

Anxiety during Pregnancy among Women Attending Al- Karkh PHC Centers, Baghdad

Marwa Salah Jebur
MBChB

Sawsan Ghazi Jassim
MBChB, FABMS

Mazin Ghazi Al-Rubaey
MBChB, DVD, MSc, PhD

Abstract

Background: Prenatal maternal anxiety is significant because of increasingly strong evidence that women who experience high stress or anxiety during pregnancy are more likely to deliver preterm or low birth-weight infants, autistic disorder, schizophrenia, and depression in infancy and childhood.

Objectivess: To assess the prevalence of anxiety during Pregnancy among women attending Al Karkh PHC Centers, Baghdad, and to study its associated factors.

Methodology: This study is a cross-sectional with analytic components conducted among 500 pregnant women from Baghdad city, Al-Karkh directorate Primary Heath Care Centers during the period extended between 1st of August 2020 until 31th of March 2021. A simple random sampling used to select the PHC centers from each sector in Al Karkh directorate. Interview was done with each woman with three Questionnaire (sociodemographic , Diagnostic and Statistical Manual of Mental Disorder (fourth edition) and Pregnancy related anxiety questionnaire)

Results: The mean age was 26.63 ± 6.811 years. There were 145 (29%) pregnant women live in rural area and 355 (71%) live in urban area. There were 155 (31%) anxious women, 21% with mild anxiety. There was a significant association with previous abortions, null parity, less parity. In addition, rural area pregnant women, younger pregnant women and the unemployed pregnant women were more anxious.

Conclusion: There was relatively high prevalence of anxiety during pregnancy among women attending Al Karkh PHC Centers (31%), 21% with mild anxiety.

Key words: Anxiety, Pregnancy, Baghdad.

Introduction

Anxiety includes a broad range of disorders, which can be characterized by feelings of anxiety and fear such as generalized anxiety disorder (GAD), panic disorder, phobias, social anxiety disorder, and post-traumatic stress disorder (PTSD). Anxiety is more common in female with 4.6% compared with 2.6% among males ⁽¹⁾.

According to the Duration: state anxiety is an acute response to a potential threat, while trait anxiety is chronic, as it is expressed constantly during the life of the individual, and is therefore considered as a trait of an individual's personality ⁽²⁾.

Anxiety can be related to many causes such as genetic and environmental causes. It is well known that being in a stressful situation can develop anxiety with time. Stressful situations are many, one of the most stressful situations is pregnancy as the pregnant woman may have multiple worries about the baby and her figures, irritability due to multiple factors and sometimes panic attacks and feeling loss of control. These symptoms if continues over time and affect the normal daily function of the pregnant woman can be considered as antenatal anxiety ⁽³⁾.

Prenatal maternal anxiety is significant because of increasingly strong evidence that women who experience high stress or anxiety during pregnancy are more likely to deliver preterm or low birth-weight infants. In addition, it has been linked to a variety of negative effects on the fetal cognitive,

emotional and neurodevelopment which increases the risk for autistic disorder, schizophrenia, and depression in infancy and childhood ^(4,5).

Rubertsson et al (2014) showed that anxiety in early pregnancy was 15.6 % ⁽⁶⁾, while In Haidar Abad-Pakistan, a Hospital based study found that the prevalence of antenatal anxiety was 18% ⁽⁷⁾. Results from a systematic review showed that the prevalence of antenatal anxiety was 18.2%, 19.1%, 24.6% in the three trimester's orderly ⁽⁸⁾.

Antenatal Anxiety can be related to multiple associated factors such as low level of literacy and income, partner violence either before or after pregnancy, lack of supportive system either from the family or the partner ⁽⁹⁾.

In the Arabic world, few studies have been found concerning antenatal anxiety and its associated factors. One study was done in Saudi Arabia found that the prevalence of anxiety using state-anxiety scale was 23.6%, while using the trait scale it was 23.9% ⁽¹⁰⁾.

From the whole literature above, we can conclude that pregnancy is one of the most difficult situations from the insight of pregnant women; it exhausts them psychologically and physically. However, Iraqi antenatal care clinics lack specialists that can provide psychological antenatal care and until now there are no organized programs for antenatal Mental Health Care ⁽¹¹⁾. Thus, the purpose of this study was to assess the prevalence of anxiety among pregnant women attending antenatal care clinics and its associated factors

which will be the data base for organized program for antenatal maternal health care in future.

