

Original Article

Determinants of Psychological Disorders Among Pregnant Women in Indonesia: A Cross-sectional Study on The Roles of Social Support, Parity, and Anxiety



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ABSTRACT

Background: Pregnancy involves physical and emotional changes that can impact a woman's psychological well-being. However, few studies have explored the combined influence of social support, parity, and anxiety on psychological disorders among pregnant women in Indonesia. This study aimed to examine the relationship between social support, parity, and anxiety with psychological disorders among pregnant women in Indonesia.

Methods: A cross-sectional study was conducted among 114 pregnant women attending antenatal care at East Java, Indonesia, community health centers. Participants were selected using a simple random sampling technique. Inclusion criteria were pregnant women living with their husbands or family members, while those who declined participation were excluded. Data were collected using the Multidimensional Scale of Perceived Social Support (MSPSS), Depression Anxiety Stress Scale-21 (DASS-21, anxiety subscale), and the Antenatal Risk Questionnaire (ANRQ). Data were analyzed using descriptive statistics and Spearman's rho correlation. This study complied with the STROBE reporting guidelines.

Results: Most respondents were aged 24–29 years (43.9%), had senior high school education (75%), were housewives (54.4%), and had moderate family income (46.5%). The results showed that low social support ($p = 0.002$), being multiparous ($p = 0.003$), and higher anxiety levels ($p = 0.001$) were significantly associated with increased psychological disorder risk. Women with low social support or severe anxiety had the highest risk. Multiparous women were more likely to report psychological distress compared to primiparous women. Social support, parity, and anxiety were significant factors associated with psychological disorders during pregnancy.

Conclusion: Mental health should be an integral part of antenatal care. These findings underscore the need to integrate mental health screening and family-based support into routine antenatal care to improve maternal psychological well-being.

Keywords: Anxiety; Parity; Pregnancy; Psychological Disorders; Social Support.

Implications for Practice:

- Mental health screening is often neglected in antenatal care, especially in developing countries where perinatal mental assessments are rare. Routine psychological evaluation should be integrated into antenatal services to detect anxiety and mental disorders early, particularly in resource-constrained settings.
- Family involvement, particularly from husbands, is vital to support pregnant women's mental well-being through education and counseling.

Implications for Practice:

- Training health professionals is essential to strengthen mental health screening and counseling in prenatal care, especially in settings with limited healthcare resources.

Introduction

Pregnancy is a natural process in women that involves hormonal changes due to fetal development, which also causes physical changes ([Bjelica et al., 2018](#)). These physical changes can influence a mother's psychological condition, especially in the third trimester ([Spinoni et al., 2023](#)). The World Health Organization (WHO) reports that 1 in 5 women experience psychological disorders during pregnancy or within one year after giving birth ([WHO, 2022](#)).

According to the World Health Organization (WHO), around 10% of pregnant women and 13% of postpartum women globally experience psychological disorders, primarily depression ([WHO, 2024](#)). In developing countries, the rates are higher, with 15.6% during pregnancy and 19.8% after childbirth experiencing psychological disorders ([WHO, 2024](#)). A study in Indonesia reported that approximately 28.7% of pregnant women experienced anxiety before childbirth ([Margawati et al., 2022](#)).

Psychological disorder during pregnancy often starts with excessive worries about the baby's health, fear of death, and limitations in daily activities. These can lead to anxiety and depression ([Jiménez-Barragan et al., 2024](#)), baby blues or postpartum depression ([Nindrea et al., 2025](#)), experience preterm birth ([Ghimire et al., 2021](#)), low birth weight (LBW) ([Ghimire et al., 2021](#)), and problems in their child's development both physically and emotionally during adolescence ([Goodman, 2019](#)). Further, women with Psychological disorder conditions, 20% may have suicidal thoughts or consider harming themselves or their baby ([WHO, 2022](#)).

Several factors can worsen the mother's mental condition, such as lack of

information from health workers, insufficient support from family, and worries about the baby's health ([Hirani et al., 2025](#)). Social support is needed among pregnant women ([Răchită et al., 2022](#)). Pregnant women may feel less confident and emotionally vulnerable, which can increase their anxiety and depression ([McCarthy et al., 2021](#)). Family support, particularly from the husband, plays a crucial role in promoting maternal mental health. It can significantly enhance their sense of confidence and security ([Bedaso et al., 2021](#)). However, many families are unaware of the emotional changes pregnant women ([Winarni et al., 2024](#)).

