

# Prevalence Rate of Major Depression among Pregnant Women Attending Family Medicine Primary Health Care Centers in Baghdad Al-Rusafah

Mina Mohammed Mukhlif\* CABHS FM, Sundus Shoki Khalil\*\* FICMS, Tamara Abdelwahab Rasheed\* FICMS

## ABSTRACT

**Background:** Pregnancy is a time of psychological change and challenge especially in the pregnancy for the first time. Depression is a serious medical condition that affects thoughts, feelings and the ability to function in everyday life. The prevalence of depression during pregnancy varies from 7-15 % in economically developed countries and 19-25% in poorer countries.

**Objectives:** To determine the prevalence rate of depression in relation to some socio-demographic variables among pregnant women attending two selected family medicine primary health care center in Baghdad, Al-Rusafah.

**Methods:** This is a cross-sectional study carried out at two primary health care centers in Baghdad, Al-Rusafah from 1<sup>st</sup> of February 2017 to 30<sup>th</sup> of April 2017. The study included all pregnant women attending to the primary health care center (Al-Dhubat Primary Health Care Center and Al-Suleikh Primary Health Care Center) for antenatal care during data collection time. Each participant was directly interviewed and the international classification of depression (ICD-10) diagnostic criteria for depression were used, in addition to general information concerning some socio-demographic variables.

**Results:** A total of 300 pregnant women participated in the study, 14% of them were in the first trimester, 58.7% were in the second trimester, and 27.3% were in the third trimester. There was significant correlation between depression and educational level ( $P=0.008$ ), family income ( $P=0.013$ ), number of pregnancies ( $P=0.003$ ), number of deliveries and live births ( $P=0.000$ ), duration of current pregnancy ( $P=0.008$ ), the presence of diagnosed complication in current pregnancy ( $P=0.023$ ), planning pregnancy ( $P=0.030$ ), and presence of family history of depression ( $P=0.002$ ).

**Conclusion:** The current study suggests that there is a high prevalence rate of depression among pregnant women in Baghdad during pregnancy which is about 77%. Most of the pregnant women suffered from depression throughout their pregnancy, but more during the 1<sup>st</sup> trimester.

**Keywords:** Depression, Pregnant women, Prevalence of depression in pregnancy.

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Pregnancy is a time of psychological change and challenge, health related anxieties, role transition, concerns and fears about inability to cope, especially in the first-time mother<sup>(1)</sup>.

Epidemiological data shows that depression is twice as common in women than men, with first onset peak during childbearing age<sup>(2)</sup>, beside that any psychiatric illness may have its onset during pregnancy<sup>(1)</sup>.

Major depressive disorder (MDD) is the leading cause of disease burden among women aged 15-44 years in both developed and developing regions of the world<sup>(3)</sup>. Estimated prevalence rates of depression during pregnancy vary from 7-15% in economically developed countries to 19-25% in poorer countries<sup>(4)</sup>. Despite the frequency of depression in women of childbearing age, information to guide patients and physicians through a consideration of treatment during pregnancy is limited<sup>(5)</sup>.

\*Al-Sulaih primary health care center, Baghdad, Iraq.

\*\*Health inspection directorate, Sulaimani, Iraq.

Pregnancy is often considered as one of the happiest times in the life of women. However, pregnancy can become a source of stress and worries as well as numerous emotional and physical changes<sup>(6)</sup>.

Pregnancy is commonly divided into three trimesters starting from the first day of the last menstrual cycle and ending with the delivery of the baby<sup>(7)</sup>.

In the 1<sup>st</sup> trimester a woman may have increased emotional liability, which may be exacerbated by nausea, breast tenderness and other physical changes typical of early pregnancy. As pregnancy progresses, further bodily changes, alteration in sexual interests and anxieties about the delivery may all contribute to mood change<sup>(8)</sup>.

By the beginning of the second trimester, most women have a mental picture of the infant; psychological attachment to the fetus begins in utero<sup>(7)</sup>.

Late pregnancy may be associated with social withdrawal and preoccupations with preparations for delivery and caring for the baby<sup>(1)</sup>. There may be fears about the impending delivery or doubts about the normality of the fetus<sup>(8)</sup>.

The etiology remains illusive, with general consensus upon complex interactions among biological, psychological and social factors<sup>(9)</sup>.