Methodology

The study is a cross-sectional study with analytic component. It was conducted during the period extended between 1st of August 2020 until 31th of March 2021. The study was conducted in Baghdad city Al-Karkh directorate, All the ten health sectors in AlKarkh were involved, from each sector; one PHC center was selected by a simple random sampling.

In order to determine the sample size needed for the study, the following assumption has been used ⁽¹²⁾:

$$N = \frac{\left(\frac{Z\alpha}{2}\right)^2 (p(1-p))}{E^2}$$

$$N = \frac{(1.96)^2(0.5(0.5))}{(0.05)^2}, \quad N=384$$

*where N= size of the sample

Zα=(1.96) for 95% confidence (i.e, α=0.05)

P= best guess' for prevalence (=0.50)

E=maximum tolerable error for the prevalence estimate (0.05)

In order to cover a larger population, getting more accurate results and to track more cases of anxiety, the sample size was further increased to 500. All pregnant women attending selected PHCs and who agreed to participate during the period of the study were included. But pregnant women who were diagnosed with psychological problems previously were excluded from the study.

A face to face direct interview was conducted to fill the questionnaire, three parts of the questionnaire held by the interviewer which were translated to Arabic by a professional translation office. Each participant was interviewed once for about 20 minutes.

According to each PHC Data, the number of attendants of pregnant women in the selected health centers yearly was (1214 ,840, 1020 ,915 ,1160 ,981 ,834 ,1460 ,742 and 672 respectively) .Total visitors of pregnant women for all the centers was (9004), so after the calculation of proportion for each health center :

(Total visitors /PHC visitors)*500 = No of cases should be taken from that PHC , so the number of participants from the health centers

would be :(60, 42 ,51, 46 ,58 ,49 ,41 ,73 ,46 and 34 respectively) .

The first part of the Questionnaire was sociodemographic Questionnaire, the second part is DSM IV Questionnaire (10 items) to determine if she has anxiety or not ⁽¹³⁾. If she has anxiety according to the DSM IV then the third part would be done; Pregnancy-Related Questionnaire-Revised 2 (PRAQ-R2) (10 items) ⁽¹⁴⁾.

The health directorate of AL-Karkh issued letters of approval and task facilitation to conduct the study at the selected PHCs. Participating women were informed that the questionnaires were used for research purposes only; verbal consent was taken from each woman. Privacy and confidentiality were confirmed, and they had been told that they have the right to end the interview whenever they want, and the participants were thanked at the end of each interview.

Generalized Anxiety Disorder

Questionnaire for DSM-IV contains 10 items, the respond for the first 9 would be:

- Not at all = zero
- Several days = 1
- More than half the days = 2
- Nearly every day = 3

The last item regarding the function the respond would be

- Not difficult at all = zero
- Somewhat difficult = 1
- Very difficult = 2
- Extremely difficult = 3

A total score of more than 10 indicates clinical Anxiety (Mild). A total score of More than 15 indicates (Moderate). Anxiety while a total score of more than 20 indicates (Severe) Anxiety.

When the pregnant lady found to have Anxiety, then the (Pregnancy Related Anxiety) Questionnaire was introduced which contain 10 Items, in 3 Domains.

- Subscale Fear of giving birth: Items 1,2,3 (score range from 3 to 15)
- Subscale Worries about bearing a handicapped child: Items 4,5,6,7 (Score ranging from 4 to 20)

- Subscale Concern about own appearance: Items 8,9,10 (Score ranging from 3 to 15)

The score for each item would be:

irrelevant =1, sometime relevant =3, relevant =5

A total score range from 10 to 50.

Data were introduced into Microsoft excel sheet 2016 and loaded into SPSS (Statistical Package for Social Sciences) version 24. Descriptive statistics were presented using tables and graphs. Chi-square test was used to measure the association between related

categorical variables. Independent t-test was used to measure the differences between related means of variables. P-value < 0.05 was considered as discrimination of significance.

Results:

A total of 500 pregnant women involved in this study, their mean age was 26.63 ± 6.811 years. There were 145 (29%) pregnant women live in rural area and 355 (71%) live in urban area. Employed women were 236 (47.2%) of the total, married were 482 (96.4%), and education level of 250 (50%) of them was secondary school or less (Table1).

Table1: Distribution of pregnant women according to sociodemographic variables in Baghdad 2020.

