

## THE EFFECT OF PRENATAL YOGA EXERCISES ON THE SLEEP QUALITY OF PREGNANT WOMEN IN THE 3<sup>rd</sup> TRIMESTER AT PMB E, DEPOK CITY NOVEMBER 2022 – FEBRUARY 2023 PERIOD

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**Abstract:** Sleep disorders are experienced by most pregnant women, the way to overcome this is by doing prenatal yoga exercises that are organized and safe. Changes in sleep patterns result from high levels of circulatory hormones and physical changes associated with pregnancy. **The purpose** of the study was to determine the effect of prenatal yoga gymnastics on the sleep quality of pregnant women in the III trimester at PMB E for the period of November 2022 – February 2023. **Method** This type of research is quantitative using the pre-experimental method one rroup pretest-post test only, where the subjects in this study are TM III pregnant women using the Pittsburgh Sleep Quality Index (PSQI) sleep quality questionnaire. The population of this study was all pregnant women in the III trimester at PMB E. Determining the size of the sample using purposive sampling, a sample of 50 people was obtained. Bivariate analysis using wilcoxon test. **The results** of this study showed that before the implementation of prenatal yoga gymnastics a total of 43 pregnant women in the III trimester had poor sleep quality and after the implementation of prenatal yoga gymnastics the quality of sleep both increased to 41 pregnant women in the III trimester. The result of the willcoxon test  $p = 0.000$  which means  $p < 0.05$  i.e. H1 is accepted. **The conclusion** of the results of this study shows that there is an influence of prenatal yoga gymnastics on the sleep quality of pregnant women in the III Trimester at PMB E for the period of November 2022 – February 2023. **Advice** for pregnant women in the III trimester to do light physical activity such as regular prenatal yoga exercises and maintain a good quality of sleep at night.

**Keywords:** Prenatal Yoga; Sleep Quality; Pregnant Women; Trimester III

## **1. INTRODUCTION**

Every woman who is declared normal without reproductive problems will experience pregnancy (Setiana, 2019). Pregnancy is a series of processes experienced by a woman which begins with the meeting between the egg and sperm in the ovary, followed by the formation of a zygote, then growth and development occur until the formation of a fetus. The gestation period is generally around 280 days or 40 weeks. The gestation period is divided into three trimesters (Widatiningsih & Dewi, 2017).

Pregnancy is a normal and natural process, where there are many changes both physically and psychologically. With these changes, pregnant women can cause discomfort in their pregnancy and this discomfort for every mother in the trimester of pregnancy is always different. Discomfort experienced by pregnant women such as heartburn, difficulty sleeping (insomnia), fatigue (fatigue), back pain, hypersalivation (ptyalism), increased frequency of urination, joint pain, nausea, nasal congestion, leg cramps and varicose veins vein (Sarwono, 2018).

Yoga is a philosophy where the everyday thought patterns, along with all our desires, worries, fears and confusions finally disappear. Prenatal yoga is a movement prepared for pregnant women. (Putu Suyoga Hindhuyana et al, 2021). The advantage of prenatal yoga is that yoga can unite our true selves and begin to understand who we really are, understand who we are and the purpose of our existence and movements that are full of awareness, gentleness , and compassion.

Based on a preliminary study conducted at PMB E, Depok City, there were data that 70% of the total number of TM III pregnant women experienced sleep disturbance complaints before doing prenatal yoga and 30% did not experience it because they took part in prenatal yoga. On November 13, 2022 in interviews at PMB E Depok City to 10 third trimester pregnant women who visited PMB E Depok City that 7 pregnant women complained of frequent awakenings at night due to increased frequency of urination and back pain causing discomfort to the mother's sleep and in 3 pregnant women said if the mother could sleep soundly and comfortably.

Decreased sleep quality is caused by several things including irregular sleep patterns, lack of exercise etc. Pregnant women who are sleep deprived can cause the body to feel less refreshed and easily tired which can result in uterine contractions in the first trimester which can cause abortion and in the second and third trimesters it can cause premature labor. While the quality of sleep is the achievement of NREM and REM sleep stages. The basic physiological needs of humans consist of hygiene, nutrition, sleep, comfort, oxygenation, and elimination. The basic need that is easiest to fulfill is the need for sleep, rest and sleep as important as other basic needs. The benefits of sleep will be felt when a person achieves good sleep quality (Nurul F, 2019). The impact of sleep disorders or lack of quality sleep can put the fetus at risk, pregnancy and during childbirth. Therefore, pregnant women who experience sleep disturbances during pregnancy are recommended to receive special monitoring (Dewiani, 2020).

