Delivery Physiological Readiness: The Pregnant Women Knowledge Relationship and Anxiety Level

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Abstract: There are about 107,000 pregnant women who experienced anxiety in facing childbirth in Indonesia in 2019. Pregnant women anxiety can arise, especially in the third trimester, until delivery. The anxiety level of pregnant women will increase, especially during the COVID-19 pandemic with the coronavirus disease outbreak that is relatively easy to spread, for pregnant women need excellent knowledge about their condition. This study aims to analyze the relationship between the anxiety level and pregnant women's knowledge with readiness to face childbirth during the COVID-19 pandemic at the Puskesmas Pariaman Selatan. This research method uses observational analytic with a cross-sectional design. The number of samples was 45 third trimester pregnant women according to the inclusion criteria, namely pregnant women in the third trimester, first pregnancy, normal pregnancy, and willing to be respondents. We took the sampling technique with purposive sampling. We analyzed the data using statistical tests. The results showed respondents had severe anxiety with less readiness to give birth, in contrast with high knowledge about pregnancy management during COVID-19 had high readiness to give birth. The results of the statistical analysis test explained that there was a relationship between the knowledge and anxiety level of third-trimester pregnant women and their readiness to give birth during the COVID-19 pandemic.

Keywords: *knowledge, anxiety, physiological readiness of delivery*

Introduction

Mortality and morbidity in pregnant and maternity women are a big problem in developing countries. Pregnancy-related issues caused around 25-50% of deaths of women of childbearing age. Death during childbirth is usually a major factor in the mortality of young women at their peak of productivity. Maternal and Perinatal Mortality Rate is the most significant measure in assessing the health services success and family planning in a country. The maternal mortality rate in Indonesia is still high, namely: 390/100,000 live births, if the estimate in Indonesia is 5,000,000 people, then there will be around 19,500–20,000 maternal and infant deaths every 26-27 minutes, the number of perinatal deaths is around 56 / 1000 or about 28,000 people death every 18–20 minutes. The ability of a country's health services measurement can determine the ratio of high and low maternal and perinatal mortality rates, including the physiological readiness of mothers to face childbirth (Manuaba, 2001; Wulandari & Laksono, 2020).

One factors that most often affects the mother's labor readiness is knowledge of pregnancy and the physiological changes of childbirth. Pregnancy is a transition time, which is a period between life before having a child who is now in the womb and life later after the child is born. We consider this radical change in status a crisis accompanied by a certain period to undergo a process of psychological preparation that normally exists during pregnancy and peaks at the time the baby is born (Varney et al., 2004; King et al., 2013). We divide pregnancy into three periods: first trimester 1-12 (12 weeks), second trimester 13-27 (15 weeks), third trimester 28-40 (31 weeks). During pregnancy, most women experience emotional and physiological changes.

Physiological changes of pregnancy and childbirth are changes experienced by mothers during pregnancy ranging from hormonal changes, forming the fetus to the process of expulsion of the fetus from inside to outside the uterus formed previously through fertilization between male sex cells and female sex cells (Grant et al., 2015). We often hear a woman say how happy and happy being a mother is, and that she has chosen a name for the baby she is about to give birth to. However, it is not uncommon for women to feel worried if there are problems in their pregnancy, worried that there is a possibility that she will lose her beauty, that there is a possibility that her baby is not normal Amalia et al. (2020), during the third trimester, women await the arrival of their baby as a part of themselves. She became impatient to see her baby soon. There is an unpleasant feeling when the baby is undelivered not on time, a fact that puts the woman on edge and can only watch and wait for the signs and symptoms. Several fears and worries will arise, such as concerns for his life and the baby. The mother has felt afraid of the pain and physical dangers that will arise during childbirth.

Facing childbirth is a concrete condition that threatens pregnant women, which causes feelings of tension, worry, and fear. For this reason, pregnant women try to be successful in dealing with these situations and possibly until delivery arrives. The existence of physiological changes that cause instability in psychological conditions during pregnancy fosters continuous concern in dealing with the birth of a baby in the first pregnant woman. Such feelings will manifest as anxiety (Erwantiningsih et al., 2021). Anxiety will be higher if the mother does not know how to deal with pregnancy and childbirth because knowledge of physiological changes during pregnancy is important for mothers to face the delivery period.

