

The Effectiveness of Lifestyle Educational Program in Health Promoting Behaviors and Menopausal Symptoms in 45-60-Year-Old Women in Marvdasht, Iran

Mahin Nazari¹, Samaneh Farmani¹, Mohammad Hosein Kaveh¹ & Haleh Ghaem²

¹ School of Health, Department of Health Education and Health Promotion, Shiraz University of Medical Sciences, Shiraz, Iran

² School of Health, Department of Epidemiology, Shiraz University of Medical Sciences, Shiraz, Iran

Correspondence: Mahin Nazari, School of Health, Shiraz University of Medical Sciences, Shiraz, Iran. Tel: 98-917-732-3669. E-mail: manazari@sums.ac.ir

Received: December 3, 2015 Accepted: January 19, 2016 Online Published: February 24, 2016

doi:10.5539/gjhs.v8n10p34

URL: <http://dx.doi.org/10.5539/gjhs.v8n10p34>

Abstract

Introduction: Health and lifestyle of women are of great importance in some periods of life, such as menopause. Since postmenopausal women are considered as a vulnerable group of the society, finding a strategy to improve their health seems necessary.

Methods: This experimental study with pretest-posttest design was carried out on 200 postmenopausal women between 45 and 60 years old in Ramjerd, Marvdasht, Iran, in 2014. The women who met the inclusion criteria of the study were selected by simple random sampling. The data were collected using demographic information questionnaire, Menopause Rating Scale (MRS), and Walker's Health Promoting Lifestyle Profile (HPLPII). The data were entered into the SPSS statistical software (version 19) and were analyzed using descriptive statistics, paired t-test, independent t-test, and chi-square test. P-values less than 0.05 were considered as statistically significant.

Results: The results of paired t-test showed a significant difference in the mean scores of health promoting lifestyle and MRS in the experimental group ($P < .05$), but not in the control group ($P > .05$).

Conclusion: Lifestyle education was effective in health promoting behaviors and menopausal symptoms. After the educational intervention, health promoting behaviors increased and menopausal symptoms decreased in the postmenopausal women. Therefore, educational interventions based on health promoting lifestyles can be used as an appropriate strategy to reduce postmenopausal women's menopausal symptoms and improve their health.

Keywords: health promotion, lifestyle, menopause

1. Introduction

Today, improving lifestyle and health promotion is a basic requirement in human societies (Golden, McLeroy, Green, Earp, & Lieberman, 2015). Health promotion is the science and art of lifestyle change in order to reach the desirable perfection (Dima-Cozma, Gavriluta, Mitrea, & Cojocaru, 2014). The main goal of health promotion is achieving healthy lifestyle behaviors (Bahadır, Certel, & Topuz, 2014). According to Pender, healthy lifestyle behaviors include self-actualization, health responsibility, exercise, nutrition, interpersonal relations, and stress management (Sorour, Kamel, Aziz, & Aboelseoud, 2014). Currently, health systems have outlined most of their plans based on family health and have paid special attention to women since they are the center of family health (Davari, Dolatian, Maracy, Sharifirad, & Safavi, 2010). Women manage family members' health, and they also have an important role in training and transitions healthy lifestyle to the next generation. Women in all age groups comprise a large proportion of the population; however, their burden of disability is high and they are encountered with special problems as a result of natural changes in their physiological status, like menopause transition (Parandavar, Mosalanejad, Ramezanli, & Ghavi, 2014). Overall, by increasing life expectancy, more than one third of a woman's life is spent in menopause, which cause many of physical and psychological changes in women (Ibrahim, Ahmed, & El-Hamid, 2015). World Health Organization (WHO, 1996) defined 'natural menopause' as the permanent cessation of menstruation resulting from the loss of ovarian

follicular activity. Natural menopause occurs after 12 months of permanent cessation of menstruation for which there is no other obvious pathological and physiological cause (Elkazeh & El-Zeftawy, 2015).

