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Research Article

## Discomfort of Pregnant Women on The Quality Sleep of Third Trimester Pregnant Women

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### ABSTRACT

**Background:** Physical changes in the third trimester of pregnancy will appear due to physiological changes and psychological changes that cause discomfort. This uncomfortable condition causes sleep disturbances in the mother. **Objective:** To determine the relationship between discomfort in pregnancy and the quality of sleep of third trimester pregnant women at the Makasar Health Center. **Method:** This was a descriptive analytic study and a cross sectional study design. Determination of the number of samples using the sample size application resulted in 40 samples of pregnant women in the third trimester. The sampling technique used purposive sampling. When the study was conducted in September-November 2020. The research instrument used the Pittsburgh Sleep Quality (PSQI) questionnaire with cronbach alpha 0.83 and the cronbach alpha 0.86 physical discomfort disorder questionnaire was tested for validity with  $r\text{-count} > 0.367$ . Data were processed by crosstab and analyzed by Chi-square. **Results:** Most of the respondents experienced discomfort (66.7%) and experienced poor sleep quality (70.0%). The association between pregnancy discomfort and sleep quality of third trimester pregnant women with a p value of 0.030. **Conclusion:** There is a relationship between discomfort in pregnancy and the quality of sleep in the third trimester of pregnant women. **Recommendation:** From this research, it is hoped that it can be used as input for health workers, especially nursing, to provide education on how to reduce pregnancy discomfort and good sleep quality in third trimester pregnant women.

**Keywords:** Third trimester pregnant women; discomfort; sleep quality

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### INTRODUCTION

According to the National Sleep Foundation in America, 35% of young adults aged 18-29 years report having poor sleep quality compared to adults aged 30-64 years despite sleeping the recommended number of hours.<sup>1</sup> In 2018, there was research that said the prevalence of insomnia in Indonesia reached 26 million people or 10% of the total 238 million Indonesian population. This number is still the highest in Asia.<sup>2</sup> Sleep disturbances are more common during pregnancy, the older the gestational age, the more sleep disturbances occur.<sup>3</sup> Based on previous research conducted on 60 third trimester pregnant women at MOSC Medical College Hospital,

Kolenchery which was studied by Joseph et al., the prevalence was that almost all respondents, namely 93.3%, had poor sleep quality in third trimester pregnancy, while those who had good sleep quality is only 6.7%.<sup>4</sup>

During pregnancy you will experience hormonal and physical changes such as nocturia, breathing problems, back pain, and swelling of the legs. In a previous study conducted by Sukroni there were 14% of pregnant women who did not have discomfort, 78% had mild discomfort and 8% had severe discomfort.<sup>5</sup> These hormonal and physical changes will cause discomfort that will affect changes in sleep and the quality of sleep for pregnant women. Pregnant women who have good sleep quality will also have good health for

the mother and fetus. If the quality of sleep is poor, it will have an impact on physical and psychological health, therefore the need for sleep also increases during pregnancy. Sleep rest is one of the physiological needs that must be fulfilled optimally, especially in pregnant women.<sup>6,7</sup>

Poor sleep quality with aspects of bedtime, wake cycle and sleep continuity during pregnancy is associated as a potential cardiometabolic risk factor. Hypertension (preeclampsia) and metabolic disease (gestational diabetes mellitus) can also be acute complications during pregnancy. Preeclampsia and gestational diabetes mellitus are associated with maternal and perinatal morbidity and also have long-term health consequences for the mother and fetus.<sup>8</sup> From the results of a preliminary study previously conducted on 50 third trimester pregnant women at the Makassar Health Center, 33 people experienced poor sleep quality. The purpose of this study was to determine the relationship between discomfort in pregnancy and sleep quality for third trimester pregnant women at the Makassar Health Center in 2020.

## RESULTS AND DISCUSSION

**Table 1:** Characteristics of respondents

Characteristics	Frequency	%
<b>Age</b>		
20-35 years	17	56.7
< 20 and > 35 years	13	43.3
<b>Profession</b>		
Housewife	11	36.7
Work	19	63.3
<b>Educational</b>		
Secondary education	17	56.7
Higher education	13	43.3
<b>Gravida</b>		
Primigravida	17	56.7
Multigravida	13	43.3

Table 1 shows that most pregnant women are in the age group of 20-35 years. This age is the ideal age because it has a low risk of complications occurring because the reproductive organs at that age are more mature. The results of this study are supported by data from the 2018 Indonesian Women's Profile which shows that there are more productive ages between the ages of 15 and 60 compared to other age groups.<sup>9</sup>

