International Journal of Medical Toxicology & Legal Medicine **Volume 27, No. 4S, 2024**
e-ISSN: 0974-4614
p-ISSN: 0972-0448
https://doi.org/10.47059/ijmtlm/V27I4S/160

Pregnant Women with Probable Psychological Issues at Al-Furat Al-Awsat Teaching Hospital in Al-Najaf Province

Russell Abbas Kareem[1], Atheer Kadhim Ibadi[2*]

[1]Department of Community Health Technologies, College of Health and Medical Technologies/Kufa, Al-Furat Al-Awsat Technical University, Kufa, Email: Iraqrussell.kareem.chm@student.atu.edu.iq
[2]Department of Pharmacy, Kufa Institute, Al-Furat Al-Awsat Technical University, 31001 Kufa, Al-Najaf, Iraq, Email: atheerkadhimibadi@yahoo.com, kin.ath@atu.edu.iq
*Corresponding Author

Received: 07.09.2024 Revised: 26.10.2024 Accepted: 17.11.2024

ABSTRACT
Background: Pregnancy is a critical period characterized by high psychological vulnerability, with potentially negative consequences on the health of the mother and her child. Therefore, the assessment of pregnant women is important in all dimensions. There is limited research on prenatal psychological issues in Iraq.
Objectives: To assess the prevalence of the most common psychological problems, including depression, anxiety, and stress for pregnant women during pregnancy.
Design and sample: This pilot study was a cross-sectional study design. A simple random sampling of 91 pregnant women at Al-Furat Al-Awsat Teaching Hospital in Najaf, Iraq. Measurements: Standardized questionnaires as data collection tools, collecting information on socio-demographic characteristics, obstetric history, psychological and social history, and conducting assessments for anxiety, depression, and stress through interviews with pregnant women.
Results: The findings of the study indicated that (81.3 %) have moderate perceived stress levels, (42.9%) have moderate pregnancy-related anxiety, and (38.5%) have severe pregnancy-related anxiety. Regarding prenatal depression, most pregnant women(80.2%) have high levels of depression and need to be referred to a psychiatric specialist for more investigation and early intervention.
Conclusion: Stress, anxiety, and depression are common among pregnant women and often occur together. Therefore, assessing the psychological state of pregnant women is essential in reducing the resulting burden and preserving the health of the mother and her fetus.

Keywords: Assessment, Pregnancy, Psychological issues, Depression, Anxiety, Stress.

INTRODUCTION

The World Health Organization (WHO) defines psychological well-being as a state of mind in which an individual can fulfill his or her potential, function efficiently, and cope with the stresses of daily life. Maintaining overall health and happiness is essential to improving mental health, enhancing physical health, and increasing life expectancy[1]. Pregnancy is a time when women often face emotional challenges due to physiological, psychological, and hormonal changes, along with an increased risk of psychiatric issues.The most common psychological issues associated with pregnancy are stress, anxiety, and depression[2].Globally, about 10% of pregnant women experience psychological disorders, especially depression and anxiety, during the antenatal period. This percentage increases in developing countries to 15.6% during pregnancy[3]. More than 20% of Iraqis are affected by mental illnesses, and this percentage continues to rise steadily [4].

Psychological issues such as depression and anxiety impact pregnancy through heightened risk of gestational diabetes and preeclampsia [5, 6], Stillbirth, premature birth, low birth weight, and small size compared to gestational age,and maternal morbidity can lead to perinatal complications, a rise in surgical deliveries and postnatal depression[7].In Iraq, the prevalence of low birth weight (LBW) among depressed pregnant women was 21.2%, compared to 7.7% for non-depressed pregnant women [8].Psychological problems may extend to developmental challenges in infants, such asneurodevelopmental problems [9,10]. Psychological distress during pregnancy is linked with an increased risk of externalizing outcomes in offspring, such as reactive or aggressive behaviour, hyperactivity, and impulsivity[11].Besides its impact on physical health, psychological distress during the prenatal period can significantlyaffects the mother's mental and emotional health, increasing the possibility of postpartum anxiety and depression.It may lead to a poor mother-infant relationship [12]. The rate

of suicidal ideation among pregnant women is estimated at approximately 11.15%. It is linked to factors such as unwanted pregnancy, severe nausea during pregnancy, the appearance of symptoms of depression and anxiety, and psychological stres[13].

The psychological status affected by multiple factors includes socio-demographic elements, psychological and psychiatric history, obstetric considerations, lifestyle choices, and social support. The socio-demographic characteristics encompass age (younger or older), unemployment status, marital status, educational attainment, occupation, and income levels. Obstetric and medical risk factors include unplanned pregnancies, brief interpregnancy intervals, uterine haemorrhage, history of infertility, previous cesarean deliveries, multiple gestations, miscarriages, and high-risk pregnancies. Psychological risk factors include personal and family history of psychological illnesses, exposure to family violence, and insufficient social support during pregnancy. At the beginning of pregnancy, we can recognize most risk factors, particularly psychological ones, which may be amendable with suitable interventions [14-18].Iraqi females suffer from psychological issues even in the teenage stage. A recent study found that female children in intermediate school students had severe levels of anxiety and depression with moderate suicidality levels in a control group [19].Recent studies in Iraq found that 44.4% of pregnant teenagers experienced antenatal depression, with significant associations with low socioeconomic status and previous psychological issues(20).