Sociodemographic variables		Frequency(500)	Percent (100%)
Age group	10-19 years	68	13.6
	20-29 years	256	51.2
	30-39 years	160	32.0
	≥ 40 years	16	3.2
Residency	Rural	145	29.0
	Urban	355	71.0
Job	Employed	236	47.2
	Non employed	264	52.8
Marital status	Married	482	96.4
	Separated or widow	18	3.6
Educational level	Illiterate	64	12.8
	Secondary school or less	250	50.0
	College/institute/ High education	186	37.2

Table 2 shows that 340 (68%) pregnant women with ≤ 3 pregnancies including this pregnancy, while according to their previous deliveries and abortion; there were 117 (23.4%) nulliparous and 278 (55.6%)

multiparous women, and 171 (34.2%) of them have had abortion. There were 389 (77.8%) pregnant women planning to deliver normally in opposite to 111 (22.2%) that planning to deliver by caesarian section.

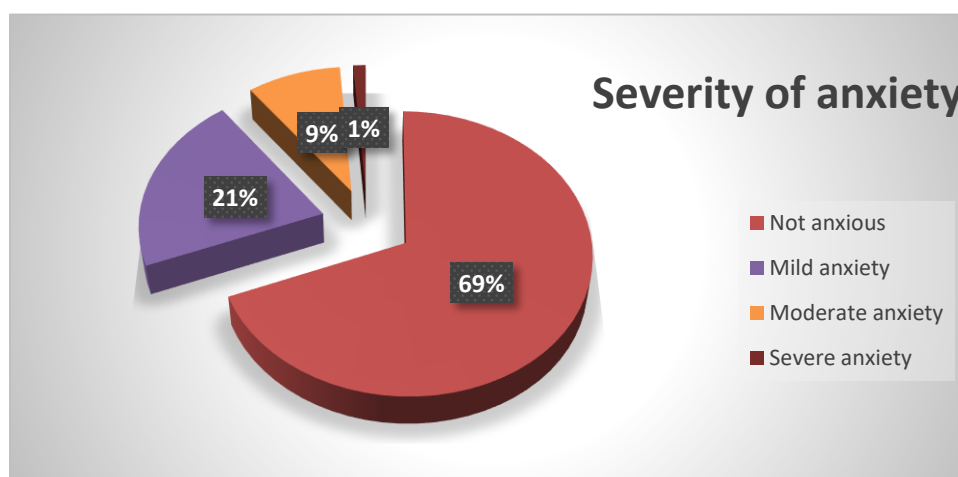
Table2: Distribution of pregnant women according to their obstetrical history in Baghdad 2020.

Obstetrical history		Frequency(500)	Percent(100%)
Gravity	≤3	340	68.0
	>3	160	32.0
Parity	0 (Nulliparous)	117	23.4
	PrimiGravida	105	21.0
	≥2 (Multipara)	278	55.6
Previous abortion	No	329	65.8
	Yes	171	34.2
Planning to deliver for this pregnancy	Normal	389	77.8
	Caesarian section	111	22.2

There were 155 (31%) anxious women with mean age (24.25 ± 6.933) years and there were 345 (69%) not anxious with mean age (27.70 ± 6.487) years. Anxious women

founded to be significantly associated with age ($p<0.001$), anxiety was more in young pregnant women. 104 (20.8%) with mild anxiety, 45(9%) with moderate anxiety, and 6 (1.2%) with sever anxiety as shown in Fig 1.

Figure 1: Distribution and severity of general anxiety among the study sample, Baghdad 2020.



As shown in table 3; the prevalence of anxiety among urban women was 35.8%, significantly higher than women who lives in rural area (19.3%), $P<0.001$. The prevalence of anxiety among unemployed women was

38.6%, while among married 31.7% with higher significant than among employed and separated/widow women, ($P<0.001$ and $P=0.047$) respectively.

Table3: The association of sociodemographic variables and general anxiety in the study sample, Baghdad 2020.

Sociodemographic variables		General anxiety				P value
		Not anxious		Anxious		
		No.	%	No.	%	
Residency	Rural	117	80.7	28	19.3	<0.001
	Urban	228	64.2	127	35.8	
Job	Employed	183	77.5	53	22.5	<0.001
	Not employed	162	61.4	102	38.6	
Marital Status	Married	329	68.3	153	31.7	0.047
	Separated or widow	16	88.9	2	11.1	
Educational Level	Illiterate	45	70.3	19	29.7	0.79
	Primary and Secondary school	169	67.6	81	32.4	
	College/institute/ high education	131	70.4	55	29.6	
Total		345	69	155	31	

Obstetrical history shows significant association among anxious women. There were 141(41.5%) anxious women have ≤ 3 pregnancies including this pregnancy, 95

(81.2%) nulliparous, and 66 (38.6%) with previous abortion; ($P<0.001$, $P<0.001$, and $P=0.006$) respectively as shown in table 4.

