Media Kesehatan Masyarakat Indonesia
Volume 21 Issue 2 2025
DOI : 10.30597/mkmi.v21i2.44786
Website : http://journal.unhas.ac.id/index.php/mkmi

Psychosocial Factors and Prevalence of Stress in Early Pregnancy: A Study in Makassar City

Jumriani Ansar[1,5*], Asri C Adisasmita[2], Sudarto Ronoatmodjo[2], Farid Husin[3], Muliani Ratnaningsih[4]

[1]Doctoral Student of Epidemiology Study Program, Faculty of Public Health, Universitas Indonesia, Depok, Indonesia
[2]Department of Epidemiology, Faculty of Public Health, Universitas Indonesia, Depok, Indonesia
[3]Department of Epidemiology and Biostatistics, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia
[4]Faculty of Health, University of Pejuang Republic Indonesia, Makassar, Indonesia
[5]Department of Epidemiology, Faculty of Public Health, Universitas Hasanuddin, Makassar, Indonesia
[*]Authors Correspondence: jumriani.ansar@gmail.com/085242543813

ARTICLE INFO

Article History:
Received Jun, 13th, 2025
Accepted jun, 25th, 2025
Published online Jun, 30th, 2025

Keywords:
Stress;
Pregnant Women;
Family Income;
Interpersonal Relationships;
EPDS;

ABSTRACT

Stress during pregnancy can negatively impact the health of both the mother and the fetus, especially in the first trimester, which is a period of intense physical and emotional adaptation. This study aims to determine the prevalence and psychosocial factors associated with the occurrence of stress in first-trimester pregnant women in Makassar City. This study uses a cross-sectional design involving 256 first-trimester pregnant women from five public health centers in the suburban areas of Makassar City. Data were collected through interviews using a structured questionnaire. The Edinburgh Postnatal Depression Scale (EPDS10) instrument was used to measure stress levels. Analysis was conducted bivariately and multivariately using logistic regression. The prevalence of severe stress among pregnant women in the first trimester was 36.72%. Multivariate analysis revealed two factors significantly associated with severe stress: low family income (adjusted Prevalence Ratio (aPR) = 2.32; 95% CI: 1.15–4.66; p = 0.018) and poor interpersonal relationships with parents or in-laws (adjusted Prevalence Ratio (aPR) = 4.63; 95% CI: 1.53–14.02; p = 0.007). Socioeconomic factors and interpersonal relationships with parents/in-laws influence the high levels of stress experienced by first-trimester pregnant women. Early intervention that considers the family's economic aspects and social support from the surrounding environment is critical in preventing stress during pregnancy.

INTRODUCTION

Pregnancy is a period marked by various significant physiological and psychological changes, making pregnant women more susceptible to stress.[1] The issue of maternal stress and mental health is now recognized as a global public health concern. An estimated 10% of pregnant women and 13% of postpartum women suffer from stress disorders or mental health issues.[2]

The antenatal period is a crucial stage that should be the focus in stress intervention, especially during the first trimester of pregnancy. The first trimester is marked by significant hormonal changes, particularly the increase in progesterone and estrogen levels, which can affect mood and stress response.[3] During this period, pregnant women experience various physical and emotional changes. Symptoms such as nausea, vomiting, fatigue, and weight changes can cause physical discomfort that impacts emotional stress. Additionally, uncertainty about pregnancy, unwanted pregnancies, and social and economic factors including lack of social support, the quality of the relationship with a partner, and unstable economic conditions contribute to increased stress levels during the first trimester.[4,5] In addition, maternal factors such as age, education, occupation, and parity are also often associated with the risk of stress in pregnant women.[6]