Overall, menopause causes a wide range of symptoms, such as hot flushes, night sweats, aching in muscles and joints, sleeping problems, short breath, weight gain, increased facial hair, depression, irritability, anxiety, sexual problems, vaginal dryness, and urinary symptoms such as urine leakage while laughing and coughing (Randhaw & Sidhu, 2014). These symptoms decrease women's health and affect their biological, psychological, and social health (Tan, Kartal, & Guldal, 2014). In general, many postmenopausal women have low knowledge and practice about menopause transition issues, indicating the necessity to plan for interventions (Barathi & Kalavathi, 2014; Elkazeh & El-Zeftawy, 2015; Shakila, Sridharan, & Thiyagarajan, 2014; Veigas, Rajgopal, Swami, & Varghese, 2014). Health promoting lifestyle education is one of the most important factors in raising postmenopausal women's awareness and improving their performance to improve their health status. All the researches in the field of menopause have also emphasized education of and care for postmenopausal women to prevent their problems (Jurgenson, Jones, Haynes, Green, & Thompson, 2014; Tan et al., 2014; Parandavar et al., 2014).

In the present study, Pender's health promotion model was used as a guide for design and implementation of educational intervention. The educational intervention was done based on the Health Promoting Lifestyle Profile-II (HPLPII) which has been developed according to Pender's health promotion model (Pender & Parsons, 2011). HPLPII measures health promoting behaviors, which are according to Pender's opinion based on individuals' lifestyle (Callaghan, 2015). This study aims to determine the effectiveness of lifestyle educational program in health promoting behaviors and menopause symptoms in 45-60-year-old women in Ramjerd, Marvdasht.

2. Materials and Methods

2.1 Data Source and Study Population

This experimental study with pretest-posttest design was carried out on 200 postmenopausal women between 45 and 60 years old in Ramjerd, Marvdasht, Iran, in 2014. Based on the previous similar studies (Heidari, Kermanshahi, & Vanaki, 2013; Safabakhsh & Nazemzade, 2013), considering $\alpha=0.05$ and $\text{power}=80\%$, and using the mean comparison formula, a 186-subject sample size was determined for the study 93 subjects in each group. Yet, considering the probability of loss, the sample size was increased to 200.

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 [P_1(1 - P_1) + P_2(1 - P_2)]}{(P_1 - P_2)^2} \quad (1)$$

Ramjerd area includes 8 villages, using simple random allocation method, 4 villages were assigned in the control group and 4 villages in the intervention group. Then among the qualified women in every region who met the inclusion criteria of the study by simple random sampling, 100 women in the control group and 100 women in the intervention group were selected. In this study, postmenopausal status was considered as cessation of menstruation without use of medications for at least 12 months. The inclusion criteria of the study were being 45-60 years old, experiencing physiological menopause, passage of at least one year and at most 10 years from cessation of menstrual cycle, being physically and mentally healthy, and being willing to participate in the study. On the other hand, the exclusion criteria were having a history of hormone therapy within the past 6 months and having a history of hysterectomy, radiation therapy, use of drugs that reduce menopause symptoms, and failure to participate in more than one training session.

Post-test was conducted two months after the pre-test. In this study, educational intervention on health-promoting lifestyles was conducted for postmenopausal women in 4 sessions, each having a specified educational content. The first session about proper nutrition, the second session on the importance of physical activity, third session on stress management techniques and interpersonal relationships and the fourth session about spiritual growth and responsibility health. Additionally, different educational methods, including interactive lecture and group discussion, and media, such as booklet, poster, picture, and slideshow, were used to enhance the participants' learning and participation. The study data were collected using a demographic questionnaire, Menopause Rating Scale (MRS), and Walker's HPLPII. All the 3 questionnaires were completed by face-to-face interview for all the samples.

2.1.1 Demographic Characteristics

The demographic Characteristics included information about age, age at menopause, marital status, employment

status, education level, parity, smoking, husband's education level, husband's occupation, and average household income.