Pregnant women experienced mild to moderate stigma when seeking professional psychological assistance, with self-stigma being more common than social stigma [21]. The stigma around perinatal mental disorders can prevent treatment, increasing suicide and substance abuse risks and negatively affecting infant outcomes [22-24].In low- and middle-income countries, many pregnant women find it difficult to access adequate information and psychological support regarding their pregnancies and childbirth preparation. While mental and emotional well-being is a vital aspect of reproductive health, it is often neglected [25].According to a study conducted in Baghdad, 91.1% of women have experienced war-related trauma over the past two decades; additionally, around 44% of psychiatric clinic visitors are women[26].

The health system in Iraq lacks an assessment of the psychological state of pregnant women. Antenatal clinics are the most appropriate places and times for periodic and regular evaluation of psychological problems with the aim of prevention and early intervention.Timely interventions can significantly mitigate future problems, improving outcomes for bothmothers and their babies.There is limited research on prenatal psychological issues in Iraq. This study aims to assess the prevalence of the most common psychological problems, including depression, anxiety, and stress among pregnant women during pregnancy.

MATERIALS & METHODS

Study design and setting

This pilot study used a cross-sectional design implemented as part of an extensive study that will be conducted for the same goal. It was performed at Al-Furat Al-Awsat Teaching Hospital in Najaf, Iraq. The study was conducted from 1 November to 30 November 2024.

Sample size and Sampling techniques

Ninety-one pregnant women were included in this study, representing 20% of the original study size. Study samples were chosen using simple random sampling.

Selection criteria and exclusion Criteria

Inclusion Criteria: Pregnant women in the antenatal period at any trimester and from Al-Furat Al-Awsat Teaching Hospital in Al Najaf province, Iraq, will be included in the study.

Exclusion Criteria: All pregnant women who have any one of these criteria were excluded from the study: Pregnant women in the postpartum period, Pregnant women with mental disabilities, such as communication and hearing problems, cognitive loss, psychotic disorder, and organic brain disease, pregnant women from other hospitals than Al-Furat Al-Awsat Teaching Hospital in Najaf, Iraq,andpregnant women who refused or provided incomplete information were excluded from the study.

Data Collection

A standardized questionnaire was obtained after translating the questionnaire into Arabic. The researcher filled out the first two parts of the questionnaire by conducting direct interviews with the participants, and the third part was filled by the participant (self-reporting). The questionnaire included the following information:

Part I): Data related to Socio-demographic characteristics of women include factors such as age and marital status, educational level, residence, economic status, occupational status, and type of family.

Part II): Data related to obstetric history and psychological and psychiatric history of the women were included.

Part III): Psychological Assessment Tools Validated tools to assess most common prenatal psychological issues include the Edinburgh Postnatal Depression Scale (EPDS) for assessing depression, the Pregnancy-Related Anxiety Questionnaire-Revised (PRAQ-R2) for anxiety, and the Perceived Stress Scale (PSS) for stress.

Measurements and Scoring

Edinburgh Postnatal Depression Scale (EPDS)

Depression was assessed using a validated Arabic translation of the Edinburgh Postnatal Depression Scale (EPDS). EPDS is a common tool used for screening symptoms of depression during and after pregnancy. This 10-item self-report questionnaire assesses the frequency of depressive symptoms over the past week and uses a four-point scale (0–3) for scoring. A higher score indicates a high level of depression. A score of thirteen or more was considered 'probable depression,' suggesting the need for a mental health referral. A score between ten and twelve indicates a potential risk of depression [27]. The internal consistency(Cronbach's alpha) for the current study was 0.8.

A perceived stress scale (PSS-10)

A perceived stress scale (PSS-10) with ten items was used to collect data on perceived stress. The tool uses a 5-point Likert scale. Each item rate was rated on a scale (0 -4), where 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Fairly Often, and 4 = Very Often. The total score range (0 - 40). Specifically, scores from 0 to 13 are considered low stress. Scores ranging from 14 to 26 indicate moderate stress, while scores from 27 to 40 reflect high perceived stress[28]. The current study's internal consistency(Cronbach's alpha) was 0.819.

