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The effect of foot reflexology applied to women aged between 40 and 60 on vasomotor complaints and quality of life

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ABSTRACT

Purpose: This study aims to identify the effects of foot reflexology applied to women on their vasomotor complaints and quality of life.
Methods: A randomised controlled study was conducted with 120 women. The experimental group received foot reflexology treatment, while the control group received nonspecific foot massage.
Results: The mean scores for hot flashes, sweats, and night sweats, were lower in the reflexology group than the control group after the practice; and the difference between the groups was statistically significant ($p < 0.001$). The mean scores for the sub-groups of the MENQOL demonstrated improvements in both groups after the application ($p < 0.001$). As for the sexual domain, there was a significant improvement in the reflexology group ($p < 0.05$), but no improvements were found in the control group ($p > 0.05$).
Conclusion: Results showed that reflexology might be effective in decreasing vasomotor problems and increasing quality of life in women in the menopausal period.

1. Introduction

The World Health Organization (WHO) defines menopause as “the permanent cessation of menstruation resulting from the loss of ovarian follicular activity” [1]. The average onset age of menopause is 51, but it generally happens between the ages of 45 and 54. The average menopause age of Turkish women is reported to be between 46 and 48 [2–4]. It is very important for women to have a healthy menopausal period. Many women who do not receive sufficient health care develop chronic diseases and their quality of life is affected negatively due to their inability to cope with the menopausal complaints. Hot flashes in particular, which is one of the most common menopausal complaints, is known to negatively affect many women's quality of life [5,6].

While hormone treatments decrease hot flashes, they are not popular among women because of the risks they contain [7] so women and doctors tend to use non-hormonal treatment options with a view to decreasing vasomotor symptoms. As a result, many women in the postmenopausal period search for alternative natural treatment options in order to manage menopause symptoms [8].

Some methods that are used in coping with vasomotor complaints include complementary or alternative medicine (CAM) such as relaxation techniques (deep breathing, guided imagery, etc.), acupuncture, yoga, and reflexology; some other methods that can be effective include regular exercise, balanced nutrition, nutrition with phytoestrogen rich food, omega 3 oil acids intake, vitamin E preparations intake, herbal supplements, appropriate clothing, and frequent showers [9,10].

Reflexology is a reflex therapy method that has been applied in various cultures for thousands of years. It is defined as a treatment that is based on the stimulation of the nerves and blood circulation of the body, using the reflex points that correspond to all body parts, organs and systems [11–15].

Eunice Ingham, the founder of the reflexology known as Zone Therapy, claims that massage applied to certain points using touch techniques is unique to this therapy. Despite the fact that nonspecific massage components may evoke systemic haemodynamic responses in their own right, in her teachings, Ingham suggests that with reflexology the haemodynamic treatment-related effect is considered to be very different from that of nonspecific massage, including components such as simple touch, therapeutic exchange

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and placebo effect [16].

Reflexology, which is one of the CAM therapies, is among the non-pharmacological methods used in the treatment of illnesses. Reflexology is a pressure technique applied with the hands and fingers. There are reflex points in the hands and feet that correspond to all areas, organs, and systems in the body. Using this method, the self-treatment mechanism of the body is activated, and physiological relief is enhanced [13,17,18].

In this manner, reflexology is beneficial in decreasing stress and tension [19], increasing blood circulation, decreasing fatigue, and enhancing haemostasis [17,19–22]. The effectiveness of reflexology has been clinically reported in premenstrual symptoms [23,24] increasing quality of life [25,26], increasing sleep quality in the postpartum and menopausal period [27,28], decreasing labour pain, shortening the duration of the first, second, and third phases of labour [29,30], and treating constipation in women [31].

There is still ambiguity regarding the mechanism behind the action of reflexology, but it has certainly been shown to have profound physiological effects, which may be partly attributed to the relaxation derived from the placebo effect, the therapeutic interaction, and the impact of touch. The explanation for the effect mechanisms of reflexology is based on various theories. These theories include the gate control theory, the neural impulse theory, the lactic acid theory and the endorphins theory [29,32]. The purpose of all of these theories is to balance the energy in the body. Reflexology helps to maintain the balance of the body by stimulating the inactive parts or soothing those that are overactive [33].

