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Original Article

Knowledge, Family Support, and Depression in Pregnant Women

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ABSTRACT

Background: Antenatal depression is a mental health problem that often occurs during pregnancy and can affect the health of the mother and fetus. This condition may lead to adverse pregnancy outcomes and negatively affect fetal development**.** This study aimed to analyze the relationship between maternal knowledge and family support and the incidence of antenatal depression.

Methods: This was an analytical correlational study with a cross-sectional approach. Accidental sampling was used with a sample size of 105 respondents. The instruments used were the Mental Health Knowledge Scale (MHKS), family support instruments, and the Edinburgh Postnatal Depression Scale (EPDS). The correlations between total scores were tested using Spearman's rank correlation.

Results: The median scores for knowledge, family support, and EPDS were 13 (range 0–20), 7 (range 2–7), and 14 (range 7–19), respectively. Based on the EPDS, 3.9% of respondents had no depressive symptoms, 28.6% were at risk of antenatal depression, and 67.7% had probable antenatal depression. Spearman's correlation showed no significant correlation between knowledge and EPDS scores (rho = 0.137, p = 0.162) or between family support and EPDS scores (rho = 0.156, p = 0.113).

Conclusions: Knowledge and family support were not significantly correlated with antenatal depressive symptoms. However, two-thirds of pregnant women screened positive for probable antenatal depression, supporting routine EPDS screening during antenatal care.

Keywords: Antenatal depression, EPDS, Family support, Knowledge, MHKS

INTRODUCTION

Antenatal depression is depression that occurs during pregnancy, characterised by persistent low mood, loss of interest, anxiety, and excessive fear that are felt almost throughout the day (1). It is one of the most common mental health problems experienced by women during pregnancy (2).

The World Health Organization (WHO) reports that approximately 10% of pregnant women and 13% of postpartum women worldwide experience mental disorders, especially depression. This figure is higher in developing countries, with 15.6% during pregnancy and 19.8% during the postpartum period (3,4). In Indonesia, the prevalence of antenatal depression is even higher, at 23% (5,6).

Antenatal depression can affect pregnancy and the fetus. According to (1), antenatal depression can increase the risk of complications during childbirth and have a permanent impact on child development. The psychological impact of antenatal depression can cause pregnant women to experience difficulties in forming emotional bonds with the fetus, which is crucial for the baby's early development. This includes low birth weight (LBW), preterm birth, short gestation period, cognitive and language delays, developmental delays, behavioral and academic problems, and attitude issues (7).

Research related to pregnant women's understanding of mental health and psychological changes shows that the majority of pregnant women have sufficient or insufficient knowledge (3,8). In addition, according to Tyastuti & Wahyuningsih (2016), pregnant women have psychological needs. The forms of support needed included support from husbands, families, and health workers. Family support is a form of social support that provides physical and psychological comfort and is obtained through the belief that a person feels loved, cared for, and appreciated by others (10).

A mother's knowledge of mental health and family support are two important factors that influence the risk of depression during pregnancy. Mothers with good knowledge tend to be able to recognize symptoms, understand the risks, implement healthy coping strategies, and seek help more quickly, resulting in lower levels of depression (11). Meanwhile, family support, be it emotional, instrumental, or informational, serves as a buffer against pregnancy-related stress, enhances feelings of safety and self-confidence, and strengthens the mother's access to and decisions about obtaining professional help (12,13). In Indonesia's highly familial rural context, limited knowledge and lack of family support can worsen distress and hinder help-seeking, thus significantly increasing a mother's vulnerability to antenatal depression (11).

The role of knowledge can be explained by the concept of mental health literacy, defined as knowledge and beliefs about mental disorders that aid their recognition, management, or prevention (40). Better mental health literacy is expected to help pregnant women recognise early symptoms and seek help. The role of family support can be explained by the stress-buffering hypothesis, which proposes that social support protects individuals from the adverse effects of stressful events (41). However, studies on antenatal depression in Indonesia have mostly examined sociodemographic and obstetric factors, and few have examined maternal mental health knowledge and family support together among pregnant women in primary health care settings.

Kedungbanteng Community Health Center was selected as the study site because [alasan pemilihan lokasi — konfirmasi]. A preliminary study conducted in the Kedungbanteng Community Health Center working area showed that of 11 pregnant women, 54.55% had sufficient knowledge of antenatal depression, and 45.45% had insufficient knowledge. 9.09% of the pregnant women had insufficient family support, 9.09% had sufficient family support, and 81.82% had good family support. Then, to describe pregnant women who experienced depression using the EPDS questionnaire, it was found that 27.27% of pregnant women did not experience depression, 27.27% of pregnant women were at risk of depression, and 54.54% of pregnant women experienced depression [cek: total 109%]. Based on the background and existing phenomena, the researcher was interested in determining the relationship between pregnant women's knowledge and family support and the incidence of antenatal depression among pregnant women in the working area of the Kedungbanteng Community Health Center.