The Pregnancy-Related Anxiety Questionnaire-Revised 2 (PRAQ-R2)

The Pregnancy-Related Anxiety Questionnaire-Revised 2 (PRAQ-R2) assesses anxiety in women during pregnancy, regardless of their parity. The assessment consists of 10 items rated on a five-point scale, where 1 = absolutely not relevant, and 5 = very relevant. Scores can be summed for specific subscales: three items on Fear of Giving Birth, four items on Worries about Bearing a Physically or Mentally Handicapped Child, and three items on Concerns about Personal Appearance. This structure allows for a detailed evaluation of various concerns related to childbirth. Anxiety, assessed using the PRAQ-R2 questionnaire, was identified with a score exceeding 10. It was categorized into mild anxiety (scores 10–20), moderate anxiety (scores 20–30), and severe anxiety (scores 31–40) [29]. The current study's internal consistency(Cronbach's alpha) was 0.9.

Statistical analysis

Data analysis was conducted using IBM version 28 of The Statistical Package for the Social Sciences (IBM SPSS). Descriptive statistics were calculated for selected numerical and categorical variables for descriptive data, inferential statistics, Independent sample t-test, and chi-square, which were used to test differences between frequencies. The P-value is considered statistically significant if it is equal to or less than 0.05.

RESULTS

The total number of respondents is 91, the age range (18-40) years with mean ± Std (26.64 ± 5.43). The response rate was 100%. The data was a normal distribution (1.67). The age range of the majority of respondents (64.8%) was 18–28 years. Almost all participants were married (98.9%), and residency is urban (61.5%) and rural (38.5%). Most participants had low to moderate educational levels, with the majority able to read and write without completing primary school (26.4%). The majority of pregnant women are housewives (67%), while 27.5% are government employees, 4.4% are ungovernment employees, and 1.1% are self-employed. The majority of pregnant women (59.3%) have a relatively adequate family income, followed by 27.5% who have a sufficient income,and 13.2% who are insufficient. Family types are similarly split between extended (56%) and nuclear (44%) households, as shown in Table (1).

Table 1: Sociodemographic characteristics of respondents

Items	Total (91)	Freq.	Perc.	P-value
Age groups	18-28Y	59	64.8	*0.001
	29-39Y	31	34.1	
	40& more	1	1.1	
	Total	91	100.0	
Marital Status	Married	90	98.9	**0.001
	Separated	1	1.1	
Residence	Urban	56	61.5	**0.028
	Rural	35	38.5	
Education levels	Not read and not write	5	5.5	**0.001
	Read and write	24	26.4	

	Primary School	17	18.7	
	Middle school	10	11.0	
	Secondary school	3	3.3	
	Diploma	15	16.5	
	Bachelor	14	15.4	
	Master degree	2	2.2	
	PhD	1	1.1	
Occupation	Government employee	25	27.5	**0.001
	Un-government employee	4	4.4	
	Self-employed	1	1.1	
	Housewife	61	67.0	
Family income	Sufficient	25	27.5	**0.001
	Sufficient to some extent	54	59.3	
	Insufficient	12	13.2	
Type of family	Nuclear	40	44.0	**0.249
	Extended	51	56.0	

*Independent Sample t-test, p-value 0.05.
**Chi-Squire test, P-value 0.05.

Regarding obstetric history, the majority of participants (71.4%) had experienced multiple pregnancies. Approximately half of the participants (50.5%) reported being married between 14 and 19 years. In terms of pregnancy planning, most pregnancies were planned (63.7%), while 36.3% were unplanned.Concerning medical history, 11% of the pregnant women reported experiencing current vaginal bleeding, and 24.3% were diagnosed with current hyperemesis gravidarum. Additionally, 31.9% had a previous history of miscarriage, and 13.2% had a previous history of stillbirth. as shown in Table 2.

Table 2: Represent the obstetricand medical history of respondents

		Frequency	Percent	P-Value
Gravity	Primigravida	26	28.6	**0.001
	Multigravida	65	71.4	
Interval between pregnancies	No	25	27.5	**0.001
	Less 1 year	24	26.4	
	2Y	7	7.7	
	3Y	10	11.0	
	4Y	8	8.8	
	5Y	10	11.0	
	6Y	1	1.1	
	7Y	4	4.4	
	8Y	2	2.2	
Pregnancy Trimester	1st trimester (1-12 weeks)	18	19.8	**0.001
	2nd trimester (13 to 27 weeks)	17	18.7	
	3rd trimester (≥28 weeks)	56	61.5	
Age Marriage	14-19Y	46	50.5	**0.001
	29-24Y	38	41.8	
	25-29Y	5	5.5	
	30-34Y	2	2.2	
No. of children	.00	26	28.6	**0.001
	1.00	25	27.5	
	2.00	22	24.2	
	3.00	8	8.8	
	4.00	7	7.7	
	5.00	2	2.2	
	7.00	1	1.1	
Planning for pregnancy	Yes	58	63.7	**0.009

