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Factors Associated With Anxiety Among Pregnant Women : An Early Mental Health Screening Strategy

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Abstract

Background: Pregnancy is a period during which women experience substantial physical and psychological changes that may increase their vulnerability to mental health problems, particularly anxiety. The World Health Organization (WHO) estimates that approximately 10% of pregnant women experience anxiety during pregnancy, with the prevalence increasing to nearly 20% as childbirth approaches. Several factors, including maternal age, pregnancy experience, gestational age, educational level, income, and family support, may contribute to anxiety during pregnancy. This study aimed to identify factors associated with anxiety among pregnant women attending Arsy Medika Clinic, Cirebon Regency, West Java, Indonesia. **Methods:** A quantitative study with a cross-sectional design was conducted among pregnant women receiving antenatal care at Arsy Medika Clinic. Participants were recruited using an accidental sampling technique, resulting in a total of 35 respondents who met the inclusion and exclusion criteria. Anxiety was assessed using the Perinatal Anxiety Screening Scale (PASS) questionnaire. Data were analyzed using descriptive statistics and the Chi-square test to determine the association between maternal characteristics and anxiety. **Results:** Family income (p = 0.033) and family support (p = 0.009) were significantly associated with anxiety among pregnant women. In contrast, maternal age (p = 0.056), educational level (p = 0.892), employment status (p = 0.832), parity (p = 0.190), and gestational age (p = 0.913) were not significantly associated with anxiety. **Conclusion:** Family income and family support were the main factors associated with anxiety among pregnant women. These findings highlight the importance of incorporating routine mental health screening into antenatal care services, with particular attention to pregnant women experiencing socioeconomic challenges and inadequate family support. Strengthening early anxiety screening programs may facilitate timely identification and intervention to improve maternal mental health outcomes.

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1. INTRODUCTION

Pregnancy is a complex biological and physiological process involving multiple factors that influence both maternal health and fetal development. During pregnancy, women experience substantial physical, hormonal, and psychological changes that may lead to various physical discomforts and emotional disturbances (Biaggi et al., 2016). Among the most common psychological problems experienced during pregnancy is anxiety. Anxiety is a natural emotional response characterized by excessive fear, worry, and feelings of uncertainty that may occur even in the absence of an identifiable threat. Although mild anxiety may represent a normal adaptive response, persistent or severe anxiety can negatively affect both maternal well-being and pregnancy outcomes.

According to the World Health Organization (WHO), approximately 10% of pregnant women worldwide experience anxiety during pregnancy**,** and this prevalence may increase to 20% as childbirth approaches (WHO, 2025). Maternal mental health disorders are particularly prevalent in low- and middle-income countries, where women often experience psychological problems throughout the perinatal period. Previous studies have reported that approximately 12% of women experience anxiety during pregnancy, while 15.6% develop depression or anxiety during the postpartum period. Reported prevalence rates vary across countries, reaching 18.2% in Uganda, 12.5% in Nigeria, 19% in Zimbabwe, and as high as 41% in South Africa (Nath et al., 2019).

In Indonesia, maternal anxiety remains a significant public health concern. Previous studies have reported that the prevalence of anxiety among pregnant women reaches 28.7%**,** indicating that psychological problems during pregnancy are relatively common. Several factors have been associated with antenatal anxiety, including maternal age, pregnancy experience, gestational age, educational level, socioeconomic status, and social support. These factors may influence women's ability to adapt to the physical and emotional changes experienced throughout pregnancy (Puspitasari & Wahyuntari, 2020; Romlah & Farizal, 2022). If left unrecognized and untreated, maternal anxiety may contribute to adverse pregnancy outcomes, including premature uterine contractions, ineffective labor contractions, prolonged labor, and reduced maternal ability to cope with childbirth (Mirdatul & Maria, 2024).

Beyond its physical consequences, untreated anxiety during pregnancy may have long-term psychological implications. Maternal anxiety can persist throughout the perinatal period and increase the risk of emotional disturbances during childbirth, the postpartum period, and breastfeeding. Consequently, psychological problems that are not identified and managed during pregnancy may accumulate over time and potentially develop into more severe mental health disorders, adversely affecting both maternal and infant well-being.