The related literature includes studies on reflexology practices to decrease menopausal period problems and increase the quality of life in women [17,28,34–38]. However, there are insufficient numbers of evidence-based studies that investigate the effects of reflexology on reducing menopausal period problems or improving the quality of life during the menopausal period. The present study is the first in our country to investigate the effects of reflexology on vasomotor complaints.

Parallel to the technological and scientific developments in the health field, nurses are expected to improve their nursing practices in relation to the use of CAM therapy and guide healthy individuals on how to use CAM therapies properly and effectively. In this regard, CAM therapies can be considered within the scope of the independent roles of nurses who have theoretical knowledge and scientific problem solving skills [39,40].

Considering the many positive effects of reflexology on the body, it is thought that its use can be investigated as a method in nursing care practices for managing vasomotor symptoms during the menopausal period. As a consequence, the present study was conducted as a randomised controlled trial to identify the effects of foot reflexology applied to women aged between 40 and 60 on vasomotor complaints and quality of life.

2. Methods

2.1. Design

This study, which is a randomised controlled trial, aims to identify the effects of foot reflexology applied to women aged between 40 and 60 on their vasomotor complaints and quality of life.

2.2. Study subjects

2.2.1. Research hypotheses

H1. Foot reflexology affects vasomotor complaints.

H2. Foot reflexology affects quality of life.

The target population of the study was women who had consulted the Menopause Polyclinic of Çukurova University Balcalı Hospital in Adana, a city in the south of Turkey. Meeting the research criteria and consulting the menopause polyclinic were sufficient reasons for the women to be included in the study.

The sample of the study was 120 women, who consulted the Menopause Polyclinic between 22nd February 2013 and 22nd February 2014. The study was conducted with one experimental and one control group. Randomisation of the women was performed by computer (Fig. 1). The women were included in the study according to the order in the randomisation list. Power of the study was found to be 89%.

Inclusion criteria: Residing in the city centre, being aged between 40 and 60, being at least literate, being in the natural premenopause, perimenopause or postmenopause period, having untreated hot flashes for at least two months, experiencing medium or severe hot flashes at least three times a day, not taking food that contains natural oestrogen, looking for relieving solutions for hot flashes, having an active sexual life, having no ulcers, surgical operations or infections in either foot and volunteering to participate in the study.

Exclusion Criteria: Women who were being treated with HRT; who had diseases with symptoms similar to hot flashes, who were treated with non-hormonal climacteric medicine within the past two weeks before the study was conducted or had fewer hot flashes complaints without having any treatments, who had a hysterectomy or bilateral oophorectomy, and who had diabetes mellitus were excluded from the study.

2.3. Ethical considerations

Ethics committee approval was received from Çukurova University Medicine Faculty Ethics Committee before the study was conducted. The purpose of the study was explained to the women participating in the study and their written Informed Consent Form (ICF) was obtained.

2.4. Intervention

The experimental group in this study received precision reflexology treatment, known as the Ingham method, while the control group received nonspecific foot massage for the purpose of identifying whether or not pressure applied to specific points or nonspecific foot massage had an effect on vasomotor complaints. The participants discovered whether they would receive pressure or massage on their feet through the ICF.

In order to minimize the environmental and other possible factors (like the relaxation effect), which could affect the study results, we applied a standard therapy for both groups of women. For standardisation purposes, the researchers formed a reflexology protocol (14 items) and a foot massage protocol (11 items) before treatment and the therapies were performed in line with these protocols. The reflexology was applied with pressure on the specific points indicated in the Ingham method. Unscented organic olive oil was used during the treatment in both groups. We used only one drop of olive oil to make the application straightforward. None of the participants were given any other treatments apart from either foot reflexology or foot massage. The practitioners maintained a standard and limited relationship with the patients. They did not talk about reflexology or foot massage; the conversations were mainly about daily life in both group. The participants were not informed about the randomisation process of the groups.