2.1.2 Menopause Rating Scale

MRS is a valuable international instrument to assess menopause symptoms that has been widely used in many clinical and epidemiological studies to determine the frequency and severity of menopausal symptoms in middle-aged women (Moravcova, Mares, & Jezek, 2014). It was also used as a basis for assessing menopause symptoms in the present study. MRS was developed by Heinmann et al. in 2000. MRS, which is a Likert-type scale, consists of 11 items (symptoms or complaints) categorized into three subscales, namely somato-vegetative symptoms, psychological symptoms, and urogenital symptoms. The somato-vegetative subscale includes sweating/hot flushes, heart discomfort, sleep problems, and joint and muscle problems. In addition, the psychological subscale includes depressive mood, irritability, anxiety, and physical/mental exhaustion. Finally, the urogenital subscale includes sexual problems, bladder problems, and vaginal dryness (Jabeen, Mahmood, & Afzal, 2015). The items are scored based on a 5-point Likert scale ranging from 0 (no symptom) to 4 (1 = mild, 2 = moderate, 3 = severe, 4 = very severe) depending on the severity of the complaints perceived by women (Elsabagh & Allah, 2012). The total score of MRS is computed by adding up the points of each item and ranges between 0 (asymptomatic) and 44 (highest degree of complaints). Besides, higher scores indicate increase in the severity of the symptoms. The validity and reliability of this scale have been reported in different populations (Sis & Pasinlioglu, 2013). In the present study, the English version of MRS was translated into Persian.

2.1.3 Health Promotion Lifestyle Profile-II

The original HPLP-II was developed by Walker in 1987. This profile was made based on Pender's health promotion model and it is appropriate for use in research within the framework of the health promotion model (Pender et al., 2011). HPLPII contains 52 items and six subscales to measure the frequency of health-promoting behaviors. Health-promoting behaviors are measured in 6 domains of health-promoting lifestyle; i.e., health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management. These items are scored based on a 4-point Likert scale with four possible responses: 1 (never), 2 (sometimes), 3 (often), and 4 (routinely) (Johnson, Gulanick, APRN, & Kouba, 2015). The total score of health-promoting lifestyle is obtained by calculating the mean of responses to all the 52 items. In addition, the total score of each subscale is computed by calculating the mean of responses to that subscale's items. Overall, HPLP-II scores range from 52 to 208 (Bi et al., 2015). According to Walker et al., Cronbach's alpha was 0.96 for HPLP-II total scale and 0.79-0.87 for the subscales (Walker & Hill-Polerecky, 1996). In Iran, the reliability of this questionnaire was determined by Mohammadi Zeidy et al. with Cronbach's alpha coefficient of 82% for the total instrument and 0.64-0.91 for the subcategories. The results of that research confirmed the reliability and validity of this questionnaire (Zeidi, Agha, & Zeidi, 2011).

2.2 Statistical Analysis

After all, the data were entered into the SPSS statistical software (version 19) and were analyzed using descriptive statistics, paired t-test, independent t-test, and chi-square test. P-values less than 0.05 were considered as statistically significant.

2.3 Ethics

At first, the institutional review board approval was obtained by the Research Vice-chancellor of Shiraz University of Medical Sciences (proposal No. 7536) and then written informed consents from all participants for taking part in the study were obtained. They were also ascertained about the confidentiality of their information.

2.4 Strengths and Limitations

One of the strong points of the present study was completing the questionnaires through face-to-face interviews, which reduced the problems related to completion of the questionnaires in the participants with low education levels. Another point was the use of MRS, as a valid international scale, to assess the menopausal symptoms. On the other hand, the limitation of this study was the recall bias related to reminding the questions in MRS, because the participants were required to express their menopausal symptoms over the past month.

3. Results

The study results showed no statistically significant difference between the two groups regarding the demographic variables before the intervention. Frequency distribution of the demographic variables in the two groups has been presented in Table 1.

The results of independent t-test revealed no significant difference between the two groups regarding the mean

scores of health-promoting lifestyle and mean scores of MRS before the intervention ($P > .05$). However, a significant difference was observed in this respect after the intervention ($P < .05$). Moreover, the results of paired t-test indicated a significant difference in the intervention group's mean scores of health-promoting lifestyle and mean scores of MRS before and after the intervention ($P < .05$). However, no significant difference was found in this regard in the control group ($P > .05$) (Tables 2 and 3).

