Introduction

Menopause, which is associated with the gradual loss of fertility and the transition to a new biological condition, is one of the most important phenomena in women's lives.[1] Life expectancy has increased considerably recently throughout the world and, nowadays, two-thirds of the world's population age up to 85 years, or even more.[2] The World Health Organization estimates that half a million women in Japan and China will experience the age of 50 years and older in 2030.[3] The mean age of menopause is 48 years in different cities of Iran, which has a lower status than developed countries.[4] Although menopause is a natural stage of life, many women experience numerous problems, such as menstruation, hot flashes, sleep disorders, night sweats, psychotic symptoms, anxiety, pulse increases, atrophy of the genitourinary system, cardiovascular disease, osteoporosis, and sexual disorders, before and after this period.[5] Hot flash is the main and the most complicated source of complaint affecting work, social activities, leisure activities, sleep, mood, concentration, communication with others, sexual activities, enjoyment of life, and quality of life in women.[6] The prevalence rate of hot flashes has been reported to be up to 70% in postmenopausal women; this phenomenon is more severe and occurs more often at night and causes sleep disorders with severe sweating and shivering.[7] The frequency of hot flashes is 70%–85% in Europe, 49%–56% in Iran, and 8%–17% in countries whose diets are more vegetable-based.[8]

ABSTRACT

Background: Menopause, during which women experience many problems, including hot flashes, is a natural stage in the life of women. One of the duties of midwives is the promotion of women's health during menopause. Herbal remedies are well received and accepted by the community. This study was conducted to determine the effect of herbal tea capsule on hot flashes during menopause.

Methods: The present randomized, clinical trial study was conducted on 82 women who complained of hot flashes during their menopause period. The samples were randomly divided into two groups, each including 41 subjects. One group received 450 mg of herbal extracts daily and the other group received starch gelatin capsules daily for 8 weeks. The capsules were similar in appearance. After the intervention, the mean hot flash score was determined using the registration form of the severity, duration, and number of hot flashes before, 4, and 8 weeks after the intervention. Statistical analysis of collected data was conducted using t-test, Chi-square, Wilcoxon, and Mann–Whitney tests.

Results: The mean score of hot flashes, in the placebo group, was 0.62 ± 0.63 before intervention, 4.24 ± 3.26 four weeks after intervention, and 4.42 ± 1.93 eight weeks after intervention; in the herbal tea group, this rate turned out to be 1.65 ± 1.42 before intervention, 3.8 ± 1.36 four weeks after intervention, and 1.74 ± 4.88 eight weeks after intervention. Hence, there was a significant difference between the groups in terms of severity and duration of hot flashes.

Conclusion: Taking herbal tea capsules for at least 1 month is recommended for treating hot flashes of women during pregnancy. It is recommended that these herbs be used as herbal supplement.

Keywords: Herbal tea, hot flashes, menopause

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such as Japan and China. This process stops automatically, and without any treatment, several years after the onset in a majority of women. However, symptoms of menopause continue up to 5 years after the onset in one-third of women and, even, they might continue up to 15 years in 20% of women. Therefore, finding ways to eliminate hot flashes, which is one of the most common menopausal problems, is quite necessary to protect the mental and physical health of postmenopausal women and peaceful continuation of life.

Various plants, such as hyacinth, blackberry, chamomile, herbal tea, sweetmeats, fennel, and soya, are recommended for the treatment of menopausal symptoms because of their phytoestrogen attributes. Herbal tea has phytoestrogen properties and contains flavonoid. Nowadays, herbal tea is used more as a plant affecting mild to moderate depression; in addition, it can be used to treat wounds, bruising, muscle aches and burns, mental disorders, anxiety, and inflammation. Based on the results of Canning et al.'s clinical trial study (2010), taking 900 mg herbal tea for 12 weeks improved hot flashes and sleep disorders in postmenopausal women with hot flash complaints.

According to Article 2 of the Law on Midwives in the country, one of the most important duties of midwives is the promotion of women’s health during menopause, and according to Article 6, familiarity with and timely prescribing of herbal supplements is considered to be the duties of midwives. Due to serious complications and risks of using replacement hormones, the use of natural, uncomplicated, and low-cost treatments, such as herbal remedies, is welcomed by the general public. Considering the cost-effectiveness and availability of herbal tea, this study was conducted to determine the effect of herbal tea capsule on hot flashes during menopause to promote the quality of women’s health in the family and community.

