

**THE EFFECTIVENESS OF LAVENDER AROMATHERAPY AND
CHAMOMILE TEA BREW ON SLEEP QUALITY OF PREGNANT
MOTHERS TRIMESTER 3 AT PMB (INDEPENDENT PRACTICE
MIDWIFE) OF MIDWIFE JEANNE, S. S.SiT, M.Kes**

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ABSTRACT

Background : Pregnancy is a physiological thing, as gestational age increases, there are physical and psychological changes in the mother which in turn can cause complaints in pregnancy. One of the complaints that are often experienced by pregnant women, especially pregnant women in the third trimester, is the problem of insomnia. One of the efforts that can be done to overcome the problems and complaints of insomnia in pregnant women is by providing lavender aromatherapy and steeping chamomile tea

Purpose : I know Effects of Lavender Aromatherapy and Steeping Chamomile Tea on Sleep Quality for Pregnant Women in the 3rd trimester. *Methodology:* This type of research is a Quasi Experimental with 1 *group pre and post-test design* . The population in this study were all 3rd trimester pregnant women with a gestational age of 28 weeks - 38 weeks, who were willing to be respondents and had complaints of sleep disorders with a total sample of 16 people. The sampling technique is *purposive sampling* . The research was conducted at PMB Midwife Jeanne S, S.SiT ., M.Kes.Bdn in July 2022. The data used is primary data. Data were analyzed by univariate and bivariate with *Wilcoxon t test* . The data was processed using a computer with the SPSS program.

Results : The results of hypothesis testing with *Wilcoxon* showed that there was a change Lavender Aromatherapy and Chamomile Tea infusion on Sleep Quality for Pregnant Women in the 3rd trimester at PMB Midwife Jeanne S , SS i T., M.Kes.Bdn with a p value of 0.001 ($p > 0.05$). **Conclusion:** There is an effectiveness of giving lavender aromatherapy and infusion of chamomile tea in overcoming insomnia in third trimester pregnant women. **Suggestion:** Midwives can provide information and therapy to pregnant women to use lavender aromatherapy and chamomile tea as an effort to overcome the problem of insomnia in pregnancy.

Keywords : Lavender Aromatherapy , Insomnia, Sleep Quality, Chamomile Tea Brewing

INTRODUCTION

During pregnancy, the mother's body undergoes several changes. One of them affects sleep quality disorders during pregnancy. Several factors cause pregnant women to experience insomnia or sleep disturbances, including back pain, increased frequency of urination at night, anxiety, abdominal pain, hormonal changes, and an

enlarged stomach. According to *the World Health Organization* (2018), globally, the prevalence of insomnia, which is one of the sleep disorders in pregnant women worldwide, is 41.8%. The prevalence of insomnia in pregnant women in Asia is estimated at 48.2%, Africa 57.1%, America 24.1%, and Europe 25.1%.

In Indonesia, the increase in the number of pregnant women in Indonesia is very significant, increasing every year. Based on data from the West Java Provincial Health Office, it has the highest number of pregnant women in Indonesia in 2019 which is 960,932 people and in 2020, which is 974,000 people. In Depok, the number of pregnant women in 2020 was 48,928 people. So in this case, the government seeks to improve the health status of pregnant women in Indonesia so that it runs well and optimally.

Pregnancy is associated with many physical, hormonal, and physiological changes that can affect sleep. From 66-94% of women report sleep disturbances during pregnancy, one of the manifestations is insomnia. Insomnia is defined as one or more of the following: difficulty initiating or maintaining sleep, getting out of bed too early, and/or complaints of nonrestorative sleep. Sleep deprivation, another common complaint, is an inadequate amount of sleep, with normal sleep outside of pregnancy being 7 to 9 hours of sleep a night. (Reichner, 2015)

Wilson (2018) revealed that women can experience insomnia during all stages of pregnancy, but it tends to occur more often in the first and third trimesters. There are 25% of pregnant women complaining of sleep disturbances in the first trimester and an increase of almost 75% in the third trimester (Jamalzehi, 2017).

There are several factors that cause poor sleep quality in pregnant women. Normal physiological changes during pregnancy include an increase in uterine size and physical discomfort, as well as an increase in the hormone progesterone which contributes to better sleep quality. It is worse for pregnant women in the third trimester. The increase in the hormone progesterone has the effect of relaxing muscles, including the bladder (Jordan *et al*, 2018).