Table 1. Frequency distribution of the subjects in the two groups according to demographic variables (N: 200)

Characteristics Individual	Group		P	
	Intervention Percent (N:100)	Control Percent (N:100)		
Age (years)	≤54 years	52	61	.199
	≥55years	48	39	
Age at menopause (years)	<50 years	71	67	.541
	≥50 years	29	33	
Parity	≤3	3	3	.437 Fisher
	4-6	48	39	
	>6	49	58	
Marital status	Married	88	94	.216 Fisher
	Single	1	-	
	Widowed	11	6	
Education level	Illiterate	64	66	.955
	Primary school	34	32	
	Middle school	2	2	
Employment status	Homemaker	100	100	-
Smoking	Yes	17	56	.121
	No	83	44	
Husband's education	Illiterate	52	57	.863 Fisher
	Primary school	39	34	
	Middle school	6	7	
	Diploma	3	2	
Husband's occupation	Farmer	57	67	.286 Fisher
	Employee	2	2	
	Laborer	25	23	
	Jobless	4	4	
	Retired	12	4	
Average family income	Low	16	10	.105
	Average	61	75	
	High	23	15	

Table 2. Comparison of the mean scores of health-promoting lifestyle in the two groups before and after the intervention

Dimensions	Group	Number	Mean (SD) before the intervention	Mean (SD) after the intervention	P*	P**	P***
Spiritual growth	Intervention	100	24.59 (4.79)	26.13 (4.39)	P<.001	.015	.726
	Control	100	24.33 (5.66)	24.38 (5.36)	.167		
Responsibility health	Intervention	100	30.44 (5.06)	31.74 (4.96)	P<.001	.034	.666
	Control	100	30.12 (5.39)	30.18 (5.38)	.158		
Interpersonal relationships	Intervention	100	17.02 (3.50)	18.49 (3.08)	P<.001	.045	.360
	Control	100	17.58 (4.99)	17.29 (5.07)	.093		
Stress management	Intervention	100	11.36 (2.88)	11.72 (2.83)	P<.001	.042	.371
	Control	100	10.99 (2.95)	10.91 (2.77)	.103		
Physical activity	Intervention	100	8.69 (1.64)	9.48 (1.80)	P<.001	.047	.397
	Control	100	8.94 (2.44)	8.87 (2.45)	.288		
Nutrition	Intervention	100	18.12 (3.05)	19.11 (2.77)	P<.001	.043	.609
	Control	100	18.34 (3.00)	18.24 (2.98)	.320		
Total score of lifestyle	Intervention	100	110.22 (14.05)	116.67 (12.80)	P<.001	.003	.973
	Control	100	110.30 (18.99)	109.87 (18.96)	.065		

* Comparison of mean scores in the intervention and control groups before and after the intervention;

** Comparison of mean scores between the intervention and control groups before and after the intervention;

*** Comparison of mean scores between the intervention and control groups before the intervention.

Table 3. Comparison of the means scores of menopause rating scale in the two groups before and after the intervention

Dimensions	Group	Number	Mean (SD) before the intervention	Mean (SD) after the intervention	P*	P**	P***
Physical symptoms	Intervention	100	10.01 (3.47)	9.66 (3.34)	P<.001	.020	.177
	Control	100	10.65 (3.20)	10.72 (3.03)	.252		
Psychological symptoms	Intervention	100	10.11 (4.45)	9.61 (4.32)	P<.001	.047	.385
	Control	100	10.63 (3.98)	10.70 (3.34)	.631		
Urogenital symptoms	Intervention	100	5.91 (3.67)	4.85 (2.93)	P<.001	.049	.210
	Control	100	5.26 (3.63)	5.68 (2.99)	.072		
Total score of MRS	Intervention	100	26.03 (9.89)	24.12 (8.97)	P<.001	.010	.692
	Control	100	26.54 (8.20)	27.10 (7.22)	.063		

* Comparison of mean scores in the intervention and control groups before and after the intervention;