The results showed that the educational level characteristics were dominated by pregnant women in their third trimester with secondary education levels (junior high school/senior high school/equivalent). This is consistent with the educational status of women aged 15 years and over in DKI Jakarta, which shows that the percentage of those with

## METHODS AND MATERIALS

This research is a quantitative research with analytic descriptive research type. The design of this study used a cross-sectional approach to analyze the relationship between discomfort in pregnancy and the sleep quality of third trimester pregnant women. This research was conducted at the Makassar District Health Center. The population in this study were pregnant women with a total of  $\pm 60$  people in November based on data owned by the KIA at the Makassar District Health Center in 2020 using a sample of 30 third trimester pregnant women. Sampling used purposive sampling where sampling was taken with certain considerations including being willing to be a respondent without coercion, being willing to fill out a Googleforms questionnaire and having adequate internet, being able to read, and not having other diseases. In this study, the Pittsburgh Sleep Quality Index (PSQI) questionnaire was used, which was designed by Buysse in 1989 to measure sleep quality and a physical comfort disorder questionnaire. This research has received ethical approval from the Research Ethics Committee, Health Polytechnic of Jakarta III No. KEPK-PKKJ3/S.127/XI/2020.

secondary education status is higher than those with primary and higher education status.<sup>9</sup>

The results showed that third trimester pregnant women were dominated by working mothers. This is in line with data on women in the global workforce where in 2017 as the participation rate increases, the number of female workers also increases. The characteristics of third trimester pregnant women who were studied last were gravida. In this study, most of the third trimester pregnant women were primigravida mothers. This finding is in accordance with the results of the 2013 Basic Health Research survey, namely the first trimester of pregnancy, namely 81.3%, while the coverage of examinations for pregnant women in the third trimester was 70.0%.<sup>10</sup>

**Table 2:** Distribution of the Frequency of Discomfort in the Pregnancy of Third Trimester Pregnant Women

Discomfort in the Pregnancy	Frequency	%
No	10	33.3
Yes	20	66.7
Total	30	100

Table 2 shows that out of 30 respondents, 20 pregnant women experienced discomfort during pregnancy (66.7%), while 10 pregnant women did not experience any discomfort during pregnancy (33.3%). During pregnancy there are physiological changes that can cause discomfort for pregnant women, especially in the third trimester. The discomforts of pregnancy in this study were grouped into two, namely not experiencing pregnancy discomfort and experiencing pregnancy discomfort. In accordance with the theory of pregnancy according to Health UCSF Medical Center Women's pregnancy produces many physical changes. During pregnancy, the heart works harder, body temperature rises slightly, body secretions increase, joints and ligaments are more flexible, and hormones change.<sup>11</sup> Likewise, according to Shamandi et al during pregnancy,

women will experience a lot of physical and hormonal changes but these changes are normal. These changes cause minor discomforts during pregnancy such as back pain and leg cramps.<sup>12</sup> This research is in line with the theory (Macdonald, 2011) that women experience lower back or pelvic pain during pregnancy. This is not life threatening but causes discomfort and stress for most pregnant women, especially in the third trimester.<sup>13</sup>

If the discomfort in pregnancy is not resolved, it will affect the physical and psychological aspects of the mother and fetus. This discomfort will cause stress or anxiety that affects the hypothalamus to stimulate the endocrine glands that regulate the pituitary gland. This reaction will increase hormone production and cause symptoms such as palpitations, rapid pulse and breathing, excessive sweating.<sup>14</sup>

**Table 3:** Distribution of the Frequency of Sleep Quality in the Pregnancy of Third Trimester Pregnant Women

Sleep quality	Frequency	%
Good	9	30.0
Poor	21	70.0
Total	30	100

Table 3 shows that out of 30 respondents, 21 pregnant women had poor sleep quality (70.0%) while 9 pregnant women had good sleep quality (30.0%). This research is also supported by the results of a study conducted on 292 pregnant women in Turkey who were studied by Sut, Asci and Topac which showed that the sleep quality of pregnant women in their third trimester was worse.<sup>15</sup> Sleep disturbances that occur in pregnant women due to an increase in the hormone estrogen progesterone and physiological changes. Meanwhile, psychological factors are most likely due to concerns about baby care, especially women with their first pregnancy.<sup>16</sup>