One of the efforts made to overcome sleep disturbances in pregnant women is Prenatal yoga. Prenatal yoga is a type of modification of hatha yoga that is adapted to the conditions of pregnant women. The purpose of prenatal yoga is to prepare pregnant women physically, mentally and spiritually during pregnancy until the birth process. With careful preparation, pregnant women will be more confident and gain confidence when they are born. have a smooth and safe delivery (Tia Pratigyo, 2017). This is reinforced by the opinion of Perry (2015), alternative therapies needed for sleep disorders in pregnancy are massage and energy therapy such as massage, acupuncture, therapeutic touch, healing touch and mind body healing such as imagery, prayer, reflection and meditation/yoga. .

Based on this background, the researcher is interested in conducting research with the title "The Influence of Prenatal Yoga on the Sleep Quality of Trimester III Pregnant Women in the Independent Practice of Midwives E in Depok City for the Period of November 2022 - February 2023".

## **2. LITERATURE REVIEW**

Sleep disturbances during pregnancy can also result in excessive daytime sleepiness, fatigue, an irresistible desire to sleep at any time, and an increased desire to take naps (Jones and Bartlett, 2016). Good sleep quality is associated with positive things such as reduced daytime sleepiness and better health (Harvey et al., 2018). Less activity during the day can cause disruption of the circadian cycle. Disruption of circadian rhythms can also be caused by being awake at night so that during the day it will be used for sleep (Tasman et al., 2015).

Respondents' sleep quality was indicated by the presence or absence of activity dysfunction during the day. Respondents who experience activity dysfunction will find it difficult to complete tasks or to concentrate on carrying out activities during the day. This can cause difficulty waking or drowsiness and fatigue during the day. Based on this study, most pregnant women did not experience difficulty in holding back sleepiness and had no difficulty in maintaining concentration when completing tasks during the day. Poor sleep quality is characterized by a decrease in daily activities, feeling weak, tired, decreased endurance, and instability of vital signs, depression, anxiety, and difficulty concentrating (Potter and Perry, 2015).

The adaptation process for a woman during pregnancy is a difficult situation. (Syaiful et al, 2019). Some women may not necessarily get through it. One of the government programs used to overcome these problems is to form a pregnant class program (Sasniari NN, 2019). One of the manifestations of carrying out pregnancy classes is by doing pregnancy exercise which has now developed into a collaboration between breathing, psychology and movement called prenatal yoga. (Nurbaiti, 2020).

Yoga is a philosophy where the everyday thought patterns, along with all our desires, worries, fears and confusions finally disappear. Prenatal yoga is a movement prepared for pregnant women. (Putu Suyoga Hindhuyana et al, 2021). The advantage of prenatal yoga is that yoga can unite our true selves and begin to understand who we really are, understand who we are and the purpose of our existence and movements that are full of awareness, gentleness , and compassion.

## **3. RESEARCH METHODS/METHODOLOGY**

The research design uses a quasi-experimental method that uses a one group pre and post test design. This study was to see the effect of prenatal yoga exercise on sleep quality in third trimester pregnant women at PMB E, Depok City. The research was conducted from November 2022 – February 2023. The sample was third trimester pregnant women who took part in prenatal yoga at PMB E. The instrument used in this study was the Pittsburg Sleep Quality Index (PSQI) questionnaire which was filled out by each respondent who participated in prenatal yoga. In this study the sampling technique used was purposive sampling. The reason for selecting the purposive sampling method in this study was because the respondents met the inclusion and exclusion criteria. Data processing used Microsoft Office Excel 2007 for descriptive analysis and the software program (Statistic Product Service Solution) for windows release 25 for non-parametric test analysis, namely the Wilcoxon test.

#### 4. RESULTS AND DISCUSSION

Respondents in the study were third trimester pregnant women who attended prenatal yoga classes at PMB E Depok City. Determination of the sample is calculated based on the theoretical formula Univariate analysis

**Tabel 1.**

**Pretest Sleep Quality Score Results**

Sleep Quality	Frequency	Percentage	
Good		7	14
Bad	43	86	
Total	50	100	

Based on the table results, it was found that there were 7 respondents or 14% who had good sleep quality and the remaining 43 respondents or 86% had poor sleep quality.