	No	33	36.3	
		Current StatusMedical history		
		Yes (F,%)	No(F,%)	
	Vaginal bleeding	10(11)	81(89)	**0.001
	Rh incompatibility	4(4)	87(95.6)	**0.001
	Gestational Diabetes	5(5.5)	86(94.5)	**0.001
	Gestational Hypertension	7(7.7)	84(92.3)	**0.001
	History of Miscarriage	29(31.9)	62(68.1)	**0.001
	History of Stillbirth	12(13.2)	79(86.8)	**0.001
	History of premature	6(6.6)	85(93.4)	**0.001
	History of low birth baby weight	3(3.3)	88(96.7)	**0.001
	History with infertility	7(7.7)	84(92.3)	**0.001
	Congenital abnormalities	2(2.2)	89(97.8)	**0.001
	Cesarean Sections	34(37.4)	57(62.6)	**0.016
	Hyperemesis gravidarum	23(24.3)	68(74.7)	**0.001
	Chronic diseases	6(6.6)	85(93.4)	**0.001

**Chi-Squire test, P-value 0.05.

Regarding psychological history (4%) of participants had a history of a family member's psychological problems,(14.3%) had a previous personal history of psychological problems before pregnancy, and 6.6% had pressure to baby sex. About (11%) of participants were exposed to current and past different types of family violence, as shown in Table (3)and Table (4).

Table 3: Psychological, social,and cultural history of respondents

		Frequency	Percent
	Questions	Yes (F,%)	No(F,%)
1	Family member's history of psychological problems	4(4)	87(95.6)
2	History of psychological problems before pregnancy	13(14.3)	78(85.7)
3	Exposed to family violence in the past or currently	10(11)	81(89)
4	Had you suicidal ideation	4(4)	87(95.6)
5	Had you suicidal attempts	2(2.2)	89(97.8)
6	Experiencing social & family pressure about baby sex	6(6.6)	85(93.4)

Table 4: Exposed to family violence in the past or currently

		Frequency	Percent
	No	81	89.0
	Physically	1	1.1
	Sexually	5	5.5
	Physically & emotionally	1	1.1
	Sexually & emotionally	1	1.1
	Physically, Sexually & emotionally	2	2.2
	Total	91	100.0

Table (5) shows that most participants (81.3%) had a moderate level, 15.4% a mild level, and only 3.3% had a high level of perceived stress assessed by PSS. According to PRAQ-R2, the majority of pregnant women (42.9%) experienced moderate anxiety, while 38.5% experienced severe anxiety. The level of prenatal depression assessed by EPDS was(49.5%) had moderate depression, (30.7%) with mild depression,while (19.8%) had severe depression.

Table 5: Probable psychological issues among pregnant women

Perceived Stress Scale Assessment		Frequency	Percent	Chi-Square	p-Value
	Mild perceived Stress	14	15.4	96.286[a]	**0.001
	Moderate perceived Stress	74	81.3		
	Highperceived Stress	3	3.3		

	Total	91	100.0		
Pregnancy-Related AnxietyStatus		Frequency	Percent	Chi-Square	p-Value
	Mild Anxiety	17	18.7	8.565[b]	**0.014
	Moderate Anxiety	39	42.9		
	Severe Anxiety	35	38.5		
	Total	91	100.0		
Edinburgh postnatal depression scale		Frequency	Percent	Chi-Square	p-Value
	Probably Fine	0	0	95.36[c]	**<0.001
	At risk for depression and anxiety	18	19.78%		
	Needs to be referred	73	80.2%		
	Total	91	100.0		

**Chi-Squire test, P-value 0.05.

DISCUSSION

Studies in the field of mental health of pregnant women have witnessed gradual development. However, research specifically addressing the prenatal period is still insufficient. To our knowledge, this is the first study in Al-Najaf Al-Ashraf that assesses combined levels of depression, anxiety, and stress during pregnancy.The current study shows a high percentage of pregnant women aged between (18-28) years. This result may be because this age is considered the most productive for having a child[30]. This result is consistent with the results of studies conducted in Tanzania[31], Erbil, Iraq[32], and Najaf, Iraq [33], which found the same results.

In this study, most pregnant women were married (98.9%), which is similar to the study findings in Nigeria [34]. Most pregnant women are found in urban areas (61.5%). This result is similar to the study conducted in Najaf, Iraq [33]. This study shows that most pregnant women are housewives (67%), similar to the study conducted in Najaf, Iraq [33], which revealed that most mothers were housewives. This may be due to most pregnant women not completing the educational level, the lack of job opportunities, and the difficulty of obtaining a private job in Iraq.

The current study shows that 26.4% of pregnant women with educational attainment are read and write. This high percentage may be because many people in the Iraqi governorate cannot complete their studies for reasons such as social and economic status, unsafe cities and schools, or residence in remote places, especially where schools are not closed and need transportation, especially in rural areas. The percentage may also be high, as most females get married early and are preoccupied with their families and children after marriage. This result is consistent with the study conducted in Iraqi Kurdistan [35], which shows the highest percentage of pregnant women at the primary school educational levels.

