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Factors That Affecting Anxiety Among Pregnant Women in Indonesia: Cross Sectional Study

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ABSTRACT: Anxiety during pregnancy is a common psychological concern that can negatively impact maternal and fetal health. Identifying the factors influencing anxiety in pregnant women is essential for targeted interventions. This study aims to analyze the factors associated with anxiety in pregnant women. A cross-sectional study was conducted with 100 pregnant women attending prenatal check-ups at the Independent Midwife Practice Place Samattar Gresik, Indonesia between April and June 2024. A total sampling technique was used, and data were analysed using univariate, bivariate (chi-square), and multivariate (logistic regression) methods. The results showed significant relationships between anxiety and health status ($p = 0.000$), parity ($p = 0.046$), gestational age ($p = 0.020$), maternal age ($p = 0.001$), education ($p = 0.001$), and family support ($p = 0.000$). Multivariate analysis identified health status ($OR = 26.870$) and family support ($OR = 4.381$) as the most influential factors associated with anxiety. Health status and family support were the strongest predictors of anxiety in pregnant women. Strengthening family support and improving maternal health may help mitigate anxiety during pregnancy.

1. INTRODUCTION

Pregnancy is a natural process that brings about significant physical and psychological changes in women. During the first trimester, pregnant women often experience psychological adjustments. In the second trimester, they typically become calmer as they begin to adapt to and accept their pregnancy. By the third trimester, anxiety tends to peak and becomes more complex compared to the previous stages.[1, 2] Anxiety symptoms during pregnancy generally follow a U-shaped pattern, being higher in the first trimester, decreasing in the second, and rising again in the third.[3] If left untreated, anxiety can lead to excessive stress, negatively affecting both the mother and the fetus, potentially resulting in serious complications.[4] According to the World Health Organization (WHO), approximately 10% of pregnant women worldwide experience mental disorders, primarily depression. In developing countries, this prevalence increases to 15.6% during pregnancy and 19.8% after childbirth. [5] A systematic review and meta-analysis found that 1 in 5 (20%) pregnant and postpartum women in low- and middle-income countries experience generalized anxiety disorder. In Indonesia, a study conducted in Semarang reported that 20.2% of pregnant women experienced mild to severe anxiety levels.[6] Research conducted in the districts of Bangkalan, Pamekasan, Sampang, and Sumenep, East Java, found that 31.4% of pregnant women experienced very severe anxiety, 12.9% experienced severe anxiety.[7] These findings underscore the importance of monitoring and addressing mental health concerns among pregnant women, especially in developing countries, to ensure the well-being of both mothers and their children.

Several factors influence anxiety in pregnant women, including health status, parity, gestational age, mother's age, parity, education level, and family support. [8, 9] Research indicates that parity can influence anxiety levels in pregnant women. Nulliparous women, who are experiencing pregnancy for the first time, often report higher levels of pregnancy-related anxiety compared to multiparous women. This increased anxiety may stem from uncertainty and fear due to a lack of prior childbirth experience. [10] Conversely, multiparous women, who have had previous childbirth experiences, may experience anxiety related to memories of past labor pain and concerns about undergoing similar experiences again. [11] These findings highlight the complex relationship between parity and anxiety, emphasizing the need for individualized support for pregnant women based on their unique experiences and concerns. Pregnancy risk increases when a woman conceives and gives birth under the age of 20 or over 35, as both age groups fall into the high-risk pregnancy category. Women in these age ranges have a higher likelihood of giving birth to babies with congenital defects. [12, 13] Education had effect on anxiety levels. Individuals with good education tend to have good literacy, solve problems effectively, and use positive coping strategies. As a result, they may experience lower levels of anxiety when facing challenges. [14, 15] Additionally, family support plays a crucial role in managing anxiety. Emotional and physical support from family members helps reduce stress and promotes overall well-being during pregnancy. [16, 17] Existing studies often analyze individual factors influencing anxiety, such as parity, maternal age, or education. However, few studies comprehensively assess the combined impact of multiple factors, including health conditions, family support, and psychological influences. [18, 19] Understanding the factors contributing to anxiety can help pregnant women and their families take proactive steps to manage stress and improve maternal health outcomes. Based on this background, the objective of this study was to analyze factors that affecting anxiety level among pregnant women.

2. MATERIALS AND METHODS

2.1 Study design

This study employed a quantitative research approach with a cross-sectional design.

2.2 Setting

Data were collected from pregnant women using self-report questionnaire. The population used in this study was 100 pregnant women who had their pregnancies checked between April 2024 and June 2024 at the Independent Midwife Practice Place Samattar Gresik, Indonesia. We used total sampling.