In the present study, foot reflexology was performed by the researcher. As training is needed before performing reflexology, the researcher participated in a five-day applied training course on

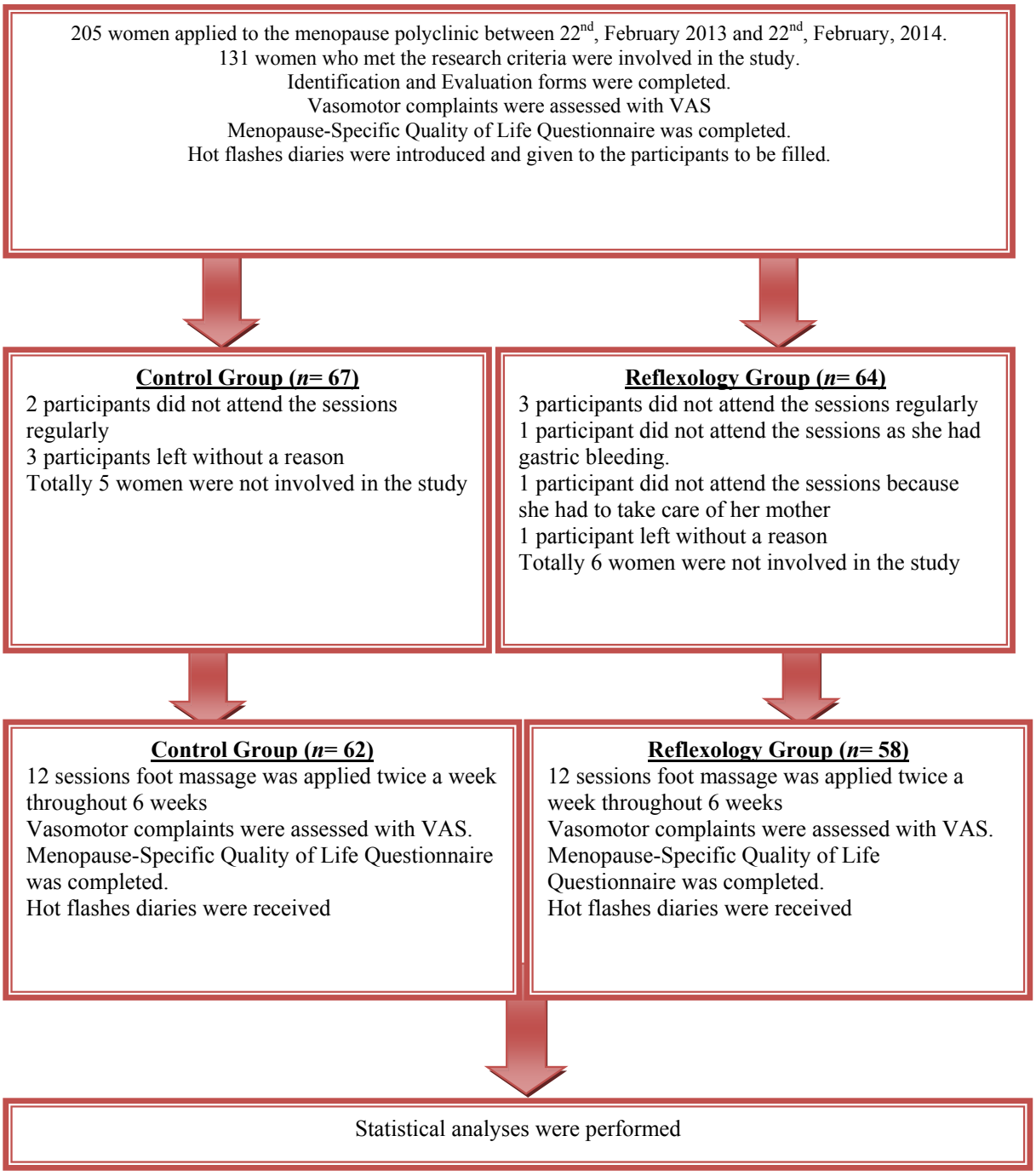


Fig. 1. Flow chart of the study.

reflexology for menopause-specific areas and received her reflexology certificate. Once she had received the certificate, the researcher applied the practice to three women during the menopausal period for nine months and conducted herself with a view to improving her practice skills. The treatment began after the reflexology specialist had confirmed that her skills were sufficient.