This study shows most pregnant women have a sufficient to some extent of income level (59.3%); this study reveals a study in Najaf, Iraq [33].In addition, the type of family showed that more than half of the study sample was exposed to extended type (56%). This result agrees with a study done in Baghdad, Iraq[36], which reported that a high percentage of pregnant women were in extended families.

The current study's findings show that (63.7 %) of the pregnant women have planned pregnancy in this pregnancy. This study is similar to the study that was conducted. Approximately 71.4% of these women are multiparous. Similar findings in China[37]. This study shows that most pregnant women have short intervals between pregnancies that are less than one year (26.4%). This finding aligns with studies in Najaf, Iraq, which indicate that most pregnant women have an interpregnancy interval of under two years [38].

Regarding the age of marriage, a large percentage of the study sample, about 50.5%, falls within the age group of 14-19 years. This finding is consistent with a study conducted in Indonesia [39], which reported that most participants were between 15 and 19 years of age.

Regarding the number of children, most pregnant women have one child (27.5%). This result agrees with a study in Najaf, Iraq[40], which reported that a high percentage of pregnant women had less than three children.

Regarding medical history, this study indicates low percent of vaginal bleeding(11%), Rh incompatibility(4%), gestational diabetes(5.5%), gestational hypertension(7.7%), history of miscarriage (31.9%), history of stillbirth(13.2%), history of premature(6.6%), history of low birth baby weight(3.3%), history with infertility(7.7%), congenital abnormalities(2.2%), cesarean sections(37.4%), hyperemesis gravidarum (24.3%), and chronic diseases(6.6%). Thisresult is similar to studies [41, 42].

Furthermore, this study found that a low percentage (4%) have suicidal ideation and (2.2%) have suicidal attempts. This result is in contrast to a previous study done in Thailand[43], in which a low percentage of pregnant women had suicidal ideation and suicidal attempts; this is related to Islam opposing suicide and self-harm.

The results of the current study showed that 4% of pregnant women have a family history of psychological problems, while 14.3% have a personal history of psychological problems. 11% of pregnant women have current or past family violence, whether physical, sexual, or emotional. This study is similar to the study done in Ethiopia[44].

Relative to experiencing social or family pressure about baby sex, irrespective of male or female (6.6%) have pressure from their family or social. This result is similar to a study in China [45], which indicated that (22.9%)of fathers desired a male baby.

The results of this study revealed high levels of perceived stress from moderate to severe levels, with (81.3%) moderate levels and (3.3%) of pregnant women with high Perceived stress. This value is higher than in the studies conducted in Ethiopia (34.8%) [46]. In Iraq, a study found that 21% of primigravida pregnant women experienced severe levels of perceived stress during their first trimester [47].

The levels of pregnancy-related anxiety were high, 42.9%, and 38.5% from moderate to high levels, respectively. This result is higher compared with two studies conducted in Ethiopia 42.1% [46] and32.2% [48], as well as Iran(26.3%) of pregnant women with severe anxiety [49], and Saudi Arabia (75.3%) [50].

The levels of women's depression are high, with 80.2% severe depression levels, 19.78% moderate levels of depression, and null of the pregnant women with mild levels of depression.This percentage is higher compared to studies conducted in Ethiopia (37.6%)[45].In Iraq, a study was conducted (21%). The finding of this study is similar to a study conducted in Iraq, which found 44.4% of pregnant teenagers experienced antenatal depression [20]. The possible discrepancy from previous studies might be due to differences in the study population, which Psychological pressure, difficulties of life in Iraq[51], the time of the study because many previous studies on pregnant psychological health done during the COVID-19 pandemic and few studies done after end it, and tools of psychological assessment different from study to another.

CONCLUSION

Psychological morbidity is common among pregnant women.The levels of anxiety, depression, and stress were found to be higher than in previous studies. Therefore, implementing strategies for early screeningof psychological issues enables early intervention and reduces complications for mothers and their babies and families. In addition, the relative contribution of a range of obstetric or psychological factors to depression, anxiety, and stress among pregnant women requires attention and evaluation in future studies.

Ethical Considerations

- An official letter to facilitate this research was obtained from the College of Health and Medical Technologies /Kufa.
- Official permission was obtained from the Al-Najaf Health Directorate to carry out this work in.Al-Furat Al-Awsat Teaching Hospital in Al-Najaf Province.
- Verbal consent was taken from all participants.

