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The effects of Reflexology on sleep disorder in menopausal women Maryam Asltoghiri^{a*}, Zahra Ghodsi^b

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Abstract

Regarding to increasing of life expectancy, women spend about one-third of their lives in menopausal stage. Many women are interested to use complementary and alternative medicines for relief from their menopausal complications. Reflexology is One of the complementary and alternative medicines .The purpose of this study was to determine the effects of Reflexology on hot flash in menopausal women. This randomized controlled trial study was carried out on 100 retired menopausal women ranging from 45 to 60 in 2011. They were randomly divided in two groups as case and control. Data collection tools were questionnaire. Questionnaire consisting of demographic characteristic, Pittsburgh Sleep Quality index. In case group reflexology was performed for 15 minutes, daily through 21 days while there was no intervention in the control group. There was no significant difference in demographic and the menopausal complications between two groups before intervention in case group. The results showed a significant reduction sleep disorder after intervention ($p < 0.001$). Reflexology is effective in improving of sleep disorder and therefore midwives can learn it and teach it to menopausal women.

Keywords : Reflexology, sleep disorder , menopausal complications

1. Introduction

The menopause transition is characterized by physical, emotional, and lifestyle changes in many women. (Bair et al 2002). Menopause is not avoided by any woman but frequency and severity of menopausal symptoms vary. A number of studies have reported the prevalence of menopausal symptoms among mid-aged women (lotto 2009) . The physiological mechanism responsible for menopause is the continuous loss of ovarian follicles to that point at which menstrual cycles completely cease. Finally, one part of the hypothalamus – pituitary-ovarian system – breaks down as the ovaries become depleted of follicles (kilaf 2008) .Nearly 80% of women going through menopause experience some kind of clinical symptom and in 40% of cases the symptoms are sufficiently intense to lead the patient to seek medical assistance. The most common symptoms are vasomotor instability, nervousness, anxiety, irritability, depression and insomnia, all significantly detrimental to well-being. . (Oliveria et al 2011).During the menopausal transition and early post menopause women rate sleep problems as among the most prevalent and bothersome of their symptoms. (Woods et al 2010). Sleep problem is highly prevalent and affects between 28% and 63% of postmenopausal women. (Oliveria et al 2011) Sleep in postmenopausal women is altered in ways which may have an adverse effect on health (Tranah et al 2010) Both age and hormonal changes can contribute to disturbed

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sleep in middle-aged women undergoing the menopausal transition. Menopausal hormonal changes may plausibly be related to acute sleep disturbances (Kravits et al 2008). Postmenopausal hormone therapy (HT) has been the standard treatment for many menopausal complaints, including hot flashes and insomnia. Clinical and experimental studies offer compelling evidence that exogenous administration of sex hormones regulates many brain functions that are involved in the regulation of sleep. Increased estrogen levels have been hypothesized to improve sleep by shortening sleep latencies, reducing nocturnal restlessness and night time awakenings, decreasing movement arousals, improving sleep efficiency, and increasing REM sleep. Estrogen replacement has also been shown to reduce sleep disordered breathing in postmenopausal women. Estrogen alone alleviated the frequency of nocturnal movement arousals as measured by polysomnography. (Tranah et al 2010) However, despite the effectiveness of HRT many women refuse or discontinue treatment because of side effects such as vaginal bleeding, bloating and breast tenderness or due to concerns about an increased risk of cancer or other HRT-linked conditions. Therefore, many women are seeking safer alternative therapies to relieve symptoms and improve quality of life. (Cardini et al 2010) . For example, complementary and alternative medicine (CAM) approaches (i.e., acupuncture, reflexology, Chinese herbs, dong quai, evening primrose oil, ginseng, kava or red clover extracts, black cohosh) for the treatment of menopausal symptoms have received some empirical attention (Dobkin et al 2009; Efe, 2009). Clinical experience suggests that reflexology may have beneficial effects on the symptoms occurring in menopausal women (Williamson et al 2002). Reflexology is a popular form of complementary and alternative medicine (CAM) (Ernst & Posadzki 2011). Pictures from Egyptian tombs suggest that foot massage was used as a form of therapy 5000 years ago. As practiced today, reflexology is a specific form of foot massage in which it is believed that areas in the feet and hands correspond to the glands, organs and other parts of the body. Practitioners believe that local finger pressure can influence the function of organs encouraging homeostasis and promoting relaxation and the healing response (Williamson et al 2002). Reflexology is effective for the following condition: diabetes, premenstrual syndrome, cancer patients and multiple sclerosis. Yet important caveats remain. It is concluded that the best clinical evidence does not demonstrate reflexology to be an effective treatment for any medical condition. (Ernst & Posadzki 2011). Furthermore, there are thus few studies which evaluate the effects of reflexology on sleep disorder in postmenopausal women. The purpose of this study was to evaluate the effects of Reflexology on sleep disorder in menopausal women.