METHODS

The research design was a correlational analysis with a cross-sectional approach. The research location is the Kedungbanteng Community Health Center from August 2024 to January 2025. The population in this study consisted of all pregnant women who underwent pregnancy check-ups at the Kedungbanteng Community Health Center, totaling 2,010. The sample size was calculated using the Slovin formula, $n = N / (1 + N \times e^2)$, with a population (N) of 2,010 and a margin of error (e) of 10%, which yielded 95.3 respondents. After adding 10% to anticipate incomplete data, the minimum sample was 105 respondents. Accidental sampling was used because pregnant women attend antenatal care visits on non-fixed schedules, and a complete sampling frame of women attending during the data collection period was not available. All eligible women attending during the study period were invited until the required sample was reached. The inclusion criteria were all pregnant women who had their pregnancy checked at Kedungbanteng Community Health Center. The exclusion criteria were women who were sick and could not fill out the questionnaire, or who could not see or hear, and thus could not participate.

The instruments used were a demographic data questionnaire to determine the characteristics of the respondents, the Mental Health Knowledge Scale (MHKS) questionnaire to measure knowledge, a family support questionnaire, and the Edinburgh Postnatal Depression Scale (EPDS) questionnaire. The MHKS is a closed-ended questionnaire with "True" or "False" responses. The score for a correct answer was 1, while the score for an incorrect answer was 0. The total score ranged from 0 to 20. The MHKS has a content validity index of 0.97 and a reliability coefficient of 0.717 (14). Because the scores were not normally distributed, the median (13) was used as the cut-off to categorise knowledge as low (<13) or high (≥13) for descriptive purposes. The family support instrument included informational, appreciative, instrumental, and emotional support, with seven questions using the answer alternatives "Yes" and "No." Correct answers have a score of 1 and incorrect answers have a score of 0, with a maximum total score of 7 and a minimum of 0, and have a validity index of 0.632 [jenis statistik validitas dan nilai reliabilitas — konfirmasi] (Trijayandari, 2014, in Puspayani, 2022). Similarly, the median (7) was used as the cut-off to categorise family support as low (<7) or high (7). The EPDS was developed by Cox et al. (42) and has been widely used to measure depression in postpartum and pregnant women. This instrument assesses the emotional state over the past seven days. The EPDS consists of 10 items with a score range of 0-30. A score <9 indicates no depression, a score of 9-12 indicates a risk of antenatal depression, and a score of ≥13 indicates probable antenatal depression; the cut-off of

≥13 was applied in this study. The Indonesian version was adapted by (15,16), with a content validity of 0.98 and Cronbach's alpha of 0.80

Spearman's rank correlation was used to examine the correlation between the total scores of knowledge, family support, and EPDS, as the data were not normally distributed ([nama uji normalitas], $p < 0.05$). Categorisation of the scores was used for descriptive purposes only. This study was approved by the Research Ethics Committee of the Faculty of Health Sciences, Jenderal Soedirman University (number 1706/EC/KEPK/XI/2024).

RESULTS

1. Respondent Characteristics

The respondent characteristic is presented in Table 1.

Table 1. Respondents' characteristics (n=105)

	Characteristic	F	Percentage (%)
Age			
	< 20-year-old	1	1,0
	20-35 year-old	84	80,0
	> 35-year-old	20	19,0
Occupation			
	Employee	19	18,1
	Unemployed	86	81,9
Income			
	<Minimum wage	53	50,5
	≥Minimum wage	52	49,5
Education			
	Elementary school	9	8,6
	Junior high school	35	33,3
	Senior high school	44	41,9
	University	17	16,2
Gestational age			
	Trimester 1 (0-13 weeks)	27	25,7
	Trimester 2 (14-26 weeks)	27	25,7
	Trimester 3 (27-40 weeks)	51	48,6
Pregnancy intention			
	Intended	84	80,0
	Unintended	21	20,0
Gravida			
	Primigravida	40	38,1
	Multigravida	64	61,0
	Grandemultigravida	1	1,0

In Table 1, it is known that the majority of respondents were aged 20-35 years (80.0%). Most respondents were unemployed (81.9%). The respondents' husbands' incomes were divided almost equally between those earning less than the city minimum wage (UMK) or less than IDR 2,195,690, namely 53 respondents (50.5%), and those earning equal to or more than the UMK, namely IDR 2,195,690. Most respondents had a high school or vocational school education (41.9%). Regarding gestational age, the majority were in their third trimester (48.6%). In addition, most respondents (80.0%) reported having planned pregnancies

2. Pregnant Women's Knowledge, Family Support, and Antenatal Depression.

Table 2 presents the median, minimum, and maximum scores for knowledge, family support, and EPDS scores, as the data were not normally distributed.

