B-ICON Proceeding

OVERVIEW OF THE SLEEP QUALITY OF PREGNANT WOMEN TRIMESTER III

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Abstract

Pregnancy is a long adaptation process. At the end of pregnancy there is a decrease in the quality of sleep in third trimester pregnant. The quality of sleep for pregnant women has an effect on the condition of the mother during pregnancy. The aim of the study was to describe the sleep quality of third trimester pregnant women in the Working Area of the Perumnas Public Health Center, Rejang Lebong Regency, Bengkulu Province, Indonesia in 2023. This research is a descriptive research. Research sample for third trimester pregnant women was selected by simple random sampling. Research time in May – June 2023. The research sample Determination of the number of samples using the Solvin formula amounted to 68 respondents. Data analysis describes the characteristics of each variable with a percentage. Research result shows that almost all respondents are aged 20-35 years (76.5%), more than half are primigravida respondents (72.1%), more than half are highly educated (67.6%) and more than half are not working (69.1%), description of the quality of sleep almost all respondents 82.4% have poor sleep quality. The decrease in the quality of sleep in the third trimester of pregnant women occurs due to changes in physiological and psychological adaptation. Physiological changes experienced by pregnant women, due to increasing gestational age such as abdominal enlargement, anatomical changes and hormonal changes, while psychological changes are caused by anxiety and worry before delivery. Midwives can provide complementary care to address complaints of sleep disturbances for pregnant women at the end of the trimester so that pregnant women can improve the quality of sleep for pregnant women

Keywords: Age, Education, Parity, Pregnant Women, Sleep Quality

INTRODUCTION

Pregnancy is a long adaptation process, especially when the mother is in her final trimester. Various worries are experienced by the mother, related to the delivery process, uncomfortable sleeping positions, fetal movement at night, fear of pain and physical danger that may arise during childbirth,

worry about her safety, worry about the baby being born in an abnormal condition, dreams that reflect her concern and worry, this can cause the mother's quality of sleep to be disrupted (Laura et al, 2016).

The sleep quality of third trimester pregnant women is categorized as poor due to physiological and psychological factors, namely frequent urination at night, illness, anxiety before delivery, and experiencing changes in blood pressure which are at risk of pregnancy complications. There are 52.8% of third trimester pregnant women have poor sleep quality (Gultom & Kamsatun, 2020). The cause of poor sleep quality is due to increased frequency of urination, difficulty breathing, heat or stifling heat. In addition, the emergence of anxiety is one of the causes of sleep quality disturbances for pregnant women (Ardilah et al, 2019).

The quality of sleep for pregnant women has an effect on the condition of the mother during pregnancy. The quality of sleep in pregnant women will affect the increase in blood pressure so that it can potentially cause preeclampsia. Preeclampsia is a pregnancy disorder characterized by high blood pressure and high protein content in the urine. This condition can harm other organs, such as the kidneys, liver and eyes which can result in death. Apart from being harmful to the mother's body, the condition of preeclampsia will also affect the condition of the unborn baby. The results showed that sleep quality affects the incidence of preeclampsia, so during pregnancy, a mother is expected to have good sleep quality. To get good quality sleep (Bustami et al., 2016).

Generally, adults need 7-8 hours of sleep, while pregnant women can get up to 10 hours. This depends on the age of the pregnant woman and the stamina felt by the mother. Good quality sleep will make the mother healthier and provide sufficient energy during labor (Wungouw & Lolong, 2017).

According to the National Sleep Foundation, there are 97.3% of pregnant women in the third trimester always wake up at night and an average of about 78% of pregnant women in America experience sleep disturbances (Pacheco, 2022). The results of Gultom and Kamsatun's research state that in Indonesia, 97% of pregnant women in their third trimester experience sleep disturbances (Gultom and Kamsatun, 2020). The prevalence of disturbed sleep patterns during pregnancy nationally in 2018 was 36.5%. The prevalence of primigravid pregnant women in trimesters 1, 2 and 3 with very anxious sleep patterns in Central Java was 15.2% in the 1st trimester, 19.6% in the 2nd trimester and 22.8% in the 3rd trimester. primigravida pregnant women in trimesters 1, 2 and 3 have increased (Ministry of Health Republic of Indonesia, 2018). The results of Herdiani and Simatupang's research (2019) stated that there were 84.6% of third trimester pregnant women who experienced poor sleep quality in Bengkulu Province (Herdiani and Simatupang, 2019).