The study design, the massage applied to the control group and the number and duration of the reflexology sessions to be applied to the reflexology group were determined based on the study conducted by Williamson et al., in 2002 [34]. The sample size (76 women) was reported to be insufficient in the limitations section of Williamson's study. The present study involved more participants. The experimental group received two-sessions of reflexology once a week for six weeks, each lasting approximately 1.5 h (25 min for the first session then a one and a half hour break, and then 25 min for the second session). The university hospital where the study was conducted was approximately one hour away from the city centre. During the treatments performed prior to the study it was found that the women would have difficulty in coming to the sessions twice a week. Therefore, it was thought that conducting two sessions at half an hour intervals would make it easier for them to attend. A reflexology specialist was consulted about this situation and the session duration was determined accordingly. The women who came to the polyclinic once a week were given an appointment

and received reflexology. The women were prevented from seeing each other during the sessions with the help of a screen. Furthermore, performing of the foot massage a standard and limited relationship was maintained between the women and the practitioners.

Foot massage was applied to the control group in line with the protocol identified earlier without applying pressure techniques to specific points. It was performed by two students who were enrolled in the Çukurova University Midwifery Department. The massage applied to the control group was performed by the same students throughout the study. Before the study was conducted, the students were trained by the researcher in matters relating to the form, duration and areas of the massage. No certification is needed for foot massage, but for students to reach the required level with the correct technique took one week. The control group received two-sessions of foot massage once a week for six weeks for approximately 1.5 h (25 min for the first session, then a one and a half hour break, and then 25 min for the second session).

2.5. Data collection

The data were collected through Identification and Assessment Form, Visual Analogue Scale (VAS), Menopause-Specific Quality of Life Questionnaire (MENQOL), and hot flash diaries. Hot flashes, night sweats and sweats were evaluated using VAS. VAS is a 10 cm horizontal line that expresses individuals being very good on one side and very bad on the other side. The participants identified vasomotor complaints by marking the scale themselves. MENQOL was developed by John R. Hilditch, Jacqueline Lewis et al., in 1996 and adopted to Turkish society by Kharbouch and Şahin in 2005 with validity and reliability studies. The Likert type scale that included 29 questions is a quality of life scale specific to health situations in menopause with the psychometric features specific to women's experiences. The scale has four domains called vasomotor, psychosocial, physical and sexual domains. The vasomotor domain (questions 1 to 3) evaluated hot flashes, night sweats, and the presence and intensity of sweating. The psychosocial domain (questions 4 to10) measured the personal perception of psychological well being with the questions relating to nervousness, memory, and feelings of sadness and unhappiness. The physical domain (questions 11 to 26) evaluated general symptoms, such as distention, gas pain, sleep disturbances, diminished energy, weight gain, dermal changes and urinary problems. The sexual domain (questions 17 to 29) enquired about symptoms such as alterations in sexual desire, vaginal dryness during sexual intercourse and avoiding sexual intercourse [41]. MENQOL was filled in by the women themselves.

Hot flashes diaries were formed by the researcher, based on the diary developed by Guttuso et al. [42]. It is a scale that evaluates the frequency and severity of hot flashes, sweats and night sweats within 24 h. Once they were involved in the study, the women were informed about how to fill in the diary. It was completed by the women throughout six weeks. As the hot flashes diary encompassed a 24-h evaluation, the participants needed to keep the diaries themselves. Hot flashes experienced at night, sweats, and night sweats were recorded in the diary the following morning. The diaries were checked when the participants brought them to each session. Each woman's diary was evaluated by the researcher after the sessions were completed.