**Tabel 2.**

**Posttest Sleep Quality Score Results**

Sleep Quality	Frequency	Percentage
Good	41	82%
Bad	9	18%
Total	50	100%

Based on the table results, it was found that there were 41 respondents or 82% who had good sleep quality and the remaining 9 or 18% of respondents had poor sleep quality.

Results of Normality Test Analysis

The calculation obtained 50 respondents

<b>Tests of Normality</b>			
	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest	.412	50	.000
Posttest	.467	50	.000
a. Lilliefors Significance Correction			

Based on the results of the normality test using the Shapiro-Wilk test in the normality test results table above, it was found that the pretest and posttest included data that were not

normally distributed with a significance  $<0.05$ . Then a hypothesis test was carried out using the Wilcoxon test as a substitute for the T test in pairs because the normality test results obtained were data that were not normally distributed.

### Hypothesis testing

**Tabel 4.**

#### Wilcoxon Test Result Analysis

<b>Test Statistics<sup>a</sup></b>	
	Posttest - Pretest
Z	-5.667 <sup>D</sup>
Asymp. Sig. (2-tailed)	.000
<i>a. Wilcoxon Signed Ranks Test</i>	
<i>b. Based on negative ranks.</i>	

Based on the table regarding the Wilcoxon test, the Asymp value is obtained. Sig. of 0.000  $<0.05$ , then H1 is accepted and the data concludes that there is an effect of prenatal yoga exercise on the sleep quality of third-trimester pregnant women at the Mandiri Midwife E Center, Depok City, November 2022 – February 2023.

Sleep Quality of Third Trimester Pregnant Women Before Giving Prenatal Yoga Exercises Based on the results of research conducted on 50 respondents by giving the PSQI questionnaire as many as 18 questions in the form of questions, in table 1 shows that out of 50 respondents almost all respondents had poor sleep quality, namely 43 pregnant women third trimester. Sleep quality itself includes 7 parameters, namely subjective sleep quality, sleep latency, sleep duration at night, sleep efficiency, sleep disturbances at night, use of sleeping pills and disruption of daytime activities.

According to the researchers, most of the respondents stated that they were often sleepy during the day and had difficulty sleeping because pregnant women who have entered their third trimester will easily wake up at night due to increased frequency of urination, overheating at night and uncomfortable sleeping positions as the mother's stomach grows. So, diversion of sleep time often occurs in pregnant women with frequent sleepiness during daytime activities and the results of cursory observations by researchers on the condition of the respondents during the pre-test found that most of the respondents looked lethargic, had black areas around the eyes, and were unable to concentrate fully. Respondents who experienced good sleep quality did not look black in the area around the eyes and looked fresh.

Respondents' sleep quality was indicated by the presence or absence of activity dysfunction during the day. Respondents who experience activity dysfunction will find it difficult to complete tasks or to concentrate on carrying out activities during the day. This can make it hard to wake up or drowsiness and fatigue during the day.

Based on this study, most pregnant women did not experience difficulty in holding back sleepiness and had no difficulty in maintaining concentration when completing tasks during the day. Poor sleep quality is characterized by a decrease in daily activities, feeling weak, tired, decreased endurance, and instability of vital signs, depression, anxiety, and difficulty concentrating (Potter and Perry, 2015). Sleep disturbances during pregnancy can also result in excessive daytime sleepiness, fatigue, an irresistible desire to sleep at any time, and an

increased desire to take naps (Jones and Bartlett, 2016). Good sleep quality is associated with positive things such as reduced daytime sleepiness and better health (Harvey et al., 2018). Less activity during the day can cause disruption of the circadian cycle. Disruption of circadian rhythms can also be caused by being awake at night so that during the day it will be used for sleep (Tasman et al., 2015).

#### Sleep Quality of Third Trimester Pregnant Women After Giving Prenatal Yoga

Based on the results of research conducted on 50 respondents by giving the PSQI questionnaire as many as 18 questions in the form of questions, in table 2 shows that out of 50 respondents almost all respondents have good sleep quality, namely a number of 41 third trimester pregnant women while respondents who have not experienced a change or have good sleep quality bad sleep a number of 9 third trimester pregnant women. Sleep quality itself includes 7 parameters, namely subjective sleep quality, sleep latency, sleep duration at night, sleep efficiency, sleep disturbances at night, use of sleeping pills and disruption of daytime activities.