Early identification of anxiety during pregnancy is therefore essential for improving maternal mental health and optimizing antenatal care services. Routine mental health screening enables healthcare providers to identify women at risk, provide timely psychological support, and implement appropriate interventions before symptoms become more severe. Understanding the factors associated with maternal anxiety is an important step toward developing targeted preventive strategies and strengthening comprehensive maternal healthcare services.

Although several studies have investigated determinants of antenatal anxiety, the associated factors may vary across populations because of differences in socioeconomic, cultural, and healthcare contexts. Limited evidence is available regarding factors associated with anxiety among pregnant women attending primary healthcare facilities in Cirebon Regency, West Java. Therefore, this study aimed to analyze the factors associated with anxiety among pregnant women attending Arsy Medika Clinic, Cirebon Regency, as an early mental health screening strategy.

2. METHOD

This study employed a quantitative analytical design using a cross-sectional approach to identify factors associated with anxiety among pregnant women. The study was conducted from 7 to 21 September 2025 at Arsy Medika Clinic, Cirebon Regency, West Java, Indonesia. The study population consisted of all pregnant women attending antenatal care services at the clinic during the study period. Participants were recruited using an accidental sampling technique. Pregnant women who attended antenatal care during the data collection period and met the predefined inclusion and exclusion criteria were invited to participate. Inclusion criteria in this study is pregnant women attending antenatal care, able to communicate in Indonesian, and willing to participate, and Exclusion criteria is pregnant women with diagnosed psychiatric disorders or incomplete questionnaire responses. A total of 35 pregnant women were included in the study. Data were collected using the Perinatal Anxiety Screening Scale (PASS) questionnaire, a standardized instrument designed to assess anxiety symptoms during the perinatal period. After receiving an explanation of the study objectives and providing informed consent, participants completed the questionnaire independently. Researchers were available to provide clarification whenever necessary. Descriptive (univariate) analysis was performed to summarize participants' demographic characteristics and anxiety status. Bivariate analysis was conducted using the Chi-square test to examine the associations between maternal characteristics—including age, educational level, employment status, family income, parity, gestational age, and family support—and anxiety among pregnant women. Statistical significance was established at a p-value of < 0.05**.**

3. RESULTS AND DISCUSSION

The findings of this study are presented in Table 1:

Table 1. Factors Associated with Anxiety Among Pregnant Women

Variable	Anxiety				Total		*P value*
	Yes		No				
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)	
Age							
<20	1	2,9	0	0	1	2,9	0,056
20-35	4	11,4	27	77,1	31	88,6	
>35	1	2,9	2	5,7	3	8,6	
Highest Level of Education							
Elementary School	0	0	2	5,7	2	5,7	0,892
Junior High School	2	5,7	7	20	9	25,7	
Senior High School	3	8,6	14	40	17	48,6	
Higher Education	1	2,9	6	17,1	7	20	
Employment Status							
Employed	5	14,3	20	57,1	25	71,4	0,832
Unemployed	1	2,9	9	25,7	10	28,4	
Income							
≤ 2.682.000	5	14,3	20	57,1	25	71,4	0,033
2.682 – 5.000.000	0	0	9	25,7	9	25,7	
≥ 5. 000.000	1	2,9	0	0	1	2,9	
Parity							
Primipara	6	17,1	18	51,4	24	68,6	0,190
Multipara	0	0	8	22,9	8	22,9	
Grandemultipara	0	0	3	8,6	3	8,6	
Gestational Age							
First Trimester	1	2,9	7	20	8	22,9	0,913
Second Trimester	2	5,7	8	22.9	10	28,6	
Third Trimester	3	8,6	14	40	17	48,6	
Family Support							
Poor	4	11,4	3	8,6	7	20	0,009
Good	2	5,7	26	74,3	28	80	

Source : Primary Data, 2025

Table 1 shows that the majority of respondents were 20–35 years old (88.6%)**,** had completed senior high school education (48.6%)**,** were employed (71.4%)**,** had a monthly family income of ≤ IDR 2,682,000 (71.4%)**,** were primiparous (68.6%)**,** were in the third trimester of pregnancy (48.6%)**,** and reported good family support (80.0%)**.** Bivariate analysis using the Chi-square test demonstrated that family income (p = 0.033) and family support (p = 0.009) were significantly associated with anxiety among pregnant women. In contrast, maternal age (p = 0.056), educational level (p = 0.892), employment status (p = 0.832), parity (p = 0.190), and gestational age (p = 0.913) were not significantly associated with maternal anxiety (p > 0.05).

