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The Effect of Traditional Chinese Medicine Mugwort Leaf Fumigation Therapy on Sleep Quality of Post-Partum Women

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Abstract

Background: Mugwort fumigation as a new treatment among post-partum women. The value of mugwort fumigation can be embodied in that fumigation for neurasthenia and can improve sleep quality. The nervous system exercise, regulate the function of autonomic nerves, improve, and through the sleep effect, long-term persistence can return to normal.

Objective: The aim of this study was to explore the effect of traditional Chinese medicine mugwort leaf fumigation therapy on the quality of sleep among post-partum women.

Methods: The study utilized a Quasi-experimental design as its research design. This study took 40 Chinese post-partum women as the research object. There were 20 participants in the experimental group (mugwort leaf fumigation) and 20 participants in the control group (Routine Fumigation Therapy).

Results: The result shows mean value of PSQI questionnaire results before the intervention was 15.90 in both the control group and the experimental group; this shows that the sleep quality of the post-partum women before the intervention was poor. The mean value of PSQI questionnaire results after the intervention in both routine and experimental groups was 11.90 in the control group, which was 4.00 lower than before the intervention but the sleep quality of post-partum women improved only a little; while the mean value in the experimental group was 9.40, which was 2.5 lower than before the intervention, thus, the score of PSQI questionnaire in the experimental group was lower than that in the control group.

Conclusion: Evidence from this study shows that after the intervention, the scores of PSQI questionnaire in the experimental group were lower than those in the control group, so the experimental group had a better intervention effect than the control group and had a good effect on the improvement of sleep quality in post-partum women.

Keywords*: Chinese medicine, Mugwort leaf fumigation therapy, Quality of sleep, Post-partum women.*

1. Background

Childbirth is a major life event and a source of stress. Many mothers experience reduced sleep time, decreased sleep quality, fatigue and various discomforts due to various reasons after childbirth, which seriously affects the recovery of maternal physical strength and energy, and even causes serious problems the occurrence of post-partum complications (Li, 2018). Post-partum insomnia is a condition that many mothers have experienced (Yang, 2020). Long-term insomnia leads to neurasthenia, bad temper, memory loss, and increased probability of postpartum depression. After giving birth to a baby, the mother's sleep quality decreases. There are many reasons for this: first, it may be due to the mother take care of the child and cannot sleep at ease, resulting in the symptoms of poor sleep. Second, there may be a certain relationship with physical factors. Some women have poor body

resistance after childbirth, and often suffer from various problems such as loss of appetite and indigestion, which can also affect sleep. Again, it may be caused by post-partum disease (Wu, et.al. 2020). For example, headache, dizziness, rheumatism, and other diseases after childbirth may cause poor sleep. At the same time, it may also be caused by mental factors and requires timely treatment (Wang, 2020). In severe cases, it will affect the functions of the cardiovascular system, the respiratory system, and the digestive system, which in turn lead to the occurrence of diseases. Sleep quality reduces the function of the body's immune system (Shi, 2020).

The mugwort leaf is bitter, pungent, and warm in nature. It enters the spleen, liver, and kidneys and is called "medicine herb." Mugwort is a purely positive herbal medicine that can warm and nourish women's yin and cold, so it is regarded as a natural tonic for women (Cao, 2020). Use mugwort fumigation as a new treatment in post-partum women. The value of mugwort fumigation can be embodied in that fumigation for neurasthenia and can improve sleep quality. (He, & Ren, 2021). The nervous system exercises, regulates the function of autonomic nerves, improves, and through the sleep effect, long-term persistence can return to normal.

Sleep quality induces cardiovascular and cerebrovascular diseases. Sleep quality often leads to sympathetic nervous excitement, nervousness, neuroendocrine dysfunction, abnormal regulation of the renin-angiotensin-aldosterone system, and increased renin activity, which leads to increased blood pressure and cerebral hemorrhage. Patients with obstructive sleep apnea syndrome are prone to changes in blood rheology, increased blood viscosity, platelet aggregation, resulting in thrombosis, and the onset of ischemic cerebrovascular disease (Gu, 2018).

