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Acupressure Reducing the Insomnia Disorders of Perimenopause

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Abstract

There are two therapeutic methods for treating insomnia in perimenopause, namely chemical and complementary treatment methods. One of the complementary therapies for reducing the problem of insomnia in perimenopause is acupressure. The design of the research used a pre-experimental with one group pretest-posttest. A pretest was conducted before the treatment of giving acupressure. The population was 32 perimenopause women registered at the Jatinom elderly posyandu in Kecamatan Kanigoro Kabupaten Blitar area. The researchers calculated the sample size using the Slovin formula at a 5% confidence level resulting in a sample size of 30 people. Purposive sampling was used as the sampling technique. The analysis was carried out to see the effect of acupressure massage therapy on insomnia in perimenopause women, using the paired sample t-test. The result of this research revealed that there was a significant difference in insomnia scores before and after acupressure treatment in reducing insomnia in perimenopause women. The treatment of Acupressure was effective in reducing the insomnia disorders of perimenopause. It is suggested that perimenopause women to apply this method to reduce their insomnia since it can be done independently.

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INTRODUCTION

Perimenopause occurs between the ages of 45 - 50 years which is a physiological condition in women characterized by a decrease in ovarian estrogen hormone levels, this hormone plays a role in sexual reproduction and can interfere with women's activities (Harlow et al., 2012). In 2021, it is estimated that 1.02 billion women in the world will experience post-menopause, and it is estimated that this number will reach 1.65 billion in 2050, before entering menopause they will go through perimenopause (Duralde et al., 2023). Indonesia has 7.4% of women entering perimenopause of the total population in 2020, estimated to reach 11.54% with an average age of 40-49 years (Hartanti et al., 2020). The estimated number of perimenopause women with an average age range of 45-64 years in Indonesia in 2035 will be 37 million people (Husna et al., 2023). Women who enter the perimenopause phase will experience a gradual decline in ovarian function, causing a decrease in the hormone estrogen which will cause several symptoms such as sleep disorders, vasomotor disorders, and mood changes (Dos Santos et al., 2021). Symptoms of perimenopause that often occur are hot flesh around 75%, and insomnia around 39%-47% (He et al., 2020). The hormone estrogen which decreases in the perimenopause phase causes a decrease in serotonin, endorphin, and dopamine levels, causing mood changes and resulting in sleep disorders or insomnia (Anurogo, 2023). Continuous insomnia will cause the emergence of new morbidities and psychiatric disorders (Ciano et al., 2017; He et al., 2020). Insomnia during perimenopause can harm psychological health, inadequate sleep quality at night will cause fatigue during the day, irritability, and decreased cognitive function resulting in depression. Therefore, treatment therapy methods are used to reduce insomnia in perimenopause women (Tandon et al., 2022).

There are two therapeutic methods for treating insomnia in perimenopause, namely chemical and complementary treatment methods. Prolonged treatment of insomnia in perimenopause women will cause headaches, delirium, cognitive impairment, and liver problems, so it is recommended to use complementary therapies (Monderer et al., 2015; Samara et al., 2020). One of the complementary therapies for reducing the problem of insomnia in perimenopause is acupressure. Acupressure can increase gamma (γ) amino butyric acid to improve sleep quality (Verma et al., 2022). Acupressure therapy uses the fingers to apply pressure to the meridian points thereby providing a flow of energy (qi) to overcome blockages in the flow of energy (qi) and restore energy (qi) balance in the body (Dincer et al., 2022).

Acupressure on the earlobe or outer ear median area provides a comfortable and warm effect that reduces insomnia (Jun et al., 2024). Other research also revealed that there was a significant difference between the treatment group and the control group (p=0.0001), acupressure carried out 12 times at the Yintang, Yifeng, Anmian, Fengchi, and Hegu meridian points made insomnia sufferers begin to feel comfortable and sleep quality improves (Ibrahim et al., 2020). Then, the acupressure at the Shenmen meridian point improves sleep quality with a result of 96.7% and a result of p: 0.000, which means there is a difference in sleep quality between before and after treatment (Indrayani et al., 2021). Menopause women in Australia can increase their sleep quality by using the acupressure technique at the Meridian points HT-7, PC-6, and SP-6 for 2-3 minutes for 3 weeks (Hmwe et al., 2020). This research focused on insomnia experienced by women entering the perimenopause phase because insomnia experienced by perimenopause women is a problem that has a significant negative impact on health status.

