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The Effect of Auriculotherapy on Climacteric, Menopause and Old Age: A Systematic Review

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ABSTRACT

Background & aim: Auriculotherapy is known as a non-invasive and safe technique that can be used by health care professionals. The purpose of this review was to explore the effects of auriculotherapy in climacteric, menopause and old age.

Methods: This systematic review, which was conducted based on the PRISMA guideline, included all clinical trials and quasi-experimental studies published in English databases of Web of Science, Scopus, PubMed, Science Direct, as well as Persian databases of SID, Magiran and IranMedex, using the main English keywords including auriculotherapy, auricular, acupressure, auricular point pressure, ear acupuncture points, menopausal OR menopause, perimenopause, climacteric and their Persian equivalents without time restriction until May 2022. The quality of studies was assessed by two independent reviewers using Jadad scale and Effective Public Health Practice Project (EPHPP) criteria.

Results: Out of 145 articles, 15 studies including 11 clinical trials with score of three and above based on the Jadad scale and four quasi-experimental studies with score of 1.51-3 based on the EPHPP criteria were examined. The results of relevant articles with a sample size of 1019 revealed that auriculotherapy reduce anxiety, intensity and frequency of hot flashes and improve the level of sex hormones, sleep disorders and quality of life in menopausal women.

Conclusion: Auriculotherapy could improve the problems of elderly and menopausal women and is suggested as a complementary and alternative method of hormone replacement therapy. Considering the limited number of studies in this field, it is required to do further research along with removing the limitations of previous studies.

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Introduction

Menopause means the permanent cessation of a woman's natural reproductive period. Clinically, menopause occurs after 12 months of amenorrhea. The average age of menopause onset is 51 years old (1). The perimenopausal period (climacteric period) refers to irregular menstruation, such that less than 12 menstrual periods occur during the last 12 months. It is one of the critical periods of every woman's life, which occurs between the ages of 45-60(1).

The menopause is a natural and physiological phenomenon (2), and before the age of 40 is called premature menopause. The most common cause of premature menopause is hysterectomy and oophorectomy. Sometimes menopause occurs naturally before the age of

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40, which is due to the decrease in the activity of the ovaries, the cessation of ovulation and the cessation of menstruation (3).

Considering that women make up about half of the world's population and almost 90% of them reach the age of 65 according to published statistics, therefore, the majority of women experience menopause and spend almost a third of their lives in menopause. On the other hand, the global trend of population aging and the subsequent increase in the population of menopausal women has caused the health and hygiene of women around the menopausal age to become an important health issue at present (2).

This period is associated with a decrease in ovarian hormones and an increase in pituitary gonadotropins, which leads to disturbances in the regularity of menstrual cycles and finally cessation of menstruation. Symptoms of menopause include hot flashes, decreased libido, vaginal dryness, anxiety signs like irritability, insomnia, memory loss and lack of energy, which all affect work, social activity, leisure time, sleep, mood, concentration, communication with others, sexual activities, enjoyment of life and overall quality of life of women (4).

One of the proposed treatments for the complications of premature menopause is hormone therapy, which has caused concern to physicians and patients due to the side effects and possible risks such as stroke, thromboembolic events, breast cancer and vascular diseases (5). As Mohammadalizadeh Charandaii et al. (2014) reported, based on a very large study in 40 centers in the United States on 27 thousand postmenopausal women between the ages of 50-79 years and intervention with combined hormone therapy for 5.6 years, routine use of this method is not recommended due to serious risks (4). Auriculotherapy is one of the methods used today to alleviate menopausal complications. Treatment through the external surface of the ear, or auricle, is called auriculotherapy (5). The auriculotherapy method, which is a non-invasive method and acceptable by the patient compared to acupuncture, uses the stimulation of the external surface of the ear. By using the auricle, you can reach almost all the anatomical points of the body, as well as different parts of the brain, spinal cord, and central and peripheral nerve systems. Auriculotherapy can be effective for controlling pain and balancing the level of hormones and neurotransmitters in the body and brain. In fact, its mechanism of action can be attributed to activating the energy channel and regulating the flow of energy in the body (6). Different studies investigated the effects of auriculotherapy, two of which are discussed below. Eslami et al. (2021) investigated the comparative effect of biofeedback and auriculotherapy on reducing hot flashes in postmenopausal women, and found that auriculotherapy is more effective in alleviating the intensity and frequency of hot flashes immediately after the intervention and four weeks later and has a significant difference with biofeedback (7). Pourmohammadi et al. (2021) evaluated the effect of auriculotherapy on the sleep quality of elderly with chronic low back pain and found that auriculotherapy improve the sleep quality of the participants (8).