Across cultures, poverty, lack of education and sex inequality predispose to developing depression in pregnancy. This is reflected in the high rates seen in low income countries, reaching up to 19-25% in Pakistan, Goa, and Rio de Janeiro. Exposure to domestic violence also increases the risk of antenatal depression. Women with poor social support, unplanned pregnancy, and those who are single or adolescent are also more vulnerable to develop depression during pregnancy<sup>(9)</sup>.

Poor mental health of the woman during pregnancy could have profound consequences for the mother and her child in terms of adverse pregnancy outcomes and offspring development<sup>(10)</sup>.

The Iraqi Mental Health Survey (IMHS) showed that the life time prevalence of depression was 18.8%<sup>(11)</sup>. A study done in Erbil which showed that 86 (48%) of the 179 participants reported depressive symptoms<sup>(12)</sup>. A study done in Turkey showed a prevalence rate of 23.1%<sup>(13)</sup> and a study done in Jamaica which showed a prevalence rate of 56%<sup>(14)</sup>. In Iranian sample, a study found that the prevalence rate of depression was 22.8%<sup>(15)</sup>. In South Africa a study reported that the prevalence rate of depression was 46.7%<sup>(16)</sup>. Other study done in Pakistan showed that the prevalence rate was 56%<sup>(17)</sup>.

The aim of this study is to determine the prevalence rate of depressive disorder among pregnant women receiving antenatal care, and its association with socio-demographic variables.

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## Methods

The data of this cross sectional study was collected during the period from 1<sup>st</sup> of February 2017 to 30<sup>th</sup> of April 2017.

The study was conducted in two family medicine primary health care centers (PHCC), (Al-Dhubat PHCC and Al-Sulaikh PHCC) in Baghdad, Al-Rusafah after obtaining ethical approval to conduct the study.

The study included 300 pregnant women that were convenient sample chosen from the two health care centers during their antenatal care visits. The women were directly interviewed. Forty-two women were in the first trimester, 176 women were in the second trimester, and 82 women were in the third trimester.

The International Classification of Depression (ICD-10) diagnostic criteria of depression were used as a practical screening research instrument for the detection of depression.

According to ICD-10, a depressive episode is diagnosed when a patient reports:

1. Depressed mood, nearly every day, for two weeks or longer and/or

2. Loss of interest or pleasure in activities that the person usually enjoys.

In addition to at least four of the following symptoms:

3. Fatigue or lack of energy.
4. Changes in psychomotor activity.
5. Feelings of guilt or worthlessness.
6. Diminished ability to think or concentrate.
7. Loss of confidence or self-esteem.
8. Sleep disturbance.
9. Recurrent thoughts of death or suicide.
10. Changes in appetite.

The diagnosis and the assessment of depression was under the guidance and help of the senior psychiatrist Ali Mazied.

The inclusion criteria: All pregnant women attending health care centers for their antenatal visits in two primary health care centers in Baghdad Al-Rusafah.

The exclusion criteria: Patients who had depression secondary to any organic disorder or substance abuse and patients diagnosed as mania or hypomania.

Statistical Package of Social sciences (SPSS) version 20 was used for data entry and data analysis. Categorical variables were tested using chi square test.  $P < 0.05$  was considered statistically significant.

## Results

The most frequent age group was (25-29) years (34.7%). Poor education constituted 26.7%, 22.7% were working, 65.7% were living as extended family, and 50.7% were of middle income, (Table 1).

As shown in table 2, 60% of the sample who had previous delivery had normal vaginal delivery (NVD), and 40% of them had cesarean section (CS), 14% of the sample were in their first trimester, 58.7% in second trimester, and 27.3% in the third trimester. Complications in their current pregnancy, 24.7% of the complication was anemia and 25% were having urinary tract infection, and the current pregnancy was unplanned in 47.7% (some pregnant women have more than one complication, so that the total is more than 300). About 14% of the sample were in the first trimester, majority of them were depressed. About 58.7% were in the second trimester, about 2/3 of them were depressed. About 27.3% of the sample were in the third trimester, most of them were depressed.

In table 3, the age, occupation and place of living were statistically not significant with depression, while the educational level, and family income were statistically significant with depression in which the P-value for them was ( $P=0.008$ ), ( $P=0.013$ ), respectively.