One of the causes of sleep disturbance referred to in this study is difficulty breathing. This is in line with the theory Hegewald and Crapo.<sup>17</sup> The chest undergoes significant structural changes in pregnancy, one of which is the subcostal angle of the ribs and lower chest wall circumference increases and the diaphragm moves upwards. These changes are necessary to accommodate the enlarging uterus and increase the mother's weight. Apart from that, other causes of sleep disorders include waking up in the

middle of the night to go to the bathroom, snoring, feeling pain and other causes. In this study, sleep disturbances were experienced in third trimester pregnant women twice a week, pregnant women explained that other causes of sleep disturbances were difficulty adjusting sleeping positions, lower abdominal pain, contractions, increased frequency of urination so that they often wake up to go to the room showers, and having toddlers who wake up and cry at night. This research is in line with research conducted by Huang, Thuy and Yen which reported that 40.3% of pregnant women experienced sleep disturbances up to two times a week and no one complained that this problem occurred more than twice a week.<sup>16</sup>

In one of the PSQI items there is a measurement of sleep quality for using sleeping pills, but in this study it did not measure sleep quality for using sleeping pills in pregnancy, this is an exclusion criterion in this study. Therefore, those items that are not analyzed are considered zero in calculating the score. Pregnant women are not recommended to take hypnotic drugs or sedatives for fear of causing teratogenic effects.<sup>18</sup>

**Table 4:** Relationship of Discomfort in Pregnancy with Sleep Quality in Third Trimester Pregnant Women

Discomfort in Pregnancy	Sleep Quality							
	Good		Poor		Total		OR	P Value
	n	%	n	%	n	%		
No	6	60.0	4	40.0	10	100	8.500	0.030
Yes	3	15.0	17	85.0	20	100		
Total					30	100		

The results of the analysis showed that pregnant women in the third trimester did not experience pregnancy discomfort and experienced more good quality sleep as many as 6 respondents (60.0%). Meanwhile, 17 respondents (85.0%) experienced discomfort in their third trimester of pregnancy with poor sleep quality. Furthermore, based on the chi-square test, it can be concluded that there is a relationship between discomfort in pregnancy and the sleep quality of third trimester pregnant women with a p-value = 0.030 (p value <0.05). From the analysis results, it was also obtained an Odds Ratio (OR) value of 8.50, which means that pregnant women who experience discomfort during pregnancy have an 8.50 times chance of experiencing poor sleep quality.

These findings indicate agreement with research conducted by Sochacki-w (2020) who reported that the quality of sleep of pregnant women decreased and reported sleep problems due to frequent awakenings in the middle of the night to sleepiness during the day.<sup>19</sup> Nearly 80% of pregnant women report napping during the day, this is done to compensate for disturbed night sleep and less sleep duration. Therefore, napping should become a habit for expectant mothers<sup>20</sup>. In addition, there are physical discomforts associated with pregnancy which can cause disrupted sleep patterns including back pain, contractions, frequent urination and difficulty breathing, especially in the third trimester. The results of this study indicate that there is conformity with the theory of IzciBalserak and Lee in a longitudinal study of 35 women, sleep quality decreased progressively during the last 5 days of pregnancy and of 20 pregnant women reported that they could not fall asleep because of contractions.<sup>21</sup> Sleep disturbances are more common during pregnancy, it is noted that nocturia is a common complaint affecting sleep quality and leg cramps increase by 75% in the third trimester.<sup>15</sup>

According to Xu et al sleep problems have become an important public health problem and problems such as insufficient sleep duration and poor sleep quality are also

common problems during pregnancy. Short sleep duration is associated with an increase in gestational diabetes mellitus. Pregnant women with diabetes mellitus are at increased risk of preeclampsia and cesarean delivery.<sup>22</sup> Newborns are at high risk of macrosomia or excess birth weight, hypoglycemia and jaundice.<sup>23</sup> In addition, sleep duration of 6 hours or less and 9 hours or more can increase the risk of coronary heart disease and other cardiovascular diseases<sup>24</sup>. The quality of sleep in third trimester pregnant women must be considered because during this trimester there are many hormonal and physiological changes.<sup>16</sup> This research is in line with the research conducted by Ko et al showed that third trimester pregnant women have a short sleep duration.<sup>25</sup>

## CONCLUSION

There is a relationship between pregnancy discomfort and sleep quality in third trimester pregnant women. Physical discomfort experienced during pregnancy can affect the fulfillment of basic human needs, especially the need for sleep rest, especially in the third trimester of pregnancy in order to maintain health during pregnancy and before delivery.

It is hoped that this research will serve as input for developments in nursing regarding pregnancy discomfort and sleep quality for third trimester pregnant women. In addition, health workers can improve health services, especially for third trimester pregnant women.

The importance of health education and promotion regarding the need for sleep for pregnant women which aims to improve the health status of pregnant women and prevent things that can be risky for the mother and also the baby during pregnancy until delivery. The results of this study can become basic data for further research. The results of research regarding physical comfort disorders and sleep quality in third trimester pregnant women need to be examined more deeply so that the relationship can be known.

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