Considering the increasing rate of elderly population across the country and also the use of auriculotherapy in various previous studies to relieve the menopausal syndroms, the current review was conducted with the aim of reviewing, summarizing and analyzing the results of related studies and identifying the existing gaps in the literature in order to provide a basis for the future studies.

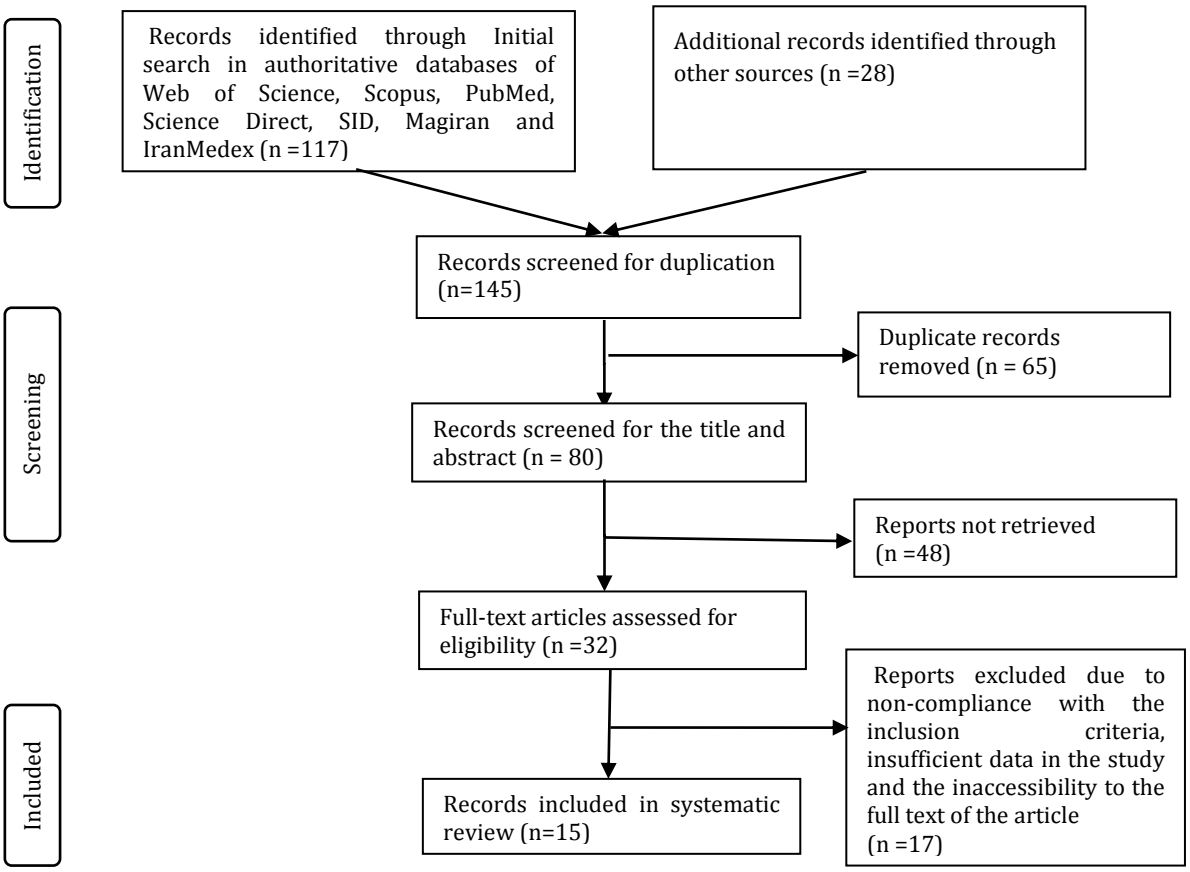
Materials and Methods

This systematic review, which was conducted based on the PRISMA guideline, included all clinical trials and quasi-experimental studies published in databases of Web of Science, Scopus, PubMed, Science Direct, as well as Persian databases of SID, Magiran and IranMedex, without time restriction from the inception to May 2022.