REFERENCES

1. World Health Organization. (2021). Mental Health. Retrieved from https://www.who.int/health-topics/mental-health/#tab=tab_1
2. Jha S, Salve HR, Goswami K, Sagar R, Kant S. Prevalence of Common Mental Disorders among pregnant women—Evidence from population-based study in rural Haryana, India. J Fam Med Prim Care. 2021;10:2319.
3. World Health Organization (WHO). https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/maternal-mental-health
4. Saied, A. A., Ahmed, S. K., Talib, H., Abdulqadir, S. O., & Omar, R. M. (2023). Mental healthcare in Iraq - Time to be a priority. Asian journal of psychiatry, 84, 103539. https://doi.org/10.1016/j.ajp.2023.103539
5. OuYang, H., Chen, B., Abdulrahman, A. M., Li, L., and Wu, N. (2021). Associations between gestational diabetes and anxiety or depression: a systematic review. J. Diabetes Res. 2021:9959779. Doi: 10.1155/2021/9959779
6. Siti, Nur, Khalida., Erry, Gumilar, Dachlan., Gatot, Ssoegiarto. (2023). Maternal distress during pregnancy related to preeclampsia. Bali Medical Journal, Doi: 10.15562/bmj.v12i3.4715
7. Jahan, N., Went, T. R., Sultan, W., Sapkota, A., Khurshid, H., Qureshi, I. A., & Alfonso, M. (2021). Untreated Depression During Pregnancy and Its Effect on Pregnancy Outcomes: A Systematic Review. Cureus, 13(8), e17251. https://doi.org/10.7759/cureus.17251
8. Ola, Ali, Nassr., Mohammed, Mahmood, Mohammed., Hind, Abdulkhaliq, Showman. (2023). Impact of antenatal depressive and anxiety symptoms on adverse birth outcomes in Baghdad, Iraq: a prospective cohort study. Al-ʻulūm al-ṣaydalāniyyaẗ, 23(1):68-80. Doi: 10.32947/ajps.v23i1.988.

9. Sethna, V., Siew, J., Gudbrandsen, M., Pote, I., Wang, S., Daly, E., et al. (2021). Maternaldepression during pregnancy alters infant subcortical and midbrain volumes. J. Affect. Disord. 291, 163–170. Doi: 10.1016/j.jad.2021.05.008
10. O'Connor, T. G., Ciesla, A. A., Sefair, A. V., Thornburg, L. L., Brown, A. S., Glover, V., et al. (2022). Maternal prenatal infection and anxiety predict neurodevelopmental outcomes in middle childhood. J. Psychopathol. Clin. Sci. 131, 422–434. Doi: 10.1037/ abn0000746
11. Tung, I., Hipwell, A. E., Grosse, P., Battaglia, L., Cannova, E., English, G., Quick, A. D., Llamas, B., Taylor, M., & Foust, J. E. (2024). Prenatal stress and externalizing behaviors in childhood and adolescence: A systematic review and meta-analysis. Psychological Bulletin, 150(2), 107–131. https://doi.org/10.1037/bul0000407.
12. Obrochta, C. A., Chambers, C., and Bandoli, G. (2020). Psychological distress inPregnancy and postpartum. Women Birth 33, 583–591. Doi: 10.1016/j.wombi.2020.01.
13. Bete, T., Ali, T., Misgana, T., Negash, A., Abraham, T., Teshome, D., Sirtsu, A., Nigussie, K., & Amano, A. (2024). Suicidal ideation and associated factors among pregnant women attending antenatal care at public hospitals of Harari regional state, eastern Ethiopia: A cross-sectional study. PloS one, 19(3), e0300417. https://doi.org/10.1371/journal.pone.0300417
14. Míguez, M. C., & Vázquez, M. B. (2021). Risk factors for antenatal depression: A review. World journal of psychiatry, 11(7), 325–336. https://doi.org/10.5498/wjp.v11.i7.325
15. Han, X., Cao, M., He, J. et al. A comprehensive psychological tendency prediction model for pregnant women based on questionnaires. Sci Rep 13, 2 (2023). https://doi.org/10.1038/s41598-022-26977-3
