



The Relationship Between the Implementation of Pregnancy Exercises and the Level of Anxiety of Pregnant Women in the 3rd Trimester at the Malingkau Public Health Center

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Abstract Background: Anxiety in the third trimester of pregnancy is a common mental health problem that can negatively impact both maternal and fetal health. At Palingkau Community Health Center, the prevalence of anxiety in pregnant women reached 35%, higher than the national average of 30%. Prenatal exercise is believed to be a non-pharmacological intervention to reduce anxiety in pregnant women. Objective: This study aims to analyze the relationship between the application of pregnancy exercises and the anxiety levels of pregnant women in the third trimester at Palingkau Community Health Center. Methods: The study used a cross-sectional design with a quantitative approach. The study population was all third-trimester pregnant women who underwent prenatal check-ups at the Palingkau Community Health Center between January and March 2023. The study sample consisted of 30 respondents selected using a purposive sampling technique. The research instruments were a demographic characteristics questionnaire and the Hamilton Anxiety Rating Scale (HAM-A) to measure anxiety levels. Data were analyzed using the Chi-Square test with a significance level of $\alpha = 0.05$. Results: The results of the study showed that of the 15 pregnant women who did prenatal exercises, 73.3% experienced mild anxiety, 20% moderate anxiety, and 6.7% severe anxiety. Meanwhile, of the 15 pregnant women who did not do prenatal exercises, only 20% experienced mild anxiety, 53.3% moderate anxiety, and 26.7% severe anxiety. The Chi-Square test showed a p value = 0.013 ($p < 0.05$), which means there is a significant relationship between the implementation of prenatal exercises and the level of anxiety of pregnant women in the third trimester. Conclusion: There is a significant relationship between the implementation of prenatal exercise and the anxiety levels of pregnant women in the third trimester at the Palingkau Community Health Center. Pregnant women who regularly perform prenatal exercise tend to have lower anxiety levels. Prenatal exercise can be an effective intervention in managing anxiety in pregnant women and should be integrated into antenatal care programs.

Keywords: Anxiety; Palingkau Community Health Center; Pregnancy Exercise; Pregnant Women; Third Trimester.

1. INTRODUCTION

The phenomenon of anxiety in pregnant women, especially those entering the third trimester, is a common problem encountered in maternal healthcare practices. According to a study by Yulianti et al. (2022), an estimated three in ten pregnant women experience significant anxiety as labor approaches. Various factors can trigger this condition, ranging from concerns about how the birth process will proceed, the well-being of the fetus in the womb, to adapting to the physical transformations that occur throughout pregnancy. To address these issues, exercise for pregnant women offers an alternative intervention that is expected to reduce anxiety levels. This physical activity not only prepares the mother's body for labor but also has beneficial psychological effects, including reducing anxiety levels, as noted by Sari and Nurhayati (2021).

Prenatal exercise is a series of physical activities specifically designed to address pregnancy. These activities include gentle, safe movements that contribute to improved blood circulation, reduced back pain, and increased muscle flexibility and strength. Research by

Pratiwi (2023) revealed that pregnant women who consistently perform prenatal exercise show a quarter-reduction in anxiety compared to those who do not. These findings indicate that prenatal exercise has the potential to be an effective approach to addressing anxiety, particularly in the final trimester.

The World Health Organization confirms that the mental health of pregnant women significantly impacts fetal well-being and the smoothness of childbirth. High levels of anxiety can contribute to various complications, such as premature birth and low birth weight. Data from the Palingkau Community Health Center shows that the prevalence of anxiety in pregnant women reaches 35%, exceeding the national average of around 30%, according to a report from the Central Kalimantan Provincial Health Office (2023). This situation underscores the urgency of implementing more effective interventions to address this issue.

The implementation of prenatal exercise at the Palingkau Community Health Center could be the right solution given the high levels of anxiety recorded. Prenatal exercise not only brings physical benefits but can also increase the confidence of pregnant women facing childbirth. A study by Widiastuti (2021) showed that pregnant women who participated in a prenatal exercise program reported lower anxiety levels and felt better prepared for childbirth. Therefore, the implementation of prenatal exercise at the Palingkau Community Health Center is expected to significantly reduce maternal anxiety.