In order to search for articles in English databases, the English keywords used were Auriculotherapy, Auricular, Acupressure, Menopausal OR Menopause, Auricular point pressure, Ear acupuncture points, perimenopause, climacteric and their Persian equivalents with all possible combinations. In this way, all the articles available in the aforementioned databases were extracted.

Reference lists of the searched articles were also reviewed to find more studies. At the baseline, the titles and abstracts of all the obtained articles were reviewed, and the duplicates and those that did not meet the inclusion criteria were removed. To avoid bias, all steps of extracting and reviewing sources were done by two researchers, independently, and if the study was removed, the reason for rejection discussed by the two researchers. Any disagreement between the two researchers was adjudicated by a third party.

Figure 1. PRIZMA Flowchart of article selection



The inclusion criteria included interventional studies (randomized clinical trials, and quasi-experimental studies) published in English and Persian and the relevance of the study titles to the topic of the present study. That is, studies that used auriculotherapy intervention on postmenopausal women (including women who experienced menopause naturally or for other reasons such as oophorectomy), elderly people, and women who were in their climacteric period. Exclusion criteria were animal studies and inaccessibility to the full text of the article. According to the publication of a review article on auriculotherapy and premature ovarian failure in (2020), studies related to premature ovarian failure were also excluded (9). Auriculotherapy is a method that cures the disease through pressure onto the points on the external surface of the ear by needles, electric current, laser, heat, magnetic seeds, Vaccaria seeds and manual pressure. Auriculotherapy directs the health signal patterns of the body, which is the result of ear stimulation, from the brain to different parts of the body (5).

Quality assessment of the included articles was performed using Jadad scale, consisting of four criteria including the possibility of bias, randomization, patient follow-up and blinding. The minimum score in this criterion is 1, the maximum score is 2, and the total score is 5 (10). In the current study, clinical trials with a Jadad score of 3 and above were included in the study. Quasi-experimental studies were evaluated by Effective Public Health Practice Project (EPHPP), a Quality Assessment Tool (11, 12). In this tool, articles were evaluated for selection error, study design, confounders, blinding, data collection method and limitations. After allocating the points, the score of 1-1.50 showed the poor quality of the study, the score of 1.51-2.50 showed the moderate quality of the study, and the score of 2.51-3 showed the strong quality of the study. Articles with moderate and strong points were included in the study. In this systematic review, information such as the author's name, year of publication, participants, sample size, withdrawal/dropout, study results, side effects, the scale used in the study based on Jadad scale and EPHPP are given separately for each study in Table 1 (The studies in the table are arranged according to the year of conducting the study from new to old). Content analysis was done qualitatively.

Results

The initial search resulted in retrieving 145 articles. After reviewing the titles and abstracts of the searched articles and removing duplicate and unrelated items, 80 possible relevant articles were examined. Among these, 65 articles were excluded due to non-compliance with the inclusion criteria, inaccessibility to the original article, and insufficient information in the article abstract. Finally, 15 studies with a sample size of 1019 were analyzed, which included 11 clinical trials with a score of 3 or higher based on the Jadad scale and 4 quasi-experimental studies with a score of 1.51-3 based on the EPHPP criteria (Figure 1).

In this review article, out of 15 reported studies, 11 were clinical trials and 4 were quasi-experimental, of which 9 were in China (60%), 2 in Iran (13.33%), 2 in Taiwan (13.33%), one in Korea (6.6%) and one in the United States (66.6%). The use of auriculotherapy was investigated in 7 studies (46.66%) about menopause, 5 studies (33.33%) about climacteric period and 3 studies (20%) about old age.

Eslami et al. (2021) compared the effect of biofeedback and auriculotherapy in two intervention groups, by providing routine care in the control group, on the reduction of hot flashes in postmenopausal women, and found that both biofeedback and auriculotherapy interventions had a significant effect in reducing the intensity and frequency of hot flashes (7). In the study of Zhou et al (2011), who compared acupuncture and auriculotherapy in the relief of menopausal hot flashes in Chinese women undergoing bilateral oophorectomy, with the use of hormone therapy in another group, the results showed that there was no statistically significant difference between the two groups in reducing the frequency and intensity of hot flashes and both groups had the same improvement in hot flashes compared to the previous treatment. In the follow-up period, the reduction in the frequency of hot flashes was more in the hormone therapy group (13).