Maternal stress during pregnancy has been proven to negatively impact the health of both the mother and the fetus, including an increased risk of postpartum depression, low birth weight, and fetal developmental disorders.[7] The most common psychological disorders experienced by pregnant women in response to stress are depression and anxiety. The prevalence of antenatal depression ranges from 7 to 15% in high-income countries and 19 to 25% in low- and middle-income countries.[8] Likewise, there is a difference in the prevalence of depression and anxiety among pregnant women between urban and rural areas. The research conducted by Rachita 2022, found that pregnant women in urban areas (53.49%) are more vulnerable to stress influenced by social and work factors compared to those in rural areas (46.51%).[9]

One of the measurement tools that can be used to identify stress in pregnant women is the Edinburgh Postnatal Depression Scale 10 (EPDS10) questionnaire. The EPDS10 consists of 10 questions that measure signs of depression and anxiety in pregnant women. To use this tool, pregnant women are asked to respond to each question by selecting one of the four available answer options. Several previous studies have indicated that EPDS10 can be used to measure psychosocial stress in pregnant women. A study from Dosani et al., 2022 found that EPDS10 has quite good validity and reliability for identifying depression and anxiety in pregnant women.[10] Therefore, based on the explanation above, this study aims to determine the prevalence of stress incidents in first-trimester pregnant women using the EPDS instrument and analyze the factors related to psychosocial stress in first-trimester pregnant women in Makassar City.

MATERIAL AND METHOD

Design

The research design is a cross-sectional study conducted in five community health centers in the city of Makassar, namely Jumpandang Baru, Rappokalling, Kalukubodoa, Pattingaloang, and Tabaringan. These five community health centers are in the Tallo and Ujung Tanah subdistricts, which are suburban areas in the city of Makassar.

Participants

The population in this study consists of all first-trimester pregnant women residing in the research health centers of Makassar City. The sample consists of first-trimester pregnant women selected according to the following criteria:

1. Fully willing to be a research subject
2. Residing at the research base location
3. Conducting ANC trimester 1 examinations at the research health center
4. The LILA measurement is greater than 23 cm.

Participants were excluded if they had a diagnosis of psychosis, schizophrenia, or other psychiatric disorders, as these conditions may interfere with the assessment of psychosocial stress and confound the interpretation of study outcomes.

Data Collection

Data were gathered by directly interviewing chosen pregnant women, who were selected using a questionnaire to evaluate factors like age, education, mother's job, family income, how the mother views her husband's support,

domestic violence, living with family, relationships with parents/in-laws, unintended pregnancy, and number of children. The level of stress was measured using the EPDS 10 questionnaire, which classified stress as severe (score over 10) or mild (score under 10). The selection of the EPDS was based on the consideration that this instrument has been widely used in perinatal contexts, demonstrates good validity and reliability, and is practical to administer. Moreover, several previous studies have utilized the EPDS as a proxy for maternal psychological conditions, including aspects of stress, thereby supporting its relevance within the framework of the present study.[11]

The mother's age is categorized into two groups: the ideal age for pregnancy (20-35 years) and the non-ideal age for pregnancy (<20 years or >35 years). Education is the highest level of education completed by the respondent. The mother's employment status can be either formal or non-formal, involving either full-time or part-time working hours. The income received by family members (husband and wife), which can come from salaries or businesses run to meet family needs, is categorized as low or high income based on the UMP standard of Makassar City in 2023 (Rp. 3,385,145). A mother's perception of her husband's support is her interpretation of the level of support from her husband, including responses, attention, emotional support, practical support, and the husband's presence during the pregnancy.

Domestic violence is an action or behavior that falls into the category of physical and psychological violence. Physical actions include hitting, kicking, the use of weapons or dangerous objects, or other physical actions that cause pain, wounds, or injuries to the victim, which occur within the context of a household relationship (husband and wife). Psychological violence includes threats and verbal abuse (shouting, harsh words, and insults). This variable was assessed based on respondents' subjective responses to a questionnaire containing items related to these aspects.

