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Strategies to improve menopausal quality of life: A systematic review

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Abstract:

BACKGROUND: Menopause and its complications could disturb the sense of well-being and health and affect the quality of life. The present study was performed to review the conducted interventional study related to the quality of life in menopausal women in Iran.

METHODS: In the present systematic review, to achieve the intended studies, Iranian Registry for Clinical Trials and Magiran, SID, Google Scholar, Scopus, PubMed, Proquest, ScienceDirect, and Web of Science databases were searched using: "menopause" and "quality of life" keywords without any time limitations. Based on Jadad criteria, studies with a score of 3 or more were enrolled in the study.

RESULTS: From all the achieved studies at primary search, 12 were selected and enrolled in the study. Reviewing the results of the studies showed that participating physical exercise, using products containing phytoestrogens and isoflavones and participating in educational and counseling sessions have an effective role in the improvement of quality of life in menopausal women.

CONCLUSIONS: Evidence indicated that from the existing strategies to improve the menopausal quality of life, using complementary medicine is an efficient method and could be more effective when consumed along with performing physical exercises and participating in educational programs.

Keywords:

Iran, menopause, quality of life, review

Introduction

Menopause is a unique event in women's life which occurs around the age of 50 and is a stage that all women would experience.^[1,2] The age of menopause has not changed during the past centuries; however, life expectancy has risen among women in the world and women spend about one-third of their lives during menopause period.^[3] During this period, following the lowered activity of the ovaries and changes in hormone levels symptoms such as headache, sleep disorder, mood swings, vasomotor symptoms such as hot flushes and night sweats and anxiety might occur.^[1,4,5] Duration, intensity, and impact of these symptoms differ from a person

to another and in different societies. Some women might experience more severe symptoms that could deeply impact their personal and social performance and quality of life and make them encounter multiple serious issues in life.^[3,6] Therefore, the symptoms of menopause have a close relation with the quality of life during the menopause period and physiologically and psychologically, could affect their quality of life.^[7,8]

One of the goals of health for all is to improve the quality of life.^[9] "Quality of life" is people's perception of their position in the social and cultural life, with regard to their goals and standards.^[10,11] Various studies have reported the negative effect of menopause on the quality of life.^[12-14] Although hormone therapy is the standard treatment for the early symptoms of

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menopause, due to its side effects such as the risk for embolism and breast cancer,^[4] using these combinations routinely is not considered appropriate. Using nonmedicinal methods for preventing the symptoms of menopause and improving the quality of life has been emphasized. Some studies have evaluated the effect of different educational and counseling methods,^[10,15,16] participating in physical activities,^[4,11,17,18] using medical plants containing phytoestrogens and isoflavones and using food supplements such as soy,^[19] licorice,^[6] red clover,^[20] and fish oil^[21] to improve and enhance the quality of life in menopausal women; but no review has been conducted on these studies in Iran so far. Hence, the present study was conducted to systematically review the conducted studies for introducing strategies to improve the quality of life in menopausal women.

Methods

This systematic review was conducted on all the clinical trials related to the quality of life in menopausal women that were conducted in Iran until July 2017. The presentation methods, including determination of the studied problem, data gathering, data analysis, and data interpretation, were performed based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses. No time limitation was set for article search. To achieve the intended studies, published articles in national and international databases; Iranian Registry of Clinical Trials, Magiran, SID, Google Scholar, Scopus, PubMed, Proquest, Science Direct, and Web of Science databases were searched. To maximize comprehensiveness in searching “menopause” and “quality of life” words were searched in the abstracts, titles and keywords. To search English sources, by searching “Iran” in the affiliation or organizational affiliation were used in Advance Search option of the PubMed, Proquest, Scopus, and Science Direct database. Hence, all of the Iranian articles related to menopause were found. The inclusion criteria for articles were being an interventional study on menopausal women, being conducted in Iran and evaluating the quality of life in menopausal women.

To increase the validity and reliability of the study, two researchers searched the articles simultaneously and evaluated the quality of the articles based on the Jadad criteria, separately. Jadad scale is one of the most valid international scales for the evaluation of the article's quality. Articles with a score of 3 or higher were enrolled in the study. Jadad scale or the Oxford quality scoring system contains three main phrases for controlling bias in clinical trials that would evaluate randomization, blinding, sample loss report, and withdrawal from the study.^[22] The totals core of the scale based on these phrases is five. A Jadad score of <3 indicates poor quality of the articles and a score of 3 or more indicates desirable

quality of the article.^[23] Based on this scale, eventually, 12 articles were enrolled in the study [Figure 1].