2. Methods

This chapter contains the research design methods, study locale, sampling techniques, research instruments, data collection procedure, statistical processing and ethical considerations.

2.1 Research Design

The study utilized a Quasi-experimental design as its research design. A quasi-experiment is an empirical interventional study used to estimate the causal impact of an intervention on its target population without random assignment. It lacks elements randomly assigned to treatment or control. Instead, quasi-experimental designs typically allow the researcher to control the assignment to the treatment condition but using some criterion other than random assignment.

This study also used nonequivalent design. The researcher compared the pretest and post-test, then analysis the relationship between the variables. Independent samples t-test. Here, the researcher first calculated the average of the two groups of pretests and compared whether they are the same. If the two means did not reach a significant difference, the average scores of the two groups were compared. The difference between the means of the two groups obtained posterior was analyzed by independent sample t test.

2.2 Population and Sampling

The sampling technique is a purposive sampling. The target sample is a non-probability sample selected according to the overall characteristics and research purpose. Purposive sampling is also called judgmental, selective, or subjective sampling (Crossman, 2018). The participants were selected based on following eligibility criteria:- (1) They are all newly delivered mothers. (2) Post-partum woman with poor sleep quality. (3) Have a high school degree or above quality, three views, and the amount of knowledge reserves will be more conducive to the results of this research. (4) No history of mental illness.

In this study, there were 20 participants in the experimental group (Mugwort leaf fumigation) and another 20 participants in the control group (Routine Fumigation Therapy). This study was random which means that the researchers divided the mothers into two different groups. Using mugwort leaf fumigation therapy, the researcher analyzed the post-partum women suffering from sleep quality to determine the effect of mugwort leaf fumigation therapy on the post-partum women.

2.3 Research Instrument

The Pittsburgh sleep quality index (PSQI) was compiled in 1989 by Dr. Buysse, he is a psychiatrist at the University of Pittsburgh. The scale is used to assess sleep quality and sleep quality in patients with mental disorders and will also be used to assess sleep quality in ordinary people.

There are 9 questions in the questionnaire. The first 4 questions are fill-in questions, the last 5 are multiple-choice questions, and the fifth is 10 questions.

2.4 Validation of Instrument

PSQI was used to assess the sleep quality of subjects in the last month. The questionnaire consisted of 19 self-rated items and 5 other rated items. Among them, the 19th self-evaluation project and the 5th other evaluation project do not participate in the scoring. Only 18 self-evaluation items participating in the evaluation are introduced here (see the attached questionnaire for details). The 18 projects consist of seven components, each of which is scored on a scale of 0 to 3. The sum of the scores is the total PSQI score. The score ranges from 0 to 21. The higher the score, the worse the sleep. Participants took about 10 minutes to complete the test. The PSQI score is 0-21.

- 0~5 Best sleep quality
- 6~10 Better sleep quality
- 11~15 Good sleep quality
- 16~21 Poor sleep quality

Participants in this study were allowed to participate if their PSQI questionnaire score was higher than 15 points, and a score lower than 15 points indicated that their sleep quality was better and did not require treatment.

2.5 Intervention of the Study

In this study, the conventional intervention of mugwort fumigation therapy was used as the independent variable, and the influence on the sleep quality of the post-partum woman was the dependent variable. There were 20 participants in the experimental group (mugwort leaf fumigation) and 20 participants in the control group (Routine Fumigation Therapy). The researchers divided these women into different groups.

The course of this study was 5 consecutive days (one course), once a day, starting at 3:00 p.m. for 30 minutes each time administered with the assistance of the researcher and hospital gynecologists and nurses. Before the start of the study, a PSQI questionnaire was conducted to confirm the degree of sleep quality. During the treatment, a PSQI questionnaire was conducted to determine the degree of sleep quality. After 5 days of treatment, PSQI questionnaire was used to investigate the degree of sleep quality.

2.5.1 Control group intervention: Maternal sleep quality ratings were determined prior to treatment. The researcher made an appointment with the mother before treatment; called the woman before treatment; measured the woman's vital signs, including blood pressure, pulse, and sleep status; asked the mother about the symptoms and time of sleep quality; specific operation and treatment methods); health education for mothers (the researcher demonstrated the relevant knowledge and operation with mothers, and instructed the mothers on the correct fumigation method); instructed women on the correct routine fumigation method (Angelica 40g/bag); let mothers The researcher paid attention to sleep and timing; made an appointment for the next treatment.