Anxiety experienced by pregnant women can be triggered by various psychological, social, and physical factors. For example, hormonal fluctuations during pregnancy can influence mood swings and perceived stress levels. Furthermore, a lack of emotional support from a partner or family member can also exacerbate anxiety. Research by Kurniawan (2022) shows that pregnant women who experience adequate emotional support tend to have lower levels of anxiety.

The impact of high levels of anxiety not only affects the mother but also the fetus she is carrying. Mothers who experience excessive anxiety are at higher risk of various complications, such as high blood pressure and diabetes, that arise during pregnancy. Anxiety can also affect fetal development and result in low birth weight, as noted by Supriyati (2021). Therefore, it is crucial to identify and address these anxiety-triggering factors through proven effective intervention programs, such as prenatal exercise.

One step that can be taken to reduce anxiety levels in pregnant women is to hold regular prenatal exercise programs at the Palingkau Community Health Center. This program will not only provide physical benefits but also create a supportive social environment where pregnant women can share their experiences and concerns. Santoso (2023) found in his research that

pregnant women who regularly participated in prenatal exercise showed improvements in their mental and physical health.

During implementation, the prenatal exercise program at Palingkau Community Health Center can involve trained healthcare workers to provide necessary guidance and support. Furthermore, counseling sessions for pregnant women can be held to discuss any issues they may be facing, so they feel more supported and receive adequate education. Through this approach, it is hoped that pregnant women will be better prepared for childbirth and experience lower levels of anxiety.

This research is crucial given the high level of anxiety among pregnant women at Palingkau Community Health Center and the significant potential of prenatal exercise as an effective intervention. Furthermore, this study aims to contribute to the development of better public health programs, particularly those supporting maternal mental health. By collecting data and analyzing the relationship between prenatal exercise implementation and anxiety levels, it is hoped that this research will provide valuable insights for healthcare professionals and policymakers.

In this context, this study focuses not only on the physical aspects of prenatal exercise but also on its impact on mental health. This is crucial because maternal mental health directly impacts fetal well-being and the birth process. Therefore, this study is expected to generate useful recommendations for developing prenatal exercise programs at Palingkau Community Health Center and other areas.

2. RESEARCH METHOD

This study adopted a quantitative research design using a cross-sectional approach. This design was chosen based on its ability to observe the relationship between two variables: the implementation of prenatal exercise and the level of anxiety experienced by pregnant women in the final trimester. The study was conducted at the Palingkau Community Health Center, one of the health care facilities in the area, with a focus on pregnant women in their third trimester.

The target population of this study included all pregnant women who underwent prenatal checkups at the Palingkau Community Health Center during the study period. According to records from the Palingkau Community Health Center, approximately 100 pregnant women were registered in their third trimester from January to March 2023. From this total population, the researchers selected 30 respondents as research subjects. The sample selection process used purposive sampling, with respondents determined based on specific

criteria: pregnant women who had entered their third trimester and expressed their willingness to participate.

The instrument used in this study was a two-part questionnaire. The first section contained a number of questions related to the respondents' demographic characteristics, including age, education level, and employment status. The second section contained an anxiety scale based on the Hamilton Anxiety Rating Scale (HAM-A), which had undergone a previously validated process. This questionnaire was designed to measure the anxiety levels of pregnant women before and after participating in a four-week prenatal exercise program. Throughout this period, respondents were required to participate in prenatal exercise sessions held at the Palingkau Community Health Center twice a week.

The data analysis process was carried out using the Chi-Square test to determine whether there was a significant relationship between the implementation of prenatal exercise and the anxiety levels of pregnant women. The Chi-Square test was chosen based on its ability to analyze the relationship between two categorical variables. Data collected from the questionnaires will be processed using statistical software, and the results will indicate whether there is a significant difference in anxiety levels before and after the implementation of prenatal exercise.

In conducting this research, ethical aspects of the study received serious attention. Before the data collection process began, all respondents were given a comprehensive explanation of the research objectives and procedures to be carried out. Respondents were also asked to sign a consent form, stating their agreement to participate in this study. The data collected will be kept strictly confidential and used solely for research purposes.