2.3 Instrument scale

Data was collected using self-report questionnaire. The questionnaires asked regarding health status, parity, pregnancy age, mother's age, education, family support, and anxiety. Anxiety was measured using the Hamilton Anxiety Rating Scale (HARS) [20]. This scale consists of 14 items, each assessing different aspects of anxiety, including both psychological and physical symptoms. The HARS evaluates factors such as tension, fears, insomnia, cognitive impairment, and somatic complaints. Each item is scored on a scale from 0 to 4, with higher scores indicating greater levels of anxiety. The total score provides an overall assessment of anxiety severity, helping clinicians and researchers identify and monitor anxiety symptoms effectively. Total Score < 14 was no anxiety. Cronbach's alpha values ranging from 0.77 to 0.92 [21], indicating acceptable to excellent reliability and concurrent validity when compared with clinical assessments and other anxiety scales, such as the Covi Anxiety Scale [22]. Family support was adopted from previous study [23] and translated by Nursalam [24]. It had 12 items. Total score 25 -36 was good family support, 13-24 was moderate family support, 0-12 was poor family support.

2.4 Data Analysis

The collected data were uploaded to a secure server, exported in XLS format, cleaned in Microsoft Excel, and analyzed with SPSS version 29. Frequencies and percentages were used as appropriate. Data were analyzed using multivariate (logistic regression) methods. The p value was set at <0.05 .

2.5 Ethical considerations

The research procedure received a letter of ethics from the Research Ethics Commission of the Komite Etik Penelitian (KEP) Lembaga Universitas Nahdlatul Ulama Surabaya No. Certificate 0396/EC/KEPK/UNUSA/2024.

3. RESULTS AND DISCUSSION

3.1 Characteristic of Respondents

The characteristics of participants were presented in Table 1. Analysis of the frequency distribution revealed that the majority of pregnant mothers exhibited normal health conditions, were experiencing their first pregnancy, were in the final trimester,

fell within the 20-35 age range, and had completed secondary education (high school or vocational training). Additionally, most respondents reported adequate family support and did not display signs of anxiety.

Table 1. Characteristic of Respondents

Respondent Characteristics	Frequencies (n)	Percentage (%)
Health Status		
Normal	61	61
Abnormal	39	39
Parity		
Nulliparous	45	45
Primipara	16	16
Multiparous	31	31
Grande is multiparous	8	8
Pregnancy Age		
First Trimester	34	34
Second Trimester	31	31
Third Trimester	35	35
Mother's Age		
No Risk (20-35 years)	55	55
At risk (<20 and >35 years)	45	45
Education		
Elementary (Elementary-Middle School)	35	35
Intermediate (Senior High School/ Vocational School)	44	44
High (College)	21	21
Family Support		
Good	55	55
Moderate	21	21
Poor	24	24
Anxiety		
Not anxiety	54	54
Anxiety	46	46
Total of respondents	100	100

3.2 Factors Related to Anxiety in Pregnant Woman

Table 2 showed the bivariate analysis results shows that there was a significant relationship between health status (p -value = 0.000), parity (p -value = 0.044), gestational age (p -value = 0.023), maternal age (p -value = 0.004), education (p -value = 0.000), and family support (p -value = 0.000) with anxiety in pregnant women.

Table 2. Factors related to anxiety in pregnant women

	No anxiety		Anxiety		<i>P</i> -value
	Frequencies(n)	Percentage (%)	Frequencies(n)	Percentage (%)	
Health Status					
Normal	50	50	11	11	0.000
Abnormal	54	54	35	35	
Parity					
Nulliparous	27	27	18	18	
Primipara	11	11	5	5	0.046
Multiparous	15	15	16	16	
Grande is multiparous	1	1	7	7	
Gestational Age					
First Trimester	24	24	10	10	0.020
Second Trimester	17	17	14	14	
Third Trimester	13	13	22	22	
Mother's Age					
No Risk (20-35 years)	38	38	17	17	0.001
At risk (<20 and >35 years)	16	16	29	29	
Education					
Base	11	11	24	24	
Intermediate	32	32	12	12	0.001
High	11	11	10	10	
Family Support					
Good	44	44	11	11	0.000
Moderate	7	7	14	14	
Poor	3	3	21	21	

Table 3 indicated that health status (p -value = 0.000) and family support (p -value = 0.001) were significantly associated with anxiety in pregnant women. The strength of these relationships was reflected in the odds ratio (OR) values. Health status had an OR of 26.870, meaning that pregnant women with poor health were 26.870 times more likely to experience anxiety. Meanwhile, family support had an OR of 4.381, indicating that pregnant women with insufficient family support were 4.381 times more likely to experience anxiety.

Table 3. Multiple logistic regression analysis of risk factors for anxiety among pregnant women

Step 1	OR	p-Value
Health Status	26.870	.000
Parity	1.440	.354
Gestational Age	1.257	.555
Mother's Age	.783	.763
Education	1.390	.497
Family Support	4.381	.001

3.3 Discussion

The aimed of this study was to analyze factors that affecting anxiety among pregnant woman. The results showed that health status, parity, gestational age, maternal age, education, and family support with anxiety in pregnant women. health status and family support were factors that affecting anxiety among pregnant woman.