Psychological changes experienced by pregnant women are caused by excessive anxiety, worry and fear for no reason, which eventually leads to depression so that the quality of sleep is disturbed. This stressful condition causes the muscles of the body to tense up, especially the muscles in the birth canal which will become stiff and hard, thus disrupting the process of opening the birth canal. Then, pregnant women who experience sleep disorders will be slower to deal with stimuli and have difficulty concentrating (Mirghaforvand). *et al*, 2017).

From the results of previous research conducted by Lestari and Maisaro (2019) with the journal *The Effect of Lavender Aromatherapy on Sleep Quality for Pregnant Women in the third trimester*, it proved that lavender aromatherapy can improve the sleep quality of pregnant women in the third trimester. property of Meihartati and Iswara (2020) that there is an effect of lavender aromatherapy on sleep quality in third trimester pregnant women in Samarinda in 2020. From the results of this study, the use of lavender aromatherapy can be a safe choice for pregnant women in improving sleep quality.

The United States Food and Drug Administration (FDA) states that chamomile tea is included in the category of general beverages that can be consumed during pregnancy. This is in accordance with Patwal's (2022) statement that the *United State's The Food and Drug Administration* (FDA) recommends that pregnant women consume chamomile tea in moderation a day for its health benefits. Chamomile tea

has calming properties that can relieve symptoms of morning sickness in early pregnancy. In addition, chamomile tea can also be a solution for pregnant women who have sleep problems such as insomnia.

Chamomile (*Matricaria recutita*) is a mild sedative compound and can also be used to aid digestion. In addition, this chamomile can also be used as a pain reliever in the morning which is commonly experienced by pregnant women. Approaching labor, this chamomile is able to regulate uterine contractions which can help the labor process (Briggs *et al* , 2021)

From a preliminary study at PMB Midwife Jeanne, S.ST., M.Kes.Bdn ., it was found that 100% of pregnant women in the third trimester experienced sleep disturbances. This sleep disorder is caused by fetal movement, anxiety, fatigue, back pain, waking up wanting to urinate and having difficulty finding a comfortable position while sleeping.

From several studies for therapy in third trimester pregnant women in overcoming insomnia, the average use of lavender aromatherapy . And currently, there is no research that uses chamomile tea in overcoming insomnia in 3rd trimester pregnant women. Steeping Chamomile Tea in Overcoming Insomnia in 3rd Trimester Pregnant Women

METHODS

The research design in this study was a *Quasy Experimental Design* in the form of *One -Group Pretest-Posttest Design without control group* . The population of this study was 3rd trimester pregnant women with a gestational age of 28 weeks - 38 weeks . While the sample in this study were pregnant women in the third trimester who experienced insomnia complaints as many as 16 people. The sampling technique in this study used *purposive sampling*. The instrument in this study used the PSQI . questionnaire.

RESEARCH RESULTS AND DISCUSSION

Univariate Analysis Results

Table 1 . *Distribution of frequency and percentage based on the characteristics of respondents in the third trimester of pregnancy (n=16)*

Characteristics of Respondents	Group	
	F	%
Age		
<20 years old	1	6.25
20-35 years old	13	81.25
Age >35 years old	2	12.5
Education		
SENIOR HIGH SCHOOL	4	25
Diploma	5	31.25
Bachelor	7	43.75
Work		
IRT	12	75
Private	4	25
Etc	0	0
Obstetric Status		
Primipara	6	37.5
Multipara	10	62.5
Grandemultipara	0	0

Gestational Age		
7 months	5	31.25
8 months	9	56.25
9 months	2	12.5
BAK frequency per day		
4-8 times	2	12.5
> 8 times	14	87.5
Back pain	7	43.75
Stomach contraction	2	12.5
baby movement	2	12.5
Sleeping position	1	6.25
Anxiety/worried	4	25
History of other diseases		
Not	16	100
Yes	0	0

Source: Research data (processed) in 2022

Based on table 1 above, it is known that the majority of the age of pregnant women are in the range of 20-35 years (81.25%); the majority of respondents have the latest educational background Bachelor (43.75%); the occupation of the majority of respondents as housewives (75%); the majority of respondents have obstetric status (gravida) namely multigravida (62.5%); the majority of respondents had a gestational age of 8 months and above (56.25%); the majority of respondents have a frequency of urination with a category of more than 8 times per day (87.5 %); the majority of respondents had complaints of discomfort felt during the third trimester of pregnancy, namely back pain (43.75%); and the majority of respondents do not have a history of disease (100%).