Results

In this systematic review, from 31 related articles to the subject, 12 interventional studies about the quality of life in menopausal women with a sample size of 925 were enrolled for evaluation. Effective interventions on the quality of life in menopausal women in Iran could be categorized into three domains of physical activity, complementary medicine, and education [Table 1].

Quality of life, as a scientific concept, is a sense welfare which is caused by satisfaction or dissatisfaction in life. Improvement of quality of life is one of the most important goals of medical interventions^[25] and since women would experience lower quality of life after menopause,^[26] applying interventions based on empowerment patterns could improve their quality of life in this period. Various studies using educational theories and models have been evaluated.^[11,27,28]

Physical activity and quality of life

Exercising and regular physical activity is effective in reducing vasomotor symptoms and improvement of hot flushing,^[29] sleep disorders,^[30,31] and psychological problems^[29,32,33] of menopausal women. The mechanism of the effect of exercising on hot flushes is through increasing the level of beta-endorphins in hypothalamus.^[29] In addition, by decreasing the level of a-serum lipoproteins and body mass index and fat percentage, it could be effective in improvement of cardiovascular diseases; so in general, physical activity could improve the quality of life in menopausal women by decreasing the symptoms of menopause.^[30,33]

According to the results of the conducted studies, aerobic and walking exercises are effective in improvement of vasomotor, mental, social, physical,^[4,17,18] and sexual^[17] symptoms and in general the quality of life in premenopausal and menopausal women^[4,11,17,18] and could

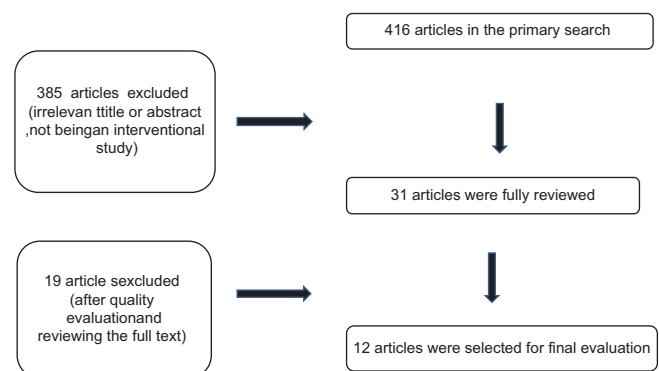


Figure 1: The flowchart for selecting and enrolling the articles in the study

Table 1: Interventional studies on quality of life in menopausal women

Author (year)	Method	Sample	Procedure	Instrument	Intervention/ control groups	Posttest after the end of the intervention	Results
Complementary medicine and quality of life							
Seyyedi <i>et al.</i> (2016) ^[24]	Clinical trial	90 menopause	Using vaginal 15% royal jelly and 0.625 conjugated estrogen	MENQOL*	Intervention Group 1: Vaginal royal jelly for 3 months Intervention Group 2: Vaginal 0.625 conjugated estrogen gel for 3 months Control group: Vaginal lubricant gel for 3 months	Immediately	Results showed that both of the interventions had more efficiency in the quality of life in menopausal women compared to the control group and royal jelly was more effective in improving the quality of life and its domains compared to conjugated estrogen ($P>0.001$), but vaginal dryness was more improved in the conjugated estrogen group compared to the royal jelly group ($P=0.02$)
Nourozi <i>et al.</i> (2015) ^[19]	Clinical trial	57 menopause	Soy milk	MENQOL	Intervention group: 500 cc of soy milk Control group: Low fat cow milk	8 months	Results showed that only the mean score sexual domain of quality of life was significantly improved in the intervention group compared to the control group after consumption of soy milk ($P=0.031$)
Asgari <i>et al.</i> (2015) ^[6]	Clinical trial	60 menopause	Licorice	MENQOL	Intervention group: Razak licorice capsule three time a day for 1 month Control group: Placebo containing starch three times a day for 1 month	Immediately	Consumption of licorice was significantly effective in improving the total score of quality of life ($P=0.001$) and its vasomotor, mental social and physical domains ($P=0.001$)
Moghadam <i>et al.</i> (2014) ^[21]	Clinical trial	68 menopause	Fish oil supplement	The World Health Organization Quality of life questionnaire**	Intervention group: daily use of one 1000 mg capsule of fish oil for 8 weeks Control group: Placebo	2 weeks	A significant difference was observed between both groups regarding their score of quality of life. Quality of life was significantly improved in the fish oil group compared to the control group after the intervention ($P<0.001$)
Ehsanpour <i>et al.</i> (2012) ^[20]	Clinical trial	55 menopause	Using red clover	MENQOL	Intervention group: 45 g capsule of red clover once a day for 8 weeks Control group: 45 g capsule of placebo containing starch once a day for 8 weeks	2 weeks	The mean score of quality of life and its domains (vasomotor, psychosocial physical and sexual) showed no significant difference between both groups after the intervention ($P<0.001$)

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Table 1: Contd...

