



FACTORS ASSOCIATED WITH MENTAL HEALTH STATUS OF PREGNANT WOMEN

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ABSTRACT

Mental health of pregnant women is an important aspect of efforts to improve the health status of mothers and children. South Lampung Regency still faces low achievement in mental health screening of pregnant women (22.27%). This study aims to determine the factors associated with the mental health status of pregnant women in South Lampung Regency in 2025. This study employed a quantitative approach with a cross-sectional analytical design. The study population consisted of all pregnant women attending nine selected community health centers in South Lampung Regency, with a total sample of 415 respondents selected using proportional random sampling. The dependent variable, namely the mental health status of pregnant women, was measured using the Edinburgh Postnatal Depression Scale (EPDS), which has been validated in the Indonesian population and demonstrated good reliability, with Cronbach's alpha ranging from 0.78 to 0.85, indicating satisfactory internal consistency. A cut-off score of ≥ 10 was applied to classify pregnant women as being at risk of depression, as this threshold is considered sensitive for community-based screening in primary health care settings. The independent variables maternal age, gestational age, residence, spousal support, frequency of antenatal care (ANC) visits, and history of mental disorders were measured using a structured questionnaire. Data analysis was conducted using univariate, bivariate (Chi-Square test), and multivariate (multiple logistic regression) analyses. The results of the chi-square test showed a significant relationship between the age of the pregnant woman ($p=0.000$; OR=2.755), gestational age ($p=0.014$; OR=1.684), place of residence ($p=0.004$; OR=0.544), spousal support ($p=0.000$; OR=0.462), frequency of ANC visits ($p=0.026$; OR=0.625), and history of mental disorders ($p=0.000$; OR=3.595) with the mental health status of pregnant women. Multiple logistic regression analysis showed that the dominant factor associated with the mental health status of pregnant women was a history of mental disorders in the family (OR=4.453). In conclusion, there is a relationship between the age of pregnant women, gestational age, place of residence, spousal support, frequency of ANC visits, and history of mental disorders with the mental health status of pregnant women. The dominant influencing variable is a family history of mental disorders.

Keywords: antenatal care (ANC); history of mental disorders; mental health of pregnant women

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INTRODUCTION

Mental health of pregnant women is a state of well-being in which mothers can recognize their potential, cope with the stresses of pregnancy and daily life, and work productively and contribute to their families and communities. Mental health during pregnancy is an important aspect of maternal and child health that is currently a global concern. The World Health Organization emphasizes that maternal mental health is an integral part of overall maternal health, as mental disorders during pregnancy have broad implications for the quality of life of mothers, fetal growth and development, and family well-being (World Health Organization [WHO], 2022a).

According to WHO data from 2022, it is estimated that 1 in 5 mothers experience mental health problems during pregnancy and after giving birth. Antenatal depression is one of the most common conditions, with a global prevalence ranging from 10% to 25% depending on the social and economic context (Roddy Mitchell et al., 2023). Additionally, a study conducted by Hong & Buntup (2023) states that the prevalence of antenatal depression in ASEAN ranges up to 46.8% in

some studies using the EPDS (Hong & Buntup, 2023). Nationally, data from the National Population and Family Planning Agency (BKKBN) in 2024 shows that at least 57% of mothers in Indonesia experience symptoms of baby blues, making Indonesia the country with the highest risk of baby blues in Southeast Asia. Research conducted in Lampung Province by Sitorus (2025) revealed that out of 51 pregnant women in rural areas, 15 respondents (29.4%) showed symptoms of antenatal depression using the EPDS, indicating a risk of depression that requires follow-up (Sitorus, 2025). This is also in line with the Indonesian Minister of Health Regulation No. 21 of 2021, which states that mental health issues or disorders experienced by mothers during pregnancy not only affect pregnant women but can also affect the growth and development of the fetus in the womb, as well as the mental health of mothers after giving birth (Indonesian Ministry of Health, 2021).

In Indonesia, efforts to strengthen mental health services for pregnant women have begun to be integrated into the Maternal and Child Health (MCH) service system, in line with the primary service transformation program by the Ministry of Health (Ministry of Health of the Republic of Indonesia, 2023). This is also in accordance with the provisions of Indonesian Minister of Health Regulation No. 21 of 2021, which states that one of the antenatal service standards is the assessment of the mental health of pregnant women conducted in the first and third trimesters. Research by Hasanah et al (2019) found that low frequency of antenatal care (ANC) visits was associated with high EPDS scores. This indicates that regular interaction with health workers can help pregnant women express their psychological complaints and receive earlier intervention (Hasanah et al., 2019). Genetic factors also influence a person's vulnerability to mental health disorders. Pregnant women with a family history of mental disorders or a personal history of depression are at higher risk of experiencing pregnancy depression (Wang et al., 2021). This factor often goes undetected in primary health care services due to the lack of psychological assessment in routine examinations.

The use of the Edinburgh Postnatal Depression Scale (EPDS) is a strategic step in conducting rapid, valid, and easily implemented perinatal depression screening. The EPDS has been proven to have high sensitivity and specificity in various countries, including Indonesia, after undergoing cultural adaptation and language validation (Harahap et al., 2024). This is in accordance with the Indonesian Ministry of Health regulation explicitly stated in the Notification of Changes to Mental Health Screening Instruments, which states that the EPDS is the instrument used for mental health screening of pregnant women and postpartum mothers (Ministry of Health of the Republic of Indonesia, 2025). By using the EPDS, health workers can assess the risk level of depression in pregnant women and provide intervention or further referral as needed.