An initial survey conducted at the Independent Midwife Practice (PMB) work area of the Perumnas Public Health Center, Rejang Lebong Regency, in 2022 there were 337 third trimester pregnant

women and 271 pregnant women with complaints of sleep disturbances (89%). Some pregnant women who have sleep disorders are reported to experience pre-eclampsia and decreased quality of life such as getting tired easily, feeling unmotivated and often dizzy. This study aims to describe the sleep quality of third trimester pregnant women in the Work Area of the Perumnas Health Center in 2023.

MATERIALS AND METHODS

This research is a type of descriptive research. Descriptive research is a research method describing the characteristics of the population or phenomenon studied. This study uses data collection at the same time. In this study, researchers made observations or measurements of variables at one particular moment. The study population was all pregnant women in the Working Area of the National Public Health Center, Rejang Lebong Regency, Bengkulu Province. The research sample was third trimester pregnant women in the working area of the Perumnas Public Health Center, Rejang Lebong Regency, Bengkulu Province. The time of the research was May – June 2023. The research sample was selected by simple random sampling. Determining the number of samples using the sample size formula according to Solvin with a total sample of 68 respondents.

This research uses the questionnaire to measure sleep quality is the Sleep Quality Questionnaire (Kuesioner Kualitas Tidur / KTK) which consists of 7 sleep components including total hours of sleep at night, bedtime, frequency of awakening, feeling refreshed when you wake up in the morning, sleep depth, sleep satisfaction at night, feeling tired/tired. sleepy during the day. The KTK contains sleep quality that describes the actual condition and quality of sleep for pregnant women last night. This questionnaire has been tested for validity with a validity test result of 0.7 – 1 and a reliability test with a Cronbach alpha value of 0.790 (Sitorus, 2020). Data analysis describes the characteristics of each variable with a percentage. This research has received approval from the Research Ethics Committee of the Bengkulu Ministry of Health PoltekkesNo. KEPK. BKL/094/03/2023

RESULTS AND DISCUSSION

The characteristics of the subjects in this study include age, parity, education and occupation. The characteristics of the research subjects in the two groups are presented in the following table:

Table 1 Characteristics of Respondents

Characteristics	Frequency	
	N	%
Age Age < 20 and > 35	16	23.5

Age 20-35 years	52	76.5

Parity		
Primigravida	49	72,1
Multigravida	19	27,9
Education		
Low	22	32,4
Tall	46	67,6
Work		
Work	21	30,9
Doesn't work	47	69,1

Based on table 1, it shows that almost all respondents are aged 20-35 years (76.5%), more than half are primigravida respondents (72.1%), more than half are highly educated (67.6%) and more than half are not work (69.1%).

Table 2. Description of Sleep Quality for Pregnant Women Based on Respondents' Characteristics

Characteristics	Sleep Quality	
	Good (%)	Bad (%)
Age		
Age < 20 and > 35	2,9	20,6
Age 20-35 years	14,7	61.8
Parity		
Primigravida	2,9	69,2
Multigravida	14,7	13,2
Education		
Low	10,3	25
Tall	7,4	57,3
Work		
Work	13,2	55,9
Doesn't work	4,4	26.5

Based on the characteristics of the respondents, almost all respondents were aged 20-35 years. The best age for a woman to get pregnant is 20 years to 35 years. If a woman experiences primigravida (first pregnancy) under the age of 20, it is called young primigravida. Whereas if primigravida is experienced by women over the age of 35 years, then it is called old primigravida. The older the age of pregnant women, they experience sleep problems during pregnancy due to many disturbing factors. During pregnancy at a young age, sleep quality tends to be better maintained. The results of the study by Rustakiyantil and Masdad (2019) state that there is a relationship between age and sleep quality of pregnant women (Rustakiyanti1 & Masdad, 2019). Based on age characteristics, more than half of respondents aged 20-35 years experienced poor sleep quality (61.8%).