Prioritizing maternal psychological health is essential to ensure both the mother's and child's overall health and well-being. However, there were few studies in terms of risk factors of psychological disorders among pregnant women in Indonesia. This study was underpinned by the Stress and Coping Theory proposed by Lazarus and Folkman, which explains that psychological outcomes result from the interaction between perceived stress and coping resources ([Lazarus and Folkman, 1987](#)). In this framework, pregnancy is considered a potentially stressful life event that requires adaptive coping. Social support functions as a protective resource that buffers the effects of anxiety on mental health, while parity influences previous experiences and coping capacity during pregnancy. Guided by this framework, the present study aimed to examine the relationships between social support, parity, and anxiety with psychological disorders among pregnant women in East Java, Indonesia.

Methods

Study Design

The study employed a correlational design with a cross-sectional approach and used self-report questionnaires. Data were collected from pregnant women attending antenatal care at the Community Health Center (Puskesmas) in East Java, Indonesia, during February 2025. In addition, this study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) reporting guidelines for cross-sectional research.

Participants

The study involved 114 pregnant women attending antenatal care at Community Health Centers (*Puskesmas*) in East Java, Indonesia. Inclusion criteria were pregnant women aged 18 years and above, currently living with their husbands or family members, and able to read and communicate in Bahasa Indonesia. Exclusion criteria included women who declined participation, had severe pregnancy complications requiring hospitalization, or were diagnosed with pre-existing psychiatric disorders. Participants were selected using a simple random sampling technique, which was considered appropriate to minimize selection bias and ensure that each eligible pregnant woman had an equal chance of being included. The sample size was calculated using G*Power 3.1 for a two-tailed correlation test ($\alpha = 0.05$, power = 0.80, effect size $r = 0.30$) ([Cohen, 2013](#)), yielding a minimum of 84 participants. To ensure sufficient power, 120 women were invited, and 114 completed the study (response rate 95%).

Instruments

Independent variables were social support, parity, and anxiety. The dependent variable was psychological disorders among pregnant women.

The Multidimensional Scale of Perceived Social Support (MSPSS), developed by Zimet et al. (1988), is a 12-item self-report instrument designed to measure perceived social support from three sources: family, friends, and a significant other. Each subscale consists of four items rated on a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). The total score ranges from 12 to 84, with higher scores indicating greater perceived support; scores can be categorized as low (12–48), moderate (49–68), or high (69–84). The MSPSS has demonstrated high internal consistency, with Cronbach's alpha values ranging from 0.85 to 0.95 ([Zimet et al., 1988](#)).

Anxiety levels were assessed using the Depression Anxiety Stress Scale 21 (DASS-21), a brief self-report instrument developed by Lovibond and Lovibond (1995) to measure the emotional states of depression, anxiety, and stress. The scale comprises 21 items, with seven items allocated to each subscale. We only used anxiety. Respondents rate the extent to which they experienced each symptom over the past week using a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). The anxiety subscale score is categorized into five severity levels: normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (>20). The DASS-21 has demonstrated good internal consistency and construct validity ([Lovibond and Lovibond, 1995](#)).

The risk of psychological disorders was assessed using the Antenatal Risk Questionnaire (ANRQ), a brief screening tool specifically designed to identify psychosocial risk factors during pregnancy. The ANRQ consists of 9 items covering a range of domains, including a history of mental health problems, perceived support, childhood abuse, relationship quality, and recent stressors. Each item is scored using a

combination of Likert-type responses and binary (yes/no) answers, with higher total scores indicating greater psychosocial risk. A cut-off score of 23 or above is commonly used to indicate elevated risk for antenatal psychological difficulties ([Austin et al., 2013](#)).

All instruments were translated into Bahasa Indonesia using a forward-backward translation procedure by two bilingual experts, followed by a review by a panel to ensure conceptual equivalence. The translated versions were pilot tested among 15 pregnant women with characteristics similar to those of the study sample to assess clarity and reliability. The instruments demonstrated good internal consistency in the current study, with Cronbach's α values ranging > 0.7 .