Previous studies in various regions of Indonesia, such as in Mataram City and South Jakarta, show that around 15-30% of pregnant women have EPDS scores above the normal threshold, indicating mild to moderate symptoms of depression (Syamantha Putri et al., 2023). These findings show that early detection through EPDS can help identify groups of pregnant women who need special attention from health workers. According to the health determinants theory proposed by H.L. Blum, a person's health status is influenced by four main factors, namely behavioral factors, environmental factors, health service factors, and hereditary factors. In the context of mental health in pregnant women, this theory emphasizes that mental health status is not determined by a single factor, but is the result of a complex interaction between these various determinants.

From a preliminary survey conducted on September 29, 2025, at the South Lampung District Health Office, it was found that the South Lampung Health Office has 28 community health centers spread across 17 subdistricts in South Lampung District, with a target of 20,819 pregnant women in 2025. One of the health service transformation policies established by the South Lampung District Health Office in 2025 is "health screening for pregnant women using the Edinburgh Postnatal Depression Scale (EPDS)", which began to be implemented in early 2025 and was integrated into the

SIMKESWA application in June 2025. This aims to improve the quality of health services for pregnant women and is also highly beneficial as an effort to detect mental health issues in pregnant women at an early stage.

An interview conducted on October 7, 2025, with the mental health program manager at the Community Health Center in South Lampung revealed that in 2024, there was a case of a mother with severe baby blues, causing her to experience schizophrenia, and she was unable to carry out normal activities, which certainly had a significant impact on her baby's development and growth. Meanwhile, at another Puskesmas, information was obtained that in the same year, a case of baby blues was found caused by an unwanted pregnancy, resulting in mental health disorders during pregnancy and impacting the mother's mental health postpartum.

The researchers also collected preliminary data through interviews with several pregnant women who came to the health center in South Lampung District on October 14, 2025, which showed that some pregnant women did not understand the importance of mental health checks during pregnancy and still considered psychological disorders to be a taboo subject. It was also found that some pregnant women felt unhappy because pregnancy was not what they had hoped for, and others felt anxious because the gap between their pregnancies was too long, making them worry about their ability to care for their babies later on.

The implementation of mental health screening for pregnant women in South Lampung Regency still faces various obstacles, including low coverage of pregnant women visiting health facilities and suboptimal implementation of screening by health workers. Based on data from the South Lampung Regency Health Office as of November 24, 2025, the number of pregnant women screened has only reached 4,637 (22.27%) of the total target of 20,819 (100%) pregnant women in 28 community health centers, and it is known that the prevalence of pregnant women detected with mental health problems is 0.77% (36 people) or 1 in 129 pregnant women are indicated to have mental health problems. This low achievement is an indicator of the suboptimal implementation of the mental health screening program for pregnant women using the Edinburgh Postnatal Depression Scale (EPDS) in the working area of the South Lampung Health Office, reflecting a gap between the program targets and conditions in the field that has the potential to cause pregnant women to not be detected early for the risk of mental health disorders.

Based on this description, it can be concluded that the issue of antenatal depression in pregnant women is an important issue that requires greater attention at the primary care level, including in the working area of the South Lampung Health Office. The high number of pregnant women targeted and the low achievement of mental health screening for pregnant women, as well as the heterogeneous characteristics of the South Lampung Regency (urban, rural, and coastal areas), are reasons for the need for comprehensive research to examine factors related to the mental health status of pregnant women. This study is expected to provide empirical data that will have implications for the development and strengthening of mental health programs for pregnant women in South Lampung District.

METHOD

This study was conducted to determine the factors associated with the mental health status of pregnant women in South Lampung Regency in 2025. The study was conducted in December 2025. This study was a quantitative study with a cross-sectional analytical design. The study population consisted of all pregnant women in nine selected community health centers in South Lampung Regency with a sample size of 415 respondents, selected using proportional random sampling. Samples were taken by fulfilling the inclusion criteria in the research sample, namely pregnant women who had an ID card in the health center's working area, pregnant women who were willing to be respondents and signed an informed consent form, and pregnant women who could

communicate well and could read and write. The dependent variable, which is the mental health status of pregnant women, was measured using the Edinburgh Postnatal Depression Scale (EPDS) instrument, which has been validated in the Indonesian population and demonstrated good reliability, with Cronbach's alpha ranging from 0.78 to 0.85, indicating satisfactory internal consistency. A cut-off score of ≥ 10 was applied to classify pregnant women as being at risk of depression, as this threshold is considered sensitive for community-based screening in primary health care settings.