Demographic features of the participants were identified at the beginning of the study. VAS and MENQOL were evaluated before the reflexology and foot massage and after the 6-week reflexology and foot massage. Hot flashes diaries were evaluated in both groups after the 6-week practice.

2.6. Statistical analysis

Statistical analysis of the data was performed using SPSS 20.0 package programming (IBM, SPSS, Statistics). Categorical measurements were expressed using numbers and percentages while numerical measurements were displayed using means and standard deviations. Comparison of the categorical variables between the groups was performed with chi square test. Whether the numerical measurements displayed normal distribution was tested using Kolmogorov-Smirnov Test. Independent group's *t*-test was applied when the hypotheses were met in the comparison of the numerical measurements; Mann Whitney *U* test was applied for cases where the hypotheses were not met. Dependent group's *t*-test was utilised for the cases when dependent numerical measurements such as pre- and post-were compared. Level of significance was taken as 0.05 in all tests.

3. Results

The average ages were 51.1 and 50.7 in the control and the reflexology group, respectively. Of the women in the reflexology group, 39.7% graduated from university and 82.8% were married. As for the women in the control group, 51.6% were literate/graduated from primary school and 98.4% were married (Table 1).

While the women in the control group experienced hot flashes for 57.3 months, this duration was 48.4 months for the women in the reflexology group. The participants were found to be similar to each other in terms of the duration of menopausal periods and experience of hot flashes ($p > 0.05$) (Table 1).

The hot flashes scores of the participants in the reflexology group were found to decrease 4.2 points, sweats 4.1 points, and night sweats 4.6 points after reflexology. As for the women in the control group, their hot flashes scores decreased 2.4 points, sweats

Table 1
Some of the characteristics of the participants.

Features	Reflexology Group (n = 58)	Control Group (n = 62)	*p*
Age (X ± SD)	50.7 ± 4.0	51.1 ± 4.5	0.558
	***n* (%)**	***n* (%)**	
Education Level			
Literature-Primary School	16 (27.6)	32 (51.6)	0.010
Secondary School	4 (6.9)	8 (12.9)	
High School	15 (25.9)	11 (17.7)	
University	23 (39.7)	11 (17.7)	
Marital Status			
Married	61 (98.4)	48 (82.8)	0.003
Single	1 (1.6)	10 (17.2)	
Duration of hot flashes			
(**Month, X ± SD**)	48.4 ± 53.6	57.3 ± 42.5	0.314

Table 2
Frequency of the mean scores regarding hot flashes, sweats and night sweats.

VAS	Reflexology Group (n = 58)	Control Group (n = 62)	*p*
	X ± SD	**X ± SD**	
Hot flash			
Before	7.5 ± 2.4	8.1 ± 2.2	0.222
After	3.3 ± 2.6	5.7 ± 2.9	<0.001
P	**<0.001**	**<0.001**	
Sweat			
Before	7.3 ± 2.6	7.1 ± 2.9	0.745
After	3.2 ± 2.8	5.0 ± 3.4	0.001
P	**<0.001**	**<0.001**	
Night sweat			
Before	6.9 ± 2.9	6.9 ± 3.6	0.939
After	2.3 ± 2.7	4.3 ± 3.5	0.001
P	**<0.001**	**<0.001**	

2.1 points, and night sweats 2.6 points after the application.

VAS mean scores for hot flashes, sweats, and night sweats were found to decrease in both groups after the application ($p < 0.001$; Table 2). While the hot flashes, sweats, and night sweats scores of both groups were similar to each other before the application, the mean scores were found to be lower in the reflexology group than in the control group after the application; the difference was found to be statistically significant ($p < 0.001$).