Pregnant women experience various physical and psychological changes throughout pregnancy. One of the psychological changes commonly experienced during pregnancy is a feeling of worry and anxiety related to various concerns. Several factors may contribute to anxiety during pregnancy, including age, education, income, and employment status.

In this study, the majority of respondents were aged 20–35 years. Among these respondents, 27 (77.1%) did not experience anxiety. The analysis showed a p-value > 0.05, indicating that age was not significantly associated with anxiety among the respondents. This finding is consistent with a study conducted by Jannati, which reported no significant association between age and anxiety among pregnant women. This finding was also supported by a previous study conducted in Nigeria, as reported by Jannati, which found no association between age and anxiety levels (Jannati, 2025). In the present study, the respondents were within the healthy and mature reproductive age range. Age may influence the reproductive process. Being within a mature age range may also influence an individual's perception of anxiety, enabling a broader perspective and greater focus when interpreting personal experiences (Ratna Dewi, Anita, et al., 2025).

These findings are also consistent with the study conducted by Maysythoh, in which the respondents were predominantly aged 20–35 years. This age range is considered a healthy reproductive age and is classified as a non-risk age group for the reproductive process (Sutrisminah, 2021). The researchers argue

that being within a non-risk age range may provide pregnant women with a greater sense of security regarding their pregnancy. The absence of a significant association between age and anxiety may indicate that age is not necessarily a determining factor in the development of anxiety. Respondents may have developed adequate emotional regulation skills and may have become increasingly aware of the importance of maintaining mental health as an effort to prevent anxiety during pregnancy. Consequently, pregnant women may be able to experience their pregnancies more comfortably and with less anxiety.

Table 1 shows that the majority of respondents had completed senior high school, comprising 17 respondents (48.6%). This finding is consistent with the study by Sutrisminah, which reported that the majority of respondents had a secondary-level education (Sutrisminah, 2021). The present study found no significant association between education level and anxiety among pregnant women. This finding differs from the study by Maysythoh, which reported a significant association between education and anxiety among pregnant women. Hawari, as cited in Maysythoh's study, stated that a higher level of education may support an individual's exposure to information and enhance their ability to process and understand information (Sutrisminah, 2021). The researchers argue that education is not obtained solely through formal schooling. In the modern era, characterized by rapid digitalization, respondents can easily access and obtain various types of information, including health information and information related to emotional management and regulation. Therefore, formal education level may not necessarily be the only determinant of an individual's access to information.

The results presented in Table 1 indicate that the majority of respondents were unemployed and did not experience anxiety (57.1%). This finding differs from the study by Ratna Dewi, which reported that the majority of respondents were employed and that employment status was significantly associated with anxiety (Ratna Dewi, 2025). This finding is inconsistent with the results of the present study, which showed no significant association between employment status and anxiety. Employment is generally a major activity undertaken by members of society and is primarily intended to generate income to meet daily needs. Individuals who earn income through employment have responsibilities and obligations that must be fulfilled in accordance with workplace demands. The researchers argue that respondents who were unemployed did not have work-related responsibilities and obligations that had to be completed according to workplace requirements. Such demands may contribute to worry and anxiety. In contrast, unemployed respondents may be able to experience their pregnancies without the pressures associated with employment. Therefore, the findings of this study suggest that pregnant women who were unemployed were less likely to experience anxiety.