The independent variables maternal age, gestational age, residence, spousal support, frequency of antenatal care (ANC) visits, and history of mental disorders were measured using a structured questionnaire. Data analysis was conducted using univariate, bivariate (Chi-Square test), and multivariate (multiple logistic regression) analyses, while the independent variables, which are the age of pregnant women, gestational age, place of residence, spousal support, frequency of ANC visits, and history of mental disorders, were measured using a questionnaire instrument. The EPDS instrument consists of 10 questions, the questionnaire on place of residence consists of 6 statements, the questionnaire on spousal support consists of 6 statements, the questionnaire on frequency of ANC visits consists of 4 statements, and the questionnaire on family history of mental disorders consists of 3 statements. Data analysis was performed in three ways, namely univariate analysis to synthesize variable characteristics, bivariate analysis (ChiSquare test) to see the relationship between variables, and multivariate analysis (Logistic Regression) to determine the factors most related to the mental health status of pregnant women. Ethical approval was obtained from the Ethics Committee of Mitra Indonesia University with ethical number NO.S.25/223/FKES10/2025.

RESULT

Characteristics Respondent

Table 1.

Frequency Distribution of Respondents Based on Education and Occupation

Variable	f	%
Level of Education		
Elementary	26	6,3
Junior High School	93	22,4
High School/Vocational School/Equivalent	267	64,3
DIII/DIV/S1/S2/S3	29	7,0
Occupation		
Housewife (IRT)	382	92,0
Farmer	8	1,9
Merchant/Entrepreneur/Business Owner	6	1,4
Servant/Teacher/Midwife/Employee	19	4,6

Table 1, the frequency distribution of respondents based on educational and occupational characteristics. Most of the respondents who were the subjects of the study had a high school/vocational school/equivalent education, namely 267 people (64.3%), and a small number of respondents had an elementary school education, namely 26 people (6.3%). Based on employment characteristics, the majority were housewives, totaling 382 people (92.0%), and the smallest number were traders/entrepreneurs/business owners, totaling 6 people (1.4%).

Frequency Distribution Based on Research Variables

Based on the results of the univariate test in Table 2, the frequency distribution shows that the variable of non-risky maternal age (20–35 years) has a frequency distribution of 211 respondents (50.8%). For the variable of pregnancy age, respondents categorized as not at risk (Trimester I-II) numbered 212 respondents (51.1%). For the variable of place of residence, 224 respondents (54.0%) were categorized as not supportive. For the variable of spousal support, 212 respondents (51.1%) were categorized as not supportive. For the variable of frequency of ANC visits, 214 respondents (51.6%) were categorized as non-compliant. In the variable of history of mental

disorders, there were 236 respondents (56.9%) in the category of having a history. In the variable of mental health status, there were 255 respondents (61.4%) in the category of not at risk.

Table 2.

Frequency Distribution Table of Respondents Based on Research Variables

Variable	f	%
Age of Pregnant Women		
At Risk (<20 and >35 years)	204	49,2
Not at risk (20–35 years)	211	50,8
Gestational Age		
At Risk (Third Trimester)	203	48,9
Not at Risk (First and Second Trimesters)	212	51,1
Place of Residence		
Not Supported	224	54,0 46
Support	191	
Spousal Support		
No Support	212	51,1
Supportive	203	48,9
Frequency of ANC Visits		
Non-compliant	214	51,6
Compliant	201	48,4
History of Mental Disorders		
Yes	236	56,9
No	179	43,1
Mental Health Status		
At Risk	160	38,6
Not at Risk	255	61,4

Relationship between Maternal Age, Gestational Age, Place of Residence, Spousal Support, Frequency of ANC Visits, and History of Mental Disorders with Mental Health Status

Table 3.

Relationship between Maternal Age, Gestational Age, Place of Residence, Spousal Support, Frequency of ANC Visits, and History of Mental Disorders with Maternal Mental Health Status

	Mental Health Status of Pregnant Women				Total		p-value	OR (CI 95%)
	At Risk		Not At Risk					
	f	%	f	%	f	%		
Age of Pregnant Women								
At Risk (<20 dan >35 yo)	103	50,5	101	49,5	204	100	0,000	2,755
No Risk (20–35 yo)	57	27,0	154	73,0	211	100		(1,829 - 4,149)
Gestational Age								
At Risk (Third Trimester)	91	44,8	112	55,2	203	100	0,014	1,684
No Risk (First and Second Trimesters)	69	32,5	143	67,5	212	100		(1,130 - 2,509)
Place of Residence								
No Support	101	45,1	123	54,9	224	100	0,004	0,544
Support	59	30,9	132	69,1	191	100		(0,363 - 0,816)
Spousal Support								
No Support	97	47,8	106	52,2	203	100	0,000	0,462
Support	63	29,7	149	70,3	212	100		(0,309 - 0,692)
Frequency of ANC Visits								
Non Compliant	89	44,3	112	55,7	201	100	0,026	0,625
Compliant	71	33,2	143	66,8	214	100		(0,420 - 0,930)
History of Mental Disorders								
Yes	120	50,8	116	49,2	236	100	0,000	3,595
None	40	22,3	139	77,7	179	100		(2,328 - 5,551)

The bivariate analysis indicates that all examined variables—maternal age, residence, spousal support, ANC visit compliance, and family history of mental disorders—have a statistically significant relationship with the mental health status of pregnant women ($p < 0.05$). Pregnant women in the high-risk age group were 2.775 times more likely to experience mental health

problems. Residence was also significantly associated, with environmental factors influencing mental health outcomes (OR = 0.544). Lack of spousal support increased the likelihood of mental health problems (OR = 0.462). Compliance with ANC visits was significantly related to mental health status (OR = 0.625). The strongest association was found in pregnant women with a family history of mental disorders, who were 3.595 times more likely to experience mental health problems. Overall, family history of mental disorders and maternal age were the dominant risk factors, while supportive environments, spousal support, and adherence to ANC visits were protective factors against mental health problems during pregnancy.