Table 2. Knowledge, family support, and EPDS scores of pregnant women (n = 105).

Variable	Median	Min-Max
Pregnant women's knowledge about antenatal depression	13,00	0-20
Family support	7,00	2-7
EPDS	14,00	7-19
Knowledge score	F	%
<13	45	42,8
≥13	60	57,2
Family support	F	%
<7	27	25,8
≥7	78	74,3
EPDS score		
< 9	4	3,9
9-12	30	28,6
≥13	71	67,7

As shown in Table 2, the majority of respondents (57 %) had a high level of knowledge. The majority (74.3 %) had high family support. In addition, 67.7% of the participants had probable antenatal depression.

3. The Correlation between Pregnant Women's Knowledge, Family Support, and EPDS Scores

The correlation between pregnant women's knowledge, family support, and EPDS scores is presented in Table 3.

Table 3. Correlation between knowledge, family support, and EPDS scores (n = 105)

	rho	*P-value*
Pregnant women's knowledge about antenatal depression	0.137	0.162
Family support	0.156	0.113

Spearman's rank correlation

Spearman's correlation showed no significant correlation between knowledge and EPDS scores (rho = 0.137, p = 0.162) or between family support and EPDS scores (rho = 0.156, p = 0.113).

DISCUSSION

1. Respondent Characteristics

The majority of respondents were aged 20-35 years. This is in line with the National Population and Family Planning Agency (BKKBN), which states that the ideal age range for pregnancy is 20-35 years. These results align with the findings of (17), (18), and Zou, S et al. (2024), who also found that the ideal age for pregnancy is predominantly between 20 and 35 years old. According to (19), the age range of 20-35 years is considered optimal for pregnancy because, at this age, the uterus is mature and can support pregnancy well, both psychologically and physically.

Most respondents were unemployed (81.9%). This aligns with data from the Central Statistics Agency (BPS), which reported that in 2023, the female labor force participation rate in Central Java was 58.92%, while in Banyumas Regency it was only 46.08%. This suggests that many women of reproductive age are not part of the labor force, which may affect their level of independence and access to health services.

The respondents' husbands' incomes were divided almost equally between those earning less than the city minimum wage (UMK). This is influenced by various factors such as education level, place of residence, and type of work. According to (20), factors such as education level, work experience, gender, area of residence, and type of work significantly affect the income of workers, both formal and informal.

Most respondents had a high school or vocational school education (41.9%). According to data from the Central Statistics Agency (BPS), in 2023, 22.74% of Indonesians aged 15 years and above had a junior high school/equivalent education, while 30.22% had a high school or vocational school or equivalent education level. This finding is in line with Sakinah's (2016) research, which noted that most pregnant women had a high school or vocational school education. A lower level of education can hinder the development of an attitude towards information (21).

Nearly half of respondents were in their third trimester of pregnancy (48.6%). This is related to the fact that most pregnant women have regular antenatal care (ANC) appointments in their third trimester to monitor the health of the mother and fetus and prepare for childbirth. This statement is in line with the research conducted by (22) which states that pregnancy check-ups in the third trimester aim to detect abnormalities in the position of the baby or other conditions that require delivery in a hospital.

Furthermore, most respondents (80.0%) had planned pregnancies. This is related to the age of the respondents, who were in the reproductive age category, which is considered safe for pregnancy. The ideal reproductive age for pregnancy is between the ages of no risk, because at that age, the risk of complications is lower (23).

2. Pregnant Women's Knowledge, Family Support, and Antenatal Depression.

The majority of respondents (57 %) had a high level of knowledge. This is in line with the research by (16), who found that pregnant women's knowledge of antenatal depression scored 14.01. According to (24), a person's level of knowledge is influenced by various factors, including age, education level, gestational age, occupation, parity, and the age of the pregnant woman. These factors affect an individual's ability to receive information, thereby developing their knowledge (24). This is in line with (25) research, which found that as a person ages, their ability to receive health information increases (25). In addition, pregnant women with higher levels of education and income tend to be more concerned about their health, as stated by (26).

The majority (74.3%) of respondents also reported high family support, reflecting the attention, assistance, and motivation provided by family members, particularly husbands and close relatives. Such support enables pregnant women to feel more comfortable and secure throughout their pregnancy. These results are consistent with (27), who reported that strong family support can reduce stress and anxiety levels in pregnant women. Similarly, Sari et al.(2020) found that women with higher family support tend to be more compliant with antenatal care (ANC) visits and the consumption of prenatal vitamins.