Living in the same house with family members means sharing a household with parents, in-laws, or other relatives. Living with family is the status of residing together or sharing a household with family members who fall into the categories of parents, in-laws, or other relatives (siblings of the spouse or other relatives) in the context of household relationships.

Interpersonal relationships with parents or in-laws are characterized by good communication, mutual respect, support for each other, and the absence of conflicts between them. The measurement of this variable relied on respondents' self-reported answers to a questionnaire addressing these aspects.

An unintended pregnancy is one that occurs without any intention or prior planning or preparation by the husband and wife. Parity is the most pregnancy a mother has ever experienced.

Data Analysis

This study uses descriptive analysis to determine the prevalence of stress among first-trimester pregnant women. To find out how risk factors relate to stress in first-trimester pregnant women, researchers used a chi-square test ($p < 0.05$) and a simple prevalence ratio, and to get a more accurate prevalence ratio of factors linked to stress, they used logistic regression. Logistic regression was applied because the dependent variable was binary. This method allows estimation of adjusted odds ratios, providing an interpretable measure of association between predictors and outcomes while accounting for potential confounders.

Ethical Considerations

This study obtained an Ethical Approval Letter with Number: Ket-682/UN2.F10.D11/PPM.00.02/2023 from the Research and Community Engagement Ethics Committee of the Faculty of Public Health, Universitas Indonesia.

RESULTS

Table 1 presents the results of the univariate analysis related the characteristics of the respondents. The analysis results indicate that in this study, most pregnant women are in the age group of 20–35 years (81.64%), which falls within the safe reproductive age range. As many as 12.11% are over 35 years old and 6.25% are under 20 years old, both of which fall into the high-risk group based on age. In terms of education, most pregnant women completed their education up to the high school level (46.09%), followed by junior high school

(19.92%) and elementary school (19.14%). For employment status, most respondents are housewives/unemployed (85.55%), while the rest work as entrepreneurs, private employees, or in formal sectors such as civil servants/ military/police.

For psychosocial factors, most respondents' families have low income (69.92%), indicating economic vulnerability in this population. Perception of spousal support is almost evenly divided, with 50.39% feeling sufficient. Most pregnant women reported never experiencing domestic violence (98.05%), although 1.95% have experienced it. As many as 58.20% live in the same house with extended family, which can have either a positive or negative impact depending on the dynamics of interpersonal relationships. Regarding this matter, the majority reported having good interpersonal relationships with their parents or in-laws (92.97%). There are 17.19% of pregnant women who experience an unintended pregnancy. In terms of the parity variable, the majority have a parity of 1–3 children (67.58%). Researchers found that 36.72% of first-trimester pregnant women experienced severe stress, while 63.28% experienced mild stress (Table 1).

Table 2 presents the results of bivariate analysis between factors related to stress in first-trimester pregnant women. The results of the bivariate analysis show that among the demographic variables, none are significantly associated with severe stress in pregnant women. The mother's age, whether under 20 years or over 35 years, did not show a significant difference compared to the age group of 20–35 years in terms of the prevalence of severe stress (p = 0.9890 and p = 0.5970). The level of education also does not have a significant effect on the level of stress (p = 0.4578), nor does the mother's employment status (p = 0.1861).

Several psychosocial variables show a significant relationship with severe stress. Low family income significantly increases the risk of severe stress compared to adequate income Crude Prevalence Ratio (CPR) = 1.82; 95% CI: 1.17–2.82; p = 0.0037). Similarly, a history of domestic violence (DV) is associated with severe stress; all mothers who experienced DV were recorded as experiencing severe stress (CPR = 2.82; 95% CI: 2.39–3.33; p = 0.0030). Poor interpersonal relationships with parents or in-laws are also significantly associated with severe stress (CPR = 2.12; 95% CI: 1.52–2.97; p = 0.0012) (Table 2).