2.5.2 Experimental group interventions: Maternal sleep quality ratings were determined prior to treatment. The researcher made an appointment with the mother before treatment; called the woman before treatment; measured the woman's vital signs, including blood pressure, pulse, and sleep status; asked the mother about the symptoms and time of sleep quality; specific operation and treatment methods); health education for mothers (the researcher must demonstrated relevant knowledge) and operation with mothers, and instructed mothers on the correct fumigation method);instructed women on the correct mugwort leaf fumigation method (mugwort leaf 30g/bag); let mothers. The researcher paid attention to sleep and timing; made an appointment for the next treatment.

3. Data Collection Procedure And Intervention Protocol

3.1 Intervention Protocol

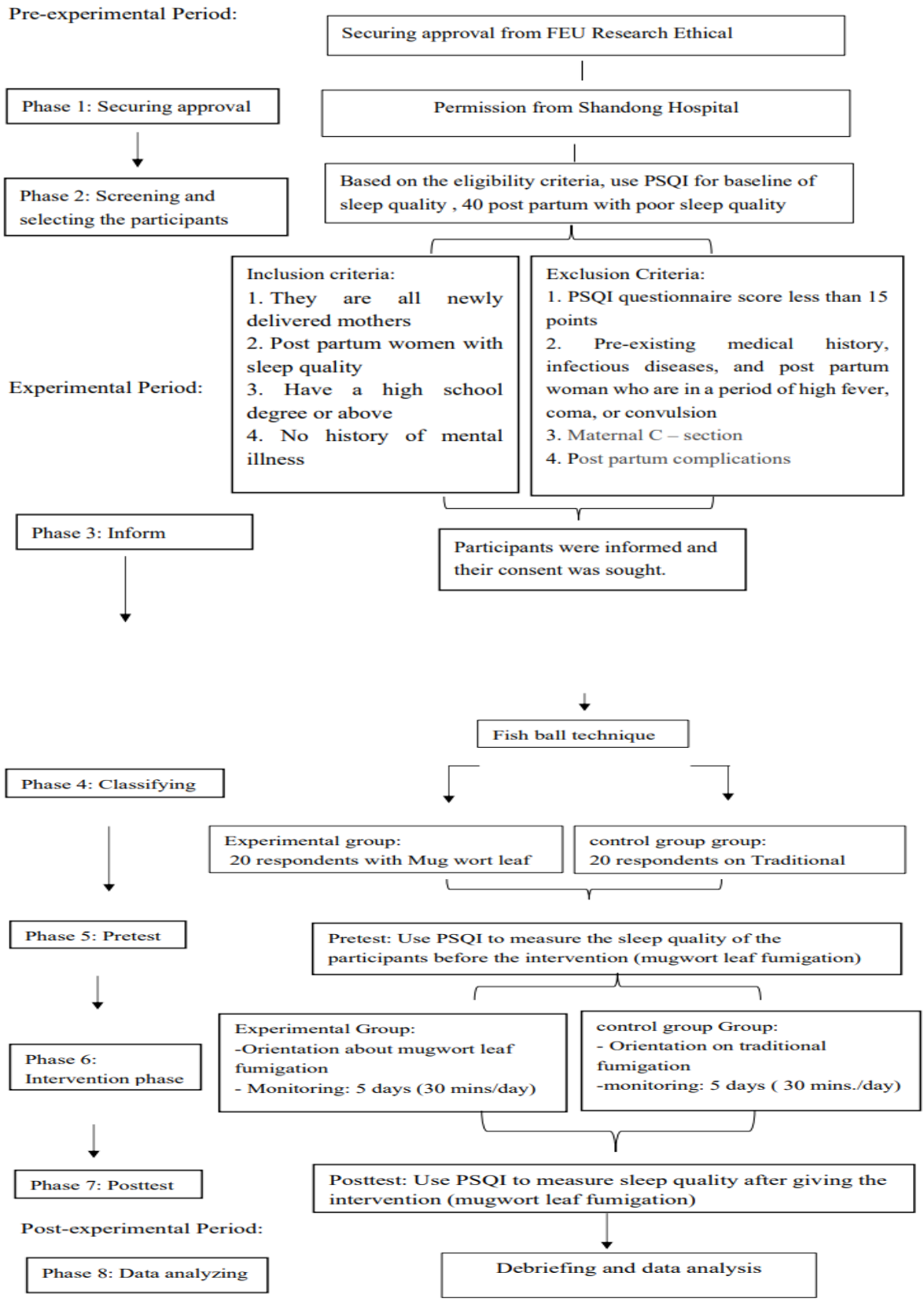

Figure 1: Intervention Protocol

3.2 Fish Ball Technique

Fish ball activities are used to manage group discussions. General ideas, rather than a large group of people having an open discussion about something.

This can be tricky to deal with, and often only benefits a few active players.

A smaller group was discussed in isolation, while the other participants sat outside and observed without interruption.

Fewer people = easier promotion.

Pre-experimental

Period Phase 1-Securing approval

The researcher requested approval from Far Eastern University and the Ethics Committee to conduct this study, from the Dean of Graduate Studies and from the hospital where to conduct the research study.

Phase 2-Screening and selecting the participants

The participants in this study were screened in the Obstetrics and Gynecology in China. Whether the mother has sleep quality was confirmed through the PSQI questionnaire, and the researcher dealt with it with the assistance of the hospital's obstetrics and gynecology department, nurses, and psychological counselors. The PSQI questionnaire was administered before the study to screen the mothers for the degree of sleep quality. Before treatment, a PSQI questionnaire was administered to determine the degree of sleep quality. After the treatment, the PSQI questionnaire was used to investigate whether the degree of sleep quality of the patients was relieved. The researcher selected the participants based on eligibility criteria. Post partum women who met these criteria were included in the study, and Post partum women who did not meet these criteria were excluded.

Phase 3-Informed consent