2 Method

This patient – blinded randomized controlled trial study was conducted on population of menopausal women in city of Hamadan in west of Iran during 6 months period in years of 2011. Respondents were screened by the principal investigator by telephone to apply the inclusion criteria. The sample consisted of 100 women ranging in age from 45 to 60 years who reported sleep disorder. All women had experienced a natural cessation of menstrual periods for at least 12 months. Non of the women included in the study had taken Hormone Replacement Therapy. Women with a history of breast or other types of cancer and/or any current medically unstable condition were excluded from the study. Other exclusion criteria were as follow: severe pathology of the feet, previous reflexology treatment, and current complementary therapy for sleep disorder. All the subjects were explained about the purpose of the study and were ensured strict confidentiality. Signed informed consent was obtained from all participants when they attended their first intervention session. All women also reported their age, parity, level of education, annual household income, marital status, satisfaction of marriage, level of exercise and body mass index. All participants completed the questionnaire package, reporting on the previous 4-week period for sleep quality by The Pittsburgh Sleep Quality index. The PSQI measures quality and patterns of sleep, including difficulties related to subjective sleep quality, latency, duration and disturbance, habitual sleep efficiency, use of sleep medication and daytime sleep dysfunction over the past month. Total PSQI has demonstrated good internal consistency as well as good convergent and divergent validity (Jomeen & Martin, 2007). All women had sleep disorder (score > 5). Then, they were divided into two groups of reflexology (n=53) and non-specific foot massage (n=47). The same nonperfumed foot cream was used in both groups. Reflexology and non-specific massage performed for 15 minutes, daily through 21 days. They were homogenized as for the cofounders. At the end of 21 days, women completed The Pittsburgh Sleep Quality index again. The effect of reflexology on sleep disorder was assessed. SPSS (SPSS

Inc, Chicago IL) statistical software was used for data analysis. All hypothesis tests were two-sided and P-values < .05 were considered statistically significant. X² , t-test , mann Whitney were used to analyze the obtained data.

3 Results

110 patients were screened for this study. A total 110 women were randomly assigned , approximately 10% of the participants who enrolled were either lost to fallow-up .Two had been assigned to the reflexology group and eight had been assigned to the non - specific massage group. Reasons for those who did not complete the study including : being to busy , no desire to continue for personal reason.

No statistically significant difference was noted in duration of menopause (26.72 ± 12.52 and 29.9 ± 12.36 months) ,education level (56.6 % and 56.9 % diploma degree) , gravida (60.3 % and 61.7 % third gravid) , number of roommate (50.9 % and 48.3 % two persons) , satisfaction of life (69.8 % and 68.1 % moderate) ,exercise (67.9 % and 57.2 %) between reflexology and non - specific massage groups , respectively.

Participants age ranged from 40 to 65 years . 52.9 ± 2.73 and 53.2 ± 2.61 in the reflexology and non - specific massage groups , respectively.

In both group most were overweight. Most people Body mass index was 23-29 (62.3 % in reflexology and 72.4 % in non - specific massage group) .

At baseline, the mean frequency of hot flash was 4-9 per day in the reflexology and non- specific massage group and before intervention , no differences were between two groups . Reflexology significantly reduced the frequency of hot flashes relative to non - specific massage. In the reflexology group , mean of hot flash frequency decreased to 2-3 hot flash per day , while the non – specific massage group remained 4-9 flash per day . (Table 1)

Mann-whitney test concerning the frequency of hot flash reveal significant relationship between reflexology and non-specific massage (z = - 3.84 p < 0.001)

At baseline , 53 women were placed in reflexology and 47 women in non - specific massage groups. Reflexology significantly reduced sleep disorder relative to non - specific massage.

41.5 % of women in reflexology and 19.1 % of women in non - specific massage had normal sleep after intervention. Our results demonstrated that reflexology and non - specific massage both reduced the sleep disorder in post-treatment period compare to pre-treatment stage, but there is statistically significant difference was noted in two groups and reflexology decreased sleep disorder than non - specific massage {x²=5/82 df=1 p < 0/01} (table1)

Table 1 : Comparison of sleep disorder in reflexology and non - specific massage groups

Sleep disorder	Reflexology group		non - specific massage groups	
	n	%	n	%
yes	31	58.5	38	80.9
no	22	41.5	9	19.1
	53	100	47	100

4 Conclusion

This is the study to evaluated reflexology as an alternative treatment for menopausal symptoms. The result of this study suggests that reflexology is an effective non-hormonal approach for treatment of sleep disorder. Over the course of the study, women reported significant decrease in sleep disorder for the reminder of the trial.

The use of complementary and alternative medicine (CAM) among menopausal women has increased in the last years. (Borreli & Ernest 2010).

Unlike the results of recent study, Williamson and associated in 2002 carried out: the first published randomized controlled trial of reflexology for psychological symptoms at the time of the menopause. They expressed that there were no significant differences between the effects of reflexology and non-specific foot massage control. No untoward reactions were noted, although no specific assessment strategies for assessing negative side no more effective than foot massage in reducing hot flash frequency, severity, or other menopausal symptoms (e.g., memory or concentration problems, sexuality) or improving menopausal quality of life. Outcomes in both groups improved over time. Although the use of foot massage may appear to be a plausible placebo condition, the majority of women in the treatment group and almost half the women in the comparison group were able to correctly identify the condition to which they had been randomized. In addition, no mechanism of action for using this therapy was described.

Song and kim in 2006 observed that foot massage (reflexology) improved quality of sleep, reduced depression and increased the level of serotonin in elderly subjects.

Lee in 2006, a significant difference was also observed in climacteric symptoms in fatigue, in total cholesterol and in the level of cortisol.

Lee in 2006 expressed that there was a statistically significant difference in depression, perceived stress, systolic blood pressure, natural – killer cell and IgG in women with reflexology. They suggest that a self –foot reflexology massage could be utilize as an effective nursing intervention to reduced depression and stress response and to strengthen immune systems in middle – aged women.

In the post– women´s Health Initiative era, considerable debate has been directed at the risks of hormone therapy. This leads women in menopause to seek beneficial health advice and make positive lifestyle changes. (Olivera et al 2011) There is a little data about mechanism of action of reflexology. Based on the belief that the whole body is represented on the foot and that the internal organs can be stimulated by pressing particular area of foot.(Ernest 2009)Based on the present results , we suggest that the reflexology is beneficial for improving sleep disorder in menopausal women. Therefore midwives can learn it and teach it to menopausal women. Further studies should assess the effect of reflexology on other symptom in menopausal women.

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