Meanwhile, unwanted pregnancies show a tendency to increase the risk of severe stress (CPR = 1.39), but this relationship has not yet reached statistical significance (p = 0.0960). Several other psychosocial variables, such as perception of spousal support, living with family, and positive interpersonal relationship status, did not show a significant relationship with severe stress (p > 0.05). In obstetric factors, parity does not show a significant relationship with severe stress. Both mothers with parity 0, 1–3, and >3 showed similar prevalence of severe stress (p = 0.6450 and p = 0.9950) (Table 2).

Table 3 presents the results of a multivariate analysis of factors related to stress in first-trimester pregnant women. We conducted multivariate analysis using logistic regression to identify factors independently associated with the occurrence of severe stress in first-trimester pregnant women. The variables chosen for the multivariate model were based on the bivariate analysis results, where a p-value of less than 0.25 was used. These included: the mother's job, family income, history of domestic violence (DV), relationships with parents or in-laws, and whether the pregnancy was unwanted.

The analysis results indicate that two variables remain significantly related after controlling for other factors: low family income, which is a significant predictor of severe stress, as mothers from low-income families have a 2.32 times higher risk of experiencing severe stress compared to mothers with sufficient income (Adjusted Prevalence Ratio (aPR) = 2.32; 95% CI: 1.15–4.66; p = 0.018), and poor interpersonal relationships with parents or in-laws, which also significantly increases the risk of severe stress. Mothers with poor interpersonal relationships are 4.63 times more likely to experience severe stress compared to those with good relationships (aPR = 4.63; 95% CI: 1.53–14.02; p = 0.007) (Table 3).

Meanwhile, other variables such as the mother's employment status, history of domestic violence, and unintended pregnancies did not show a significant relationship in the final model.

Table 1. Characteristics of Respondent

Variable	n = 256	%
Mother's Age (Years)		
< 20	16	6.25
20-35	209	81.64
>35	31	12.11
Mother's Education Level		
No schooling/Not completed elementary school	4	1.56
Complete elementary school	49	19.14
Complete middle school	51	19.92
Graduate from high school	118	46.09
Complete D3/Bachelor's/Master's	34	13.28
Job Status Mother		
Not working/housewife	219	85.55
Entrepreneur	9	3.52
Private employee	16	6.25
Civil Servants/Police/Military	5	1.95
Others	7	2.73
Family income		
Enough	77	30.08
Less	179	69.92
Mother's Perception of Her Husband's Support		
Sufficient	129	50.39
Less	127	49.61
Domestic Violence (DV)		
Never	251	98.05
Ever	5	1.95
Living Under the Same Roof with Family		
No	107	41.80
Yes	149	58.20
Interpersonal Relationship with Parents/in-laws		
Good	238	92.97
Bad	18	7.03
Unintended Pregnancy		
Intended	212	82.81
Unintended	44	17.19
Parity (Time)		
0	67	26.17
1-3	173	67.58
>3	16	6.25
Stress in Pregnant Mothers		
Mild Stress	162	63.28
Severe Stress	94	36.72