Table 2 . Frequency distribution before the use of lavender aromatherapy and chamomile tea on sleep quality in third trimester pregnant women (n=16)

		N	Min	Max	mean	Std. Deviation
Sleep Before	Quality	16	8	14	11.00	1,862
Sleep After	Quality	16	3	9	5.06	1982
Valid N (listwise)		16				

Source: Research data (processed) in 2022

Based on table 2, it is known that insomnia in third trimester pregnant women before lavender aromatherapy and chamomile tea brewed , there were 16 respondents (100%).

Table 3 . Frequency Distribution after Use of Lavender Aromatherapy and Chamomile Tea on Sleep Quality in 3rd Trimester Pregnant Women

No	Sleep quality after intervention	N	Percentage (%)
1	Poor sleep quality	5	31.2
2	Good sleep quality	11	68.8
Amount		16	100.0

Source: Research data (processed) in 2022

And after lavender aromatherapy and chamomile tea brewed , there were 11 respondents (68.8%) experiencing better sleep quality, and 5 respondents (31.2%) still experiencing poor sleep quality in third trimester pregnant women.

Table 4. Average sleep quality of pregnant women in the third trimester before and after treatment with Lavender Aromatherapy and Chamomile Tea.

		N	Min	Max	mean	Std. Deviation
Sleep Quality Before		16	8	14	11.00	1,862
Sleep Quality After		16	3	9	5.06	1,982
Valid (listwise)	N	16				

Source: Research data (processed) in 2022

Bivariate Analysis Results

Table 1. Wilcoxon . Test Results

Sleep quality	N	mean	SD	MD	P value
Before	16	11	1,862	5.94	0.001
After	16	5.06	1,982		

Discussion

Univariate Analysis

1.The level of sleep quality of pregnant women in the 3rd trimester before the Lavender Aromatherapy and Chamomile Tea Steeping

The level of sleep quality of pregnant women in the third trimester was obtained before the Lavender Aromatherapy and Chamomile Tea infusion treatment. ie all respondents have poor sleep quality 100%. Meanwhile, the average level of sleep quality for pregnant women in the third trimester before being treated with lavender aromatherapy and chamomile tea was 11.0 with a standard deviation of 1.862.

quality of sleep was measured before being given lavender aromatherapy and infusion of chamomile tea using a sleep quality questionnaire in the form of The Pittsburgh Sleep Quality Index (PSQI) which consists of 7 aspects of sleep parameters , namely subjective sleep quality and sleep latency . , sleep duration (sleep duration) , effective sleep duration in bed (habitual sleep efficiency) , sleep disturbance (sleep disturbance) , use of sleep medication (sleep medication) , and daytime dysfunction .

Based on this study, 16 respondents (100%) experienced insomnia before being given the intervention. This is in line with Reichner's (2015) statement that from 66-94% of women report sleep disturbances during pregnancy, one of the manifestations is insomnia. Insomnia is defined as one or more of the following: difficulty initiating or maintaining sleep, getting out of bed too early, and/or complaints of nonrestorative sleep .

This is also in line with Wilson's (2018) statement that women can experience insomnia during all stages of pregnancy, but it tends to occur more often in the first

and third trimesters. There are 25% of pregnant women complaining of sleep disturbances in the first trimester and an increase of almost 75% in the third trimester (Jamalzehi, 2017).

The results showed that most of the respondents who were pregnant women (43.75%) had 6-7 hours of sleep (sleep duration). This is in line with the results of research by Reichner (2015) that sleep deprivation, another common complaint, is an inadequate amount of sleep, with normal sleep outside of pregnancy being 7 to 9 hours of sleep a night.