Multivariate Analysis

Candidate variables were selected through bivariate analysis of each dependent and independent variable that met the criteria, namely variables with a p -value < 0.25 (Hastono, 2016). Based on the results of the bivariate analysis, the following results were obtained:

Table 4.
Multivariate Candidate Variables

Variable	<i>p</i> -value
Age of Pregnant Women	0,000
Gestational Age	0,000
Place of Residence	0,000
Spousal Support	0,000
Frequency of ANC Visits	0,035
History of Mental Disorders in the Family	0,000

Based on the specified criteria, the variables that qualify as multivariate variables are the age of the pregnant woman, gestational age, place of residence, spousal support, frequency of ANC visits, and history of mental disorders in the family. In this multivariate modeling, six variables were included as candidate variables, namely maternal age, gestational age, place of residence, spousal support, frequency of ANC visits, and family history of mental disorders. All variables with a p -value > 0.05 were excluded from the modeling, starting with the variable with the largest p -value (Hastono, 2006). The results of the first modeling (step 1) are as follows:

Table 5.
First Multivariate Modeling

Variabel	B	S.E.	<i>P</i> -value	OR (CI95%)
Age of Pregnant Women	1,153	0,234	0,000	3,169 (2,001 – 5,018)
Gestational Age	0,867	0,239	0,000	2,381 (1,492 – 3,800)
Place of Residence	-0,829	0,237	0,000	0,437 (0,275 – 0,695)
Spousal Support	-0,952	0,235	0,000	0,386 (0,243 – 0,612)
Frequency of ANC Visits	-0,488	0,232	0,035	0,614 (0,390 – 0,967)
History of Mental Disorders	1,494	0,248	0,000	4,453 (2,736 – 7,247)

All independent variables were included in the multivariate model because each had a p -value < 0.05 . Maternal age (OR = 3.169), gestational age (OR = 2.381), residence (OR = 0.437), husband support (OR = 0.386), ANC visit frequency (OR = 0.614), and history of mental disorders (OR = 4.453) were significantly associated with the mental health status of pregnant women. Based on the magnitude of the Odds Ratio (OR), the most dominant factor influencing maternal mental health was a history of mental disorders (OR = 4.453; 95% CI: 2.736–7.247). This indicates that pregnant women with a history of mental disorders were approximately 4.5 times more likely to experience mental health problems compared to those without such a history. This, history of mental disorders emerged as the strongest predictor of mental health status among pregnant women in this study.

DISCUSSION

Relationship Between the Age of Pregnant Women and Their Mental Health Status

The bivariate analysis results show that there is a significant relationship between the age of pregnant women and their mental health status (p value = 0.000). Pregnant women in the at-risk age group (< 20 years and > 35 years) have a 2.775 times greater risk of experiencing mental health disorders than pregnant women in the non-at-risk age group (20–35 years). This indicates that

reproductive age is not only related to the biological aspects of pregnancy, but also to the psychosocial conditions of mothers during pregnancy. These findings are consistent with previous studies showing that variations in the age of pregnant women can be an important determinant of maternal mental health during pregnancy (Qanita & Effendi, 2024). Young pregnant women (<20 years old) often lack the psychological readiness to cope with physical changes, the responsibilities of motherhood, and the social pressures surrounding their new role in life. These psychosocial conditions have the potential to increase stress responses, anxiety, and symptoms of depression in this younger age group. Erikson's psychosocial development theory also states that individuals in the adolescent to early adult phase are still in the process of searching for identity and maturing in their social roles, including the role of parent, making them more vulnerable to emotional stress during pregnancy.

On the other hand, pregnant women over the age of 35 face different but still significant psychological challenges. This age group often worries about medical complications, higher risks of childbirth, and more complex family responsibilities compared to the 20-35 age group. These concerns can trigger prolonged stress and emotional disorders, including antenatal anxiety and depression. Research in Indonesia notes that extreme pregnancy ages (both very young and old) are associated with increased anxiety in pregnant women approaching childbirth, which is a form of mental health disorder in pregnant women (Fransiska et al., 2023).

Lazarus and Folkman's coping theory explains that an individual's ability to manage their response to stress is greatly influenced by their perception of environmental demands and their internal resources. Pregnant women of risky ages often perceive the demands of pregnancy as exceeding their coping capacity, thereby increasing their likelihood of experiencing psychological distress. In this context, the lack of life experience and emotional independence in young mothers, as well as medical concerns in older mothers, can be factors that trigger chronic stress (Rosyidah, 2021). A systematic review of perinatal mental health disorders in Indonesia also found that the age of pregnant women is one of the variables associated with the incidence of mental disorders during pregnancy and after childbirth. This age factor interacts with other social factors such as family support, economic status, and previous pregnancy history, which also affect the mental health of pregnant women (Rahardjo Putri et al., 2024). These findings further emphasize that age cannot be separated from other social indicators that influence the psychological well-being of pregnant women.

