risky groups could be helpful in improving the level of health-promoting lifestyle and value of health and consequently decreasing the outcomes caused by these two factors during the middle-aged period in women. Considering the effective factors in health-promoting lifestyle and value of health in this age group, it is necessary to pay more attention to statistical difference between ages, genders, educational levels, existence of simultaneous chronic diseases and also evaluation of the study in lower ages, male participants, participants with higher educational levels and participants with simultaneous diseases.

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BIBLIOGRAPHIC REFERENCES

1. Hakimi S SM, Ramezani Tehrani F. Concerns of menopausal women: A phenomenological study in North West Iran. Payesh 2014;13(3): 32-330.
2. Barat SH, Kotenaei MJ, Bouzari Z, Sam S, Taheri Otaghsar M. Factors affecting life process of postmenopausal women. J Babol Univ Med Sci 2013;15(3):30-5.
3. Zokaei MS AM. An introduction to cultural history of the body in Iran. Tehran, Iran: Teesa Publications; 2014.
4. Movahed M, Hosseini M. The Middle-Aged Women's Experience and Perception of Age-Related Physical Changes and Health, Shiraz City, Iran. J Qual Res Health Sci 2016;7(2):157-71.
5. Mirzaei M. Demography of elderly in Iran according to censuses of 1956- 2006. Salmand.2(5):326-31.
6. Rashidi S, Bahrami M. Factors Related to Health Promoting Lifestyle in Elderly. J Urmia Nurs Midwifery Fac.2015;13(2):90-8.
7. Population and Housing Census [Internet]. 2016 [Cited]. Available in:

https://www.unece.org/stats/census.html
8. Elavsky S, Gold CH. Depressed mood but not fatigue mediate the relationship between physical activity and perceived stress in middle-aged women. Maturitas. 2009;64(4):235-40.
9. SA O. Maternit,Newborn and Womens Health Nursing.Philadelphia, Journal Lippincott Wiliams and Wilkin, 2008;32:54-2.
10. Beard JR, Officer A. De Carvalho IA, Sadana R, Pot A, M. Michel J. The World report on ageing and health: a policy framework for healthy ageing. Lancet. 2016;387(10033): 2145-54.
11. Sauer MV. Reproduction at an advanced maternal age and maternal health. Fertil Steril. 2015;103(5):1136-43
12. Meneguci J, Sasaki JE, da Silva AS, Scatena LM, Damião R. Socio-demographic, clinical and health behavior correlates of sitting time in older adults. BMC Public Health. 2015;15(1):65.
13. Nazarpour S, Tehrani FR. Effects of the severity of menopausal symptoms on sexual function in postmenopausal women. J Qazvin Univ Med Sci. 2015;19(4):54-63.
14. Liu YB, Liu L, Li YF, Chen YL. Relationship between health literacy, health-related behaviors and health status: a survey of elderly Chinese. Int J Environ Res Public Health. 2015;12(8):9714–9725.
15. Kabisch N, van den Bosch M, Lafortezza R. The health benefits of nature-based solutions to urbanization challenges for children and the elderly–A systematic review. Environ Res. 2017;159:362-373.
16. Huijg JM, Gebhardt WA, Verheijden MW, et al. Factors influencing primary health care professionals' physical activity promotion behaviors: a systematic review. Int J Behav Med. 2015;22(1):32-50
17. Balatsoukas P, Kennedy, CM, Buchan I, Powell J, Ainsworth J. The role of social network technologies in online health promotion: a narrative review of theoretical and empirical factors influencing intervention effectiveness. J Med Internet Res. 2015;17(6):e141
18. Van Dam R LT, Spiegelman D, et al. Combined impact of lifestyle factors on mortality: Prospective cohort study in us women. BMJ (online);337:a1440
19. Mahalit JR, Burns SM, Syzdek M. Masculinity and perceived normative health behaviors as predictors of mens health behaviors. Soc Sci Med. 2007;64(11):2201-9.
20. Byrne DW, Rolando LA, Aliyu MH, McGown PW, et al. Modifiable healthy lifestyle behaviors: 10-year health outcomes from a health promotion program. Am J Prev Med. 2016;51(6):1027-1037.
21. Makizako H, Shimada H, Doi T, et al. Physical frailty predicts incident depressive symptoms in elderly people: prospective findings from the Obu Study of Health Promotion for the Elderly. J Am Med Dir Assoc. 2015;16 (3):194-9.
22. Ziegelmann JP, Knoll N. Future directions in the study of health behavior among older adults. Gerontology. 2015;61(5): 469-76.
23. Lai JY, Wang J. Switching attitudes of Taiwanese middle-aged and elderly patients toward cloud healthcare services: An exploratory study. Technol Forecast Soc Change. 2015;92:155-167.
24. Huang TT, Liu CB, Tsai YH, Chin YF, Wong CH .Physical fitness exercise versus cognitive behavior therapy on reducing the depressive symptoms among community-dwelling elderly adults: A randomized controlled trial. Int J Nurs Stud. 2015;52(10):1542-52.
25. Walker SN SK, Pender NJ The health promoting lifestyle profile; development and psychometric characteristics. Nurs Res. 1987;36(2):76-81.
26. Kerr MJ, Ritchey DA. Health-promoting lifestyles of English speaking and Spanish speaking Mexican-American migrant farm workers. Public Health Nurs. 1990;7(2):80-7.
27. Mohammadi IZ, Pakpour AH, Mohammadi BZ. Reliability and Validity of Persian Version of the Health-Promoting Lifestyle Profile. J Mazandaran Univ Med Sci 2012;21(1):102-13.
28. Lau RR, Hartman KA, Ware JE. Health as a value: Methodological and theoretical considerations. Health Psychol. 1986;5(1):25-43.
29. Abbaszadeh MADBG, r. Dahir, A. Empowering Social and Cultural Discussion on Citizens' Self-Care Life. Socio-Cultural Education. 2012;1(1):141-19.
30. Walker SN, Hill-Polerecky DM. Psychometric evaluation of the Health-Promoting Lifestyle Profile II: University of Nebraska Medical Center; 1996.
31. Dogra S, Stathokostas L. Correlates of extended sitting time in older adults: an exploratory cross-sectional analysis of the Canadian Community Health Survey Healthy Aging Cycle. Int J Public Health. 2014(59):983–91.
32. De Rezende LFM, Rey-López JP, Matsudo VKR, Luiz OdO. Sedentary behavior and health outcomes among older adults: a systematic review. BMC Public Health. 2014;14:333.
33. Gennuso KP, Gangnon RE, Matthews CE, Thraen-Borowski KM, Colbert LH. Sedentary behavior, physical activity, and markers of health in older adults. Med Sci Sports Exerc. 2013;45:1493–500.
34. Chastin SFM, Fitzpatrick N, Andrews M, DiCroce N. Determinants of sedentary behavior, motivation, barriers and strategies to reduce sitting time in older women: a qualitative investigation. Int J Environ Res Public Health. 2014;11(1):773–791.
35. Safaai Rad A KL, Shomoossi N, Ahmadi Tahour M. The relationship between spiritual well- being and mental health of university student. Journal of sabzevar university of medical sciences. 2011:280-274-17-
36. Heshmati H, Behnampour N, Haji-Ebrahimi M H, Charkazi A, Asadi Z, Dehnadi A. Elderly Hygiene Status in Rural Areas of Golestan Province in Iran. Salmand: Iranian Journal of Ageing. 2012; 7 (1) :25-33
37. Vagetti GC, Moreira NB, Filho VCB, de Oliveira V, et al. Aspects of quality of life associated with self-rated health: a study of elderly women from a physical activity program in low-income neighborhoods in Curitiba in the state of Parana, Brazil. Cien Saude Colet. 2013(18):3483–93.

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