16. Lilliecreutz, C., Josefsson, A., Mohammed, H., Josefsson, A., & Sydsjö, G. (2021). Mental disorders and risk factors among pregnant women with depressive symptoms in Sweden A case-control study. Acta obstetricia et gynecologica Scandinavica, 100(6), 1068–1074. https://doi.org/10.1111/aogs.14051
17. Türkmen, H., Akın, B. & Erkal Aksoy, Y. Effect of high-risk pregnancy on prenatal stress level: a prospective case-control study. Curr Psychol 43, 23203–23212 (2024).https://doi.org/10.1007/s12144-024-05956-z.
18. Tesfaye G, Madoro D, Tsegay L (2023) Maternal psychological distress and associated factors among pregnant women attending antenatal care at public hospitals, Ethiopia. PLoS ONE 18(1): e0280470. https://doi.org/10.1371/journal.pone.0280470
19. Atheer Kadhim Ibadi, M. H. R. (2024). Impact Of Family Violence On Psychosocial Development Among Female Intermediate Schools. Obstetrics and Gynaecology Forum, 34(3s), 1336–1345. Retrieved from https://www.obstetricsandgynaecologyforum.com/index.php/ogf/article/view/474
20. Rana Faeq Saud, Muthana Abdulrazzaq Jabbar, Riyadh Sh. Alrudaini, Jawad K Al-Diwan. Antenatal depression among teenage pregnant Mothers Baghdad, Iraq, 2023. Int J Adv Res Med 2024;6(2):25-30. DOI: 10.22271/27069567.2024.v6.i2a.549
21. Xiao, M., Huang, S., Liu, Y., Tang, G., Hu, Y., Fu, B., & Lei, J. (2024). Stigma and its influencing factors for seeking professional psychological help among pregnant women: A cross-sectional study. Midwifery, 132, 103973
22. Moore D, Ayers S, Drey N. A thematic analysis of stigma and disclosure for perinatal depression on an online forum. JMIR Ment Health. (2016) 3:e18. 10.2196/mental.5611 [DOI] [PMC free article] [PubMed] [Google Scholar].
23. Chin K, Wendt A, Bennett IM, Bhat A. Suicide and maternal mortality. Curr Psychiatry Rep. (2022) 24:239–75. 10.1007/s11920-022-01334-3 [DOI] [PMC free article] [PubMed] [Google Scholar].
24. Law S, Ormel I, Babinski S, Plett D, Dionne E, Schwartz H, et al. Dread and solace: talking about perinatal mental health. Int J Mental Health Nurs. (2021) 30:1376–85. 10.1111/inm.12884 [DOI] [PMC free article] [PubMed] [Google Scholar].
25. Val, A.; Míguez, M.C. Prevalence of Antenatal Anxiety in European Women: A Literature Review. Int. J. Environ. Res. Public Health 2023, 20, 1098. https://doi.org/10.3390/ijerph20021098.
26. Lafta, R. K., & Merza, A. K. (2021). Women's mental health in Iraq post-conflict. Medicine, Conflict and Survival, 37(2), 146–159. https://doi.org/10.1080/13623699.2021.1946903
27. Stevenson, K., Alameddine, R., Rukbi, G. et al. High rates of maternal depression amongst Syrian refugees in Lebanon - a pilot study. Sci Rep **9**, 11849 (2019). https://doi.org/10.1038/s41598-019-48247-5
28. Chaaya M, Osman H, Naassan G. Ziyad M. "Validation of the Arabic version of the Cohen perceived stress scale (PSS-10) among pregnant and postpartum women". BMC Psychiatry. (2010) 10:1–7. doi: 10.1186/1471-244X-10-111
29. Bagade V, Mhatre B. Prevalence of pregnancy-related anxiety in pregnant women in southern fringes of Pune, India. Int J Health Sci Res. 2021; 11(10): 41-45. DOI: https://doi.org/10.52403/ijhsr.20211007
30. T, Y, Tan., S, K, Lau., S, F, Loh., Heng, Hao, Tan. (2014). Female ageing and reproductive outcome in assisted reproduction cycles. Singapore Medical Journal, 55(6):305-309. Doi: 10.11622/SMEDJ.2014081