The physiological approach to pregnancy and childbirth is a worldwide concern. The United States as a center for health research has spent 17.5% of the gross domestic product on health care every year. This budget is the highest cost globally. Caring for a live newborn is the third most expensive reason to pay for the birth of a mother and child. According to the World Health Organization revealed that the current risk-free birth rate is 32% and 56% of pregnant women experience single and augmented induced labor (Hamilton et al., 2019). Meanwhile, a recent World Health Organization report concluded that cesarean deliveries are over 10% associated with maternal and newborn mortality WHO (2012). Meanwhile, the maternal mortality rate in the United States continued to increase by 26.6% in the period 2000-2014 (D'Alton et al., 2019).

The causes of high maternal mortality include low antenatal care visits, levels of anxiety, and lower knowledge (Paputungan et al., 2016). Pregnant women with less knowledge about pregnancy and childbirth psychological changes, often ignore antenatal care visits. It makes them loos of getting professional health support to reduce their anxiety (Grimes, 1994). Knowledge is someone knowing about a certain object. Sense of hearing, touching, sight, smell, taste affects a person's knowledge influenced by the eyes and ears (Notoadmojo, 2016). The educational factors affect someone's knowledge. Someone who has high knowledge will have highly educated too and vice versa.

Pregnant women are not only worried about their physiological changes in pregnancy and childbirth. They are more anxious about their psychological changes also makes them fear the dangers of COVID-19 transmission. This anxiety disorder is a psychiatric disorder. Anxiety that interferes with the mother's psychology will harm pregnancy until delivery, inhibiting its growth, weakening uterine muscle contractions, and others. These effects can harm the mother and fetus (Novitasari, 2013). A study in Indonesia shows that pregnant women with high anxiety levels experience a risk of giving birth to premature babies and even miscarriages (Gary, 2020).

This study aimed to reveal how the relationship between knowledge level and anxiety affects the readiness of pregnant women to face childbirth at the South Pariaman Health Center. The research formulation: 1} Is there a relationship between the level of knowledge of pregnant women with readiness to face childbirth and 2) Is there a relationship between the anxiety level affects the readiness of pregnant women to face labor.

Method

This research method is descriptive quantitative research with a cross-sectional design. Quantitative research design examines the relationship between the level of knowledge and anxiety levels of pregnant women with readiness to face childbirth. We use this method to determine the significant relationship between the variables studied to produce conclusions to clarify the object description under study (Creswell & Poth, 2016). This study aimed to test the hypothesis by using statistical calculations.

We carried a sample of this study out on pregnant women in the third trimester in the working area of the Puskesmas Pariaman Selatan (Public Health Center). This study selected the sample age between the ages of 18 to 30 years, totaling 45 people. We carried the research process out in two stages. In the first stage, the researcher visited all recorded mothers in the medical records who underwent antenatal care visits to the Public Health Center. The second stage is distributing questionnaires to determine the mother's level of knowledge about pregnancy and childbirth. Through a questionnaire and supported by records of antenatal care visits, the researcher then measured the respondent's level of anxiety. The research instrument used a questionnaire with a 5-point Likert scale. Measurement of anxiety levels using the Hamilton Anxiety Rating Scale (HARS) developed by Max Hamilton. HARS comprises 14 question items to measure signs of anxiety in children and adults (Kautsar et al., 2017). Data analysis techniques to test the hypothesis using the Chi-Square test

Results

The study results on the relationship between the frequency of mother's knowledge about pregnancy and childbirth and the frequency of the mother's level of anxiety on pregnant women's readiness to face labor, we explain through the results of chi-square analysis. For more details, we can clarify the findings of the relationship analysis between the frequency of knowledge of pregnant women about pregnancy and childbirth with their readiness to face labor:

Table 1. Relationship of Knowledge Level with Physiological Readiness of Delivery

Knowledge level	Childbirth Physiological Readiness				Amount		P-value
	Not ready		Ready				
	f	*%*	*f*	*%*	*f*	*%*	
Low	8	47.1	2	7.1	10	22.2	0.000
Moderate	5	29.4	11	39.3	16	35.6	
High	4	23.5	15	53.6	19	42.2	
Total	17	37.8	28	62.2	45	100	

The chi-square test above showed that a high level of maternal knowledge contributes to increased maternal readiness for childbirth. We can say that the higher the mother's level of knowledge, the higher the mother's physiological readiness for childbirth. There are 15 people (53.6%) who have physiological readiness to face childbirth. This figure is lower than mothers who have a low level of knowledge about eight people (47.1%) of the 17 samples stated they were not ready to face childbirth.