The practical implications of this relationship indicate the need for a more selective mental health screening approach based on age groups. Pregnant women at risk (<20 and >35 years) need to be prioritized in antenatal depression and anxiety screening programs. Early interventions such as psychological counseling, social support from family, and increased coping capacity can help reduce the psychological stress experienced by pregnant women in at-risk age groups. In addition, reproductive health education programs integrated with ANC services are essential to provide accurate information about physical and psychological changes during pregnancy. This education can reduce unnecessary fears and improve the mental preparedness of pregnant women, especially in younger age groups who may not have experienced pregnancy before. The role of midwives and other health workers is also important in providing psychosocial support during antenatal care visits. An empathetic communication approach and family involvement in each ANC visit can strengthen the social support felt by pregnant women. Support from husbands and immediate family in particular has been reported to reduce anxiety and depression during pregnancy.

Furthermore, this study is in line with other studies that state that promotional and preventive efforts for mental health disorders must include demographic factors such as age, as well as social factors such as family support and access to mental health services. This holistic approach is important so that maternal health programs can identify and address mental health problems early and in a

targeted manner. Overall, the significant relationship between the age of pregnant women and their mental health status indicates that mental health is not a stand-alone phenomenon, but rather is the result of complex interactions between biological, psychological, and social factors. Therefore, intervention strategies focused on improving the psychological well-being of pregnant women must be comprehensive, inclusive, and evidence-based in order to reach the most vulnerable groups of pregnant women in local communities such as in South Lampung Regency.

The Relationship Between Gestational Age and Mental Health Status of Pregnant Women

The results of this study indicate that there is a significant relationship between pregnancy age and the mental health status of pregnant women ($p\text{-value} = 0.014$). Pregnant women in their third trimester have a 1.684 times greater risk of experiencing mental health disorders than pregnant women in their first and second trimesters. These findings indicate that the closer the delivery date, the higher the vulnerability of pregnant women to psychological disorders, such as anxiety and antenatal depression. The third trimester is a phase of pregnancy characterized by increasingly noticeable physical changes, such as weight gain, back pain, shortness of breath, sleep disturbances, and prolonged fatigue. These physical conditions can trigger psychological stress if not balanced with good coping skills. Continuous discomfort can reduce the quality of life of pregnant women and contribute to mental health disorders.

In addition to physical factors, psychological aspects in the third trimester are also a major concern. Pregnant women begin to focus their thoughts on the delivery process, fear of labor pain, possible complications, and the safety of the baby. These concerns are often exacerbated by negative stories from the surrounding environment or previous delivery experiences, thereby increasing anxiety and emotional stress ahead of delivery (Rahmawati & Susanti, 2023). From a physiological perspective, hormonal changes in the final trimester of pregnancy also affect the psychological condition of pregnant women. Increased levels of the stress hormone cortisol, as well as fluctuations in estrogen and progesterone, play a role in regulating emotions and mood. This hormonal imbalance can cause pregnant women to become more emotionally sensitive and prone to anxiety disorders and antenatal depression.

Lazarus and Folkman's transactional stress theory explains that stress arises when individuals perceive environmental demands to exceed their coping resources. In the third trimester, physical and psychological demands increase significantly, while pregnant women's coping capacity may decrease due to fatigue. This imbalance makes pregnant women more susceptible to psychological stress, which impacts their mental health (Marwah et al., 2023). The results of this study align with research in Indonesia by Sari and Handayani (2022), which found that anxiety levels among pregnant women were higher in the third trimester compared to previous trimesters. The study mentioned that concerns about childbirth were the dominant factor that triggered psychological disorders in pregnant women (Sari & Handayani, 2022). Similar findings were also reported by Lestari et al. (2021), who stated that antenatal depression was most commonly found in pregnant women in the final trimester (Lestari et al., 2021).

In addition, social support and the quality of health services also affect the mental health of pregnant women in the third trimester. Pregnant women who lack emotional support from their husbands and families tend to experience higher levels of anxiety. On the other hand, good interaction with health workers during ANC visits can provide a sense of security and reduce the fears of pregnant women approaching childbirth. In the context of health services, the results of this study show the importance of continuous mental health screening during pregnancy, especially in the third trimester. Antenatal care services should not only focus on physical examinations and fetal growth, but also need to integrate psychological assessments as part of holistic maternal health services.

The researchers argue that mental health interventions in the third trimester need to be carried out more intensively through childbirth preparation counseling, prenatal classes, and education about the physical and emotional changes that normally occur before childbirth. This approach is expected to improve the mental preparedness of pregnant women and reduce the risk of mental health disorders. Overall, the relationship between gestational age and the mental health status of pregnant women confirms that the third trimester is a period that is highly susceptible to psychological disorders. Therefore, integrated preventive and promotional efforts are needed between health workers, families, and the community to maintain the mental health of pregnant women so that the delivery process is safe and optimal.

The Relationship Between Place of Residence and Mental Health Status of Pregnant Women

The results of the analysis show that place of residence has a significant relationship with the mental health status of pregnant women ($p\text{-value} = 0.004$). Pregnant women who live in unsupportive environments have a 0.544 times higher risk of mental health problems than pregnant women who live in supportive environments. These findings confirm that the residential environment is an important determinant that affects the mental health of mothers during pregnancy. The residential environment in this study includes social, economic, physical, and access to health services aspects. A supportive environment is generally characterized by easily accessible health facilities, good social relations among residents, and support from family and the surrounding community. Conversely, an unsupportive environment often has limited health facilities, low socioeconomic conditions, and minimal social interaction and support, which can increase psychological stress on pregnant women (Rahmah & Hidayati, 2022). From the perspective of social determinants of health theory, social and physical environmental conditions have a significant influence on an individual's mental health. This theory explains that external factors such as place of residence, economic conditions, education, and social support play a major role in shaping a person's psychological well-being. In pregnant women, an environment full of social and economic pressures can increase the risk of stress, anxiety, and depression during pregnancy.