Table4: the association of obstetrical variables and general anxiety among the study sample, Baghdad, 2020.

Obstetrical variables		General anxiety				P value
		Not anxious		Anxious		
		No.	%	No.	%	
Pregnancies No.	≤3	199	58.5	141	41.5	<0.001
	>3	146	91.3	14	8.8	
Deliveries No.	Nulliparous	22	18.8	95	81.2	<0.001
	1	73	69.5	32	30.5	
	≥2 (multipara)	250	89.9	28	10.1	
Abortion	No abortion	240	72.9	89	27.1	0.006
	Abortion	105	61.4	66	38.6	
Planning to deliver by	Normal delivery	276	71.0	113	29.0	0.077
	Caesarian section	69	62.2	42	37.8	
Total		345	69	155	31	

Discussion:

In recent years, psychiatric branches and other related disciplines, including antenatal care program, have been concerned and focused on pregnant women experiencing different symptoms of anxiety and depression during their pregnancy and in the period following birth.

This study showed that 20.8% of the women in the sample had a mild general anxiety, 9% with moderate anxiety, and 1.2% with severe anxiety. And concerning anxiety during pregnancy, mild anxiety during pregnancy was significantly higher than moderate-severe anxiety. These results were different from the result of a review of 783 articles and 102 studies incorporating women from different countries done by Cambridge University in 2018 which stated that the overall prevalence was 4.1% for a generalized anxiety disorder and for a clinical diagnosis of any anxiety disorder during pregnancy was 15.2%.⁽¹⁵⁾ Also a, near percentages, were found in a systematic literature analysis conducted in united states in 2015 which found that the prevalence of anxiety symptoms during pregnancy (HADS-A scores ≥ 8) was 15.6% specially in early pregnancy⁽⁸⁾.

Women in this study with moderate-severe anxiety during pregnancy were those of lower age group with mean age (23.15 ± 7.483), which is consistent with similar data obtained from the study which was carried out in Sweden by Rubertson and his colleagues⁽⁶⁾. In this article it was found that women under the age of 25 are more prone to development of anxiety, these finding could be explained as the pregnant women from these age groups experience more anxiety about the changes in their body during pregnancy, and these concerns usually decrease with age. Prevalence of moderate to severe anxiety during pregnancy among unemployed women was significantly higher than that of employed women in the study sample; this was similar to a study done on a national Swedish sample, which confirmed that unemployment is associated with antenatal depressive and anxiety symptoms⁽⁶⁾. A Second study was done in Saudi Arabia confirmed the same results that employed women had a lower anxiety-trait score compared with unemployed women⁽¹⁰⁾

This could be explained due to lower income that may lead to less utilization and visits to ANC especially during the quarantine

as many people lost or left their jobs and this probably put an extra stress on them especially pregnant women. Mild anxiety during pregnancy was higher among urban women, this result agreed with a population-based study done in rural area in Bangladesh which found that a high prevalence of antepartum anxiety symptoms was reported⁽¹⁶⁾, This variation in results between rural and urban areas in different countries may be related to socioeconomic status of the community that affect the status of anxiety and stress on pregnant mothers. Obstetrical history shows significant association among anxious women, most of them were nulliparous, if we compared this to a study by Schetter et al., who found that the prevalence of antenatal depression and anxiety in the first delivery was 11.0%, then drops to 8.5% in the second, third baby and more⁽¹⁷⁾.

Married women in this study were more anxious during pregnancy than separated/widow women without significant association, these results were consistent with a few studies which found that marital status was not a significant predictor of antenatal pregnancy associated anxiety^(18,19).

Pregnant mothers are concerned about the impact of the pandemic on their families and the future new born, and in addition, isolation and social distancing are important contributors in this anxiety symptoms⁽²⁰⁾.

This study concluded that:

1. About one third of pregnant women were anxious, and the majority of them were with mild anxiety.
2. There was a significant association with previous abortions, nulliparity, less parity, rural area pregnant women. Younger pregnant women and the unemployed pregnant women were more anxious.

References

1. World Health Organisation. Maternal Mental Health; 2017
Available at :
<https://www.sciencedirect.com/science/article/abs/pii/S0884217517300011> Accessed at April 2021.
2. Endler N.S., Kocovski N.L. State and trait anxiety revisited. *J. Anxiety Disord.* 2001; 15:231–245.doi: 10.1016/S0887-6185(01)00060-3.
3. Horikawa H M, Yagi Y A. The relationships among trait anxiety. National center of biotechnology information. PLoS ONE; 2012: 7 (4). DOI: <https://doi.org/10.1371/journal.pone.0035727>.