Based on the results of the study, the majority of respondents in the third trimester of pregnancy said that the frequency of urination was < 8 times / day. This is in line with Jordan et al (2018) that many factors cause poor sleep quality in pregnant women. Normal physiological changes during pregnancy such as an increase in uterine size and physical discomfort, as well as an increase in the hormone progesterone contribute to poor sleep quality in third trimester pregnant women. Increased progesterone has the effect of relaxing muscles, including the bladder. This is also in line with Yanti 's (2017) statement that the causes of insomnia are muscle cramps, frequent urination at night, and shortness of breath.

Based on the results of the study, respondents in the third trimester of pregnant women said that sleeping difficulties were caused by discomfort felt during the third trimester, namely back pain, abdominal contractions, fetal movement, sleeping position and anxiety/worrying. This is in line with Wilson (2018) explaining that some of the symptoms during the third trimester can include insomnia and pain. Pain can occur in any part of the body of pregnant women during this time. From the back, to the hips, to the stomach, there are many places that may be painful and uncomfortable. Then, the psychological causes of insomnia are depression, stress, anxiety (anxiety) (Kemenkes RI, 2018).

The assumption of the researcher in this study, all pregnant women in the third trimester before being treated with lavender aromatherapy and steeped chamomile tea experienced poor sleep quality and the highest sleep quality score was 14 and the lowest was 8. During the third trimester of pregnancy, mothers often experience many factors including frequent urination, waking at night, back pain, movement frequent and anxious babies that interfere with the quality of the mother's sleep.

2. The level of sleep quality of pregnant women in the third trimester after the treatment of Lavender Aromatherapy and Chamomile Tea

The level of sleep quality of pregnant women in the third trimester was obtained after the treatment of Lavender Aromatherapy and Chamomile Tea. namely 5 people (31.2%) with poor sleep quality and 11 people (68.8%) with good sleep quality. While the average level of sleep quality of pregnant women in the third trimester after being treated with lavender aromatherapy and the chamomile steeping is 5.06 with a standard deviation of 1.982.

Based on this study, researchers used therapies in the form of lavender aromatherapy and chamomile tea to treat insomnia in third trimester pregnant women. This research is in line with Sari and Anggorowati (2020) that non-pharmacological ways to overcome insomnia are massage, exercise, aromatherapy and herbal drinks. . Aromatherapy and herbal drinks such as lavender and chamomile contain a sedative effect that can improve sleep quality.

This lavender flower aromatherapy contains linalool which functions as a sedative effect so that when someone inhales lavender flower aromatherapy, the aroma released stimulates the olfactory nerve cilia receptors located in the olfactory epithelium to transmit the aroma to the bulbosolfactorius via the olfactory nerve. The bulbosolfactorius is related to the limbic system. The limbic system receives all information from the auditory system, visual system, and olfactory system. Limbic is the inner structure of the brain that is shaped like a ring which is located below the cortex cerebrum. The most important parts of the limbic system that deal with smell are the amygdala and hippocampus. The amygdala is the center of emotion and the hippocampus is associated with memory (including the scent produced by lavender flowers) then through the hypothalamus as a regulator, the aroma is carried into a small but significant part of the brain, namely the raphe nucleus. The effect of the stimulated raphe nucleus is the release of serotonin which is a neurotransmitter that regulates the onset of sleep (Jordan et al, 2018).

This is used by researchers to carry out work procedures, namely lavender aromatherapy is put into a 60 ml refill bottle by adding about 15-20 drops of essential oil to 50 ml of sterile water and the spray is set every 10 minutes. The spray starts when the mother is in a pre-sleep state, 20 minutes before the usual time for the mother to start sleeping and the room is closed (Lestari and Maisaro, 2019).

Researchers used chamomile tea steeping because according to Patwal (2022) that chamomile tea can be safe for pregnant women in the third trimester if you drink it in moderate amounts. Chamomile tea has calming properties. In addition, chamomile tea can also be a solution for pregnant women who have sleep problems such as insomnia. There isn't much research on the safety or efficacy of herbal teas, including chamomile during pregnancy. However, it is considered a safe category of chamomile tea drinks that can be consumed during pregnancy by the United States Food and Drug Administration (FDA).