Based on the results presented in Table 1, the majority of respondents had an income of ≤ IDR 2,682,000, and income was significantly associated with anxiety among the respondents ($p < 0.05$). This finding is consistent with the study conducted by Sutriningsih, which found a significant association between family income and anxiety levels among pregnant women in the working area of Balinggi Public Health Center (Sutriningsih, n.d.). However, this finding differs from the study by Ratna Dewi, which reported no significant association between income and anxiety levels among respondents (Ratna Dewi, 2025).

The findings of the present study are consistent with the theory that socioeconomic conditions, including income, are important determinants of an individual's physical and mental health. Income affects a family's ability to meet basic needs and access health resources. The researchers argue that pregnancy is a period of preparation for the next generation, and adequate financial resources are required to fulfill the various needs of pregnant women throughout pregnancy. Income determines a family's ability to meet basic needs and access health resources. When income is limited, pregnant women may experience concerns about their ability to meet basic needs, which may increase anxiety. Therefore, income may be an important factor associated with anxiety among pregnant women.

Parity refers to the number of pregnancies that have reached a gestational age or fetal weight considered viable for delivery. In this study, the majority of respondents were primiparous and did not experience anxiety (68.6%). The analysis showed no significant association between parity and anxiety among the respondents ($p > 0.05$). This finding is consistent with the study by Jannati, in which the majority of respondents were primigravidas. The high proportion of primigravidas indicates that most respondents were experiencing their first pregnancy, which is generally accompanied by a process of psychological adaptation and may involve a greater potential for anxiety due to limited previous experience. A study by Nakamura, as cited by Jannati, reported that primiparous women had higher anxiety scores than multiparous women. However, anxiety may also occur among multigravida women despite their previous experience of pregnancy and childbirth. Among multigravida women, anxiety may be influenced by unpleasant experiences during previous pregnancies or childbirth (Jannati, 2025).

However, the results of the bivariate analysis in the present study differed from those reported by Jannati, as no significant association was found between parity and anxiety among the respondents. This finding is therefore not consistent with the study by Jannati, which reported an association between parity and anxiety.

Gestational age is closely associated with the level of anxiety experienced by pregnant women. The results presented in Table 1 show that the majority of respondents were in the third trimester of pregnancy (27–40 weeks). This finding differs from the study by Sutriningsih, which reported that the majority of respondents were in the second trimester (15–26 weeks). The statistical analysis showed no significant association between gestational age and anxiety among the respondents. This finding is supported by a study conducted by Nadillah, which found no significant association between gestational age and anxiety among pregnant women (Isti et al, 2022).

Anxiety during the first trimester is generally associated with physical changes such as discomfort, nausea and vomiting, and fatigue, which may affect daily activities. Psychological changes may also occur, including increased emotional sensitivity, irritability, and feelings of restlessness. These conditions may arise during early pregnancy because fetal development is not yet clearly visible (Sukmahati et al., 2024). During the second trimester, pregnant women's emotional conditions generally become more stable as they adapt better to physical and psychological changes. However, anxiety may still occur, particularly concerning fetal health, especially when mothers perceive changes in or a decrease in fetal movement (Hasanah et al., 2023). During the third trimester, anxiety may increase again and become more complex as childbirth approaches. Pregnant women often experience concerns about labor pain, the risk of complications, and the safety of both themselves and their babies, accompanied by increasing physical changes and emotional changes as delivery approaches (Sari et al., 2023).

The researchers argue that gestational age serves as an important indicator of the changes experienced by pregnant women. Therefore, regular monitoring and screening for anxiety are necessary for the early detection of maternal mental health problems and for improving antenatal care services. Midwives should provide optimal assistance and support to help pregnant women manage emotional changes throughout pregnancy.

Based on the results presented in Table 1, the majority of respondents had good family support and did not experience anxiety (74%). This finding differs from the study by Sutriningsih, which reported that the majority of pregnant women had poor family support. The analysis in the present study showed a significant association between family support and anxiety among the respondents ($p < 0.05$). This finding is consistent with the study by Sutriningsih, which found a significant association between family support and anxiety levels among pregnant women in the working area of Balinggi Public Health Center. This finding is also supported by Jannati, who reported a significant association between family support and anxiety among pregnant women.