Materials and Methods

The present randomized, clinical trial study was conducted on 82 women who complained of hot flashes during their menopause period. The samples were randomly divided into two groups, each including 41 subjects. Aging between 45 and 60 years old, having had hot flashes for at least 3 months, complaints of hot flashes at least three times a day, lack of hormone therapy in the past 3 months, lack of treatment with relief medications for menopause, nontreatment with phytoestrogens such as soy, lack of heart disease, hypertension, diabetes, mental illness, thyroid disorders, liver disease, cancer, abnormal uterus bleeding, lack of antianxiety drugs, nonuse of any medicinal plant, nonuse of anticoagulants and hypnotics, and lack of smoking were the main inclusion criteria; exclusion criteria included starting to take antianxiety drugs, sleep apnea, anticoagulants such as aspirin, heparin, and warfarin, use of phytoestrogens and nonhormonal drugs to relieve menopausal symptoms such as clonidine and hormone therapy during the study, showing allergy to herbal tea during the study, abnormal hemorrhage uterus and any systemic illness during the study, and the desire not to participate in the continuation of the study. Required data were collected using a demographic form consisting of age, educational level, employment status, marital status, number of pregnancies, number of children, and hot flash record in 1 month. To determine the rate and frequency of hot flashes, a sign is recorded at the time of hot flashes (morning, noon, night). According to the recommendation of the Food and Drug Administration, hot flashes were categorized into four groups of asymptomatic, minimal with no feeling of heat or perspiration; moderate hot flash, which accompanied feelings of heat and perspiration, but without disturbances in daily activities; and, finally, intense hot flash was characterized with feelings of heat and perspiration and disturbance in daily activities, to which scores from 0 to 3 were attributed. The number of hot flashes was recorded daily and the average was measured.

With regard to their duration, these hot flashes were categorized into several groups of 30–60 s, 1–3 min, 3–5 min, and more than 5 min. The weekly average of each variable was calculated separately by dividing its total in 1 week by the number of days from the same week that the form was completed. The results were evaluated based on the average changes in the mean of each variable during the intervention period compared with the beginning of the study. the mean score duration, severity and number of hot flashes has decreased. Daily recording of hot flashes has been used by scholars outside Iran and its scientific reputation has been repeatedly re-evaluated in Iran several times after being reviewed by faculty members of the University of Medical Sciences. The validity and reliability of these tools have, also, been examined and approved by Sadeghi et al. (2012) in Tehran University of Medical Sciences and Nahidi et al. (2008) in Shahid Beheshti University of Medical Sciences. The reliability of this form was confirmed in Mashhad University of Medical Sciences by a test–retest ($r = 0.86$) and $r = 0.9$. In Shahid Beheshti University of Medical Sciences, the reliability of the instrument was confirmed by a retest and correlation coefficient ($r = 0.96$).

After obtaining permission from the Ethics Committee of the University with the number 9201282144190058 and registering the research the Center for Clinical Trials of Iran with the number of No. 9 201307302751, the researcher obtained the necessary permissions from the University and General Hospital of Women and Menopause Clinic. After expressing the goals of the study, written consent of qualified women was obtained. Subjects were randomly assigned to two groups. A pharmacist had categorized the medicines into two groups of A and B, and the subjects were taught how to use the medicines. One group took herbal tea capsules (450 mg/day in two divided doses) and the other group took capsules of 450 mg of starch twice daily produced by Pharmacological Research Center of Tarbiat Modarres University, both for 8 weeks. The researcher, the subjects studied, and the
statistician were not aware of the type of drug used, and both capsules were prepared with the same form and with codes B and A by a pharmacist’s advisor and provided to the research units. To monitor the consumption of capsules, the researcher controlled the use of the drug by phone call with the research units, and if they did not use the capsules properly, or had any of the conditions for removal, they would be excluded from the study. Data were analyzed by SPSS software version 16 (Chicago, IL, USA) using independent t-test, Chi-square, Wilcoxon, and Mann–Whitney tests.

Findings

From 82 participants studied in the present research, 41 patients received herbal tea capsules and 41 received placebo capsules containing starch. During the use of medications in herbal tea group, 2 cases were suffering from diarrhea and 2 more were excluded due to irregular drug use and 2 patients due to diarrhea. Final analysis was conducted on 74 subjects. Table 1 shows that the two groups were similar in terms of age, age of the last menstruation, mean number of pregnancies, number of children and number of abortions. The majority of samples were housewives, 83.8% in the test and 75.7% in the control group; they had average economic status, 94.5% in the test and 70.3% in the control group; they were mostly married, 100% in the test and 91.9% in the control group; and, finally, regarding educational status, the majority of them, 34% in the test group, had secondary or high school educations. The analysis of Wilcoxon in Table 2 shows that duration and frequency of hot flashes in each group before, 4 and 8 weeks after intervention were statistically significant ($P \leq 0.001$).