3. RESULTS AND DISCUSSION

This study aims to analyze the relationship between the implementation of prenatal exercise and the anxiety levels of pregnant women in the third trimester at the Palingkau Community Health Center. Based on the results of data analysis on 30 respondents, an overview of the characteristics of the respondents and the relationship between the variables studied was obtained. The majority of respondents were in the 20–35 age group (63.3%), which is a healthy reproductive age and relatively safe biologically for pregnancy and childbirth. In terms of education, the majority of respondents had a high school education background (36.7%), which potentially affects the mother's ability to understand and absorb health information related to the benefits of prenatal exercise. In terms of employment status, 60% of respondents were housewives who have more flexibility in time to participate in prenatal exercise activities at health facilities. Based on parity, respondents were predominantly multiparous mothers

(46.7%) who had previous pregnancy experience but still potentially experienced anxiety before childbirth.

The results of the study showed that the anxiety levels of pregnant women in the third trimester varied, with 46.7% experiencing mild anxiety, 36.6% experiencing moderate anxiety, and 16.7% experiencing severe anxiety. This finding indicates that although almost half of the respondents were in the mild anxiety category, there was still a significant proportion who experienced moderate to severe anxiety before delivery. The results of the Chi-Square test showed a p-value of 0.013 ($p < 0.05$), which indicated a statistically significant relationship between the implementation of pregnancy exercises and the anxiety levels of pregnant women in the third trimester. Pregnant women who regularly do pregnancy exercises tend to experience lower levels of anxiety compared to mothers who do not do pregnancy exercises, as seen from the distribution of crosstab data where 11 out of 15 mothers who did pregnancy exercises experienced mild anxiety, while in the group that did not do pregnancy exercises, only 3 out of 15 people experienced mild anxiety.

General Data

Table 1. General Data Distribution.

Characteristics	Frequency	%
Age:		
• <20 years	5	16.7
• 20–35 years	19	63.3
• >35 years	6	20.0
Education		
• Elementary School	6	20.0
• JUNIOR HIGH SCHOOL	8	26.7
• SENIOR HIGH SCHOOL	11	36.7
• College	5	16.6
Work		
• Housewife	18	60.0
• Private	8	26.7
• Government employees	4	13.3
Parity		
• Primipara	13	43.3
• Multipara	14	46.7
• Grand multipara	3	10.0

This study involved 30 pregnant women in their final trimester. The age distribution of respondents showed that the majority were between 20 and 35 years old, accounting for 63.3%. This age group is considered the ideal age range for pregnancy, as the risk of complications for both mother and baby is relatively low. According to information from the National Population and Family Planning Agency (BKKBN), pregnancies between the ages of 20 and 35 have a higher success rate and fewer health risks compared to those in pregnant women under 20 or over 35 (BKKBN, 2021).

In terms of education level, data shows that the majority of pregnant women have a secondary education background, with 36.7% being high school graduates. Higher education levels are generally associated with a greater capacity to understand health information, including the benefits of prenatal exercise. A study by Astuti et al. (2022) revealed that pregnant women with higher education tend to be more proactive in seeking health information and are more open to new health practices, including prenatal exercise. This indicates that education can play a significant role in influencing maternal attitudes toward prenatal exercise and health during pregnancy.

In terms of employment status, 60% of respondents were housewives, while the remainder worked in the private sector and as civil servants, with proportions of 26.7% and 13.3%, respectively. This employment status provides flexibility for pregnant women to participate in prenatal exercise activities at the Palingkau Community Health Center. Research conducted by Sari et al. (2023) shows that pregnant women who are not tied to formal employment are more likely to attend prenatal exercise classes, which contributes to reducing their anxiety levels before delivery. Therefore, support from the home environment and the availability of flexible time can increase pregnant women's participation in exercise programs.

Special Data

Table 2.Distribution of Anxiety Levels of Pregnant Women.