According to the researchers, an increase in the quality of sleep for pregnant women in the third trimester is due to an increased feeling of comfort, calm and peace after the implementation of prenatal yoga, although in parameter no. 5 disturbances during sleep at night such as waking up to go to the bathroom, difficulty breathing comfortably feels pain still often occur but the frequency has begun to decrease because it is a physiological response of the body. The decrease in frequency is because when the body performs guided movements and meditation, the erythrocytes that carry oxygen from the blood to the brain become more fluent so that the body feels refreshed, calm, easy to concentrate and comfortable when resting.

Symptoms or complaints experienced by respondents normally occur in late pregnancy (2<sup>nd</sup> and 3<sup>rd</sup> trimester). Many pregnant women often wake up at night, experience sleep disturbances or insomnia, find it difficult to maintain sleep, and are restless at the end of pregnancy. Normal symptoms in the third trimester are low back pain, leg pain, frequent urination (Salaka, 2017). Physiologically sleep complaints of pregnant women are caused by the movement and growth of the fetus which can put pressure on the urinary bladder/bladder so that it can increase the frequency of urination, increase body weight or the body becomes heavier so that it can change the structure of the spine. That thing cause pregnant women to experience discomfort in the lower back area. This discomfort also occurs in the extremities with complaints of cramps. These conditions can cause psychological changes in pregnant women, physical changes that occur during pregnancy and nearing delivery can cause anxiety and worry, this can sometimes affect the quality of sleep of pregnant women (Pilliteri, 2015). Anxiety is a risk factor that can cause a decrease in sleep quality in the third trimester of pregnancy (Situmorang, 2018). Research by Palifiana and Wulandari (2018) states that physical discomfort in pregnancy is related to the sleep quality of third trimester pregnant women. Discomfort from ambient temperature and lack of ventilation can also affect sleep.

#### The Effect of Prenatal Yoga Exercises on Sleep Quality for Trimester III Pregnant Women

Based on the results of the research conducted on 50 respondents by giving the PSQI questionnaire as many as 18 questions in the form of questions that were asked before the implementation of prenatal yoga and after the implementation of prenatal yoga, it was found in table 1 and table 2 shows that of the 50 respondents before the implementation of prenatal yoga, almost all respondents 43 third trimester pregnant women had poor sleep quality and after prenatal yoga exercise, almost all respondents had good sleep quality increased, namely 41 third trimester pregnant women.

Based on statistical tests, it was also found that there was a significant difference between the pretest and posttest scores, so it can be concluded that there is an effect of prenatal yoga

exercise on the sleep quality of third-trimester pregnant women at PMB E, Depok City, November 2022 - February 2023 period with a significance value of  $p (0.000)$  which means  $p < 0.05$  which means the hypothesis is accepted. In accordance with Marwiyah's research (2018) it states that there is an effect of pregnancy exercise on the sleep quality of pregnant women in the 2nd and 3rd trimesters in the working area of the Kasemen Health Center. Research by Nonik Ayu Wantini (2022) that there is a decrease in the types of sleep disturbances in pregnant women with TM III before and after *ujjayi pranayama*, including the inability to fall asleep within 30 minutes after lying down, waking up in the middle of the night, and experiencing pain. Ermiyati (2022) also conducted research and found that there was a significant effect between the activity of participating in yoga and the sleep quality of third trimester pregnant women. According to Qonitatul Yumna. (2020) found that there was an effect of pregnancy exercise on the sleep quality of pregnant women with a gestational age of 13 to 30 weeks in the Working Areas of the Batu and Junrejo Health Centers.

## **CONCLUSION**

Based on the results of the study, it was shown that out of 50 respondents there were results, before prenatal yoga exercise for third trimester pregnant women at the Mandiri Midwife E Practice, Depok City for the period November 2022 – February 2023 with poor sleep quality had the highest number (43 respondents) while the number of good quality was 7 respondents.

Based on the results of the study, it was shown that out of 50 respondents there were results, after prenatal yoga exercises for third trimester pregnant women at the Mandiri Midwife E Practice, Depok City for the period November 2022 - February 2023 the highest number had good sleep quality (41 respondents) while the number of poor quality was 9 respondents.

There is an effect of prenatal yoga exercises on the sleep quality of third-trimester pregnant women at the Mandiri Midwife E Practice in Depok City for the period November 2022 – February 2023.

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