Source: Primary Data, 2024

Table 2. Bivariate Analysis Results

Factor	Variable	Severe Stress n (%)	Mild Stress n (%)	CPR	95% CI	p
Demography	**Mother's Age (Years)**					
	< 20	6 (37.50)	10 (62.50)	0.99	0.52-1.94	0.9890*
	20-35	78 (37.32)	131 (62.68)	ref	ref	ref
	>35	10 (32.26)	21 (67.74)	0.86	0.50-1.48	0.5970*
	Education					
	Low	41(39.42)	63 (60.58)	1.13	0.82-1.56	0.4578*
	High	53 (34.87)	99 (65.13)			
	Mother's Job					
	Not Working	10 (27.03)	27 (72.97)	0.70	0.40-1.23	0.1861
	Working	84 (38.36)	135 (61.64)			
Psychosocial	**Income**					
	Lack	76 (42.46)	103 (57.54)	1.82	1.17-2.82	0.0037
	Enough	18 (23.38)	59 (76.62)			
	Mother's Perception of Husband's Support					
	Low	47 (37.01)	80 (62.99)	1.02	0.74-1.40	0.9241*
	High	47 (36.43)	82 (63.57)			
	Domestic Violence					
	Yes	5 (100.00)	0 (0.00)	2.82	2.39-3.33	0.0030
	No	89 (35.46)	162 (64.54)			
	Living with Family					
	Yes	54 (36.24)	95 (63.76)	0.97	0.70-1.34	0.8517*
	No	40 (37.38)	67 (62.62)			
	Interpersonal Relationship with Parents/In-Laws					
	Bad	13 (72.22)	5 (27.78)	2.12	1.52-2.97	0.0012
	Good	81 (34.03)	157 (65.97)			
	Unintended Pregnancy					
	Unintended	21 (47.73)	23 (52.27)	1.39	0.97-1.99	0.0960
	Intended	73 (34.43)	139 (65.57)			
Obstetric	**Parity**					
	0 time	23 (34.33)	44 (65.67)	0.91	0.62-1.34	0.6450*
	1-3 time	65 (37.57)	108 (62.43)	Ref	Ref	Ref
	>3 time	6 (37.50)	10 (62.50)	0.98	0.52-1.94	0.9950*

Source: Primary Data, 2024

*p > 0.25 is not included in the multivariate analysis

DISCUSSION

The results of this study found that pregnant women experiencing moderate to severe psychosocial stress (EPDS score ≥ 10) in the first trimester amounted to 36.72%. In line with the research conducted by Padhani (2024) and Atif (2021) in Pakistan, which found an antenatal depression prevalence of 37% among mothers.[12,13] Consistent findings indicate that mental health concerns during pregnancy necessitate significant attention. High levels of stress and depression during pregnancy can have long-term negative impacts on the health of both the mother and child, affecting the child's development and increasing the risk of premature birth.[14,15] Handling this issue requires a comprehensive intervention that considers both individual and relational dimensions during pregnancy.[14]

Waqas (2020) conducted another study that yielded similar results, revealing that 42.2% of pregnant women reported experiencing high levels of stress. Based on multivariate analysis (logistic regression), the study produced a significant model that predicts high stress levels. According to him, low family income, unintended pregnancies, high parity, lack of decision-making freedom, marital problems, abuse, desire for male children, and history of birth complications are associated with high stress levels in pregnant women.[16]

This study also found low income and poor relationships with parents/in-laws as the main predictors associated with stress in first-trimester pregnant women. Low family income is one of the factors that can contribute to increased psychosocial stress in pregnant women, especially in the first trimester when adaptation to pregnancy is taking place.[17,18] This condition is often accompanied by various difficulties in meeting basic needs, such as nutritious food, decent housing, transportation expenses to healthcare facilities, and specific needs during pregnancy. This economic uncertainty can cause concerns both in the short and long term, which ultimately become a source of chronic stress for the mother. Additionally, pregnant women with low incomes tend to have limited access to quality Antenatal Care (ANC) services, including regular pregnancy check-ups and psychological counseling services. These limitations can create feelings of insecurity regarding the condition of the pregnancy and the health of the fetus, which in turn exacerbate the levels of stress and anxiety experienced.

Besides income, poor interpersonal relationships with parents/in-laws have the highest risk of causing stress in first-trimester pregnant women in this study. A poor relationship with parents or in-laws indicates communication problems that an cause emotional stress, affecting the mother's health and the development of the fetus. Research conducted by Qiftiyah and Azizah shows that disharmonious communication can be a major source of stress for a pregnant mother, leading to emotional discomfort, decreased appetite, and overall deterioration of health.[19]