The age of pregnant women is classified into two, namely at risk and not at risk. Age at risk means the age of pregnant women at high risk if they experience pregnancy. ie too young age (35 years).

Age not at risk means the age of the mother who is recommended to experience pregnancy, namely age 20-35 years. According to Salama (2016) even though pregnant women aged 20-35 years are ready to accept the presence of their baby and carry out all their duties as a mother, still pregnancy at the age of 20-35 years can cause many changes in the life of pregnant women.(Salama, 2016). Changes that occur in the mother, namely physical changes that cannot be avoided by the mother and changes in the mother's mentality related to accepting the mother's new role in her family are some things that can indirectly have a negative impact on the quality of the mother's sleep. Age less than 20 years and more than 35 years is an age at risk for pregnancy (Anggarani & Subakti, 2013).

Pregnancy under the age of 20 is a high-risk pregnancy which can have a negative impact on the health of the mother and that of her baby. Pregnancy at a young age or underage is at risk for premature birth, low birth weight babies (LBW), bleeding during childbirth, and can also cause death in the mother and baby. Mothers who are pregnant in their teens or under 20 years generally have imperfect blood circulation from the cervix to their uterus, so this can cause little nutrition to be given to the fetus in the womb. Blood circulation in the genital tract is also lacking so that it can cause an increased risk of infection and increase the risk of paterm delivery (delivery before 37 weeks of age).(Pribadi et al, 2015).

Old age can cause the risk for the onset of diseases that accompany increasing age. The occurrence of cancer and heart disease is higher. The combination of pregnancy and old age can cause a high risk of birth defects, infant death or maternal death. Other risks of pregnancy over 35 years are the risk of developing gestational diabetes, placenta previa, hypertension, and bleeding (Anggarani & Subakti, 2013).

Changes in sleep cycles occur due to age. According to Hedman, sleep time for pregnant women aged over 35 years is less than 7 hours, this is because pregnancy intolerance is more difficult, pregnant women feel fatigue during the day increases, and the age that is no longer productive causes difficulty going to bed early.(Hedman et al., 2012). The results of Rustakiyanti and Masdad's research (2019) state that there is a relationship between age and the quality of sleep for pregnant women. Pregnant women aged > 35 years, during this age period, women who are pregnant experience hormonal changes that affect circadian rhythms including sleep activity (Rustakiyanti1 & Masdad, 2019).

The characteristics of respondents based on parity are more than some of the primigravida respondents. Based on the characteristics of parity, more than half of primigravida respondents

experienced poor sleep quality (69.2%). Parity is the number of previous pregnancies that have reached the limit of viability (capable of living) and have been born regardless of the number of children, for example the birth of twins only counts one parity. Based on the results of research conducted by researchers, it was found that some of the parity of multigravida respondents.

Parity will affect the quantity of sleep for pregnant women. Where in the first pregnancy (primigravida) pregnant women do not have sufficient experience to give birth, so they feel more anxious and afraid to experience labor later compared to mothers who have often given birth, this anxiety makes it difficult for pregnant women to do sleep activities, to reduce fear and worry that pregnant women do activities that make them feel calm (Kızılırmak et al, 2012).

According to Qudriani and Hidayah (2017) pregnant women with multigravida parity have pregnancy experience so that mothers know more about the risks that can harm pregnancy so that mothers can take preventive measures so that risks do not occur during pregnancy (Qudriani & Hidayah, 2017). According to Oktaviani (2017) multigravida parity is parity that is safe for pregnant women and also during labor because mothers with multigravida parity in dealing with pregnancy and childbirth already have experience (Oktaviani, 2017).