**Table 1: distribution of the study group by socio-demographic characteristic.**

Socio-demographic variables		No.	%	Total
Age group	< 20 years	37	12.3	300
	20-24	66	22.0	
	25-29	104	34.7	
	30-34	53	17.7	
	≥ 35 years	40	13.3	
	Mean ±SD	26.9 ± 6.1	15-41	
Educational level	Illiterate	2	0.7	300
	Read & write	5	1.7	
	Primary	73	24.3	
	Intermediate	70	23.3	
	Secondary	36	12.0	
	Diploma	29	9.7	
	College	75	25.0	
	Higher education	10	3.3	
Occupation	Housewife	226	75.3	300
	Worker	68	22.7	
	Student	6	2.0	
Place of living	Separated	103	34.3	300
	Extended family	197	65.7	
Family income	High	108	36.0	300
	Middle	152	50.7	
	Low	40	13.3	

**Table 2: Distribution of the study group according to type of delivery, duration of current pregnancy, obstetric complications and planning during current pregnancy.**

		No.	%	Total
<b>Type of delivery (total =190)</b>	NVD	114	60	<b>190</b>
	CS	76	40	
<b>Duration of current pregnancy in months</b>	1 <sup>st</sup> trimester	42	14	<b>300</b>
	2 <sup>nd</sup> trimester	176	58.7	
	3 <sup>rd</sup> trimester	82	27.3	
<b>Presence of diagnosed complication in current pregnancy</b>	No	151	50.3	<b>300</b>
	Yes	149	49.7	
<b>Type of complications</b>	No	151	50.3	
	Bleeding	30	10	
	Anemia	74	24.7	
	Pregnancy induced hypertension	13	4.3	
	Gestational diabetes	8	2.7	
	Genital infection	13	4.3	
	Pre-eclampsia	-	-	
	Urinary tract infection	75	25	
	Psychological	-	-	
<b>Pregnancy planned</b>	No	143	47.7	<b>300</b>
	Yes	157	52.3	

**Table 3: Distribution of the study group by socio-demographic characteristic and their association with depression.**

		Depression		No depression		P Value	Total
		No.	%	No.	%		
<b>The age (years)</b>	< 20	27	73.0	10	27.0	0.436	300
	20-24	48	72.7	18	27.3		
	25-29	78	75.0	26	25.0		
	30-34	44	83.0	9	17.0		
	≥ 35	34	85.0	6	15.0		
<b>The educational level</b>	Illiterate	2	100.0	-	-	0.008	300
	Read and write	5	100.0	-	-		
	Primary	64	87.7	9	12.3		
	Intermediate	52	74.3	18	25.7		
	Secondary	19	52.8	17	47.2		
	Diploma	23	79.3	6	20.7		
	College	58	77.3	17	22.7		
Higher education	8	80.0	2	20.0			
<b>The occupation</b>	Housewife	176	77.9	50	22.1	0.275	300
	Employee	52	76.5	16	23.5		
	Student	3	50.0	3	50.0		
<b>The place of living</b>	Separated	81	78.6	22	21.4	0.625	300
	Extended family	150	76.1	47	23.9		
<b>The family income</b>	High	73	67.6	35	32.4	0.013	300
	Middle	124	81.6	28	18.4		
	Low	34	85.0	6	15.0		

In table 4, there were no statistical significant association between type of delivery, and type of complication with depression, while there were statistical significant association between the duration of current pregnancy, planning of pregnancy and presence of diagnosed complication with depression.

It was found that the prevalence of depressive disorder was 77%. It is evident

from the study that the majority of pregnant women have moderate depression 36.7%, (Table 5).

The results showed that the prevalence of depressive disorder is higher during 1<sup>st</sup> trimester 92.9% than that in the 2<sup>nd</sup> and 3<sup>rd</sup> trimesters which are 70.5% and 82.9% respectively, (Table 6).