Author (year)	Method	Sample	Procedure	Instrument	Intervention/ control groups	Posttest after the end of the intervention	Results
Physical activity and quality of life							
Asghari <i>et al.</i> (2017) ^[17]	Clinical trial	108 menopause	Aerobic exercise and diet education	MENQOL	Intervention Group 1: Three sessions 45-60 min on diet education through speeches once a week along with pamphlets Intervention Group 2: Aerobic exercise 45-60 min three times a week for 12 weeks Intervention Group 3: Performing aerobic exercise along with diet education Control group: No intervention	Immediately (8 th and 12 th weeks)	The mean score of quality of life in the exercise group (8 and 12 weeks after the intervention) showed a significant difference compared to the control group ($P=0.018$, $P=0.001$). In addition, the mean score of quality of life in the diet group (8 weeks after education) was not significantly different compared to the control group ($P=0.552$). However, 12 weeks after the intervention the mean score of quality of life was significantly different between the diet and the control groups ($P=0.34$). The mean score of quality of life had a significant difference between the exercise with diet group and the control group 8 and 12 weeks after the intervention ($P<0.001$)
Alizadeh- Charandabi <i>et al.</i> (2014) ^[18]	Clinical trial	81 menopause and premenopause	Hiking and diet education	MENQOL	Intervention Group 1: Three sessions 45-60 min on diet education through speeches once a week along with pamphlets Intervention Group 2: Diet education package with hiking three times a week for 12 weeks Control group: No intervention	Immediately (8 th and 12 th weeks)	In the exercise and diet education group, the total mean score of quality of life ($P=0.001$) and the score of its domains of vasomotor, psychosocial and physical ($P<0.001$) showed a significant difference at the 8th and 12th weeks after the intervention. The score of the sexual domain had no significant difference ($P>0.05$) In the diet education group, in comparison to the control group, the mean score of quality of life at the 12th week ($P=0.001$), the mean score of vasomotor domain at 8th and 12 th weeks ($P<0.05$) and the mean score of psychosocial domain at the 12 th week ($P<0.001$) showed a significant difference

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Author (year)	Method	Sample	Procedure	Instrument	Intervention/ control groups	Posttest after the end of the intervention	Results
Nikpour and Haghani (2014) ^[11]	Clinical trial	80 menopause	Aerobic exercise	NHP***	Intervention group: 20-40 minute aerobic sessions for 8 weeks Control group: No intervention	Immediately	Exercise program was significantly effective in improving the general health profile ($P=0.001$) and the domains of physical, pain, sleep, energy, emotional reaction, and social isolation ($P<0.05$)
Mirghafourvand <i>et al.</i> (2014) ^[4]	Clinical trial	54 menopause and premenopause	Aerobic exercise	MENQOL	Intervention group: Performing aerobic exercise as hiking with moderate speed 3 days a week for 12 weeks Control group: No intervention	8 and 12 weeks	The total mean score of quality of life at the end of the 8 th week ($P=0.01$, 95% CI=-1.9-13.7) and the 12 th week ($P<0.001$, 95% CI=-7.9-17.8) was significantly lower in the exercise group compared to the control group after the intervention. The mean score of psychosocial and physical domains at the 8 th and 12 th weeks and the vasomotor domain at eth 12 th week was significantly lower in the intervention group compared to the control group ($P<0.05$). No significant difference existed between both groups regarding their sexual domain ($P>0.05$)
Educational programs and quality of life							
Bahri <i>et al.</i> (2016) ^[15]	Clinical trial	100 menopause	Education	MENQOL	Intervention group: 3 educational sessions 60 min based on the guideline using speech and educational movies Control group: No intervention	3 months	The mean score of quality of life was significantly decreased in menopausal women after the intervention ($P<0.001$). In addition, mental ($P=0.001$) and physical ($P=0.002$) domain had a significant decrease 3 months after the intervention which indicated improvement of quality of life in these domains
Yazdkhasti <i>et al.</i> (2012) ^[16]	Semi-experimental	110 menopause	Educational programs through supportive group using speech, discussion and conversation	MENQOL	Intervention group: 10 educational sessions 120 min once a week divided into 6 groups Control group: no intervention	1 month	After the intervention, quality of life had a significant difference between the intervention and the control groups in vasomotor ($P=0.001$), psychosocial ($P=0.007$), physical ($P=0.001$), and sexual ($P=0.001$) domains and the quality of life ($P=0.001$)

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Table 1: Contd...