Table 1. Characteristic of previous studies on the effects of auriculotherapy on climacteric, menopause and old age

No.	First author / year / country /Reference	Study design	Intervention	Sample size	Sample size of intervention group	Sample size of control group	Dropout rate	Complications	scale/intervention	Main results	Jadad/EPHPP score
1	Eslami/2021/Iran/(7)	Pretest and posttest pilot clinical trial	Auriculotherapy	39	26	13	-	-	Completing the checklist of intensity and frequency of hot flashes before, immediately and four weeks after the intervention	Auriculotherapy was more effective in reducing the intensity and frequency of hot flashes immediately and four weeks after the intervention and had a significant difference with biofeedback (P < 0.001).	3
2	Pourmohammadi/2021/Iran/(8)	Randomized single-blind clinical trial	auriculotherapy	70	33	29	8.8%	-	Pittsburgh Sleep Quality Index	Auriculotherapy improved the quality of sleep in the elderly with chronic back pain (P < 0.001).	5
3	Yan/2018/China/(19)	Randomized clinical trial	auriculotherapy in combination with electrical stimulation	64	30	34	0	Vaginal bleeding, pain, endometrial hyperplasia in the control group	Kupperman index measuring FSH LH level, E2	The combined treatment of the intervention group effectively alleviated premenopausal clinical symptoms and improved sex hormone levels.	3
4	Xinmei/2017/China/(1	Randomized	auriculotherapy in	60	30	30	0	-	Fasting blood test to check estradiol	The clinical effectiveness	3

No.	First author / year / country /Reference	Study design	Intervention	Sample size	Sample size of intervention group	Sample size of control group	Dropout rate	Complications	scale/intervention	Main results	Jadad/EPHPP score
	6)	clinical trial	combination with needle stimulation						level and quantitative rating scale to measure clinical symptoms of menopausal syndrome	between the two groups was not significant (P>0.05). In the follow-up, the score of clinical symptoms in the auriculotherapy group was significantly lower than the drug group (P<0.05).	
5	Jin/2017/China/(17)	Quasi-experimental study	auriculotherapy	60		30	-	-	E2 measurement and clinical symptoms	Clinical symptoms improved and estradiol increased.	Moderate 1.60 EPHPP
6	Viel/2016/ Korea/(23)	Quasi-experimental study	auriculotherapy	49		-	-	-	Quantitative rating scale for measuring clinical symptoms of menopausal syndrome	Auriculotherapy improved hot flashes and menopause caused by cancer.	Moderate 2.50 EPHPP
7	Yeh/2014/ USA/(24)	Randomized controlled pilot study	auriculotherapy	37	19	18	-	Itching	- Self-report during treatment and end of intervention and follow-up one month later - RMDQ questionnaire	In terms of the incidence rate of the worst back pain, auriculotherapy caused a significant decrease in the intervention group (P < 0.01).	4
8	Kao/2012/	Random	auriculot	50	25	19	10%	-	- Hamilton	A significant	5

No.	First author / year / country /Reference	Study design	Intervention	Sample size	Sample size of intervention group	Sample size of control group	Dropout rate	Complications	scale/intervention	Main results	Jadad/EP HPP score
	Taiwan/(15)	ized double-blind study	herapy						Anxiety Rating Scale - Short Form 36 Health Survey Questionnaire (SF-36)	reduction in the use of alprazolam and zolpidem showed that auriculotherapy was useful for controlling anxiety (P < .05).	
9	Li/2012/China/(25)	A blinded randomized pilot study	auriculotherapy	39	21	18	23.1%	-	Questionnaires of constipation symptoms, quality of life and activity and follow-up on day 10, 21 and one month later	The results showed no significant statistical difference between the two groups (P>0.05).	4
10	Zhou /2011/China/(13)	Randomized clinical trial	Acupuncture and auriculotherapy	46	19	24	6.5%	-	Recording the severity of hot flashes from one week before treatment to four weeks after treatment Measurement of LH/FSH before and after treatment	Both groups had the same improvement in hot flashes compared to the previous treatment (P < .05). In the follow-up, the reduction in the frequency of hot flashes was more in the hormone therapy group (P < .05).	4
11	Zhanling/2011/China/(20)	Randomized clinical trial	auriculotherapy	Auriculotherapy for perimenopause	Acupuncture pre-menopausal N=62 N=63 postmenopaus	N=130	7.6%	-	KMI (Kupperman Menopausal Index)	For premenopausal patients: the effect rate was 96.8% in the auriculotherapy group and 56.3% in	3