The difference between this research and the previous research was the acupressure points. We used 5 meridian points of the message while the research from Jun et.al and Ibrahim et.al used 2-3 acupressure points. The meridian points used were : (1) the LR(lever)-2 Xinjian meridian point which is useful for the eye organ located between the 1st and 2nd toes, in the indentation of the difference in skin color, distal to the I metatarsophalangeal joint, (Gao et al., 2013); (2) PC (Pericardium)-6 Nei guan meridian point which is useful for reducing insomnia and regulating blood pressure is located at 4.5 cm above the wrist crease line, between the palmaris longus muscle tendon and the flexor carpi radialis muscle tendon; (3) HT (Hearth)-7 Shenmen meridian point which useful for insomnia, tachycardia, relaxation located on the curve of the ulnar side of the wrist fold line, the radial side of the flexor carpi ulnaris muscle tendon,(Ye et al., 2023); (4) ST (Stomach)-44 Neitting meridian point which is useful for disorders of the face and abdomen, facilitates breathing located between the 2nd and 3rd toes, in the distal curve of the second metatasrphalangeal joint (Park et al., 2010); (5) SP(Spleen)-6 Sanyinjiao meridian point which is

useful for disorders of the face and abdomen, facilitates breathing located on the posterior edge of the tibia bone, 3 flat divisions above the peak of the internal malleolus (Wang et al., 2020). The acupressure was done by giving a gentle massage to a depth of 1.5 cm, using the middle finger and index finger (2 cun) for 50 times pressure and counterclockwise.

METHODS

This was pre-experimental research with one group pretest-posttest. In this design, a pretest was conducted before the treatment. The population included 32 perimenopause women registered at the Jatinom Elderly Posyandu in Kecamatan Kanigoro Kabupaten Blitar area who had sleep disorders (insomnia). The researchers calculated the sample size using the Slovin formula at a 5% confidence level which resulted in the sample size of 30 respondents. Purposive sampling was used, with the following inclusion criteria: women aged 45-50, experiencing insomnia, and willing to participate in the research. Exclusion criteria: women who had insomnia and some comorbidities (kidney problems, heart difficulties, cancer, hepatitis, tuberculosis), are not present during data collection, or use sleeping drugs. This research was conducted on May 23-26, 2024 at the Jatinom Elderly Posyandu. The instrument used the Insomnia Severity Index (ISI) scale, developed by Charles M. Morim of Laval University, which consisted of seven questions. The ISI included seven items addressing sleep initiation, sleep maintenance, early awakening, level of satisfaction with sleep patterns, amount of interference with daily functioning, implications of sleep-related disorders, and level of anxiety about the problem. Each item is rated on a five-point Likert scale (0–4). The total score varies between 0 and 28. Categories (ISI): 0-7 No clinically significant insomnia, 8-14 Subthreshold insomnia, 15-21 Clinical insomnia (moderate severity), and 22-28 Clinical insomnia (severe). The dependent variable in this research was the insomnia score of perimenopause women who experience insomnia. The independent variable was the acupressure method, acupressure meridian points at LR(lever)-2 Xinjian, PC (Pericardium)-6 Nei guan, HT (Hearth)-7 Shenmen, ST (Stomach)-44 Neitting, SP(Spleen)-6 Sanyinjiao. The data collection process starts with the respondent signing a consent form to become a respondent, then the respondents were gathered at the Jatinom Elderly Posyandu to be given the ISI questionnaire (pre-test), then the massage was carried out at meridian points LR (lever)-2 Xinjian, PC (Pericardium)-6 Nei guan, HT (Hearth)-7 Shenmen, ST (Stomach)-44 Neitting, SP(Spleen)-6 Sanyinjiao massages takes approximately 15-20 minutes. The acupressure process for respondents was carried out 4 times in 1 month. By the end of the treatment, it was evaluated with the ISI questionnaire (post-test). The data normality test was carried out using the Shapiro-Wilk test, and the results was 0.158 and 0.291 ($p>0.05$), which means the data is normally distributed, then the analysis was carried out to see the effect of acupressure massage therapy on insomnia in perimenopause women, using the paired sample t-test. This research took an ethical review at the Ethics Committee of the Husada Jombang Health Sciences College on March 29, 2024.

RESULTS

The results of the research on the effectiveness of acupressure techniques at meridian points LR (lever)-2 Xinjian, PC (Pericardium)-6 Nei guan, HT (Hearth)-7 Shenmen, ST (Stomach)-44 Neitting, SP(Spleen)-6 Sanyinjiao to reduce insomnia problems carried out on 30 perimenopause female respondents at the Jatinom elderly posyandu, Kanigoro, Kabupaten Blitar are presented in the table below.

Table 1: The results of paired sample t-test on insomnia score of perimenopause women at the Jatinom Elderly Posyandu (n=30).

Variabel	Intervention			Sig
	Pre test Mean ±SD	Post test Mean ±SD	Δ Mean	
Insomnia score	11.7000 ±4.8929	5.8333 ±4.0350	41.333 ±8.579	0.000

Based on table 1 above, it is known that the results of the paired sample t-test analysis carried out show a p-value of 0.000 ($\alpha \leq 0.05$), meaning that there is a significant difference in insomnia scores before and after acupressure treatment in reducing insomnia in perimenopause women at the Jatinom Elderly Posyandu, Kecamatan Kanigoro Kabupaten Blitar.