31. Elia, E. F., & Ayungo, J. (2023). Socio-demographic influence on the pregnant women's comprehension of maternal health information inTanzania. Heliyon, 9(12), e22448. https://doi.org/10.1016/j.heliyon.2023.e22448
32. Abdulrahman Mustafa S, Ismail Abdulla S, Jamil Piro T, et al. (October 08, 2024) Sleep Disturbances Among Pregnant Women Attending a Maternity Teaching Hospital in Erbil, Iraq. Cureus 16(10): e71088. doi:10.7759/cureus.71088.
33. Rashed, M. R., & Aljebor, M. K. A. (2024). Assessment of Women's Knowledge about the Risks of Medication Use During Pregnancy in Al-Najaf Provence. South Eastern European Journal of Public Health, 133–145. https://doi.org/10.70135/seejph.vi.1116.
34. Anyebe EE, Olubiyi SK, Jibril UN, Aluko JO, Ibraheem MA, et al. (2023) Assessing Levels of Anxiety and Psychological Distress among Pregnant Women in a South-West State of Nigeria: A Descriptive Cross-Sectional, Exploratory Study. Adv Appl Sci Res. 14:106.
35. Fadhil P S, Mahmmod M B (July 09, 2024) Evaluation of Pregnant Women's Knowledge About Preeclampsia in the Kurdistan Region of Iraq: A Cross-Sectional Study. Cureus 16(7): e64134. doi:10.7759/cureus.64134
36. Rana Faeq Saud, Maha Saber Koshi and Riyadh Shiltagh Al-Rudaini. Prevalenceand risk factors of antenatal depression among pregnant women attending primary healthcare centers in Baghdad, Iraq: A cross-sectional study. Int. J. Gynaecol. Res. 2024;6(1):43-49. DOI: 10.33545/2664892X.2024.v6.i1a.24
37. Yang, H., Pan, Y., Chen, W. et al. Prevalence of and relevant factors for depression and anxiety symptoms among pregnant women on the eastern seaboard of China in the post-COVID-19 era: a cross-sectional study. BMC Psychiatry **23**, 564 (2023). https://doi.org/10.1186/s12888-023-05059-2
38. Jasim, Suhad & Shukriyia, Shadhan & Al Kassar, Rajha A Hamza. (2021). Effect Of Psychological Status For Women On Fetomaternal Outcome During Covid-19 Pandemic In Najaf City. Turkish Journal of Physiotherapy and Rehabilitation; 32(3) ISSN 2651-4451 | e-ISSN 2651-446X
39. (2023). Hubungan Dukungan Keluarga dan Budaya dengan Pernikahan Usia Dini pada Perempuan di Kampung Cibeo Kelurahan Kemanisan Curug Kota Serang Tahun 2018. Doi: 10.60010/jikd.v1i2.9
40. Al-Hamoodi, A. A. N., Fatlawi, D. A. H., Abdullah, M., Ibrahim Luaibi, S., Alsaeedi, K. Z. B., Al-Khalidi, N. A. S., & Kadium, H. J. (2022). Assessment Of The Depression Symptoms Among Mothers Of Preemie At Al_Zahraa Teaching Hospital Of Gynecology And Obstetrics. Journal of Positive School Psychology, 4180-4188.
41. Li W, Lin L, Teng S, Yang Y, Li L, Peng F, Peng D, Gao X and Huang G (2024) Path analysis of influencing factors for anxiety and depression among first-trimester pregnant women. Front. Psychol. 15:1440560. Doi: 10.3389/fpsyg.2024.1440560
42. Kaya F, Akdoğan İY. The examination of psychological well-being in pregnant women in terms of demographic and pregnancy-related features and self compassion. J Educ Res Nurs. 2022;19(1):85-92.
43. Tanpradit, K., & Kaewkiattikun, K. (2020). The Effect of Perceived Stress During Pregnancy on Preterm Birth. International journal of women's health, 12, 287–293. https://doi.org/10.2147/IJWH.S239138
44. Tesfaye, Y., & Agenagnew, L. (2021). Antenatal Depression and Associated Factors among Pregnant Women Attending Antenatal Care Service in Kochi Health Center, Jimma Town, Ethiopia. Journal of pregnancy, 2021, 5047432. https://doi.org/10.1155/2021/5047432
45. Xiuhua Huang, Ying Wang, Yuqiong Wang et al. Prevalence of antenatal depression and associated factors of continuous three trimesters depression: A multicentre study in Chengdu, China, 05 July 2022, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-1712072/v1]
46. Nebiyu Solomon Tibebu, Belayneh Ayanaw Kassie, Tazeb Alemu Anteneh, Bayew Kelkay Rade, Depression, anxiety and stress among HIV-positive pregnant women in Ethiopia during the COVID-19 pandemic, Transactions of The Royal Society of Tropical Medicine and Hygiene, Volume 117, Issue 5, May 2023, Pages 317–325, https://doi.org/10.1093/trstmh/trac126
47. Suhad, Hassan, Omran., Lujain, Anwar, Al-Khazraji. (2022). 3. Evaluation of Primigravida Pregnant Women's Perceived Stress during First Trimester of Pregnancy . Mağallaẗ al -Mawṣil li -l-tamrīḍ, Doi: 10.33899/mjn.2022.175766.
48. Pandey D. The prevalence of general anxiety disorder and its associated factors among women's attending at the perinatal service of Dilla University referral hospital, Dilla town, Ethiopia, April 2020 in Covid pandemic. Heliyon. 2020;6(11):e05593.
49. Ahmed Kadim M, Abdulameer Abdulrasol Z, Fadhil Obaid A, Ahmed Hamid H, Hamdi NH, Mousa NA. Assessment of Anxiety Among Pregnant Mothers. Iranian Rehabilitation Journal. 2023; 21(1):73-80. http://dx.doi.org/10.32598/ irj.21.1.1621.5
50. Eman, Abahussain., Manal, Al-Otaibi., Khulud, Al-Humaidi., Sultanah, Al-Mutairi., Alexandra, Al-Khatir., Amani, Abualnaja., Sarah, Al-Mazidi. (2022). 3. Pregnancy Complications in Pandemics: Is Pregnancy-Related Anxiety a Possible Physiological Risk Factor? International Journal of Environmental Research and Public Health, Doi: 10.3390/ijerph191912119

51. Saied, A. A., Ahmed, S. K., Metwally, A. A., & Aiash, H. (2023). Iraq's mental health crisis: a way forward? Lancet (London, England), 402(10409), 1235–1236. https://doi.org/10.1016/S0140-6736(23)01283-7