Table 3 demonstrates the frequency of the MENQOL sub-group mean scores of the participants. Scores of the reflexology group after reflexology were found to decrease 7.4 points in the vasomotor domain, 8.0 points in the psychosocial domain, 14.2 points in the physical domain, and 2.2 points in the sexual domain. As for the women in the control group, their scores after the application were found to decrease 5.1 points in the vasomotor domain, 6.0 points in the psychosocial domain, 8.6 points in the physical domain, and 0.4 points in the sexual domain. Mean scores of both groups were found to be similar at the outset ($p > 0.05$) and these mean scores decreased in both groups after the application. However, the decrease was more significant in the reflexology group than the control group ($p < 0.05$).

Graph 1 displays distribution of the median values for hot flashes within 40 days according to the participants' diaries. On the first, 10th, 20th, 30th, and 40th day hot flashes median values were 17, 14, 10.5, 8 and 8.5, respectively in the control group while they were found to be 17.5, 14.5, 10.5, 8 and 4, respectively in the reflexology group. It was found that the changes in hot flashes in the control and reflexology groups started from the 32nd day and continued until the 40th day ($p < 0.05$).

4. Discussion

The present study has demonstrated that reflexology and foot massage applied to the women in both control and reflexology groups for six weeks and 12 sessions decreased hot flashes, sweats, and night sweats. However, vasomotor complaints in women who received reflexology were found to demonstrate a larger decrease when compared to the control group ($p < 0.001$). Hot flashes that the women experienced for 40 days were identified according to the diaries they kept. According to these diaries, the changes in the control and reflexology groups were found to start as of the 32nd day ($p < 0.05$; Graph 1).While vasomotor complaints were similar in both groups at the outset, the decrease was higher in the reflexology group after the application ($p < 0.05$). According to these results, the hypothesis “foot reflexology affects vasomotor complaints” was accepted within the scope of the limitations of the study.

Beside VAS, changes in vasomotor domain, one of the MENQOL sub-groups, were also investigated while identifying the vasomotor complaints. Vasomotor complaints were found to decrease both in the reflexology group and in the control group after the applications ($p < 0.001$; Table 3), but the complaints decreased more in the reflexology group ($p < 0.05$). Asltoghiria and Ghodsi found that while mean scores for the frequency of hot flashes was 4–9 on average per day in the reflexology and massage group before the application, this mean reduced to 2–3 on average in the reflexology group, but remained 4–9 in the massage group [28].

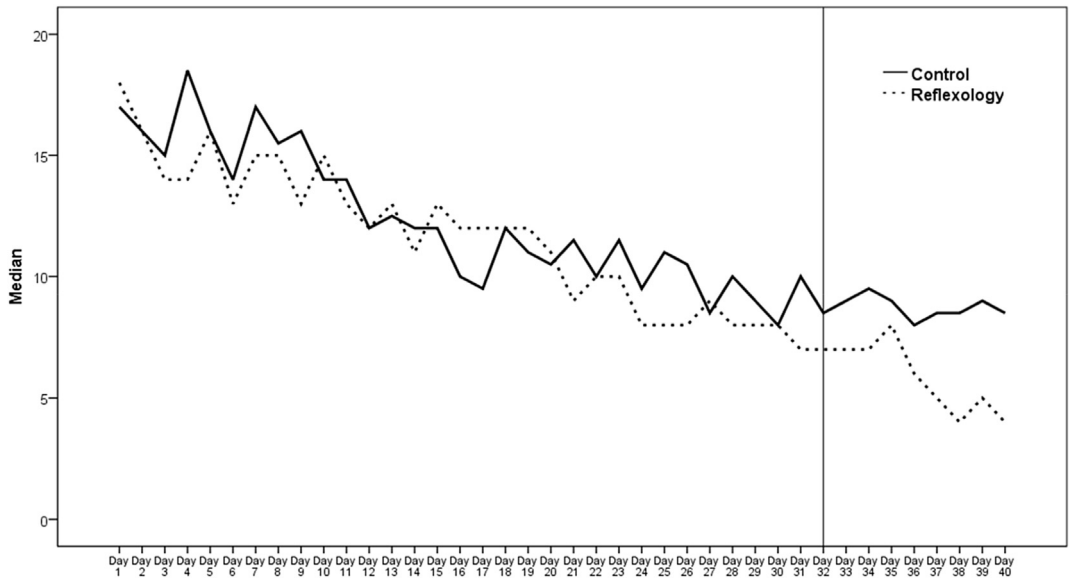
When compared to the scores before the application, psychosocial and physical mean scores of MENQOL were found to decrease in both groups after the application ($p < 0.001$; Table 3). Higher decrease in the reflexology than the control group indicates that reflexology might be an effective method in decreasing menopausal complaints of women.