Data Collection

We obtained permission from the Gresik district health office and Community Health Center (Puskesmas) Gresik, East Java, Indonesia. Enumerators collected data from pregnant women attending antenatal care as outpatients at community health centers (puskesmas). All enumerators received standardized study procedures, ethics, and data handling training. Eligible participants were approached in the waiting area after receiving services, and the purpose of the study was briefly explained. Those who agreed to participate were asked to sign an informed consent form before data collection. Participants then completed a questionnaire administered approximately 20–30 minutes. Completed questionnaires were checked for completeness, double-entered into SPSS, and cross-verified. Missing data ($<5\%$) were managed using listwise deletion.

Data Analysis

All data were analyzed using SPSS version 25. Descriptive statistics were

employed to summarize the characteristics of the respondents, including frequencies and percentages, and categorize participants into risk and non-risk groups. The Kolmogorov–Smirnov test indicated that the data were not normally distributed; therefore, the data were analyzed using Spearman's rho correlation test of independence to examine the relationship between variables, with a significance level set at $p < 0.05$. Although potential confounding variables such as maternal age, education, and income were considered, no multivariate adjustment was applied due to this study's exploratory nature and sample size limitation.

Ethical Considerations

This study received ethical approval from the Ethics Committee of Hang Tuah Health Sciences Institute (Stikes Hang Tuah Surabaya) with approval number PE/82/II/2025/KEP/SHT. All procedures were conducted in accordance with the ethical standards of the Declaration of Helsinki, and written informed consent was obtained from all participants prior to data collection.

Results

Table 1 presents the characteristics of the respondents, showing that the majority were aged 24–29 years (43.9%). Most had a senior high school education (75%), the majority were housewives (54.4%), and most family incomes ranged from IDR 3,000,000 to 4,800,000 (46.5%).

Table 1. Characteristics of Research Respondents

Characteristic	Category	n (%)
Age (Years)	18-23	32 (28.1)
	24-29	50 (43.9)
	30-35	28 (24.6)
	>35	4 (3.5)
Education	Junior high school	3 (2.6)
	Senior high school	86 (75.4)
	University	25 (21.9)

Characteristic	Category	n (%)
Occupational	Housewife	62 (54.4)
	Private employee	24 (21.1)
	Self-employee	18 (15.8)
	Civil servant	10 (8.8)
Income	< Rp.1.800.000	13 (11.4)
	Rp.1.800.001-3.000.000	37 (32.5)
	Rp.3.000.001-4.800.000	53 (46.5)
	Rp.4.800.001-7.200.000	11 (9.6)
	Total	114 (100)

The Kolmogorov-Smirnov test indicated that the data were not normally

distributed, supporting the use of non-parametric analysis. The Spearman's rho test revealed significant correlations between social support and psychological disorders ($p = 0.002$) and between anxiety levels and psychological disorders ($p = 0.001$), and a significant association between parity and psychological disorders ($p = 0.003$). Women with lower social support, higher anxiety, and multiparity were more likely to experience psychological distress.

Table 2. Social Support, Parity, Anxiety, and Psychological Disorders of Participants

Variable	Category	N (%)	Statistic (test)	p value	r
Social support (Independent Variable)	Low	9 (7,9)	Spearman's rho correlation test	P = 0.002*	r = 0,286
	Moderate	60 (52,6)			
	High	45 (39,5)			
	Total	114 (100)			
Parity (Independent Variable)	Primipara	44 (38,6)	Spearman's rho correlation test	P = 0.003*	r = 0,342
	Multipara	70 (61,4)			
	Grandemultipara	0 (0)			
	Total	114 (100)			
Anxiety (Independent Variable)	Normal	29 (25,4)	Spearman's rho correlation test	P = 0.001*	r = -0,465
	Mild	56 (49,1)			
	Moderate	25 (21,9)			
	Severe	4 (3,6)			
	Extremely severe	0 (0)			
	Total	114 (100)			
Psychological disorders (Dependent Variable)	Risk group	40 (35,1)			
	Non-risk group	74 (64,9)			
	Total	114 (100)			