No.	First author / year / country /Reference	Study design	Intervention	Sample size	Sample size of intervention group	Sample size of control group	Dropout rate	Complications	scale/intervention	Main results	Jadad/EPHPP score
				syndrome N=276	al					the control group. For postmenopausal patients: the effect rate was 85.7% in the auriculotherapy group and 53.0% in the control group.	
12	Kung/2011 / Taiwan /(14)	Pretest and posttest quasi-experimental study	auriculotherapy	45		-	-	-	Pittsburgh Sleep Quality Questionnaire and Quantitative Rating Scale for Measuring Clinical Symptoms of Menopausal Syndrome	Auriculotherapy increased parasympathetic activity and decreased cardiac sympathetic activity and improved postmenopausal insomnia.	Strong 2.60 EPHPP
13	Xin-hua/2006/ China/(18)	Randomized clinical trial	auriculotherapy	86	54	32	0	-	Kupperman index	Kupperman index scores were significantly different in two groups and both were useful in reducing menopausal symptoms, but the comparison of the effect of two treatments showed no significant difference.	3
14	Bi-	Quasi-	auriculot	30	30	-	-	-	Self-report	After three courses of	Moderate

No.	First author / year / country /Reference	Study design	Intervention	Sample size	Sample size of intervention group	Sample size of control group	Dropout rate	Complications	scale/intervention	Main results	Jadad/EPHPP score
	yi/2004/China/(21)	experimental study	herapy						checklist of climacteric symptoms	treatment, the clinical symptoms disappeared and the menstrual disorder was clearly improved.	1.50 EPHPP
15	Jin/1993/China/(22)	Randomized clinical trial	auriculotherapy	68	34	34	-	-	Kupperman index FSH, LH, E2 level measurement	Kupperman index scores decreased in both groups, E2 level increased clearly, FSH and LH levels decreased. In general, they reported an improvement in reproductive endocrine function in premenopausal women.	3

In a quasi-experimental study titled auriculotherapy for postmenopausal women with insomnia, Kung et al (2011) found that auriculotherapy was able to improve the duration and quality of sleep in postmenopausal women and reduce the time before falling asleep by reducing sympathetic activity and improving heart rate, leading to improved sleep (14).

Kao et al (2012) investigated the effect of auriculotherapy on the anxiety of postmenopausal women, and found that the use of auriculotherapy significantly reduced the prescription of alprazolam in the intervention group, indicating the positive effect of this intervention on anxiety control (15).

Xinmei et al. (2017) compared the effect of acupressure and auriculotherapy with oral administration of Nylestriol 1 mg and Oryzanol 20 mg on menopausal syndrome of liver-kidney deficiency type and estradiol. The results showed that there was no significant statistical difference between the two groups in the improvement of symptoms, but auriculotherapy was outperformed in long-term follow-up (16). In a quasi-experimental study entitled effects of auriculotherapy on menopausal syndrome of liver-kidney deficiency type and estradiol, Jin et al. (2017) found an improvement in the clinical symptoms (17). Xin-hua et al. (2006) compared the effects of acupressure and auriculotherapy on menopausal syndrome and showed that both had an equal role in reducing symptoms (18).

Yan et al. (2018) compared auriculotherapy in combination with electrical stimulation in women with premenopausal syndrome with oral administration of progynova 1 mg and dydrogesterone 20 mg. The results showed that the combined treatment of the intervention group effectively contributed to the improvement of symptoms (19). Similarly, Zhanling et al. (2011) showed the effective role of auriculotherapy in combination with supplements in improving symptoms (20). In quasi-experimental study by Bi-Yi et al. (2004), auriculotherapy improved clinical symptoms in perimeopausal females (21). Jin et al. (1993) also showed that auriculotherapy was as effective as hormone therapy in improving symptoms and increasing estrogen levels (22). In a quasi-experimental study by Viel et al. (2016), who used auricular acupuncture for the climacteric symptoms after breast cancer treatment, they found that auriculotherapy improved the symptoms of hot flashes (23). Yeh et al. (2014) conducted a pilot study similar to the previous study, but in this study they measured the effect of auriculotherapy on chronic back pain in the elderly. They found that auriculotherapy in the intervention group compared to the control group for which pressure was used on points unrelated to the back, reduced the incidence rate of the worst or most severe pain (24). Li et al. (2012) investigated the effect of auriculotherapy on constipation and the quality of life of the elderly using magnetic pellets and vacaria seeds, and found that auriculotherapy with both methods almost equally improved the quality of life of the elderly and the condition of bowel movements (25). Pourmohammadi et al. (2021) investigated the effect of auriculotherapy on the sleep quality of elderly people with chronic back pain, and found that auriculotherapy has improved the quality of sleep in elderly people with chronic back pain compared to the sham group in which points unrelated to the back were pressed (8).