The researcher introduced and explained the scope and purpose of the study to the control group and the experimental group, and signed an informed consent form. She disseminated the informed consent among the selected participants, and they had the right to refuse or withdraw. Through this process, the researcher, the selected participants, and witnesses have enough knowledge and information about the entire research process. The subject was the person who signed the informed consent form.

Phase 4-Collection of Data

First, the researcher obtained permission from the Dean, FEU Ethics Committee and from the hospital. After approval, the researcher proceeded to the research locale for the recruitment of participants, who met the criteria, and evaluated the population profile questionnaire and the PSQI questionnaire. Secondly, the researcher and nurses instructed these women to perform mugwort leaf fumigation therapy.

In this study, the conventional intervention of mugwort fumigation therapy was used as the independent variable, and the influence on the sleep quality of the post-partum woman was the dependent variable. There were 20 participants in the experimental group (mugwort leaf fumigation) and 20 participants in the control group (Routine Fumigation Therapy). The researcher divided these women into different groups. Phase 5-Pretest phase

Experiment

In the experimental group, the post partums diagnosed with sleep quality were evaluated by the Numerical Rating Scale (NRS) before receiving traditional Chinese medicine mugwort leaf fumigation treatment and routine intervention.

Phase 6-Intervention phase

The duration of this study was five consecutive days (a course of treatment), once a day, at 3 o'clock in the afternoon, and each time is 30 minutes. The management was assisted by the researcher and hospital gynecologists and nurses. Before starting the study, a PSQI questionnaire was conducted to confirm the degree of sleep quality, a PSQI questionnaire was conducted every day after treatment to determine the degree of sleep quality, and a PSQI questionnaire was administered 5 days after the study to measure sleep quality scores.

Experimental

The researcher divided the experiment into two groups, the first group was given a mugwort leaf fumigation treatment, and the second group was given a conventional treatment.

The first group of 20 participants received traditional Chinese medicine mugwort leaf fumigation on the first day; the second group of 20 participants received conventional therapy on the first da. It was complicated to select post-partum women with sleep quality who met the requirements of this study, so this study randomly divided 20 participants into experimental and 20 participants into control groups for treatment.