** Comparison of mean scores between the intervention and control groups before and after the intervention;

*** Comparison of mean scores between the intervention and control groups before the intervention.

4. Discussion

The present study aimed to investigate the effect of lifestyle education on health-promoting behaviors and menopausal symptoms in the postmenopausal women between 45 and 60 years old. The study results demonstrated the positive impact of lifestyle education on health-promoting behaviors and menopausal symptoms in the postmenopausal women. After implementing the educational intervention in the intervention group, health-promoting behaviors significantly increased and menopausal symptoms decreased in the postmenopausal women. This result was comparable to that of the study performed by Cristina Larroy Garcia et al. on Spanish postmenopausal women. They showed that implementation of a cognitive behavioral intervention

based on healthy lifestyle education led to a reduction in menopausal symptoms, especially depression and anxiety, in the intervention group. In that study, healthy lifestyle education was held through eight 2-hour sessions for the intervention group. After implementing the educational intervention, a significant reduction was observed in menopause symptoms in the intervention group compared to the control group that had not received any training (Garcia & Gomez-Calcerrada, 2011). The results were also consistent with those of the study conducted by Fahimeh Sehati in Iran. That study demonstrated that implementing educational intervention based on lifestyle education using Walker's HPLPII was effective in increasing health promoting behaviors and improving menopause symptoms. In that study, the intervention group participated in three 60-minute sessions for three consecutive weeks. Four weeks after the intervention, a statistically significant difference was observed in menopausal symptoms in the intervention group, while the changes in the control group were not significant (Sehhatieshafaie, Mirghafourvand, & Jafari, 2014).

Similarly, Debra Anderson carried out a research on Australian postmenopausal women and reported that a multifaceted intervention through implementation of a 12-week educational program on healthy lifestyle was effective in increasing health-promoting behaviors and improving menopausal symptoms. In that study, the results of posttest showed a significant reduction in depression, anxiety, hot flushes, night sweats, and physical problems in the group that had received face-to-face education and counseling (Anderson, Seib, McGuire, & Porter-Steele, 2015). The findings of the study by Ikuyo Imayama also revealed the positive effects of healthy lifestyle interventions, such as diet and physical activity, on improving menopausal symptoms and health promotion in postmenopausal women. Based on the results, after a 12-month intervention on postmenopausal women's lifestyle in the intervention group, their mental health increased significantly and their symptoms of depression, stress, and anxiety decreased compared to the control group (Imayama et al., 2011).

In the study by Kirsi Mansikkamakia et al. on 2,606 Finnish postmenopausal women, physical activity level was reported to be related to reduction and improvement of menopause symptoms, such as depressed mood, anxiety, memory disorders, and physical symptoms. The results of that study emphasized the importance of postmenopausal women's physical activity, as one of the important health-promoting lifestyles dimensions, in reducing their physical and mental symptoms (Kirsi Mansikkamakia et al., 2015). Jiny Jame and Vruti Patel performed researches on Indian women and suggested that structured training programs about menopausal symptoms and their management had a positive effect on increasing postmenopausal women's knowledge and improving their performance. After the educational intervention in these three studies, the mean scores of postmenopausal women's knowledge and performance on management and reduction of menopause symptoms significantly increased and the menopausal symptoms reduced (James, 2012; Patel, Koshy, & H.N, 2014). The results of the study by In Kyung Kim et al. in Korea showed that 86% of middle-aged women had not received any training about menopause transition issues and 92% of them demanded more training about menopause. According to the study results, regular training programs in the field of menopause and healthy lifestyle were very necessary to empower postmenopausal women to control and improve menopausal symptoms (In Kyung Kim, 2012).