As many as 67.7% of the participants had probable antenatal depression, which is considerably higher than the global (10%) and Indonesian (23%) estimates described in the Introduction. Several factors may explain this discrepancy. First, the EPDS is a screening instrument rather than a diagnostic tool, and prevalence

estimates based on screening tools are known to exceed those based on diagnostic interviews (43). Second, the cut-off of ≥13 was originally developed for postpartum women, and the optimal cut-off for pregnant women varies across studies (44). Third, the EPDS anxiety items may capture pregnancy-related worries, particularly in the third trimester, a stage when psychological changes tend to become more complex compared to earlier trimesters (28); nearly half of the respondents (48.6%) were in this trimester. Fourth, maternal age also appears to influence emotional responses; (29) noted that an individual's ability to cope with anxiety varies according to age. Parity and family-related conditions may also contribute to depressive symptoms. Kusuma, (2018) found that family challenges, such as caring for young children or having many dependents, can increase the likelihood of antenatal depression. Fifth, 20.0% of the respondents had unintended pregnancies. Low acceptance of pregnancy has been associated with higher levels of depression, anxiety, and stress, as well as poorer physical health, quality of life, and maternal–fetal attachment (31). In addition, half of the households earned below the regional minimum wage, and 81.9% of the women were not employed; unemployed pregnant women are more prone to depression due to limited social interaction and financial insecurity (32). Finally, a similarly high proportion was found in our preliminary study at the same health center, suggesting that the finding reflects the local context rather than a sampling artefact. Therefore, this figure should be interpreted as the proportion of women with high depressive symptoms who require further clinical assessment, not as diagnosed depression.

3. The Correlation between Pregnant Women's Knowledge, Family Support, and EPDS Scores

The results of this study showed no significant relationship between pregnant women's knowledge and the incidence of antenatal depression. This finding contradicts the research conducted by (33), who found a significant relationship between knowledge of high-risk pregnancy and depression levels among pregnant women. However, the present result is in line with the study by (34), which also found no significant relationship between pregnant women's knowledge of high-risk pregnancy and the occurrence of pregnancy complications. Although not significant, the direction of the correlation was positive (rho = 0.137), which may reflect greater recognition and reporting of depressive symptoms among women with better mental health knowledge.

The absence of a relationship in this study may be explained by the fact that antenatal depression is more strongly influenced by psychosocial factors, such as economic pressure and lack of social support, rather than knowledge level (35). Nevertheless, knowledge remains an important factor that can influence maternal behavior during pregnancy. Pregnant women who have a better understanding of high-risk conditions are more likely to take preventive actions and seek timely care to reduce potential complications. Febrianti, Riyanti, and Suryandari (2023) also found that participation in prenatal classes significantly improved mothers' knowledge of high-risk pregnancies and delivery complications.

Similarly, this study found no significant relationship between family support and antenatal depression. This result is consistent with the findings of (28), who reported that family support did not significantly affect the risk of antenatal depression. Bedaso et al. (2021) explained that this may occur because most subjects receive adequate support from their partners and social environments. In contrast, Putri et al. (2024) reported that social support is a key determinant of lower depression risk. Support and encouragement from family members, especially husbands, help pregnant women cope with the challenges of pregnancy and reduce the risk of psychological complications (38). In addition, family support scores in this study showed a ceiling effect: the median was the maximum possible score (7), which limited variability and may have reduced the ability to detect a correlation.

Family support has a direct positive impact on health and emotional well-being. It can help reduce anxiety and feelings of helplessness by providing comfort and a sense of stability during stressful situations. The lack of a significant relationship between family support and antenatal depression in this study may also be related to other influencing factors, such as low socioeconomic status. Mahmoodi (2017) found that family income has an indirect negative effect on the mental health of pregnant women. Insufficient family income can increase stress, and prolonged stress can trigger depression both during pregnancy and after childbirth (Simkin, Whalley, and Keppler, 2017).

Limitations

This study has several limitations. First, the cross-sectional design does not allow causal inference. Second, the analysis was bivariate; potential confounders such as age, occupation, parity, unintended pregnancy, and income were not adjusted for. Third, important risk factors for antenatal depression, including a history of mental health disorders, intimate partner violence, economic stress, and pregnancy-related complications, were not measured and may have confounded the results. Fourth, the EPDS is a screening instrument; the results indicate probable depression rather than a clinical diagnosis. Fifth, family support scores showed a ceiling effect (median 7 of a maximum of 7, with only four distinct scores observed), which limited variability and may have reduced the ability to detect a correlation. Finally, accidental sampling at a

single community health center limits the generalisability of the findings. Future studies should measure these factors and use multivariable analysis with larger samples.

CONCLUSIONS

There was no significant correlation between pregnant women's knowledge and EPDS scores, nor between family support and EPDS scores. However, two-thirds of the respondents screened positive for probable antenatal depression. This finding supports routine antenatal depression screening using the EPDS during antenatal care visits, so that women who screen positive can be referred for further assessment and follow-up. Future research should examine other psychosocial factors, such as a history of mental health problems, intimate partner violence, economic stress, and pregnancy complications, using multivariable analysis.

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