DISCUSSION

Perimenopause is a transition period from the reproductive phase to the non-reproductive phase which is characterized by a reduction in the hormones estrogen and progesterone (reproductive

hormones) and generally occurs at the age of 45-51 years (McCarthy & Raval, 2020). The progesterone hormone stimulates benzodiazepines, and gamma (γ) amino butyric acid receptors which work as an anxiolytic, causing sleep disorders in perimenopause women, as well as decreasing the estrogen hormone, causing the metabolism of norepinephrine, serotonin, and acetylcholine to decrease which can reduce sleep latency (Brown & Gervais, 2020).

The respondents in this research were around 45-55 years old who experienced irregular menstrual cycles and insomnia. The room for the massage was in a separate room with an atmosphere that was not too cold and not too hot with a room temperature of 260C, with classical instrumental music added. The acupressure was carried out using the middle finger and index finger to a depth of 1.5 cm. The massage was done gently with 50x pressure in a counterclockwise rotation.

The research conducted at the Jatinom elderly posyandu with the treatment of acupressure at meridian points LR-2 obtained a *P-value* (0.0001) meant there was a significant difference in value between before and after treatment. This is in line with previous research stated that acupressure in menopausal women at the HT-7 Shenmen meridian point which was carried out for 8 weeks had a significant difference from insomnia measurements in the 4th and 8th weeks (t = 5.996, *P-value*<.001) (Bomi & Hyojung, 2023). Meridian pints HT (Hearth)-7 Shenmen dan aromatherapi bunga mawar dapat menurunkan insomnia pada wanita perimenopause dengan *p-value* sebesar 0.000 (*p-value* ≤α /0.05). Moreover, acupressure at the HT-7, PC-6, GV-20 points carried out 6 times over 2 weeks is effective in improving the sleep quality of perimenopause women (*P-value*=0.000) (Nainggolan et al, 2024).

The acupressure technique carried out on respondents (perimenopause women) used a gentle massage to a depth of 1,5cm, with the principle of touch that shows concern for the respondent, so that it can provide a feeling of calm and comfort by establishing a therapeutic relationship between the researchers and the respondent. This is the consequence of acupressure massage which activates the parasympathetic nervous system. Then, the increased response in the autonomic nerves transmits messages to the serotonin hormone which functions as a neurotransmitter that carries signals to the brain to activate the pineal gland to produce the hormone melatonin, then this melatonin hormone will inhibit the suprachiasmatic nucleus (SCN) in the anterior hypothalamus. The suprachiasmatic nucleus (SCN) plays a role in regulating circadian rhythms resulting in a decrease in sleep latency, nocturnal awakenings, and an increase in total sleep time and sleep quality (Chang et al., 2009; Waits et al., 2018). This is also confirmed by the literature review research that acupressure is effective for increasing estrogen levels in women in the perimenopause phase because acupressure at this point stimulates the serotonin hormone which can increase estrogen hormone levels so that enzyme production suppresses the activity of the serotonin reuptake transporter (SERT) (Ko & Kim, 2018). Apart from that, the massage process in acupressure uses fingers pressing on the meridian points, this aims to regulate vital energy (qi energy) so that it can help release muscle tension, increase blood circulation, and increase the body's immunity (Hmwe et al., 2020). Acupressure can provide a feeling of relaxation and calm which stimulates the sympathetic nervous system and has a positive impact on women entering the perimenopause phase (Küçükkelepçe et al., 2022).

CONCLUSION

The conclusion of this research revealed that there was a significant difference in insomnia scores before and after acupressure treatment in reducing insomnia in perimenopause women at the Jatinom Elderly Posyandu, Kecamatan Kanigoro Kabupaten Blitar. Acupressure was effective in reducing the insomnia disorders of perimenopause.

SUGGESTION

Acupressure is a complementary method that has no side effects so it can be an alternative treatment. Acupressure meridian points LR(lever)-2 Xinjian, PC (Pericardium)-6 Nei guan, HT (Hearth)-7 Shenmen, ST (Stomach)-44 Neitting, SP(Spleen)-6 Sanyinjiao can overcome insomnia because they provide a comfort and calm sensation towards the perimenopause and this method can be done independently by the women in the perimenopause phase.

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CONFLICTS OF INTEREST

The authors stated that there is no conflict of interest in this research. The whole process of the research until the publication was done by the authors without any involvement from other funders or institutions.

AUTHOR CONTRIBUTIONS

All authors fully contributed to this research during the process until publication. The primary author and co-author are involved in observing the phenomena that arise, creating and compiling the theoretical framework, gathering supporting articles, performing analysis, presenting the data, and deciding the final version to be published.

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