The findings of the study conducted by J. Moilanen et al. on Finnish post-menopausal women indicated a relationship between menopause symptoms and lifestyle. Based on the results, unhealthy lifestyle could increase the incidence and severity of menopausal symptoms. Therefore, the more unhealthy the lifestyle, the higher the incidence and severity of menopause symptoms will be (Moilanen, Aalto, Hemminki, Arod, & Luotob, 2010). Unhealthy lifestyle is one of the risk factors for cardiovascular disease and osteoporosis in postmenopausal women, which can increase the incidence of chronic diseases and severity of menopausal symptoms (Perez, Garcia, Palacios, & Pérez, 2009). The study by Sameera Ali Rizvi in Karachi, Pakistan indicated the high prevalence rate of unhealthy lifestyle and chronic diseases in middle-aged women. In that study, 31% of the middle-aged women consumed meat, fruits, vegetables, and milk less than 3 times a week. In addition, the majority of them were poor in terms of physical activity and 36% expressed diseases, such as diabetes, hypertension, cardiovascular disease, and arthritis. The results of that study showed prevention of chronic diseases through lifestyle modification in the menopausal transition as an important strategy (Rizvi, Jalil, Azam, Shamsi, & Saleem, 2012). The results of all the researches on issues related to menopause have emphasized paying attention to women's training needs in this period of life. Also, many of these findings have indicated the effectiveness of education in improvement of postmenopausal women's performance in management of menopausal symptoms. Hence, education and lifestyle modification can be one of the most important factors in raising postmenopausal women's awareness, improving their performance in management of menopausal symptoms, and promoting their health.

5. Conclusion

Lifestyle education was effective in health-promoting behaviors and menopausal symptoms. After implementing of the educational intervention, health-promoting behaviors increased and menopause symptoms reduced among the postmenopausal women. Since postmenopausal women are one of the vulnerable groups in any society, implementation of educational interventions based on health promoting lifestyles can be used as an appropriate strategy to reduce postmenopausal women's menopausal symptoms and promote their health.

Acknowledgements

This article was extracted from Samaneh Farmani's M.Sc. thesis approved and financially supported by the Research Vice-chancellor of Shiraz University of Medical Sciences (proposal No. 7536). Hereby, the authors would like to thank Ms. A. Keivanshekouh at the Research Improvement Center of Shiraz University of Medical Sciences for improving the use of English in the manuscript. They are also grateful for the professors and officials of School of Health, colleagues, and the participating women for their kind cooperation in this study.

Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

References

- Anderson, D., Seib, C., McGuire, A., & Porter-Steele, J. (2015). Decreasing menopausal symptoms in women undertaking a web-based multi-modal lifestyle intervention: The Women's Wellness Program. *Maturitas*, *81*, 69-75. <http://dx.doi.org/10.1016/j.maturitas.2015.02.263>
- Bahadır, Z., Certel, Z., & Topuz, R. (2014). Research on Healthy Living Behaviors of Archery Coaches And Boxing Coaches. *International Journal of Science Culture and Sport*, *1*(1), 88-96. <http://dx.doi.org/10.14486/IJSCS78>
- Barathi, S. K., & Kalavathi, S.. (2014). Assessment of Knowledge on Signs and Symptoms of Menopause among Premenopausal Women. *IOSR Journal of Nursing and Health Science*, *3*(2), 33-37. <http://dx.doi.org/10.9790/1959-03233337>
- Bi, J. L., Huang, Y., Xiao, Y., Cheng, J. R., Li, F., Wang, T., ... Zhao, X. S. (2015). Association of lifestyle factors and suboptimal health status: A crosssectional study of Chinese students. *BMJ Open*, *4*(1), 1-8.
- Callaghan, D. M. (2015). The Development of a Faith Community Nursing Intervention to Promote Health across the Life Span. *International Journal of Faith Community Nursing*, *1*(2), 8-20.
- Davari, S., Dolatian, M., Maracy, M. R., Sharifirad, G., & Safavi, S. M. (2010). The Effect of A Health Belief Model (HBM)-based Educational Program on the Nutritional Behavior of Menopausal Women in Isfahan. *Iranian Journal of Medical Education*, *10*(5), 1263-1272.
- Dima-Cozma, C., Gavriluta, C., Mitrea, G., & Cojocaru, D.-C. (2014). The Importance Of Healthy Lifestyle In Modern Society A Medical, Social And Spritual Perspective. *European Journal of Science and Theology*, *10*(3), 111-120.
- ElhossinyElkazeh, E. A. E., & El-Zeftawy, A. M. A. (2015). Knowledge of Women in Reproductive Age about Menopausal Problems and Preventive Health Behaviors in Tanta City, Al Gharbyia Governorate, Egypt. *Journal of Nursing and Health Science*, *4*(3), 51-63.
- Elsabagh, E. E. M., & Allah, E. S. A. (2012). Menopausal symptoms and the quality of life among pre/post menopausal women from rural area in Zagazig city. *Life Science Journal*, *9*(2), 283-291.
- Garcia, C. L., & Gómez-Calcerrada, S. G. (2011). Cognitive-Behavioral Intervention among Women with Slight Menopausal Symptoms: A Pilot Study. *The Spanish Journal of Psychology*, *14*(1), 344-355. http://dx.doi.org/10.5209/rev_SJOP.2011.v14.n1.31
- Golden, S. D., McLeroy, K. R., Green, L. W., Earp, J. A. L., & Lieberman, L. D. (2015). Upending the social ecological model to guide health promotion efforts toward policy and environmental change. *Health Educ Behav*, *42*(1), 8-14. <http://dx.doi.org/10.1177/1090198115575098>
- Heidari, F., Kermanshahi, S. M. K., & Vanaki, Z. (2013). The effect of a supportive health promotion program on the lifestyle of premenopause teachers. *Journal of Kashan University of Medical Sciences*, *17*(1), 14-24.
- Ibrahim, Z. M., Ahmed, W. A. S., & El-Hamid, S. A. (2015). Prevalence of menopausal related symptoms and their impact on quality of life among Egyptian women. *Clinical and Experimental Obstetrics & Gynecology*, *2*(1), 161-167.