Poor interpersonal relationships, especially with parents or in-laws, can be an indicator that pregnant women do not receive adequate social support during pregnancy. In fact, strong social support during pregnancy, especially in the first trimester marked by significant emotional and physical changes, has been proven to be negatively correlated with stress levels. This means that the higher the social support received by the mother, the lower the level of stress she experiences. Belay's (2018) research found that social support is a significant predictor of stress occurrence in pregnant women. Research has proven that high social support protects pregnant women against maternal stress (aOR: 0.21; 95% CI: 0.07-0.66).[4]

Table 3. Results of Multivariate Analysis

Variable	*a*PR (95%CI)	p
Mother's Job		
Not Working	1.09 (0.44-2.69)	0.857
Working	ref	ref
Income		
Lack	2.32 (1.15-4.66)	0.018
Enough	ref	ref
Domestic Violence		
Yes	1.33 (0)	0.991
No	ref	ref
Interpersonal Relationship with Parents/In-Laws		
Bad	4.63 (1.53-14.02)	0.007
Good	ref	ref
Unintended pregnancy		
Unintended	1.67 (0.83-3.37)	0.149
Intended	ref	ref

Source: Primary Data, 2024

Low family income and poor interpersonal relationships with parents or in-laws are two very important social factors to consider in efforts to prevent stress in pregnant women. Stress in pregnant women is not just emotional discomfort but an important risk factor that can affect the health of both the mother and the child. Therefore, attention to the detection, monitoring, and management of stress during pregnancy is crucial in order to improve the quality of pregnancy and achieve healthy birth outcomes.

CONCLUSION AND RECOMMENDATION

This study indicates that first-trimester pregnant women with low family income and poor interpersonal relationships with parents or in-laws have a higher risk of experiencing severe stress. Efforts to prevent stress in pregnant women should focus on improving access to socioeconomic assistance and strengthening interpersonal support, especially from close family members. Routine checkups should also include mental health screenings in the first trimester.

AUTHOR CONTRIBUTIONS

Each author made significant contributions to the reported work, whether in terms of ideas, research design, execution, data collection, analysis, and interpretation, or in all of these areas; they all participated in drafting, revising, or critically reviewing the article; they all approved the journal to which the article was submitted; and they all agreed to be accountable for every part of the work.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Dipietro JA. Psychological and Psychophysiological Considerations Regarding the Maternal-Fetal Relationship. *Infant and Child Development*. 2010;19(1):27–38. https://doi.org/10.1002/icd.651
2. WHO. Perinatal Mental Health. Geneva; Word Health Organization. https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/maternal-mental-health
3. Manuaba F. Ilmu Kebidanan, Penyakit Kandungan, dan KB untuk Pendidikan Bidan. 2nd ed. Jakarta: EGC; 2010.
4. Belay YA, Moges NA, Hiksa FF, Arado KK, Liben ML. Prevalence of Antenatal Depression and Associated Factors among Pregnant Women Attending Antenatal Care at Dubti Hospital: A Case of Pastoralist Region in Northeast Ethiopia. *Depression Research and Treatment*. 2018;2018(1). https://doi.org/10.1155/2018/1659089
5. Bödecs T, Szilágyi E, Cholnoky P, Sándor J, Gonda X, Rihmer Z, et al. Prevalence and Psychosocial Background of Anxiety and Depression Emerging During the First Trimester of Pregnancy: Data from a Hungarian Population-Based Sample. *Psychiatria Danubina*. 2013;25(4):352–358. https://pubmed.ncbi.nlm.nih.gov/24247046/
6. Yang K, Wu J, Chen X. Risk Factors of Perinatal Depression in Women: A Systematic Review and Meta-Analysis. *BMC Psychiatry*. 2022;22(1):63. https://doi.org/10.1186/s12888-021-03684-3
7. Dunkel Schetter C, Tanner L. Anxiety, Depression and Stress in Pregnancy: Implications for Mothers, Children, Research, and Practice. *Current Opinion in Psychiatry*. 2012;25(2):141–148. https://doi.org/10.1097/YCO.0b013e3283503680
8. Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of Maternal Depression, Risk Factors, and Child Outcomes in Low-Income and Middle-Income Countries. *The Lancet Psychiatry*. 2016;3(10):973–982. https://doi.org/10.1016/S2215-0366(16)30284-X
9. Răchită A, Strete GE, Suciu LM, Ghiga DV, Sălcudean A, Mărginean C. Psychological Stress Perceived by Pregnant Women in the