The results of statistical tests showed the value of p = 0.000, so we can conclude that there is a significant relationship between the level of knowledge and the readiness of the mother to face childbirth physiologically. Next are the findings of the analysis of the relationship between the frequency of pregnant women's anxiety levels about their readiness to face childbirth:

Table 2. The Relationship between Anxiety Levels and Physiological Readiness of Delivery

Anxiety Level	Childbirth Physiological Readiness				Amount		P-value
	Not ready		Ready				
	f	*%*	*f*	*%*	*f*	*%*	
Low	2	20.0	17	48.6	19	42.2	
Moderate	1	10.0	13	37.1	14	31.1	0.000
High	7	70.0	5	14.3	12	26.7	
Total	10	22.2	35	77.8	45	100	

The chi-square test above showed that a high level of maternal anxiety contributes to a decrease in the physiological readiness of labor. We said that the higher the level of anxiety, the lower the physiological readiness of labor. There are seven people (70.0%) who experience physiological unpreparedness for childbirth. This figure is lower than mothers who have low anxiety levels, where only five people (14.3%) of the 35 samples stated they were not ready to face physiological changes during childbirth. The statistical test results showed the value of p = 0.000, so we can conclude that there is a significant relationship between the anxiety level and the physiological readiness of labor.

Discussion

Results from the research described above, we can explain the findings of each of the variables tested that relate to the frequency of pregnant women's knowledge and anxiety with physiological readiness for labor. The explanation is more detailed as follows.

The Effect of Knowledge Level on Physiological Readiness of Delivery

The results showed that pregnant women who had a high frequency of knowledge had a higher percentage of physiological readiness for childbirth, namely 15 people (53.6%) compared to mothers who had low knowledge about handling pregnancy and childbirth during the COVID-19 pandemic, namely two people (22,2%). Manuaba (2001) revealed that the frequency of knowledge of pregnant women is high regarding physiological changes during pregnancy, and childbirth plays a significant role in strengthening the psychology of mothers during pregnancy, especially in strengthening their physiological readiness when facing the labor process. According to Azene et al. (2019), pregnant women with high knowledge will affect their awareness to manage their pregnancy and labor. It makes their visits to public health centers increased to get health antenatal care services and health education counseling about the physiological changes they experience during pregnancy during the COVID-19 pandemic in maintaining their condition and their fetuses. We got knowledge from health counseling for pregnant women given by health workers at the Public Health Center when mothers make antenatal care visits. Husna & Sundari (2015) revealed pregnant women will gain knowledge about good care for their pregnancy and allow them to detect pregnancy complications early to get better management and delivery planning if getting antenatal care service. This study is the same as the findings of Yusuf Mohammed (2015) reported that there was a relationship between a mother's knowledge about routine pregnancy care and physiological readiness for delivery of pregnant women.

The same report by Rahmatia et al. (2019) revealed that there is a positive relationship between knowledge about pregnancy care and childbirth.

According to Notoadmojo (2016), knowledge results from knowing, and this occurs after people have sensed a certain object. Sensing occurs through the five human senses, namely: the senses of sight, hearing, smell, taste, and touch. Most knowledge of humans can get through the eyes and ears. Knowledge of cognition is a very significant domain for the formation of one's actions. There are several factors, namely age, education level, occupation, and experience, influence knowledge. These findings reveal the level of knowledge about pregnancy and childbirth of pregnant women regarding midwifery care, including preparation for delivery, which comprises understanding labor, delivery time, signs of labor, process, and duration of labor. Based on the age of pregnant women who took part in the study, they aged about 21-35 years (70.6%). They include the respondent in the young category, so it is possible if there are respondents who lack experience and knowledge in dealing with childbirth.