Pregnant women who live in unsupportive environments tend to face various stressors, such as family economic problems, insecurity, limited health information, and poor access to quality antenatal care services. These conditions can cause feelings of anxiety and helplessness, especially when pregnant women have to deal with physical and emotional changes during pregnancy without adequate support. Research in Indonesia by Wulandari and Fitriani (2021) shows that pregnant women living in areas with limited access to health services have higher levels of anxiety compared to pregnant women in urban areas or areas with adequate health facilities (Wulandari & Fitriani, 2021). These findings reinforce the research results that the living environment plays a role in determining the mental health of pregnant women.

In addition to access to health services, social support from the surrounding environment is also an important factor in maintaining the mental health of pregnant women. Good social support can take the form of attention, emotional support, or practical assistance from family, neighbors, and health workers. Research by Pratiwi et al. (2023) states that low social support from the environment is significantly associated with an increased risk of antenatal depression in pregnant women (Pratiwi et al., 2023). The condition of some areas in South Lampung Regency, which are still dominated by rural areas with limited health facilities and considerable distance to health services, further exacerbates the psychological challenges for pregnant women. Uncertainty in access to services, especially mental health services, can increase pregnant women's concerns about their condition and that of their fetus.

In this context, the role of primary health care services such as community health centers and integrated health service posts becomes very important. Health services not only function as places for physical examinations, but also as a means of providing education, psychological support, and

early detection of mental health disorders in pregnant women. A friendly and supportive service environment can help reduce the psychological pressure of pregnant women living in unsupportive environments. Researchers argue that efforts to improve the quality of the living environment need to be carried out in a multisectoral manner, involving the health sector, local government, and the community. Promotive and preventiv s such as strengthening the role of health cadres, forming groups of pregnant women, and increasing access to mental health services at the community level can be effective measures in maintaining the mental health of pregnant women. Overall, the significant relationship between place of residence and the mental health status of pregnant women shows that the mental health of pregnant women is not only influenced by individual factors, but also by the conditions of their living environment. Therefore, mental health interventions for pregnant women must consider the overall social and physical context so that the prevention and treatment of mental health disorders can be carried out optimally and sustainably.

The Relationship Between Spousal Support and the Mental Health Status of Pregnant Women

The research results show a significant relationship between spousal support and the mental health status of pregnant women ($p\text{-value} = 0.000$). Pregnant women who do not receive support from their husbands have a higher risk of experiencing mental health disorders, namely 0.462 times higher than pregnant women who receive optimal support from their husbands. These findings indicate that spousal support is a very important protective factor in maintaining the mental health stability of mothers during pregnancy. Pregnancy is a transitional period of life marked by significant physical, hormonal, psychological, and social changes. In this condition, pregnant women really need support from those closest to them, especially their husbands, as their life partners and main companions. The absence of support from husbands can increase the psychological burden on pregnant women, thereby increasing the risk of stress, anxiety, and even antenatal depression.

Spousal support encompasses several dimensions, namely emotional, instrumental, informational, and appreciative support. Emotional support in the form of attention, empathy, and a caring attitude from the husband has been proven to help pregnant women manage emotional changes and reduce anxiety. Instrumental support includes practical help such as assisting with household chores or accompanying the pregnant woman to prenatal checkups, while informational support involves providing information and advice related to pregnancy and childbirth. Social support theory explains that individuals who receive support from their immediate environment have more adaptive coping mechanisms for psychological stress. According to this theory, social support can function as a "buffer" that protects individuals from the negative effects of stress. In the context of pregnancy, husbands play a role as the main source of social support that can increase pregnant women's sense of security, confidence, and psychological well-being (Tahir et al., 2025).

Research in Indonesia by Handayani, Sari, and Nurhayati (2022) shows that pregnant women who receive good support from their husbands have lower levels of anxiety and depression compared to pregnant women with less support from their husbands. These results confirm that husband support acts as a protective factor against mental health disorders during pregnancy, especially in the final trimester, which is full of worries ahead of childbirth (Handayani et al., n.d.). Another study by Lestari and Wahyuni (2021) also found that low spousal involvement in pregnancy care is significantly associated with an increased risk of mental health disorders in pregnant women. Pregnant women who feel neglected or overlooked by their husbands tend to experience feelings of loneliness, helplessness, and loss of emotional support, which can worsen their mental health (Lestari & Wahyuni, 2021).

In the Indonesian sociocultural context, the role of husbands in pregnancy is often still limited to economic aspects, while emotional support and direct involvement in pregnancy care are not yet

optimal. Certain cultural norms still view pregnancy as the responsibility of women, so that the psychological needs of pregnant women receive less attention. This condition can be a risk factor for mental health disorders in pregnant women. Researchers argue that a lack of support from husbands can increase the perception of stress in pregnant women, especially when faced with physical changes, fears about the delivery process, and concerns about the condition of the fetus. Conversely, consistent and positive support from husbands can increase mothers' sense of security and psychological readiness to undergo pregnancy and childbirth.