Discussion

In the current study titled the effect of auriculotherapy on the climacteric, menopause and old age, the results of various studies in this field were examined, and the comparison of findings is discussed. It should be noted that due to difference in the definition of menopause and climacteric period, each study is discussed separately.

In the study by Zhou et al. (2011), hormone therapy and auriculotherapy were effective in improving hot flashes but were not significantly different (13). In the study of Eslami et al. (2021), auriculotherapy was more effective in reducing the severity and frequency of hot flashes immediately after intervention and four weeks later and had a significant difference with biofeedback (7). Kung et al. (2011) in Taiwan pointed to the decrease in hot flashes in the group receiving auriculothharapy (14). The results of all three studies are in line for hot flashes. None of the studies have cited specific side effects. In these studies, although auriculotherapy has been compared with different methods, the intervention and follow-up time and the sample size range is

approximately similar, and according to the results, auriculothray seems effective in reducing hot flashes. However, it seems that the definitive conclusion can be reached by designing more studies with larger sample size.

One of the problems of menopause caused by the reduction of sex steroids is sleep disorder, which significantly affects the quality of life of women during this period. In fact, sleep is the resting time of the brain and body, during which consciousness is relatively reduced. Sleep relieves a person from stress. It also causes spiritual, psychological and physical renewal and is always one of the most basic human needs (26). Kung et al. (2011) found that auriculotherapy could improve the duration and quality of sleep in postmenopausal women (14). Considering that no other study was found in the field of insomnia in postmenopausal women, the results of this study were compared with other review studies that have investigated auriculotherapy on insomnia. In a review study by Jin et al. (2020) who investigated the effectiveness and safety of using auriculotherapy on insomnia, they emphasized the effectiveness of auriculotherapy and its safety for the treatment of insomnia (27). In a review study by Yeung et al. (2012) who measured the effect of acupuncture, reflexology and auriculotherapy on insomnia, they emphasized the positive effects of auriculotherapy for the treatment of insomnia (28). The results of a review study by Lan et al. (2015) on the effect of auriculotherapy on insomnia confirm the findings of other studies in this field (29). Therefore, considering the safety of this method and the acceptance of more people to use auriculotherapy, this method seems to be safe and effective for the treatment of sleep disorders.

Another area of discussion is menopause anxiety. Anxiety is classified as constant worry, anger or feeling of natural disasters, feeling strain and feeling unable to rest, which is also a predictor of depression in postmenopausal women (5). Unfortunately, only one article was found on this matter, which can be a guide for future studies. There were studies about the effects of acupressure on stress and anxiety, which were omitted from the comparison with the study of Kao et al. (2012) due to the difference in the nature of stress and anxiety investigated in those studies. In the study of Kao et al. (2012), the use of auriculotherapy significantly reduced the consumption of alprazolam in the intervention group. However, the results of just one article are not enough to draw conclusions in this regard and more studies are needed (15).

In the studies of Xinmei et al. (2017), Jin et al. (2017), Xin-hua et al. (2006), who investigated the application of auriculotherapy in menopausal syndrome, the data found that auriculotherapy, either in combination with acupuncture or alone, was as effective as drug treatments in the management of menopausal syndrome symptoms (16-18). In the long-term follow-up in the study of Xinmei et al. (2017), acupuncture had worked better than drug treatments and auriculotherapy (16).