According to Amini et al (2018) pregnant women with primigravida parity who have only had one pregnancy will usually experience difficulties when adapting to their pregnancy due to little experience and low knowledge of the mother compared to pregnant women who have multigravida parity. This means that the group of mothers who are experiencing pregnancy for the first time (primigravidas) and experience higher anxiety is a natural and common thing to happen. As for mothers who have had more than one pregnancy (multigravida) and experience mild anxiety, it is also normal or common to happen. Differences in anxiety levels between the primigravida and multigravida groups are related to psychological reactions. Psychological reactions experienced by pregnant women in the third trimester are related to their babies, risks of pregnancy, the process of giving birth pregnant women are very emotional in an effort to prepare or be aware of everything that might happen and have to be faced. So that multigravida mothers can adapt better than primigravida mothers so they have better sleep quality (Amini et al, 2018).

Gravida status and pregnancy experience in a woman do not mean that the quality of sleep will be different. In general, the physiology of sleep will be influenced by physical and psychological conditions. Everyone's satisfaction with the quality of sleep is strongly influenced by the role of circadian rhythms. The most familiar rhythm is the 24-hour cycle, day and night, which is better known as the diurnal or circadian rhythm. Circadian rhythms influence patterns of major biological functions and behavioral functions. Fluctuations and forecasts of body temperature, heart rate,

blood pressure, hormone secretion, sensory abilities, and mood depend heavily on the maintenance of the 24-hour circadian cycle. And influenced by light and temperature as well as external factors such as social activities and work routines (Anasari et al., 2022).

The characteristics of respondents based on education are more than half of them highly educated, more than half of them experience poor sleep quality (57.3%). A person's education affects his knowledge and mindset of the mother so that the mother has a fairly high absorption of information, conversely, low or insufficient education can hinder the development of a person's attitude towards the new values that are introduced so that knowledge is also lacking. Education is a basic human need that is needed for self-development and increasing one's intellectual maturity. This intellectual maturity influences one's insight and thinking, both in visible actions and in the way of decision making. The level of education is also one of the factors that influence a person's perception of being more receptive to new technological ideas. The higher a person's education level, the greater the opportunity to seek medical information from health services. Education affects the response of pregnant women in dealing with sleep disturbances that originate from within and from the environment (Widihastuti et al., 2019)

The characteristics of the respondents based on work were obtained by the majority of non-working respondents who experienced more than half (55.9%) poor sleep quality. Pregnant women who don't work do some household activities until they spend time completing them so that pregnant women don't have time in the morning to do physical activities such as healthy walks and pregnant women think that if they are already doing household activities then they don't need to do physical activities for pregnant women to maintain the health of other pregnancies. The results of Felyanti's research (2020) state that one of the dominant variables affecting the quality of sleep for pregnant women is work (Felyanti, 2020).

Pregnant women who work standing for a long time are at higher risk of experiencing preterm labor. Pregnant women should avoid work that can cause them to experience physical stress. Pregnant women should avoid doing work that can cause them to feel very tired and during work they should be able to take time to rest sufficiently. Pregnant women who have a history of complications in their pregnancies that may recur, such as babies with low birth weight, must minimize their physical work. Pregnant women should take good care of their womb, one of which is by not doing heavy work that can cause the mother to feel tired. During pregnancy, it will be easy for you to feel tired. Adequate rest is very good for pregnant women (Leveno et al., 2018).

Pregnant women who work can interact with the community and colleagues who already have experience in pregnancy and childbirth so that they can increase their knowledge about pregnancy and childbirth. Working can supplement family income to meet needs during and after childbirth. With an adequate economic status and family income, pregnant women are better prepared to face their pregnancy because they can support the costs needed during and after pregnancy, because a low socioeconomic status can interfere with the psychological condition of the mother and the level of anxiety will increase (Widihastuti et al, 2019).