Williamson et al. found that anxiety and depression mean scores indicated a significant decrease in the first six weeks after the application when compared to the initial values, but the change at the end of 23 weeks was not significant [34]. In their study, Asltoghiria and Ghodsi found that reflexology was effective in decreasing sleep disorders in the menopausal period [28]. Lee's two studies show that reflexology has effects on tiredness, physiological parameters, depression and stress experienced in the menopausal period [17,36]. A number of studies also indicate that reflexology is effective in decreasing menopause symptoms, stress and tiredness [37,38].

In studies conducted with various patient groups, it was

Table 3
Frequency of the mean scores for the MENQOL sub-groups.

MENQOL Sub-groups	Reflexology Group (n = 58)	Control Group (n = 62)	*p*
	X ± SD	**X ± SD**	
Vasomotor domain			
Before	19.3 ± 4.0	19.3 ± 4.7	0.965
After	11.9 ± 5.1	14.2 ± 5.5	0.017
p	**<0.001**	**<0.001**	
Psychosocial domain			
Before	31.6 ± 11.3	35.3 ± 11.7	0.080
After	23.6 ± 11.3	29.3 ± 12.3	0.010
p	**<0.001**	**<0.001**	
Physical domain			
Before	73.4 ± 20.5	76.9 ± 17.1	0.321
After	59.2 ± 21.5	68.3 ± 19.1	0.016
p	**<0.001**	**<0.001**	
Sexual domain			
Before	13.8 ± 7.9	15.7 ± 6.9	0.173
After	11.6 ± 6.7	15.3 ± 6.7	0.003
p	**<0.001**	**0.617**	



Graph 1. Distribution of hot flashes medians according to the participants' diaries.

determined that reflexology is efficient in decreasing stress and tension [19,22,43], diminishing tiredness [20,44], increasing sleep quality [27], and treating constipation in women [31]. The results of our study are in accordance with those in the literature.

In the MENQOL evaluation of sexuality, signs including alterations in sexual desire, vaginal dryness during sexual intercourse, and avoiding sexual intercourse were evaluated. Dopamine is known to be the most important neurotransmitter to play a role in sexual desire, drive and motivation. It is considered that reflexology increases the synthesis of serotonin in the body by affecting levels of dopamine and serotonin [45]. The sexual sub-group of MENQOL displayed an improvement in the reflexology group ($p < 0.05$), while no changes were indicated in the control group ($p > 0.05$; Table 3). In this study, improvements identified in the reflexology group may be related to the effect of reflexology on serotonin.

An evaluation of all areas of the Quality of life Scale indicates that beside the vasomotor complaints and psychosocial and physical domains, reflexology significantly improved problems the women experienced in the sexual domain as well ($p = 0.03$). In line with these results, the hypothesis "foot reflexology affects quality of life" was accepted within the limitations of the study.

Pinto & Paul found that quality of life of the women in the menopausal period increased after reflexology and there was a significant difference in their mean scores before and after the massage. Thus, they indicated that foot reflexology was an effective technique in decreasing menopause symptoms and thus increasing quality of life [35].

Studies in the literature conducted with various groups have also reported that reflexology might be an effective method for increasing the quality of life [25,26,46,47].