Author (year)	Method	Sample	Procedure	Instrument	Intervention/ control groups	Posttest after the end of the intervention	Results
Forouhari <i>et al.</i> (2010) ^[10]	Semi-experimental	62 menopause and premenopause	Education using group discussion, educational pamphlets and a CD for relaxation techniques	MENQOL	Intervention group: 6 educational sessions 45-60 min once a week for groups Control group: No intervention	3 months	The mean score of quality of life had a significant difference between both groups before and after the intervention ($P=0.001$). The mean score of vasomotor, psychosocial, physical and sexual domains also showed a significant difference between both groups after the intervention ($P=0.001$)

*MENQOL including four domains of vasomotor, psychosocial, physical and sexual and vaginal dryness, **The World Health Organization Quality of life questionnaire including four domains of physical health, mental health, social relationships, and environment health, ***NHP including the domains of physical, pain, sleep, energy, emotional reaction, and social isolation. MENQOL=Menopause-specific quality of life, NHP=Nottingham Health Profile

be considered as an effective method for improvement of menopause symptoms in premenopausal and menopausal women. However, some studies did not find any significant relation between physical activity and the sexual domain of quality of life.^[4,18]

Complementary medicine and quality of life

Using nonhormonal methods for decreasing the symptoms of menopause and improvement of quality of life in menopausal women is known as complementary medicine. In other words, complementary medicine for treating the symptoms of menopause includes a wide range of herbal medicine containing phytoestrogen, isoflavon products, and food supplements such as soy.^[34,35] Some of the introduced phytoestrogens for improvement of the symptoms and quality of life during menopause are using soy milk^[19] and red clover.^[20] Only a study showed that using licorice has been effective on the improvement of quality of life in menopausal women and reported a significant relation between consumption of licorice and vasomotor, mental, social, and physical domains of quality of life and its total score.^[6] Besides containing phytoestrogen, licorice could decrease depression and stress in menopausal women by increasing the level of dopamine and norepinephrine.^[36] Furthermore, such as other phytoestrogens, licorice has anti-oxidants and antibacterial properties. Some studies have shown the effectiveness of licorice in decreasing the number and intensity of hot flushes.^[37,38]

Royal jelly is another used drug in the complementary medicine which is traditionally used for improvement of many complications and problems of menopause due to its potential estrogenic properties and simulation of estrogen receptors.^[39,40] Royal jelly is a complex matter and a product of honey bee that contains protein, sugars, fats, amino acids, vitamins, and minerals and also gamma globulin and elements needed for maintaining

good health with various biological activities in body cells and tissues.^[41,42] Furthermore, as a part of a beneficial diet, royal jelly contains many known useful minerals.^[39] It also affects the process of collagenization and the activity of skin fibroblasts.^[43] Some studies have been conducted on the anti-oxidant properties of royal jelly.^[44,45] Using vaginal royal jelly could be effective in improvement of vaginal dryness although it has a weaker performance in comparison with conjugated estrogen, it is an effective in improvement of quality of life and its domains in menopausal women.^[24] Another introduced supplement which is effective on quality of life is fish oil which could improve the quality of life in menopausal women due to its eicosapentaenoic acid and docosahexaenoic acid.^[21,46]

Educational programs and quality of life

Studies have shown that menopausal women usually suffer from lack of information. Education, especially during menopause, would increase awareness,^[47] and awareness has a positive effect on their healthcare and improvement of health behaviors.^[8] Besides increasing the awareness, participating in educational classes could improve women's attitude too. In addition, these would feel more empowered and valuable; therefore, their perception of the severity of the menopause's symptoms would be decreased and their quality of life would be improved.^[18,47] Education could be used for increasing the level of information and skill about menopause in menopausal women. The educations in the forms of self-care packages could be provided through speech and educational films,^[15] supportive groups^[16] and education through group discussions along with education for strengthening the muscles, relaxation techniques, and coping with problems of menopause.^[10] Results indicated the effectiveness of the educations on menopausal women.