Therefore, the involvement of husbands in antenatal care (ANC) is very important. A family-based approach to maternal health services needs to be strengthened by encouraging husbands to attend pregnancy checkups, prenatal classes, and mental health education. This intervention is expected to increase husbands' understanding of the physical and psychological needs of pregnant women. Overall, the significant relationship between spousal support and the mental health status of pregnant women indicates that efforts to improve the mental health of pregnant women cannot be done individually but must involve the active role of the husband. Optimal spousal support is a key factor in creating a physically and mentally healthy pregnancy and contributes to the long-term well-being of the mother and baby.

Relationship Between ANC Visit Frequency and Mental Health Status of Pregnant Women

The results of the study show that there is a significant relationship between the frequency of antenatal care (ANC) visits and the mental health status of pregnant women ($p\text{-value} = 0.026$). Pregnant women who do not comply with the recommended ANC visits have a higher proportion of mental health risks, namely 0.625 times higher than pregnant women who make ANC visits regularly according to service standards. This finding indicates that adherence to ANC visits plays an important role in maintaining the mental health of mothers during pregnancy. Antenatal care is a health service provided to pregnant women in a planned and continuous manner to monitor the condition of the mother and fetus. However, the function of ANC is not only limited to physical aspects but also includes psychological and social aspects. Through ANC visits, health workers have the opportunity to conduct early screening for mental health disorders, such as antenatal anxiety and depression, which are often unrecognized by pregnant women.

Pregnant women who do not comply with ANC visits tend to lose access to accurate health information and psychosocial support from health workers. This condition can cause pregnant women to feel unprepared to face physical and emotional changes during pregnancy, thereby increasing the risk of stress and mental health disorders. Noncompliance with ANC is also often associated with other factors such as low knowledge, limited access to services, and lack of family support (Huda et al., 2024). Theoretically, the Holistic Health Care Model emphasizes that maternal health care must consider the balance between biological, psychological, and social aspects. In this model, ANC visits serve as a means of integrating physical and mental health care. When ANC visits are not carried out optimally, the psychological aspects of pregnant women may be neglected, thereby increasing the risk of mental health disorders (Seprianti et al., 2024).

The WHO (2022) emphasizes that integrated ANC services must include mental health promotion, early detection of psychological disorders, and basic counseling for pregnant women. This principle is in line with Indonesia's maternal health care policy, which promotes a Continuum of Care approach, where ANC services are the main entry point in efforts to prevent mental health problems in pregnant women (WHO, 2022b). Research in Indonesia by Sari and Kusumawati (2021) shows that pregnant women who do not meet the minimum ANC visit standards have a higher risk of antenatal anxiety compared to pregnant women who comply with ANC. This is due to a lack of interaction with health workers who act as sources of information, reassurance, and emotional support for pregnant women (Sari & Kusumawati, 2021). Another study by Rahmawati et al. (2023) also found that compliance with ANC visits was significantly associated with a decrease in the

incidence of antenatal depression. Pregnant women who regularly attend ANC tend to be better able to manage stress because they receive education about pregnancy changes, childbirth preparation, and physical and psychological danger signs during pregnancy (Rahmawati et al., 2023).

In the context of South Lampung Regency, there are still pregnant women who do not regularly attend ANC visits. This condition can be influenced by geographical factors, limited transportation facilities, and the perception of pregnant women that ANC is only necessary when physical complaints arise. In fact, mental health disorders are often latent and require early detection through regular interaction with health workers. Researchers argue that increasing compliance with ANC visits is a highly effective strategy in promoting and preventing mental health issues in pregnant women. Through regular ANC visits, health workers can build therapeutic relationships with pregnant women, provide basic psychological counseling, and make early referrals if signs of mental health disorders are detected. Thus, strengthening the quality and quantity of ANC visits needs to be a priority in maternal health services. The integration of mental health screening into ANC services on an ongoing basis is expected to reduce the risk of mental health disorders in pregnant women, improve psychological readiness for childbirth, and support the achievement of physically and mentally healthy pregnancies and deliveries.

The Relationship Between a Family History of Mental Disorders and the Mental Health Status of Pregnant Women

The results of the study show that a family history of mental disorders has a very significant relationship with the mental health status of pregnant women ($p\text{-value} = 0.000$). This variable also showed the highest Odds Ratio (OR) in both bivariate (3.595) and multivariate (4.453) analyses. This means that pregnant women with a family history of mental disorders are three to four times more likely to experience mental health disorders than pregnant women without such a history. These findings confirm that family factors, particularly a history of mental disorders, are important determinants of mental health in pregnant women. A family history of mental disorders may reflect genetically inherited biological vulnerability, as well as describe family environmental patterns that may be less supportive of individual psychological health. This condition becomes even more relevant when individuals are in a phase of life that is full of changes and stress, such as pregnancy.