Anxiety Level	Frequency	%
• Light	14	46.7
• Currently	11	36.6
• Heavy	5	16.7

The anxiety levels of pregnant women showed that 46.7% of respondents experienced mild anxiety, 36.6% experienced moderate anxiety, and 16.7% experienced severe anxiety (Table 5). The anxiety experienced by pregnant women can be influenced by various factors, including previous experiences, social support, and information obtained. According to research by Putri et al. (2022), high levels of anxiety can negatively impact the health of both

mother and baby, so it is important to identify and manage this anxiety. Prenatal exercise can be an effective intervention to reduce this level of anxiety.

Bivariate Analysis

Bivariate analysis was conducted to identify the relationship between prenatal exercise and maternal anxiety levels. A crosstab table shows that of the 15 pregnant women who performed prenatal exercise, 11 experienced mild anxiety, 3 moderate anxiety, and 1 severe anxiety. Meanwhile, of the 15 women who did not perform prenatal exercise, only 3 experienced mild anxiety, while 8 experienced moderate anxiety and 4 severe anxiety. These results indicate that pregnant women who performed prenatal exercise tended to have lower levels of anxiety than those who did not (Table 6).

The Chi-Square test showed a p-value of 0.013, which is lower than the 0.05 significance level. This indicates a significant relationship between the implementation of prenatal exercises and the level of anxiety in pregnant women in the third trimester. Research by Hidayati and Rahmawati (2023) also supports this finding, where prenatal exercises were shown to be effective in reducing maternal anxiety by increasing relaxation and reducing stress. Prenatal exercises not only help in physical preparation for labor but also provide important psychological benefits for pregnant women.

Discussion

This research aligns with several previous studies examining the relationship between prenatal exercise and anxiety levels in pregnant women. Research conducted by Wulandari and Handayani (2019) at the Godean I Community Health Center in Sleman consistently demonstrated a significant relationship between prenatal exercise and anxiety levels in third-trimester pregnant women, with a p-value of 0.001 ($p < 0.05$). The study demonstrated that prenatal exercise can reduce anxiety levels through muscle relaxation and increased endorphin production, which have a calming effect on pregnant women. These results support the findings of research at the Palingkau Community Health Center, which showed that pregnant women who regularly perform prenatal exercise tend to experience less anxiety than those who do not.

In line with the above research, Aprilia and Puspitasari (2020) in their research at Wates Regional Hospital in Yogyakarta found that prenatal exercise had a significant effect in reducing anxiety levels in primigravida mothers in the third trimester, with statistical test results showing $p = 0.000$. The study emphasized that prenatal exercise is not only physically beneficial in preparing for childbirth, but also provides positive psychological impacts through social interactions with other pregnant women and guidance from health workers during the exercise activities. This is relevant to the characteristics of respondents in the study at

Palingkau Community Health Center, where 43.3% were primiparous mothers who needed more support in facing their first childbirth experience. Prenatal exercise activities carried out in groups provide an opportunity for pregnant women to share experiences and reduce anxiety through the social support that is built.

Sari and Wijayanti's (2021) study at the Surabaya City Maternity Clinic also supports these findings, showing a significant difference in anxiety levels between pregnant women who participated in prenatal exercise and those who did not ($p=0.012$). The study used the Hamilton Anxiety Rating Scale (HARS) to measure anxiety levels and found that 68% of pregnant women who regularly participated in prenatal exercise experienced a decrease in anxiety scores after 4 weeks of intervention. The mechanism for reducing anxiety is explained by regular physical activity, which can increase blood flow to the brain, improve mood, and reduce stress hormones such as cortisol. This finding is relevant to research data from the Palingkau Community Health Center, where of the 15 respondents who participated in prenatal exercise, 11 (73.3%) experienced mild anxiety, demonstrating the effectiveness of prenatal exercise in managing anxiety.

Nurhasanah and Dewi (2018) in their study at the Ciputat Community Health Center, South Tangerang, found similar results with a p -value of 0.003, indicating a significant relationship between the frequency of attending prenatal exercise and the anxiety levels of pregnant women in the third trimester. The study more specifically analyzed the frequency of attendance at prenatal exercise and found that mothers who attended at least 8 prenatal exercise sessions showed lower anxiety levels than those who attended fewer than 8 sessions. The aspect of continuity and regularity in attending prenatal exercise is an important factor that needs to be considered in a maternal health intervention program. This has practical implications for health workers at the Palingkau Community Health Center to not only encourage pregnant women to participate in exercise but also ensure consistent attendance to obtain optimal benefits.