In the study of Yan et al. (2018), the combined treatment of auriculotherapy and electrical stimulation effectively alleviated premenopausal clinical symptoms compared to the control group receiving drug treatment, and improved sex hormone levels (19). The reduction of complications with increasing estradiol levels seems to be justified. In the quasi-experimental study, Viel et al. (2016) found that auriculotherapy improved the symptoms of hot flashes (23). In the study of Zhanling et al. (2011) on perimenopausal syndrome, the participants were both menopausal and premenopausal people. In both groups, auriculotherapy improved the clinical symptoms (20). In the quasi-experimental study, Bi-yi et al. (2004) reported that clinical symptoms disappeared and menstrual disorders were clearly improved after three courses of treatment. Considering the quasi-experimental nature of the study and the relatively small sample size of 30, the disappearance of symptoms within three months is not very reliable (21). However, there is a need to conduct studies with more accurate design and implementation and randomization with a larger sample size. In the study of Jin et al. (1993) who compared auriculotherapy with hormone therapy on the symptoms of perimenopausal syndrome, the auriculotherapy was as effective as hormone therapy in reducing symptoms, but its side effects were less than

hormone therapy (22). In the study of Yan et al. (2018), vaginal bleeding, pain and hyperplasia occurred in the control group that received drug treatment (19), which can be a sign of the safety of the auriculotherapy method. Due to its safety, low cost and high patient acceptance, auriculotherapy can be used to alleviate perimenopausal symptoms, although this conclusion does not logically rule out the need for further studies.

In general, the studies that have dealt with the use of auriculotherapy in elderly people are very limited and only three articles were found. The reason for the limited number of studies on this age group, despite their higher problems compared to other age groups, is the higher ratio of non-acceptance of treatment or tolerance of the length of treatment on the part of the elderly. Considering the abundance of this age group in the country and the cost burden imposed on the society for their treatment, care and maintenance, researchers should pay more attention in this field to conduct studies.

Pourmohammadi et al. (2021) pointed out the positive effects of auriculotherapy on sleep quality (8). Yeh et al. (2014) reported that auriculotherapy reduced the incidence rate of worst or most severe pain. This is the only study that reported the incidence of side effects in the intervention group receiving auriculotherapy, but itching did not lead to withdrawal from the study (24). Li et al (2012) were the only group that studied the effect of auriculotherapy on the treatment of constipation. Their results showed that auriculotherapy with magnetic and plant seeds improved bowel movements and quality of life in the elderly, but there was no statistically significant difference between the two interventions (25).

Undoubtedly, further research is needed to draw conclusions in this regard. The points to consider in most of the studies were how to perform the auriculotherapy process, which was not mentioned much, and how the expertise and skill of the person who performed the auriculotherapy was confirmed. Some questionnaires were in the form of self-reports, which could be biased. According to the results of the all studies as well as due to the absence of complications and low cost, auriculotherapy can be used as a supplement for postmenopausal and elderly women, although this does not rule out the need to conduct further research with a better design and larger sample size. Considering the limitation of conducting studies on the application of auriculotherapy in menopause and other fields, it is better to design and implement studies on auriculotherapy training and its implementation in different fields.

One of the strengths of the present study was showing the issues related to auriculotherapy in the community of elderly and menopausal women, which needs more work. Among the limitations of the present study was the lack of meta-analysis that could well show the effect of auriculotherapy on each of the problems related to elderly and menopausal women, and the reason for this was the heterogeneity in the studies (including the duration of the intervention and different methods of measurement). Other limitations of the present study include the lack of access to all published articles and reports due to the limitation of the search to Persian and English language articles. Therefore, due to the heterogeneity of the studies and the poor methodology of most of the studies, the reported evidence should be interpreted with caution.

Conclusion

According to the available evidence, auriculotherapy can help in improving the problems of women in climacteric, menopause and old age and is suggested as a complementary and alternative method of hormone replacement therapy, but due to the small number of studies conducted in this field and also the limitations of some studies, it is suggested to conduct further research along with removing the limitations of previous studies. Despite the low cost and safety of auriculotherapy, a reasonable number of studies is not available regarding the impact o this method on the problems of menopausal or perimenopausal women, ao it is impossible to draw conclusion based on the existing studies. The limited studies in this regard may be due to the lack of skills in the field of auriculotherapy; therefore, planning is needed to familiarize more researchers and therapists with this low-cost method. However, this study can be a guide

for future studies in this regard by collecting information and specifying existing gaps.

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Conflicts of interest

Authors declared no conflict of interest.

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