This study supports the findings of Asih, (2010), revealing that most pregnant women at the Kaliwungu Public Health Center, Semarang Regency have excellent knowledge, 19 people (63.3%), and 11 people (36.7%) with sufficient knowledge. Most of the respondents had good delivery readiness, namely 21 people (70.0%) and only four respondent (13.3%) who were not ready to face childbirth physiologically. This study concludes that there is a relationship between the level of knowledge about the physiology of labor and delivery readiness for pregnant women at the Kaliwungu Public Health Center, Semarang Regency. The p-value of 0.000 evidenced this at a significance of 0.05.

The Effect of Anxiety Level on Physiological Readiness of Delivery

The results showed that pregnant women with low anxiety levels showed a high level of physiological readiness, namely: seven people (70.0%). Pregnant women with high anxiety levels showed their physiological unreadiness for childbirth: about five people (14.3%). The results of statistical tests got a p-value of = 0.000. We can conclude that there is a significant relationship between physiological unreadiness and the level of anxiety.

This study is the same as the research results conducted by Toosi et al. (2017). They found that nine respondents of pregnant women with high anxiety levels experienced greater physiological unpreparedness for childbirth than mothers who had low anxiety levels, namely six people. These findings showed that feelings of anxiety affect physiological unpreparedness in undergoing labor. One of the psychological changes in pregnant women is anxiety. We found the anxiety and depressive symptoms in pregnancy affect between 10-25%. We associate increased symptoms of depression and anxiety with increased preterm birth, postpartum depression, and behavioral difficulties in children. Childbirth is a natural process, but if something does not manage properly, it can be abnormal. The childbirth process often produces some psychological aspects: psychological problems for pregnant women, one of which is the anxiety level.

Anxiety levels can have negative effects, such as depression during pregnancy. Depression in pregnancy is one effect of failure to achieve roles. Pregnancy with depression causes acute anxiety, which also affects the well-being of the fetus in the womb. So that anxiety becomes one factor that can increase the risk of disruption of fetal growth and development and other conditions that affect lifestyle, nutritional fulfillment, and the impact of depression (Rianti et al., 2018).

Achieving the role of mothers during pregnancy requires broad family, social, and health support. Pregnant women need access to integrated physical and psychological care, namely acceptance of their behavior, partnerships, and counseling. Health workers can detect deviations in the mother's psychological behavior and determine the type of integrated psychological care needs for them.

Anxiety is the most common feeling experienced by pregnant women before delivery. It often occurs is when pregnant women who are about to give birth that threatens their lives mostly focus on the relationship between anxiety, in the birth process, or the period of care and healing. Anxiety is a universal human experience and a feeling that is unexpressed because of an unclear and unidentified source of threat or thought. Some factors cause anxiety for pregnant women before delivery, including age and knowledge about childbirth (Çankaya & Şimşek, 2020).

This study supports the research of Bangun (2019), revealing that there is a significant relationship between the characteristics of education and the level of anxiety in dealing with childbirth between those who do yoga. Then the research of Aditya & Fitria (2021) reported that the anxiety scores of pregnant women varied during the pandemic, from conditions of no anxiety, mild anxiety, moderate-to-severe anxiety. Sixty-two points five percent of respondents have severe anxiety. They analyzed data using Spearmen's test to determine differences in maternal anxiety levels. Pregnant women with acute anxiety will affect unreadiness to prepare for childbirth.

Conclusion

Based on the explanation of the study results above, we can conclude that the knowledge of pregnant women about physiological changes, handling, and care of pregnancy during their pregnancy affects their readiness to face childbirth physiologically. Likewise, the maternal anxiety factor during pregnancy also affects their physiological readiness when facing childbirth. This finding provides an important contribution for health workers at the Public Health Center to continue to increase mother's knowledge about the physiology, handling, and care of their pregnancy during the COVID-19 pandemic and providing counseling on management of care and antenatal care during the pandemic at the health public services level so that mothers do not experience anxiety when facing childbirth and are physiologically ready to wait for delivery theirs infant.

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