The function of reflexology is to increase the flow of hidden energy that results in healing effects throughout the body. The application of deep pressure on the reflex points stimulates the peripheral and central nervous systems. This information is transmitted to the brain, and the brain transmits the messages to the visceral organs and secretory glands. Energy blockages are released, enabling energy to flow and circulate throughout the body; thus, power is generated for the body to heal itself [12,33]. Massage differs from reflexology. Massage, in particular, is believed to induce a calming and reassuring sensation, with reduced discomfort and improved mood, resulting from the ensuing production of oxytocin [48].

We have also investigated studies in literature related to foot massage. In studies conducted with various patient groups, it has been reported that foot massage exerts a positive effect on reducing postoperative pain [49–51], decreases blood pressure and anxiety, and elevates the quality of life [52,53]. However, in contrast to these results, there are also studies reporting that the foot massage has no significant effect [48,54–57]. In the randomised controlled studies of Hattan et al., foot massage applied to patients following cardiac surgery was reported to result in no significant improvement for pain, tension, relaxation and rest [54]. In two studies by Moyle et al., it was determined that foot massage does not have any positive effect on agitation and the reduction of stress in patients with dementia [48,55]. In the study of Hulme et al., it was reported that foot massage was not effective in decreasing postoperative pain following laparoscopic sterilization [57].

Findings of the present study support the idea that reflexology might be used as a method of nursing care in decreasing the problems of women in the menopausal period and increasing their quality of life.

5. Conclusions

Foot reflexology was found to decrease menopausal women's hot flashes, sweats and night sweats. In addition, reflexology application was found to have positive effects on women's quality of life in the physical, psychosocial, and sexual dimensions.

Like many positive outcomes in various fields, reflexology might be performed independently by nurses as autonomous roles with a view to decreasing vasomotor complaints and increasing quality of life.

5.1. Implications for future research

Reflexology treatment requires time, physical strength and patience. Attending the sessions regularly is important. Therefore, showing sensitivity is vital before starting the process. During the treatment, conducting long interviews, meeting women with different personalities and sharing something different with each person were the factors that motivated the researcher. As the present study lasted one year, it can be said that reflexology requires patience and endeavour. Together with reflexology practice,

choosing control group practitioners carefully is of particular importance. They should be individuals who can fulfil this duty with real working discipline. As the process is tiring due to requiring physical strength, one should consider all of these factors before deciding to study reflexology. Considering all these issues, the following recommendations can be made; performing reflexology and foot massage in a manner where women cannot see each other, planning studies in which both reflexology and foot massage practices are conducted by professionals other than the researchers, conducting both practices by the same person if it is not possible to conduct the study with some other experts, planning and conducting the study in premenopausal, menopausal or postmenopausal periods separately, planning studies in relation to the future effects of reflexology, conducting studies with a larger population and longer periods of time and relating research results to clinical and field applications.

6. Limitations

There were several limitations to the present study. Firstly, only the women who applied to the menopause polyclinic were included. As the number of women who consulted the polyclinic due to vasomotor complaints was insufficient, it was not possible to maintain a similarity for all sociodemographic variables in the study.

Secondly, in terms of blinding, it would have been more appropriate if the reflexology had been applied by a reflexology specialist. However, as the high cost required for that exceeded the project budget, it was conducted by the researcher. It would also have been better if the foot massage had been applied by one person. However, as the project budget allocated at most four hours work daily for the person to be hired, two students conducted the massage.

Finally, the women should not be able to see each other during the reflexology and foot massage applications. Owing to the inadequate conditions of the hospital where the study was conducted, the women were prevented from seeing each other with the help of a screen. In order to prevent the relaxation effect, a limited relationship was maintained between the patients and the practitioners in both groups. Conversation on non-medical matters was permitted. Despite all these implementations, discussions relating to daily life may have affected the results.

Author contributions

EG was responsible for the concept and design of the study, data collection, intervention, analysis, the interpretation of the results and drafting of the manuscript.

MB was responsible for the concept and design of the study, the interpretation of the results, and drafting and revision of the manuscript. All the authors approved the manuscript for publication.

Disclosures

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Conflict of interest

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

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