The study found that pregnant women with poor health status were more likely to experience anxiety, highlighting a strong relationship between health status and anxiety in pregnancy. This finding aligns with previous research, which also reported a significant association between health status and anxiety in pregnant women. Poor health can lead to physical discomfort, complications, and increased medical concerns, all of which contribute to heightened stress and worry during pregnancy.[25, 26]

Based on the research results indicating a significant relationship between parity and anxiety in pregnant women. This finding aligns with previous research which also found a strong link between health status and anxiety in pregnant women. Higher-risk parity is associated with increased maternal anxiety and a higher risk of maternal mortality. The study found that higher parity was associated with an increased incidence of complications, which can contribute to elevated anxiety levels in expectant mothers.[27]

The study showed that there was a relationship between gestational age and anxiety in pregnant women. Anxiety tends to peak in the third trimester as emotional changes intensify. Excitement and fear as childbirth approaches often leads to increased anxiety. Anxiety levels often peak during the third trimester due to intensified emotional changes. As childbirth approaches, the combination of excitement and fear can lead to increased anxiety. Studies have shown that anxiety symptoms reported in the third trimester predict shortened gestational age and lower birth weight. Additionally, third-trimester pregnancy anxiety has been linked to shorter gestational length, even after adjusting for factors such as maternal age, education, parity, and obstetric risk.[28]

This study employed that there was relationship between maternal age and anxiety during pregnancy, highlighting that both younger and older maternal ages can influence anxiety levels. Adolescent mothers are at a higher risk of experiencing prenatal distress. A study found that adolescent mothers have a 10.31 times greater chance of experiencing prenatal distress compared to adult mothers. This increased anxiety may be due to emotional immaturity and lack of preparedness for motherhood. Advanced maternal age (over 35 years) is associated with increased risks during pregnancy, which can contribute to heightened anxiety. Research indicates that women of advanced maternal age have significantly higher rates of anxiety and depression than younger women.[29, 30] These findings suggest that maternal age is a significant factor influencing anxiety levels during pregnancy, with both younger and older mothers facing unique challenges that can impact their mental health.

This study showed that there was relationship between education and anxiety in pregnant women. For instance, previous study found that higher education levels predicted lower anxiety and depressive symptoms during pregnancy. The researchers noted that these educational differences were not attributable to childhood socioeconomic status or parental mental health, suggesting that higher education may provide women with better coping mechanisms and health literacy, thereby reducing prenatal anxiety [14]. Additionally, a study concluded that needs-based education was effective in relieving prenatal anxiety and improving certain anxiety-related outcomes. This indicates that tailored educational interventions can play a significant role in mitigating anxiety among expectant mothers.

This study found that there was a relationship between family support and anxiety in pregnant women. Studies have shown that strong family support can reduce anxiety levels during pregnancy. When pregnant women feel supported by their families, their confidence increases, leading to decreased anxiety. [17] Social support during pregnancy alleviates emotional and physical

pressures, improving the well-being of both mother and child. The review emphasized that emotional support from family members plays a crucial role in reducing stress and anxiety during pregnancy. Enhancing family support systems could be an effective strategy to mitigate anxiety in pregnant women. These findings underscore the importance of family support in promoting mental health during pregnancy.

There was limitation of this study, the cross-sectional design does not allow for causal inferences, making it difficult to determine the long-term effects of the identified factors on anxiety levels. Future studies should consider a larger, more diverse sample and employ longitudinal designs to assess changes in anxiety over time.

4. CONCLUSION

This study confirmed that several factors, including health status, parity, gestational age, maternal age, education, and family support, are significantly associated with anxiety in pregnant women. Among these, poor health status and insufficient family support were the strongest predictors of heightened anxiety. Pregnant women with good health and strong family support exhibited lower anxiety levels, emphasizing the importance of both physical well-being and social support during pregnancy. Strengthening healthcare services and promoting family involvement in maternal care can help reduce pregnancy-related anxiety and improve maternal and fetal outcome.

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AUTHOR CONTRIBUTIONS

RAD and MM Conceptualization, Data Curation, Formal Analysis, Methodology, Validation, Visualization, Writing – Original Draft, Review & Editing; NP, YA, SAP, DPS Conceptualization, Investigation, Methodology, Validation, and Writing – Original Draft, Review & Editing

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICS STATEMENT

The research procedure received a letter of ethics from the Research Ethics Commission of the Komite Etik Penelitian (KEP) Lembaga Universitas Nahdlatul Ulama Surabaya No. Certificate 0396/EC/KEPK/UNUSA/2024.

DATA AVAILABILITY STATEMENT

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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