1 gram chamomile tea bags with chamomile tea brewed which was used by researchers to be advised to pregnant women respondents by dividing into 2 parts to be consumed during the day and at night, each 100 ml. The method of brewing this tea is in accordance with Patwal (2022), which is as follows: Boil one glass of water (200ml). Pour boiling water into the cup containing the chamomile tea bag. Leave it for five to ten minutes depending on how concentrated you want it to be. Cover the mug so that the aroma remains. Then, remove the tea bag. And you can add a teaspoon of sugar/honey to enjoy freshly brewed chamomile tea.

According to the researcher's assumptions, from the research conducted, it was seen that there was an improvement in sleep quality after being given the intervention, 3rd trimester pregnant women who had been given lavender aromatherapy and chamomile tea interventions experienced good sleep quality, this is because the provision of aromatherapy is very important for pregnant women who can help. One of the complaints during pregnancy is sleep disturbances. Aromatherapy provides a sense of comfort and calm so that it can help reduce various complaints in pregnancy such as anxiety, stress, pain and can also reduce insomnia so that it can improve the quality of sleep for pregnant women in the third trimester. In addition, the content of chamomile tea is also good for improving sleep quality.

Bivariate Analysis***1. Effect of sleep quality before and after lavender aromatherapy and chamomile tea steeping***

The results using the Wilcoxon test stated that there was a significant effect in giving lavender aromatherapy and infusion of chamomile tea in overcoming insomnia on the level of sleep quality of pregnant women in the third trimester with a p value of 0.001 ($p > 0.05$).

From the results of statistical tests, it can be concluded that there is a significant effect on changes in the quality of sleep for the better in third trimester pregnant women after 1 week of giving lavender aromatherapy and steeping chamomile tea. This proves that lavender aromatherapy and chamomile tea steeping have calming/sedative properties that can help regulate the central nervous system. From the results of previous research conducted by Lestari and Maisaro (2019) with the journal *The Effect of Lavender Aromatherapy on Sleep Quality for Pregnant Women in the Third Trimester*, it has been proven that lavender aromatherapy can improve the sleep quality of pregnant women in the third trimester.

continued with the research journal *The Effect of Lavender Aromatherapy on the Sleep Quality of Pregnant Women* belonging to Meihartati and Iswara (2020) that there was an effect of lavender aromatherapy on sleep quality in third trimester pregnant women in Samarinda in 2020. Based on the results of the study, the use of lavender aromatherapy can be a safe choice for mothers pregnancy in improving sleep quality.

For the use of steeping chamomile tea, according to Patwal (2022) explained that there is not much research on the safety or efficacy of herbal teas, including chamomile during pregnancy. However, it is considered a safe category of chamomile tea drinks that can be consumed during pregnancy by the United States Food and Drug Administration (FDA).

The researcher assumes that, based on the research conducted, there are differences in sleep quality between before and after the intervention, so that there is a significant difference in the increase in sleep quality before and after good sleep. So the researchers concluded that giving lavender aromatherapy and brewing chamomile tea is indeed good for improving the sleep quality of pregnant women.

The research conducted has several limitations that may affect the results of this study, namely as follows:

1. Respondents selected must meet the inclusion criteria. Due to time constraints, the originally planned sample of 20 selected respondents was only 16 respondents.
2. This research only used 1 group experiment pre test and post test . So, for future researchers, it would be better if using a quasi-experimental study with a control group design.

CONCLUSIONS AND SUGGESTIONS***Conclusion***

Based on the results of the study, it can be concluded that there is a significant effect on giving lavender aromatherapy and infusion of chamomile tea, on changes in the quality of sleep of pregnant women with a p value of 0.001 ($p > 0.05$).

Suggestion**1) For pregnant women**

The results of this study are expected to provide clear information for the public regarding the effect of the effectiveness of using lavender aromatherapy and chamomile tea in overcoming insomnia in third trimester pregnant women.

2) For Midwives

The results of this study are expected to be an input or source of information as well as a knowledge base for midwives about the relationship between the effectiveness of the use of lavender aromatherapy and chamomile tea in overcoming insomnia in third trimester pregnant women . so that midwives can provide complementary therapy for pregnant women.

3) For Health Practice Land Agencies

The results of the study are expected to be input and as tangible evidence of the Effectiveness of Using Lavender Aromatherapy and Chamomile Tea in Overcoming Insomnia in 3rd Trimester Pregnant Women with sleep disorders so that it can be used as an SOP for insomniacs in pregnant women.

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