The analysis of Mann-Whitney test findings showed decrease in the frequency, duration, and severity of hot flash in 4 and 8 weeks after the intervention [Table 3].

**Discussion**

One of the most important causes of hot flush during menopause is the reduction in sex hormones. Hormonal-related physical and mental changes can cause hot flashes when ladies reach a certain age. According to Al-Akoum *et al.*’s study, which was conducted to evaluate the effect of herbal tea on hot flashes and quality of life on 47 postmenopausal women age between 45 and 60 weeks during 12 weeks, taking three capsules of 300 mg daily caused considerable improvement in sleep disturbance score, in comparison to the placebo group ($P \leq 0.05$).[19]

van Die *et al.* conducted a study to investigate the effect of herbal tea and vitex on the physical and psychological symptoms of menopause on 93 women for 16 weeks. Although the hot flash score improved ($P < 0.001$) in both group, this improvement was not considerable in comparison to the placebo group.[20] However, the results of Chung *et al.*’s study (2004), which was conducted to investigate the effect of the combination of herbal tea and black cohosh (ginoplasm tablets) on menopausal symptoms on 89 patients, showed that this medicine did not turn out to be efficient in removing menopause disorders, such as insomnia, in comparison to the placebo group.[18] Cunning’s study (2010) investigated the effect of herb on premenstrual syndrome; according to the results of this study, in which 35 menopausal women received 900 mg herbal tea daily, herbal tea was significantly more effective than placebo in improving physical and behavioral symptoms.[11] Kazemian’s study (2006), which was conducted to investigate the effect of passion flowers on hot flashes of 54 menopausal women for 30 days, showed considerable and significant decrease in the intensity of hot flashes ($P \leq 0.05$).[21]

### Table 1: Comparison of mean and standard deviation of demographic characteristics in two groups of herbal tea and placebo

| Group | Herbal tea (mean±SD) | Placebo (mean±SD) | $P$ |
|-------|----------------------|-------------------|-----|
| Age (years) | 52.19±3.79 | 52.4±24.14 | 0.82 |
| Last menstruation age (years) | 47.38±2.190 | 47.4±47.38 | 0.61 |
| Number of pregnancies | 0.57±0.689 | 0.65±1.6 | 0.68 |
| Number of children | 3.38±1.25 | 3.24±1.83 | 0.77 |
| Number of abortions | 0.57±0.689 | 0.65±1.6 | 0.9 |

SD: Standard deviation

### Table 2: Frequency distribution of duration and number of hot flushes in two groups before, 4, and 8 weeks after intervention

| Groups | Mean and SD of hot flashes before intervention | Mean and SD of hot flashes 4 weeks after intervention | Mean and SD of hot flashes 8 weeks after intervention |
|--------|---------------------------------------------|------------------------------------------------|--------------------------------------------------|
| Herbal tea | 2.17±0.38 | 6.30±6.37 | 4.88±1.74 |
| | 1.37±0.75 | 7.84±6.25 | 3.008±1.366 |
| | 1.039±0.704 | 6.30±6.37 | 1.65±1.42 |
| Placebo | 2.39±0.389 | 7.84±6.25 | 0.622±3.06 |
| | 1.4±0.55 | 4.76±6.05 | 4.4±3.026 |
| | 1.1±0.484 | 12.76±5.64 | 4.4±3.026 |
| $P$ | ≤0.0001 | ≤0.001 | ≤0.003 |
| ≤0.001 | ≤0.001 | ≤0.001 |

SD: Standard deviation
Conclusion

The results of this study showed the effect of herbal tea capsule on the improvement of hot flashes in postmenopausal women. Therefore, it is recommended that midwives and gynecologists use herb tea as a safe, inexpensive, and noninvasive treatment for hot flashes in postmenopausal women.

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The results of Friedmann and Wilcoxon follow up test: There was no significant difference between herbal tea and placebo groups in terms of duration, severity and number of hot flashes before intervention. There was a significant difference between duration, severity and number of hot flashes 4 and 8 weeks after intervention in herbal tea group (P < 0.0001).

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Nil.

Conflicts of interest

There are no conflicts of interest.

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