The experimental group implemented once a day 30 minutes each time for 5 consecutive days Five days is a one-course treatment of fumigation). After one course of treatment, it can be proved whether the maternal sleep quality is relieved. If the sleep is relieved, the next course of treatment can be continued for fumigation. In this study, a course of mugwort leaf fumigation was performed to prove whether it can alleviate sleep quality.

Intervention

Chinese medicine mugwort leaf fumigation therapy

Intervention methods were used in this study: In this study, mugwort leaf fumigation therapy was used as an auxiliary therapy to intervene in the experimental group. Once a day, 30 minutes each time, for 5 consecutive days.

Control group treatment

Step 1: The researcher made an appointment with the mother;

Step 2: The researcher called the women before treatment;

Step 3: The researcher measured the female's vital signs, including blood pressure, pulse, and sleep status;

Step 4: The researcher asked about the symptoms and timing of sleep quality in the post-partum;

Step 5: The researcher asked about the maternal treatment plan; (Women must clearly understand the specific operation and treatment of this study);

Step 6: The researcher provided health education for mothers; (Researcher must conduct relevant knowledge and operation demonstrations with mothers, and guide them to the correct fumigation method);

Step 7: The researcher instructed post-partum women on the correct method of Routine Fumigation Therapy (Angelica. Traditional Chinese medicine for sleep quality.40g/bag); Angelica and mugwort leaf have different medicinal effects and different dosages. All are formulated by professional pharmacists;

Step 8: The researcher let the mothers paid attention to sleep conditions and time;

Step 9: The researcher made an appointment for the next treatment time.

Medicine

Mugwort leaf

It is used for dispelling cold and relieving pain, warming menstruation to stop bleeding. It is used for reducing abdominal cold and pain, irregular menstruation, cold uterus, infertility, vomiting blood, epistaxis, uterine bleeding, bleeding during pregnancy; external treatment of skin itching. Vinegar, moxa and charcoal are warmed to stop bleeding. Used for bleeding due to deficiency and cold.

Mugwort leaf fumigation

Mugwort leaf fumigation mainly relies on heat energy and atomized steam, adopts the mugwort leaf fumigation bed, and is fully automatic and humanized design. The heat of mugwort leaf fumigation and the purely positive medicinal power of mugwort leaf can remove the cold in the body through the perineum, warm the uterus, improve blood circulation, disinfect and relieve itching, and improve sleep.

Experimental group treatment

Step 1: The researcher made an appointment with the mother;

Step 2: The researcher called the women before treatment;

Step 3: The researcher measured the female's vital signs, including blood pressure, pulse, and sleep status;

Step 4: The researcher asked about the symptoms and timing of sleep quality in the post- partum;

Step 5: The researcher asked about the maternal treatment plan; (Women must clearly understand the specific operation and treatment of this study);

Step 6: The researcher provided health education for mothers; (Researcher must conduct relevant knowledge and operation demonstrations with mothers, and guide them to the correct fumigation method);

Step 7: The researcher instructed post-partum women on the correct method of Mugwort Leaf Fumigation (The specification quantity of mugwort leaf is 30g/bag.); Angelica and mugwort leaf have different medicinal effects and different dosages. All are formulated by professional pharmacists;

Step 8: The researcher let the mothers paid attention to sleep conditions and time;

Step 9: The researcher made an appointment for the next treatment time;

Phase 7-Post test phase.

Post-experimental Period

Phase 8-Statistical Treatment of Data.

The PSQI was used to evaluate for the sleep quality score index of all the participants. All survey information is input into SPSS for analysis. SPSS provides description of the corresponding data, bivariate statistical data analysis, prediction of numerical results, and prediction of identification groups. Frequency and percentage were used to get the demographic profile in terms of age, educational level, occupation, and marital status.

The Mean and Standard Deviation were used to get the sleep quality score index before and after intervention. ANOVA was used to compare the sleep quality index score of the experimental and control group.