4. Reck C., Tietz A., Müller M . The impact of maternal anxiety disorder on mother-infant interaction in the postpartum period. *PLoS ONE*; 2018; 13(5) DOI: <https://doi.org/10.1002/imhj.20274>
5. Guardino CM, DunkelSchetter C, Bower JE. Randomised controlled pilot trial of mindfulness training for stress reduction during pregnancy. *Psychol Health*. 2014; 29(3):334–49. Doi:10.1080/08870446.2013.852670 .
6. Rubertsson C, Hellström J, Cross M, et al. Anxiety in early pregnancy: prevalence and contributing factors. *Archives of women's mental health*. 2014 Jun; 17(3):221-8.DOI: <https://doi.org/10.1007/s00737-013-0409-0>
7. Karmaliani R, Asad N, Bann CM et al . Prevalence of anxiety, depression and associated factors among pregnant women of Hyderabad, Pakistan. *International Journal of Social Psychiatry*. 2019 Sep; 55(5):414-24. DOI: <https://doi.org/10.1177%2F0020764008094645>
8. Dennis CL, Falah-Hassani K, Shiri R. Prevalence of antenatal and postnatal anxiety: systematic review and meta-analysis. *The British Journal of Psychiatry*. 2017 ;210(5):315-23.
9. Bayrampour H, Vinturache A, Hetherington E, Lorenzetti DL, Tough S. Risk factors for antenatal anxiety: a systematic review of the literature. *J Reprod Infant Psychol*. 2018; 36(5):476–503. doi.org/10.1080/02646838.2018.1492097.
10. Alqahtani AH, Al Khedair K, Al-Jeheiman R,. Anxiety and depression during pregnancy in women attending clinics in a University Hospital in Eastern province of Saudi Arabia: prevalence and associated factors. *Int J Womens Health*. 2018;10:101. doi:10.2147/IJWH.S153273.
11. Alhasnawi S, Sadik S, Rasheed MO, et al. The prevalence and correlates of DSM-IV disorders in the Iraq Mental Health Survey (IMHS). *World Psychiatry*. 2009; 8(2):97.
12. Lemeshow, Stanley, et al. Adequacy of sample size in health studies. Chichester: Wiley, 1990.
13. American Psychiatric Association. *Diagnostic and Statistical [Manual of Mental Disorders, Fifth Edition*. Arlington, VA: 2013.
14. Huizink AC, Delforterie MJ, Scheinin NM, Tolvanen M, Karlsson L, Karlsson H. Adaption of pregnancy anxiety questionnaire-revised for all pregnant women regardless of parity: PRAQ-R2. *Arch WomensMent Health*. 2016; 19(1):125–32.
15. Balinska MA, Nesbitt R, Ghantous Z, et al. Reproductive health in humanitarian settings in Lebanon and Iraq: results from four cross-sectional studies, 2014–2015. *Confl Health*. 2019; 13(1):1–10. DOI: 10.1186/s13031-019-0210-4.
16. Nasreen HE, Kabir ZN, Forsell Y, et al. Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: a population based study in rural Bangladesh. *BMC women's health*. 2011 Dec; 11(1):1-9. DOI: <https://doi.org/10.1186/1472-6874-11-22>
17. Biaggi A, Conroy S, Pawlby S, et al. identifying the women at risk of antenatal anxiety and depression: a systematic review (Revised). 2016 Feb; 191:62-77.DOI: <http://dx.doi.org/10.1016/j.jad.2015.11.014>
18. Schetter CD, Tanner L. Anxiety, depression and stress in pregnancy: implications for mothers, children, research, and practice. *Current opinion in psychiatry*. 2012 Mar; 25(2):141. DOI: <https://dx.doi.org/10.1097%2FYCO.0b013e3283503680>
19. Glynn LM, Schetter CD, Hobel CJ, Sandman CA. Pattern of perceived stress and anxiety in pregnancy predicts preterm birth. *Health Psychol*. 2010 Jan; 27(1):43-51. DOI: 10.1037/0278-6133.27.1.43. PMID: 18230013.
20. Kajdy A, Feduniw S, Ajdacka U, et al. Risk factors for anxiety and depression among pregnant women during the COVID-19 pandemic: A web-based cross-sectional survey. *Medicine*. 2020 Jul 24; 99(30). DOI: <https://dx.doi.org/10.1097%2FMD.00000000000021279>