- Imayama, I., Alfano, C. M., Kong, A., Foster-Schubert, K. E., B., Carolyn, E., Xiao, L. R., ... McTiernan, A. (2011). Dietary weight loss and exercise interventions effects on quality of life in overweight/obese postmenopausal women: A randomized controlled trial. *International Journal of Behavioral Nutrition and Physical Activity*, 8(118), 2-12. <http://dx.doi.org/10.1186/1479-5868-8-118>
- Jabeen, N., Mahmood, M., & Afzal, M. (2015). Menopausal Rating Scale as a Tool for Assessment of Menopausal Symptoms a Multicentre Study in Middle Aged Women-Online. *Researchgate*, 4(4), 246-251.
- James, J. (2012). A study to evaluate the effectiveness of structured teaching programme on knowledge regarding menopausal problems and its remedial measures among middle age women in selected rural areas Bangalore. *Rajive Gandhi University of Health Sciences Bagalkar Karnataka*, 1-94.
- Johnson, J. E., Gulanic, M., Aprn, F., Penckofe, S., & Kouba, J. (2015). Does knowledge of coronary artery calcium affect cardiovascular risk perception, likelihood of taking action, and health-promoting behavior change? *J Cardiovasc Nurs*, 30(1), 15-25. <http://dx.doi.org/10.1097/JCN.000000000000103>
- Jurgenson, J. R., Jones, E. K., Haynes, E., Green, C., & Thompson, S. C. (2014). Exploring Australian Aboriginal Women's experiences of menopause: a descriptive study. *BMC Women's Health*, 14(47), 2-11. <http://dx.doi.org/10.1186/1472-6874-14-47>
- Kim, I. K., Choi, H. M., & Kim, M. H. (2012). Menopausal Knowledge and Management in Peri-menopausal Women. *The Korean Society of Menopause*, 18, 124-131. <http://dx.doi.org/10.6118/jksm.2012.18.2.124>
- Mansikkamäki, B. K., Raitanen, J., Malilad, N., Sarkealae, T., Männistöe, S., Fredmand, J., & Luotoa, R. (2015). Physical activity and menopause-related quality of life-A population-based cross-sectional study. *Maturitas*, 80, 69-74. <http://dx.doi.org/10.1016/j.maturitas.2014.09.009>
- Moilanen, J., Aalto, A.-M., Hemminki, E., Arod, A. R., & Luotob, R. (2010). Prevalence of menopause symptoms and their association with lifestyle among Finnish middle-aged women. *Maturitas*, 67(4), 368-374. <http://dx.doi.org/10.1016/j.maturitas.2010.08.007>
- Moravcova, M., Mares, J., & Jezek, S. (2014). Menopausal Rating Scale-Validation Czech Version Specific Instrument For Assessing Health-Related Quality Of Life in Post menopausal Women. *Ošetrovatelství A Porodní Asistence*, 5(1), 36-45.
- NeslisahTan, M., Kartal, M., & Guldal, D. (2014). The effect of physical activity and body mass index on menopausal symptoms in Turkish women: a cross-sectional study in primary care. *BMC Women's Health*, 14(38), 2-9.
- Parandavar, N., Mosalanejad, L., Ramezanli, S., & Ghavi, F. (2014). Menopause and Crisis? Fake or Real: Comprehensive Search to The Depth of Crisis Experienced: A Mixed-method Study. *Global Journal of Health Science*, 6(2), 246-255. <http://dx.doi.org/10.5539/gjhs.v6n2p246>
- Patel, V., Koshy, S., & Ravindra, H. N. (2014). Effectiveness Of Structured Teaching Programme On Knowledge Regarding Menopausal Symptoms And Its Management Among Women. *IOSR Journal of Nursing and Health Science*, 3(3), 22-26. <http://dx.doi.org/10.9790/1959-03332226>
- Pender, N., Murdaugh, J., & Parsons, M. A. (2011). The Health Promotion Model Manual. *Health Promotion in Nursing Practice*, 1-17.
- Perez, J. A. M., Garcia, F. C., Palacios, S., & Pérez, M. (2009). Epidemiology of risk factors and symptoms associated with menopause in Spanish women. *Maturitas*, 62(1), 30-36. <http://dx.doi.org/10.1016/j.maturitas.2008.10.003>
- Randhaw, R., & Sidhu, S. (2014). Age at natural menopause and menopausal symptoms among rural women of Amritsar (Punjab). *Medical Science*, 7(24), 48-55.
- Rizvi, S. A., Jalil, F., Azam, S. I., Shamsi, U., & Saleem, S. (2012). Prevalence of menopause, chronic illnesses and life style of middle aged women in Karachi, Pakistan. *US National Library of Medicine Enlisted Journal*, 5(4), 347-354.
- Safabakhsh, L., & Nazemzade, M. (2013). The Effect of Health Promotion Education on High School Students' Lifestyle. *Iranian Journal of Medical Education*, 13(1), 58-65.
- Sehhatieshafaie, F., Mirghafourvand, M., & Jafari, M. (2014). Effect of Education through Support Group on Early Symptoms of Menopause: A Randomized Controlled Trial. *Journal of Caring Sciences*, 3(4), 247-256.