*The Spearman's rho test

Discussion

This study aimed to explore the factors contributing to psychological disorders among pregnant women in Indonesia. The results showed that social support, parity, and anxiety were factors that affected psychological disorders among pregnant women. Pregnant women with low and moderate social support experience more

psychological disorders compared to pregnant women with high social support. This finding aligns with previous studies that confirm that social support is a protective factor against stress and anxiety during pregnancy ([Żyrek et al., 2024](#); [Bedaso et al., 2021](#)). Feeling accepted, heard, and helped by those closest to them can provide emotional calm and strengthen

the psychological resilience of pregnant women in facing various pregnancy challenges ([Al-Mutawtah et al.](#), 2023, [Wang et al.](#), 2023).

The results can be interpreted through Lazarus and Folkman's Transactional Model of Stress and Coping, which states that psychological outcomes depend on an individual's cognitive appraisal of stress and available coping resources ([Lazarus and Folkman](#), 1987). In this context, social support serves as an external coping resource that helps buffer stress responses. In contrast, low support may increase perceived stress and reduce emotional resilience, leading to greater anxiety and psychological distress. Multiparous women may experience additional caregiving and household responsibilities, which can lower their perceived coping capacity and increase psychological strain.

This study also found a significant relationship between parity and psychological disorders. Multiparous mothers had a higher proportion of psychological disorders compared to primiparous mothers. This finding was supported by several previous studies showing that mothers with more than one parity tend to face dual responsibilities ([Wang et al.](#), 2022) and physical fatigue ([Nursalam et al.](#), 2025), which can worsen psychological conditions.

In addition, there was a significant relationship between anxiety levels and psychological disorders. Pregnant women with higher anxiety increase the risk of depression, stress, and other mental disorders during pregnancy ([Biaggi et al.](#), 2016). Anxiety can interfere with the mother's ability to adapt positively to changes during pregnancy, thereby increasing psychological disorders.

This study has limitations in its cross-sectional design, so it cannot conclude a cause-and-effect relationship. In addition, other factors such as marital status,

economic status, and psychological history were not studied in depth. Further research is recommended to use a longitudinal design to trace the development of mental health in pregnant women from early pregnancy to the postpartum period. In addition, it is important to conduct intervention studies that can increase social support and reduce anxiety levels in pregnant women, especially for mothers with high parity. Conceptually, this study is grounded in the stress and coping framework, highlighting social support as a key coping resource that helps reduce antenatal distress. Future studies should explore this mechanism using longitudinal or experimental designs to establish causal inference.

Implications and limitations

The findings of this study highlight the importance of integrating mental health assessments into routine antenatal care in Indonesia, involving family members—especially husbands—through education and counseling to enhance emotional and practical support for pregnant women. Healthcare providers should receive training to conduct psychological screenings and provide basic counseling, while policymakers are encouraged to incorporate psychosocial aspects into maternal health programs. However, this study has several limitations, including its cross-sectional design, which prevents causal inference, reliance on self-reported questionnaires that may introduce bias, and data collection from a single region, limiting generalizability. Future longitudinal studies with larger and more diverse samples must validate and expand upon these findings.

Relevance to Practice

Antenatal care in many health service centers remains focused on physical examinations, while mental health screening has received limited attention,

particularly in developing countries. Integrating routine psychological assessment into antenatal visits is essential to identify women at risk of anxiety and psychological disorders early. Family involvement should also be strengthened through education and counseling to enhance emotional and practical support for pregnant women. In addition, training and dissemination programs for nurses and other health professionals are needed to optimize mental health screening and provide appropriate psychological counseling during prenatal care.

Conclusion

This study found that social support, parity, and anxiety were significantly associated with psychological disorders among pregnant women. These findings emphasize the importance of integrating mental health assessment into routine antenatal care to enable early detection and intervention. Enhancing family involvement and providing psychological support can help improve maternal well-being.

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CrediT Authorship Contributions Statement

Astrida Budiarti : Conceptualization, Methodology, Supervision, Writing

Puji Hastuti : Original Draft, Investigation, Resources, Funding Acquisition.

Iis Fatimawati: Writing -Review & Editing, Data Curation, Project Administration

Rahmah Sulistyawati : Software, Validation, Formal Analysis.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have

appeared to influence the work reported in this paper.

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