Another study reported by Jannati, which was conducted in Iran, showed that pregnant women who received emotional support from their partners or family members had lower anxiety scores. This finding is also supported by Mona's qualitative systematic review, which explained that social support may come from close family members. Women who receive social support during pregnancy may receive various forms of emotional support that they consider important. In addition, pregnant women may experience greater satisfaction with the support they receive. This is consistent with the theory that social support can be provided to pregnant women in the form of emotional, informational, and esteem support from their social environment. Such support may increase feelings of security and self-esteem and enhance problem-solving abilities among pregnant women (Al-Mutawtah et al., 2023).

The researchers argue that support from close family members, particularly from the husband as the closest source of support, plays an important role in helping mothers adapt to pregnancy-related changes and manage their emotions. It is important for partners to be present and provide support throughout pregnancy. This is consistent with the theory that *family support*, particularly from the husband as the closest source of support, helps mothers adapt to pregnancy-related changes through attention, practical assistance, information provision, and emotional reinforcement. The researchers assume that when these forms of support are adequately provided throughout pregnancy, pregnant women may develop better coping mechanisms. Therefore, family support may serve as an important factor in psychological management and may help prevent anxiety during pregnancy.

The findings of this study emphasize the importance of integrating mental health screening into routine antenatal care services. Although several maternal characteristics, such as age, educational level, employment status, parity, and gestational age, were not significantly associated with anxiety, socioeconomic factors and family support demonstrated a significant relationship with maternal anxiety. These findings suggest that anxiety during pregnancy is not solely determined by biological or obstetric factors but is also influenced by the social environment in which pregnant women live. Systematic reviews have consistently identified inadequate social support, financial difficulties, and psychosocial stressors as major risk factors for antenatal anxiety. Therefore, healthcare providers, particularly midwives, should

incorporate psychosocial assessments into antenatal care to identify women at risk and provide timely counseling or referral services. Early detection of anxiety may prevent the progression of psychological distress and improve both maternal and neonatal health outcomes (Dennis, 2017).

Furthermore, the significant association between family support and anxiety observed in this study reinforces the crucial role of partners and family members in promoting maternal mental well-being. Emotional, informational, and practical support from family members may enhance pregnant women's coping abilities, increase their confidence in managing pregnancy-related challenges, and reduce psychological distress (Simarmata et al., 2019). Likewise, adequate family income may alleviate concerns regarding healthcare expenses, childbirth preparation, and infant care, thereby decreasing anxiety levels. These findings highlight the need for family-centered antenatal care programs that actively involve husbands and other family members in maternal health education and psychological support. Strengthening family participation and implementing routine mental health screening may contribute to more comprehensive and holistic antenatal care services (Jin et al., 2025).

This study had several limitations. Of the variables examined, only two were significantly associated with anxiety, whereas the remaining five variables were not significantly associated with anxiety. This may have been due to the relatively small sample size, potential selection bias, and limitations of the research design, which employed a *cross-sectional* approach. The data analysis also presented difficulties in determining the odds ratios (ORs) and confidence intervals (CIs), making it difficult to determine which variable had the strongest association with anxiety among all variables examined. This was because the bivariate analysis did not meet the requirements for further analysis, as the contingency tables were not in a 2 × 2 format.

4. CONCLUSION

Based on the findings of this study, it can be concluded that social factors, particularly income and family support, especially support from the husband, should be a primary focus in the implementation of mental health screening for pregnant women at healthcare facilities at various levels, particularly during *Antenatal Care* (ANC) visits. Several recommendations can be proposed based on the findings of this study. First, further research should be conducted to investigate other variables that may be associated with anxiety among pregnant women, such as support from healthcare professionals, sociocultural factors, and other relevant variables that may complement the findings of the present study. Second, future studies should consider increasing the sample size to obtain more accurate and statistically significant results. Third, future researchers are encouraged to use different research designs to provide a broader understanding of the factors associated with anxiety among pregnant women. In addition, health policymakers are expected to develop and strengthen health promotion programs aimed at preventing mental health problems among pregnant women through policies that support the routine implementation of early anxiety screening at accessible healthcare facilities.

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