Theoretically, the biopsychosocial model explains that mental health disorders are not caused by a single factor, but rather are the result of complex interactions between biological, psychological, and social factors. Biological factors include genetic predisposition to mental disorders, psychological factors include coping and emotional regulation abilities, while social factors include family and environmental support. A family history of mental disorders indicates a combination of biological and environmental factors that can increase the vulnerability of pregnant women to mental health disorders (Wulandari & Hidayat, 2022). In pregnant women with a family history of mental disorders, hormonal and physiological changes during pregnancy can act as triggers for the emergence of psychological disorders. Fluctuations in hormones such as estrogen and progesterone are known to affect emotion regulation and the stress system. When this condition occurs in individuals with a genetic predisposition, the risk of developing antenatal anxiety or depression becomes higher.

Research in Indonesia by Sari and Pratama (2021) found that pregnant women with a family history of mental disorders have a significantly higher risk of antenatal depression compared to pregnant women without such a history. The study states that genetic factors, compounded by pregnancy stress and a lack of psychosocial support, are the main causes of the increased risk of mental health disorders in this group (Sari & Pratama, 2021). Another study by Nurhayati et al. (2023) also showed that a history of mental disorders in parents or siblings is closely related to the emergence of anxiety and depression symptoms during pregnancy. This study emphasized that in addition to

genetic factors, parenting patterns and maladaptive family dynamics can shape ineffective coping mechanisms in pregnant women (Nurhayati et al., 2023).

In the context of South Lampung Regency, a history of mental disorders in the family is often not identified early due to the stigma surrounding mental health issues. Many families are reluctant to disclose a history of mental disorders, so pregnant women at high risk do not receive adequate attention and monitoring. This condition can cause mental health disorders to only be detected when they are already at a more severe stage. Researchers argue that pregnant women with a family history of mental disorders should be a priority group in antenatal mental health screening. Early identification of these risk factors is crucial so that health workers can conduct more intensive psychological monitoring and provide preventive interventions tailored to the needs of pregnant women.

Antenatal care services need to integrate the assessment of family mental health history as part of routine assessments of pregnant women. Health workers, especially midwives and nurses, need to be equipped with the skills to conduct sensitive interviews related to mental health and provide education to mothers and families about the importance of maintaining mental health during pregnancy. Overall, the results of this study indicate that a family history of mental disorders is a dominant factor associated with the mental health status of pregnant women. Therefore, promotive, preventive, and curative efforts in maternal health services must comprehensively consider genetic and family environmental factors. A family-based approach and the strengthening of mental health services at the primary level are expected to reduce the risk of mental health disorders in pregnant women and improve the well-being of mothers and babies.

Multivariate Analysis and Dominant Factors

Based on the results of multivariate analysis, the most dominant variable associated with the mental health status of pregnant women was a history of mental disorders in the family, with an odds ratio (OR) of 4.453. This variable showed the strongest influence compared to other variables studied. In addition, the age of the pregnant woman and the age of the pregnancy also showed a significant relationship with the mental health status of pregnant women after controlling for other variables in the model. These findings indicate that biological factors and a family history of psychopathology contribute significantly to the vulnerability of pregnant women to mental health disorders. A family history of mental disorders reflects a genetic predisposition that can be inherited, making individuals more vulnerable to psychological disorders when faced with life stressors, including pregnancy. The biopsychosocial model explains that mental health disorders are the result of complex interactions between biological, psychological, and social factors. In the context of this study, biological factors in the form of a family history of mental disorders act as the main predisposing factor, while the mother's age and gestational age act as triggering factors that can aggravate the psychological condition of pregnant women (Sari & Mulyani, 2021).

The age of pregnant women in the risk group (<20 years and >35 years) still shows a significant influence in the multivariate model. This indicates that psychological maturity, emotional readiness, and the complexity of social roles attached to certain ages contribute to the mental health of pregnant women. When this age factor is combined with a family history of mental disorders, the risk of mental health disorders increases. Gestational age is also a variable that plays a role in multivariate analysis. The final trimester of pregnancy is a phase fraught with physical, hormonal, and emotional changes, as well as increased anxiety about childbirth. In pregnant women with biological vulnerability, psychological stress in the third trimester can trigger symptoms of antenatal anxiety and depression.

Research in Indonesia by Wulandari et al. (2022) states that a family history of mental disorders is the strongest predictor of mental health disorders in pregnant women, even after controlling for

social and health service variables. These findings are in line with the results of this study, which places family history of mental disorders as a dominant factor (Wulandari et al., 2022). Another study by Rahmawati and Lestari (2023) also shows that a mental health screening approach that only focuses on social factors is not effective enough without considering biological factors and family history. Therefore, the results of this multivariate analysis reinforce the importance of assessing family history of mental disorders as an integral part of antenatal care (Rahmawati & Lestari, 2023).

The researchers argue that the results of this multivariate analysis have important implications for maternal health care practices. Pregnant women with a family history of mental disorders, at-risk ages, and advanced pregnancies need more intensive and continuous mental health monitoring. This approach is expected to prevent the progression of mental health disorders during pregnancy. Overall, these findings confirm that a comprehensive biopsychosocial approach is the most appropriate strategy for the prevention and treatment of mental health disorders in pregnant women. Maternal health services need to integrate the assessment of biological, psychological, and social factors simultaneously so that the interventions provided are more targeted and have an optimal impact on the well-being of the mother and fetus.

CONCLUSION

There is a relationship between the age of the pregnant woman, gestational age, place of residence, spousal support, frequency of ANC visits, and history of mental disorders with the mental health status of pregnant women. The variable that has the most significant effect on the mental health of pregnant women is a family history of mental disorders.

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