A meta-analysis conducted by Putri, Rahmawati, and Susanti (2022) compiled 15 studies in Indonesia from 2015 to 2021 on the effect of prenatal exercise on maternal anxiety. The meta-analysis results showed an effect size of 0.78 with a 95% confidence interval (0.65-0.91), indicating that prenatal exercise has a significant effect on reducing maternal anxiety. The meta-analysis also identified that the components of relaxation movements, breathing techniques, and light meditation integrated into prenatal exercise significantly contributed to reducing anxiety. These comprehensive findings strengthen the validity of the research results at Palingkau Community Health Center and provide a strong scientific basis for recommending

prenatal exercise as a non-pharmacological intervention in managing maternal anxiety in the third trimester, especially considering that 16.7% of respondents still experience severe anxiety that requires special attention from health professionals.

4. CONCLUSION

Based on the results of research conducted at Palingkau Community Health Center regarding the relationship between the implementation of pregnancy exercises and the anxiety levels of pregnant women in the third trimester, it can be concluded that there is a statistically significant relationship between the two variables. This study involved 30 respondents of pregnant women in the third trimester with the results of the Chi-Square test showing a p-value of 0.013, which is smaller than the alpha significance level of 0.05, so that the research hypothesis is accepted and there is a significant relationship between the implementation of pregnancy exercises and the anxiety levels of pregnant women in the third trimester at Palingkau Community Health Center. The characteristics of the respondents show that the majority are in the productive age group of 20-35 years at 63.3%, most of whom are secondary educated with 36.7% high school graduates, and dominated by housewives at 60% who provide flexibility of time to participate in pregnancy exercise activities regularly.

The results of the bivariate analysis showed a striking difference between the group that performed prenatal exercises and those that did not. Of the 15 pregnant women who regularly performed prenatal exercises, 73.3% experienced mild anxiety, 20% moderate anxiety, and only 6.7% severe anxiety. In contrast, of the 15 pregnant women who did not perform prenatal exercises, only 20% experienced mild anxiety, while 53.3% experienced moderate anxiety and 26.7% severe anxiety. These data clearly indicate that pregnant women who actively participate in prenatal exercise programs tend to experience lower levels of anxiety. This finding aligns with various previous studies in Indonesia that have consistently shown the effectiveness of prenatal exercises in reducing anxiety levels in pregnant women in the third trimester.

The mechanism of anxiety reduction through prenatal exercise can be explained through physiological and psychological aspects. Physiologically, regular physical activity increases the production of endorphins, which have a relaxing effect, increases blood flow to the brain, which improves mood, and lowers levels of stress hormones like cortisol. Movements involving muscle relaxation techniques, breathing exercises, and light meditation contribute significantly to reducing physical and mental tension. Psychologically, group activities create a supportive social environment where pregnant women can interact, share experiences, and provide emotional support. Guidance from health professionals also increases mothers'

knowledge about the labor process, reducing uncertainty and fear, which can contribute to anxiety.

The practical implications of this study are significant for the maternal and child health care system. Given that the prevalence of anxiety at Palingkau Community Health Center reached 35%, higher than the national average of 30%, prenatal exercise programs should be made a standard component of antenatal care services. Health workers should actively promote and facilitate prenatal exercise activities on a regular schedule at least twice a week. For pregnant women who continue to experience severe anxiety, additional interventions such as individual counseling or referral to a psychologist are needed. Limitations of the study include the cross-sectional design, which cannot establish a definitive causal relationship, the relatively small sample size, and the use of purposive sampling, which could potentially introduce selection bias. Recommendations for further research include conducting experimental studies with larger sample sizes and random sampling techniques to enhance validity. The final conclusion confirms that prenatal exercise has proven effective as a safe, non-pharmacological intervention in managing maternal anxiety and should be systematically integrated into maternal and child health services.

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