Last Trimester of Pregnancy. *International Journal of Environmental Research and Public Health*. 2022;19(14):8315. https://www.mdpi.com/1660-4601/19/14/8315

10. Dosani A, Yim IS, Shaikh K, Lalani S, Alcantara J, Letourneau N, et al. Psychometric Analysis of the Edinburgh Postnatal Depression Scale and Pregnancy Related Anxiety Questionnaire in Pakistani Pregnant Women. *Asian Journal of Psychiatry*. 2022;72:103066. https://doi.org/10.1016/j.ajp.2022.103066
11. Dhaliwal SK, Dabelea D, Lee-Winn AE, Crume T, Wilkening G, Perng W. Maternal Psychosocial Stress During Pregnancy and Offspring Neurobehavioral Outcomes During Early Childhood in the Healthy Start Study. *Annals of Epidemiology*. 2023;86:16-24. https://doi.org/10.1016/j.annepidem.2023.06.001
12. Padhani ZA, Salam RA, Rahim KA, Naz S, Zulfiqar A, Ali Memon Z, et al. Prevalence and Risk Factors of Perinatal Depression Among Mothers and Fathers in Pakistan: A Systematic Review and Meta-Analysis. *Health Psychology and Behavioral Medicine*. 2024;12(1). https://doi.org/10.1080/21642850.2024.2383468
13. Atif M, Halaki M, Raynes-Greenow C, Chow C. Perinatal Depression in Pakistan: A Systematic Review and Meta-Analysis. *Birth*. 2021;48(2):149–163. https://doi.org/10.1111/birt.12535
14. Chíxaro L, Soroka V, Moreira P, Duran T, Neto E, Veras M. Efeitos Do Estresse E Da Saúde Mental Materna Na Gravidez: Uma Revisão de Literatura: Effects of Stress and Maternal Mental Health on Pregnancy: A Literature Review. *Revista Científica Multidisciplinar O Saber*. 2024;1(2):1-9. https://doi.org/10.51473/rcmos.v1i2.2024.725
15. Khanam R, Applegate J, Nisar I, Dutta A, Rahman S, Nizar A, et al. Burden and Risk Factors for Antenatal Depression and Its Effect on Preterm Birth in South Asia: A Population-Based Cohort Study. *PLoS ONE*. 2022;17(2):e0263091. https://doi.org/10.1371/journal.pone.0263091
16. Waqas A, Zubair M, Zia S, Meraj H, Aedma KK, Majeed MH, et al. Psychosocial Predictors of Antenatal Stress in Pakistan: Perspectives from a Developing Country. *BMC Research Notes*. 2020;13(160). https://doi.org/10.1186/s13104-020-05007-3
17. Madeghe BA, Kogi-Makau W, Ngala S, Kumar M. Risk Factors and Experiences of Prepartum Depression in Urban-Low-Income Settlement Nairobi Kenya: A Mixed-Method Study. *F1000Research*. 2020;9:1495. https://doi.org/10.12688/f1000research.27434.3
18. Oliveira TA, Luzetti GGCM, Rosalém MMA, Mariani Neto C. Screening of Perinatal Depression Using the Edinburgh Postpartum Depression Scale. *Revista Brasileira de Ginecologia e Obstetrícia*. 2022;44(5):452–457. https://doi.org/10.1055/s-0042-1743095
19. Qiftiyah K, Azizah N. Bridging Communication Gaps for Maternal Well-Being. *Academia Open*. 2024;9(2). https://doi.org/10.21070/acopen.9.2024.8310