4. Data Analysis

The researcher used the frequency and percentage to get the demographic profile of the participants. To get the sleep quality index score of the experimental and control group before and after intervention the researcher utilized the Mean and Standard Deviation. To compare the pretest and posttest of both groups, the researcher used ANOVA.

5. Ethical Considerations

This study has been submitted to the Far Eastern University Ethics Review Committee (ERC) for review and approval. The study was conducted in strict compliance with the standards of ethical principles for health research, in particular the seven elements of the National Code of Ethics. These include social value, informed consent, vulnerability of study participants, risks, benefits and security, privacy and confidentiality of information, justice and transparency. (National, 2017)

6. Result

Table 1: Sleep Quality Among Parturient Women Before the Intervention

		Herbal Fumigation Group (Control)		Mugwort Fumigation Group (Experimental)	
Scores Interval	Description	Frequency	Percentage	Frequency	Percentage
0-5	Best Sleep Quality				
6-10	Better Sleep Quality				
11-15	Good Sleep Quality	3	15	2	10
16-21	Poor Sleep Quality	17	85	18	90
Total		20	100	20	100
Mean		17.15 (Poor Sleep Quality)		17.10 (Poor Sleep Quality)	
SD		1.39		1.17	

According to Table 1, the results of the PSQI questionnaire showed that the pre-intervention maternal sleep quality in the routine fumigation group was 11-15, with 3 having good sleep quality and 17 having poor sleep quality; the pre-intervention maternal sleep quality in the mugwort fumigation group had 2 having good sleep quality and 18 having poor sleep quality. The pre-intervention sleep quality score was 17.15 in the routine fumigation group and 17.10 in the mugwort fumigation group; both scores reflected poor sleep quality prior to treatment. The number of best sleep quality and better sleep quality was 0 in both groups, indicating that the sleep quality of women before the intervention was less optimistic.

This is mainly because poor quality, long time to fall asleep, sleep quality and daytime sleepiness are the main sleep problems of pregnant women in China (Li, 2018). Poor sleep quality, both during pregnancy and post-partum, is reflected in three main areas: subjective sleep quality, sleep latency, and sleep quality (Jia,2019). More than 20% of women felt poor or very poor sleep quality during pregnancy and delivery. About 20% of pregnant women need 60 minutes to fall asleep. About half of pregnant women have weekly sleep quality due to various reasons affecting their nighttime sleep (Yang, 2021). The increased pressure in the uterus during pregnancy increases the chances of going to the toilet at night, as well as the need to feed the newborn at night after delivery. This may lead to the development of sleep quality. If the mother-to-be does not sleep well, along with other factors in the body, this can have a number of effects on the health of the mother and baby. For example, common snoring conditions, breathing disorders and lack of oxygen can easily cause gestational hypertension and affect the mother-to be's health. The growth and development of the fetus can also be affected if it is in a state of intermittent hypoxia. In addition, poor sleep quality of the mother-to-be can led to decreased immunity and susceptibility to colds and infections (Zhang, 2021).

According to the comfort care model, the meaning of comfort care includes physical, psychological, social and spiritual comfort. Among them, physical comfort refers to the most direct feeling of the body, and the patient's requirement for physical comfort is one of the important conditions to meet comfort. Therefore, applied in the study, it is possible to use the theory to observe the state of the mothers and judge the experimental conclusions in a more informed way.

Table 2: Sleep Quality Among Post Partum Women After the Intervention

		Routine Fumigation Group		Mugwort Fumigation Group	
Scores Interval	Description	Frequency	Percentage	Frequency	Percentage
0-5	Best Sleep Quality				
6-10	Better Sleep Quality			14	70
11-15	Good Sleep Quality	12	60	6	30
16-21	Poor Sleep Quality	8	40		
Total		20	100	20	100
Mean		14.95(Good Sleep Quality)		9.60(Better Sleep Quality)	
SD		1.90		1.98	

As can be seen from Table 2, the mean value of 14.95 in the routine fumigation group was significantly higher than the mean value of 9.60 in the mugwort fumigation group, indicating that the intervention effect of the mugwort steaming group was better than that of the herbal steaming group. After the trial, it was found that the sleep quality of the conventional group also improved, proving that the conventional group also contributed to the improvement of the women's sleep quality, but the effect was not as pronounced.