The physical activity of pregnant women is generally not different from the activity before pregnancy. Before pregnancy, regular physical activity did not interfere with sleep quality. The physiological changes of pregnancy exacerbate the body's systems which can affect the quality of sleep. The higher the physical activity, the worse the sleep quality of pregnant women. This is due to increased body metabolism of pregnant women. The results of the study by Rustikayanti et al (2020) state that physical activity is correlated with sleep quality in pregnant women. Heavy physical activity carried out by pregnant women can make the mother tired and require a long enough sleep to replace the energy expended, fatigue can make the mother's REM sleep waves make the quality and quantity of mother's sleep not fulfilled (Rustikayanti et al, 2020)

Table. 2 Overview of Sleep Quality for Pregnant Women

Variable	Frequency	
	n	%
Sleep Quality		
Good	12	17,6
Bad	56	82.4

Based on table 2 shows that almost all respondents 82.4% have poor sleep quality. In the phase of pregnancy which is a time of great change. These changes are not only related to physical changes, but also psychological changes which are a consequence of the growth of the fetus in the womb. Changes occur in pregnant women to maintain body metabolism, support fetal growth, and prepare for labor and breastfeeding with varying levels in each trimester. Pregnancy too is a maturity crisis which can be stressful, but valuable as the woman prepares herself to provide care and assume responsibility. When entering the third trimester or increasing gestational age, more and more complaints are felt by the physical, psychological (Gultom & Kamsatun, 2020).

This is in line with research by Komalasari et al (2013) which stated that 72.2% of third trimester pregnant women experience poor sleep quality. Several things can disrupt the quality of sleep for third trimester pregnant women, namely fetal movements that interfere with the mother's rest, dyspnea, back pain, constipation and varicose veins. Shortness of breath is caused by limited

expansion of the diaphragm as a result of the enlarging uterus. Frequent urination is caused by reduced bladder capacity due to enlargement of the uterus and the presenting part of the fetus so that the bladder becomes full faster (Komalasari et al, 2013).

Sleep quality is the individual's ability to maintain a sleep state and to achieve appropriate stages of rapid eye movement (REM) and nonrapid eye movement (NREM) sleep. Pregnant women need more sleep compared to women who are not pregnant, which is around 8-10 hours at night and 1-2 hours during the day. This is because pregnant women need a lot of energy for fetal growth and mother's health. Pregnant women should at night go to bed early and don't sleep too late while taking a nap after lunch time but don't go to bed immediately so that pregnant women don't feel nauseous. If the quality of the mother's sleep is not sufficient, it will affect the health of the mother and fetus (Potter & Perry, 2014).

Physiologically, pregnant women with third trimester of pregnancy, namely back pain, frequent urination at night because the uterus begins to descend into the pelvic cavity and presses on the bladder which makes the mother always want to urinate besides that the vascularization of the bladder causes decreased muscle tone and the occurrence of hemodilution also causes water metabolism to increase so that the formation of urine increases and the baby will often kick at night, so that he finds it difficult to sleep well (Gultom & Kamsatun, 2020).

Disruption of sleep patterns in pregnant women is often felt during the second and third trimesters of pregnancy, this occurs due to changes in physiological and psychological adaptations, physiological changes experienced by pregnant women, due to increasing gestational age such as abdominal enlargement, anatomical changes and hormonal changes. In addition, pregnant women also experience back pain, difficulty breathing, sleep, lack of sleep, frequent urination, abdominal contractions, swollen ankles, leg cramps (Hutchison et al., 2012). The growth of the fetus which is so enlarged can put pressure on the mother's bladder, as a result the capacity of the bladder becomes limited so that the mother often wants to urinate, this can interfere with the mother's rest including her sleep time. Pregnant women who experience disturbed sleep patterns can interfere with their physical health, such as weakness and decreased body resistance so they are susceptible to disease (Hutahaean, 2013).

The psychological changes experienced by pregnant women are more due to 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 body's muscles to tense up, especially the muscles in the birth canal will become stiff and hard so that it interferes with the process of opening the birth

canal. In addition, pregnant women who experience sleep disturbances will be slower to deal with stimuli and have difficulty concentrating (Mirghaforvand et al., 2017).