Discussion

The present study was conducted to evaluate the efficiency of the strategies to improve the quality of life in menopausal period. Jadad scale was used to evaluate the articles and studies that gained a score of 3 or more based on this scale had desirable quality and were enrolled in the study for evaluation. Quality of life in the selected studies was evaluated using quality of life questionnaires including the World Health Organization questionnaire and menopause-specific quality of life (MENQOL). This questionnaire was designed by Hilditch *et al.* in the Toronto University of Canada to assess the quality of life in menopausal women;^[48] it has 23 items with a scoring range of 0–6 based on the Likert scale and contains four domains of vasomotor (3 questions), psychosocial (7 questions), physical (16 questions), and sexual (3 questions). The gained score ranges from 0 to 174 and higher scores indicate more severe symptoms of menopause and lower quality of life.^[4] Since this questionnaire assesses the four domains of vasomotor, psychosocial, physical, and sexual, which are the main common symptoms of menopause during this period, it is considered a valid scale for evaluating the quality of life in menopausal women and has been used in various studies.^[2]

Before menopause, most women have a negative attitude toward menopause and results of the study showed that the more negative women's attitude toward menopause, the more severe their perception of the experienced symptoms.^[49] Hence, educating women in different fields including introduction to menopause and its problems, its coping strategies, diet, and body relaxation techniques^[10] could have an important role in accepting menopause and improving women's quality of life during this period. Conducting weekly educational classes for menopausal women not only would help in changing their attitude toward menopause, but it could also be effective in decreasing the severity of the perceived symptoms and improving the quality of life. About education it should be noted that; in some studies, improvement of women's quality of life was occurred after 12 weeks of education (compared to 8 weeks).^[17,18] Hence, to assure effectiveness and durability of the education, repeating the sessions during a longer period of time would be more effective.

On the other hand having regular physical activity and performing aerobic exercises are effective in improvement of the quality of life and its domains. However, two studies showed that performing physical activities is not effective on the sexual domain of quality life.^[4,18] Since sexual disorders in menopausal women are multifactorial, it could be caused due to mental disorders such as depression or anxiety, disrupted interpersonal

relationships, fatigue, stress, drug consumption, history of physical or sexual abuse, and physical disorders that would lead to painful sexual performance such as endometriosis or atrophic vaginitis.^[39] Furthermore, considering that the level of testosterone would naturally decrease in menopausal women, it might cause decreased levels of excitation and sexual response^[50] and decreased sexual desire.^[24] Therefore, using phytoestrogen products along with performing aerobic exercises is recommended. Consumption of red clover by menopausal women could increase the level of luteinizing hormone, decrease the level of sex-hormone-binding globulin, increase the level of testosterone and also increase the level of blood estradiol; although it has no effect on the thickness of endometrium, it could decrease the severity of hot flushes^[5] and improve the symptoms of vaginal dryness and the dyspareunia caused by it. However, the onset of effectiveness of licorice is faster than other herbal medicines, especially soy and red clover; on the other hand, licorice is native to Iran, and it is cheaper^[37] which makes it more accessible. Along with these products, due to its pseudo-estrogenic effects, simultaneous topical use of royal jelly could be effective in decreasing sexual complications and improvement of quality of life in menopausal women.

Conclusions

Results of reviewing the studies showed that using phytoestrogen and isoflavone products along with performing physical exercises and participating in educational and counseling classes have an effective role in the improvement of the quality of life in menopausal women; it is recommended that aerobic exercises and educational classes would be continued.

In addition, MENQOL with four domains of vasomotor, psychosocial, physical, and sexual, which are truly related to the common effective symptoms on quality of life during menopause, is considered a valid questionnaire for assessing the quality of life in menopausal women and is an appropriate scale for studies on the quality of life in menopausal women. Since the purpose of systematic review studies is to regularly and systematically reviewing the studies, qualitatively gathering the results of the studies, combining the results of different studies and providing a general interpretation of the results, presenting a general conclusion from the results of the reviewed studies about effective strategies for improving the quality of life in menopausal women is one of the strengths of the present study. Although in this study, the researchers tried to gather all of the Iranian studies, inaccessibility to some of the studies, and unpublished results of other studies were the limitations of the present study.

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Conflicts of interest

There are no conflicts of interest.

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