This is because the benefits of post-partum fumigation are that it improves blood circulation, unblocks breast meridians, promotes lactation, and also helps to strengthen maternal fitness. The disadvantage is that it can cause skin burns and even damage skin tissue. It is important to grasp the time and timing of fumigation. The size of the steam. Through fumigation and evaporation of sweat, the heat generated by mugwort sitz bath fumigation and the pure medicinal power of mugwort can clear the cold energy in the body through the perineum, warm the uterus, improve blood circulation, disinfect and stop itching, and improve sleep conditions. Symptoms such as cramps caused by pregnancy (Qin, 2018).

According to Maslow's Hierarchy of Needs theory. Understanding the sleep state needs of the proband is an important prerequisite for applying the hierarchy of needs theory to motivate the proband. In different families, different lifestyle needs are full of differences and change frequently. Therefore, researchers should conduct regular surveys by various means to understand the unmet sleep needs of mothers and then provide targeted motivation.

Table 3: Difference in the Sleep Quality of Post-Partum Women Between Control Group and Experimental Group Before the Intervention

Group	Mean	SD	Computed Mann Whitney Test Value	p-value	Interpretation	Decision
Herbal Fumigation (Control)	17.15	1.39	198	0.956	Not Significant	Do not Reject Null Hypothesis
Mugwort Fumigation (Experimental)	17.10	1.17				

Note: p-value ≤ 0.05 – significant, p-value > 0.05 – not significant

As can be seen from Table 3, the mean P value for both interventions before the intervention was 0.956, which was greater than the significance level of 0.05, so the null hypothesis was not rejected. This indicates that before the intervention, there was no significant difference in maternal sleep quality between the control and experimental groups, and they were comparable.

This is mainly because the incidence of postpartum depression caused by post-partum sleep quality ranged from 5.36% to 11.09%. It can be as high as 30% from 6 weeks post-partum to 6 months post-partum. Some data show that the recurrence rate of post post-partum depression in patients with post-partum depression is as high as 30%~50%. With the increased attention and awareness of the disease, its incidence is increasing year by year, which should attract the attention of society and obstetrics and gynecology professionals. (Jiang, 2020).

Severe insomnia and postpartum insomnia are mostly caused by nighttime breastfeeding affecting sleep, endocrine system abnormalities or postpartum depression and anxiety. When a woman is pregnant, her body's endocrine system undergoes major changes, especially the secretion of estrogen and progesterone is different from before. The balance changes in order to meet the needs of herself and the fetus. In addition, as the fetus grows, the heart load increases. The pregnant woman must make certain adjustments to meet her needs. After delivery, the endocrine system does not return to normal in a short period of time. Although the cardiac load has been reduced, the circulatory system still needs some time to recover, leading to insomnia in women during labor (Song, 2019).

Chronic insomnia and sleep deprivation is a manifestation of neurological dysfunction, which is directly related to stress, overthinking, and overwork in daily life. In this case, first of all, it is necessary to have an optimistic attitude and mood in daily life and avoid overexcitement and overexcitement. It is advisable to have appropriate physical exercise in daily life. Patients also need to take medications for treatment and can take tranquilizer and orlistat to treat neurological disorders.

According to Dorothea Orem's Self-care theory. Individuals have a unique capacity for self-care and therapeutic self-care needs over a certain period of time. When this need for care is greater than the ability to self-care, nursing services are needed. The mothers had some degree of sleep quality problems as evidenced by the difference in sleep quality before the intervention. (Jia, 2019)

Table 4: Difference in the Sleep Quality of Post-Partum Women Between Control Group and Experimental Group Before the Intervention

Group	Mean	SD	Computed Mann Whitney Test Value	p-value	Interpretation	Decision
Herbal Fumigation (Control)	14.95	1.90	11	0.001	Significant	Reject Null Hypothesis
Mugwort Fumigation (Experimental)	9.60	1.98				

Note: p-value ≤ 0.05 – significant, p-value > 0.05 – not significant

As can be seen in Table 4, the mean P-value of 0.001 is less than the significance level of 0.05 for the two intervention methods after the intervention, so the null hypothesis is rejected. This indicates that there is a significant difference in the quality of maternal sleep between the control and experimental groups before the intervention.