- Shakila, P., Sridharan, P., & Thiyagarajan, S. (2014). An Assessment of Women's Awareness and Symptoms in Menopause (A Study with Reference to Academic Women's at Sri Lanka). *Journal of Business & Economic Policy*, 1(2), 115-124.
- Sis, A., & Pasinlioglu, T. (2013). Determining the association between Turkish women's menopausal symptoms and their marital adjustment. *Turkish Journal of Medical Sciences*, 43, 928-938. <http://dx.doi.org/10.3906/sag-1208-7>
- SobhySorour, A., Kamel, W. W., Aziz, E. M. A. E., & Aboelseoud, A. (2014). Health promoting lifestyle behaviors and related risk factors among female employees in Zagazig city. *Journal of Nursing Education and Practice*, 4(5), 42-51.
- Veigas, J., Rajgopal, D., Swami, D. S. V., & Varghese, J. (2014). A Study on Knowledge and Practice of Post Menopausal Women on Health Maintenance in A Selected Rural Community of Mangalore Dakshina Kannada District, Karnataka. *Advances in Life Science and Technology*, 17(1), 26-29.
- Walker, S. N., & Hill-Polerecky. (1996). Psychometric evaluation of the Health-Promoting Lifestyle Profile II. *Nursing Research*, 36(2), 76-80.
- Zeidi, E. M., Agha, A. P. H., & Zeidi, B. M. (2011). Validity and reliability of the Persian version of the health promoting lifestyle questionnaire. *Journal of Mazandaran University of Medical Sciences*, 21(1), 103-113.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).