The prevalence of changes in sleep quality during pregnancy ranges from 40% to 96% being higher during the third trimester of pregnancy. Research by Jereme et al (2021) states that more than two-thirds of pregnant women have poor sleep quality. Poor sleep quality can cause mental disorders for the mother and tend to experience various anxiety disorders (Jemere et al., 2021).

The decrease in the duration of sleep for pregnant women in the third trimester (28-42 weeks) is because the mother has difficulty sleeping (insomnia). It is felt as a result of increased anxiety or worry and physical discomfort. Anxiety felt by pregnant women in the third trimester. This is a reflection of the awareness that her pregnancy is nearing its end, so there is fear of an abnormal delivery process, anxiety about whether the baby will be born safely, and worry if the baby is born in an abnormal condition. Physical discomfort related to changes in body shape, this physical discomfort such as lower back pain, and a feeling of aches in the body. Anxiety and physical discomfort are stressors that can stimulate the sympathetic nervous system and the adrenal glands. In this situation there will be an increase in the secretion of the hormone adrenaline or epinephrine, so that it can increase tension in pregnant women which results in pregnant women becoming more restless and unable to concentrate. This condition can cause further anxiety and physical discomfort, making it more difficult for pregnant women to sleep (Wahyuni & Ni'mah, 2019).

Research conducted by Mindell et al (2015), revealed thatSleep disorders in nulliparous women increase, where during pregnancy, especially in the third trimester, the percentage of sleep disturbances increases significantly(Mindell et al, 2015). Kizilirmak et al stated that the risk of insomnia increased 2.03 times higher in the third trimester compared to the first and second trimesters (Kızılırmak et al, 2012).

In the third trimester, sleep disturbances in pregnant women will reach their peak. Sleep disturbances experienced by mothers during the third trimester are insomnia triggered by the mother's worry about the future birth process. Besides that, in the third trimester, the mother will also experience difficulty sleeping due to improper sleeping position and the mother will also experience frequent urination. The comfort of the mother while sleeping will be disturbed because of the active movement of the fetus in the mother's womb(Prasadja, 2014). Other factors that cause sleep disturbances in mothers in the last trimester are lower back pain, heartburn, and muscle cramps. A quarter of pregnant women in the third trimester experience restless leg syndrome (RLS), which is a sleep disorder characterized by an uncomfortable feeling in the legs, causing the mother to Move your feet frequently to relieve uncomfortable sensations (Bustami et al., 2016).

Poor sleep quality will cause the sympathetic and parasympathetic nervous system to be activated by the hypothalamus as an effect of an imbalance in the body's homeostasis, so that an active sympathetic nervous system will result in an increase in peripheral resistance and an increase in cardiac output which can result in increased blood pressure. Continuous sleep disturbance will result in physiological changes in the body in the form of an imbalance in the body's homeostasis. Someone who has poor sleep quality will experience changes in blood pressure that cause several diseases/complications (Gultom & Kamsatun, 2020)

Pregnant women experience poorer sleep quality in the first trimester, gets better in the second and then gets worse again in the third. The reason could be due to an increase in hormones (estrogen and progesterone) which starts in the first trimester and reaches its peak in the third trimester. Physiological changes such as softening of the breasts, enlarged uterus also reach their greatest in the third trimester. Poorer sleep quality in late pregnancy may be due to concerns about caring for the baby. Sleep quality can be affected by poor Sleep Hygiene Practices, including an uncomfortable bed, varying bedtimes, using the bed for other activities, sleeping without sensation and staying in bed despite not being able to fall asleep within 30 minutes (Huong et al., 2019). The limitation of this study is that it only describes the sleep quality of pregnant women in the third trimester and does not analyze the causal factors

CONCLUSION

The quality of sleep in pregnant women in the third trimester decreases. Physiological changes experienced by pregnant women, due to increasing gestational age such as abdominal enlargement, anatomical changes and hormonal changes, while psychological changes are caused by anxiety and worry before delivery. Midwives can provide complementary care to address complaints of sleep disturbances for pregnant women at the end of the trimester so that pregnant women can improve the quality of sleep for pregnant women.

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Declaration of Interest Statement

The authors declare that they have no conflict of interest.

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