This is mainly since there is a positive correlation between post-partum sleep quality and postpartum depression. Women with post-partum sleep quality should be intervened as soon as possible to reduce the risk of depression. (Zhou, 2020). Among healthy pregnant women, sleep quality is associated with the development of postpartum depression. Poor sleep quality in the third trimester increases the risk of depression in the first post-partum month. Shortened sleep duration may be a negative pregnancy outcome (high risk factor for pregnancy-induced hypertension, gestational diabetes, and cesarean section. High-quality sleep is fundamental to maternal physical recovery after delivery and is an important indicator of maternal physical and mental health and quality of life. (Xiang, 2014). To date, few studies have consistently focused on the quality of women's sleep during pregnancy and post-partum, as well as on depression during pregnancy and delivery, and the impact of breastfeeding on sleep quality (Qin, 2018).

Based on the Roy Adaptation Model, Roy used a six-step process: behavioral assessment; stimulant assessment; nursing diagnosis; goal setting; and intervention and assessment. Maternal sleep quality in Table 4 was improved by behavioral assessment, stimulant assessment, nursing diagnosis, goal setting, intervention, and assessment.

Table 5: Difference in the Sleep Quality of Post-Partum Women Before and After the Intervention in the Control Group and Experimental Group

Group	Mean	SD	Computed Wilcoxon Sign Test Value	p-value	Interpretation	Decision
Herbal Fumigation (Control)						
Before	17.15	1.39	-2.808	0.005	Significant	Reject Null Hypothesis
After	14.95	1.90				
Mugwort Fumigation (Experimental)						
Before	17.10	1.17	-3.932	0.001	Significant	Reject Null Hypothesis
After	9.60	1.98				

Note: p-value ≤ 0.05 – significant, p-value > 0.05 – not significant

As can be seen from Table 5, after the intervention, the P-value for the routine fumigation method was 0.005; the P-value for the mugwort fumigation method was 0.001; the P-value for the routine fumigation method was less than the significance level of 0.05, so the null hypothesis was rejected; the P-value for the mugwort fumigation method was less than the significance level of 0.01, so the null hypothesis was rejected. This indicates that there is a significant difference in maternal sleep quality between the control and experimental groups after the intervention.

This is because mugwort fumigation mainly relies on heat and atomized steam, and the use of Dumai fumigation bed is a fully automatic and humanized design. Together with the intelligent temperature control design, the safety performance is high. The effects of mugwort fumigation are mainly as follows. It has the effect of moving qi and blood and eliminating blood stasis. It can make qi and blood more harmonious and Ying and Wei more peaceful. (Wu, 2019) It can improve the symptoms of Qi and Blood deficiency and provide some relief to the symptoms of pale face and cold hands and feet. It can harmonize the yin and yang of the body. Mugwort fumigation has the effect of tonifying blood, lowering blood, regulating qi and blood, and relieving pain. It can strengthen the immunity of the body and has the effect of preventing diseases. It can strengthen the body and prolong longevity (Wang, 2020).

Mugwort has a pungent, bitter taste and is warm in nature. It is suitable for bleeding and abdominal pain caused by deficiency cold. It is effective for women with irregular menstruation and abdominal pain, as well as for stress, insomnia, and hair loss. It is a good medicine for gynecology. It is very useful for irregular menstruation, uterine cold, infertility, bleeding, excessive menstruation, pregnancy bleeding; poor sleep, relief of insomnia, high tension, and daily mental stress (Huang, 2020).

7. Conclusion

Evidence from this study shows that after the intervention, the scores of PSQI questionnaire in the experimental group were lower than those in the control group, so the experimental group had a better intervention effect than the control group and had a good effect on the improvement of sleep quality in post-partum women. Before the intervention, the women's sleep quality is poor. After the intervention, women's sleep quality in the experimental group is better than that in the control group. Before the intervention, there is a significant difference in the quality of maternal sleep between the control and experimental groups. After the intervention, there is a significant difference in maternal sleep quality between the control and experimental groups.

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