**Table 4: Type of delivery, duration of current pregnancy, presence of complication, and planning in current pregnancy and their association with depression.**

		Depression		No depression		P value	Total
		No.	%	No.	%		
The type of delivery	NVD	95	83.3	19	16.7	0.873	190
	CS	64	84.2	12	15.8		
Duration of current pregnancy in months	1 <sup>st</sup> trimester	39	92.9	3	7.1	0.008	300
	2 <sup>nd</sup> trimester	124	70.5	52	29.5		
	3 <sup>rd</sup> trimester	68	82.9	14	17.1		
The presence of diagnosed complication in current pregnancy	No	108	71.5	43	28.5	0.023	300
	Yes	123	82.6	26	17.4		
The type of complication	No	108	71.5	43	28.4	0.196	300
	Bleeding	27	90.0	3	10.0		
	Anemia	61	81.9	13	18.1		
	Hypertension	12	88.9	1	11.1		
	Gestational diabetes	6	60.0	2	40.0		
	Genital infection	9	66.7	4	33.3		
	PET	-	-	-	-		
	UTI	65	83.3	10	16.7		
	Psychological	-	-	-	-		
Is the pregnancy planned	No	118	82.5	25	17.5	0.030	300
	Yes	113	72.0	44	28.0		

**Table 5: Prevalence of depressive disorder among the pregnant women.**

		No.	%	Total
Depression	No	69	23.0	300
	Yes	231	77.0	
Severity of depression	Mild	35	11.7	300
	Moderate	110	36.7	
	Severe	86	28.7	

**Table 6: Prevalence of depression during different trimesters.**

Duration of pregnancy	No. of pregnant	Depression		No depression	
		No.	%	No.	%
1 <sup>st</sup> trimester	42	39	92.9	3	7.1
2 <sup>nd</sup> trimester	176	124	70.5	52	29.5
3 <sup>rd</sup> trimester	82	68	82.9	14	17.1
<b>Total</b>	<b>300</b>	<b>231</b>		<b>69</b>	

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## Discussion

In this study, ICD-10 diagnostic criteria was used for diagnosis of depression. The prevalence of depression in this study was higher than that in the previous studies, this may be because of the use of different tools and different sample size.

There is no significant association of age group with depression ( $P= 0.436$ ), the prevalence rate of depression in pregnant women varied by age group<sup>(18)</sup>. The findings were consistent with Gholam Rezakheirabadi<sup>(15)</sup> and Priscila Krauss<sup>(19)</sup>.

About two thirds of the sample were housewives. Majority of housewives, about two thirds of employee and about one half of the students were depressed. The job was not significantly associated with depression ( $P=0.257$ ). This result was consistent with Hashima E Nasreen<sup>(21)</sup> and Priscila Krauss<sup>(19)</sup>, but was not consistent with Gholam Rezakheirabadi<sup>(15)</sup>.

Majority of the sample were living as extended family, about 76.1% of them were depressed and 78.6% of those who lives in separated place were depressed. The place of living is not significantly associated with depression ( $P=0.625$ ), this finding was consistent with Atif Rahman<sup>(17)</sup>.

About 50.7% of the participants were of middle income. The income has statistically significant correlation with depression ( $P=0.013$ ), in which people with low income were far more likely to suffer from psychiatric distress than those with high income<sup>(22)</sup>, these findings were consistent with Atif Rahman<sup>(17)</sup>, but not consistent with Hashima E Nasreen<sup>(21)</sup>.

About one third of the sample were primigravida, most of them were depressed. About 72.7% of the pregnant women with the second child were depressed. About 87.7% of the pregnant with the third child were depressed and about majority of the pregnant with their fourth child and more were depressed. These findings are statistically significant with depression ( $P=0.003$ ), the findings consistent with

Gholam Rezakheirabadi<sup>(15)</sup>, but not consistent with Hashima E Nasreen<sup>(21)</sup>.

About 74.4% of the pregnant women who had previous one live birth, about 91.3% who had previous two live births, about 86.1% of the pregnant women with previous three live births and about 100% with previous four and more live births were depressed. The number of live birth is statistically significant with depression ( $P=0.000$ ).

About 21% of the sample have history of abortion. The history of abortion is statistically not significant association with depression ( $P=0.587$ ), this finding was consistent with Gholam Rezakheirabadi<sup>(15)</sup>, and Priscila Krauss<sup>(19)</sup>.

About 83.3% of women with normal vaginal delivery were depressed and about 84.2% of women with cesarean section were depressed. The findings were not statistically significant with depression ( $P = 0.873$ ). A meta-analysis specifically addressing consequence of cesarean section obtained evidence relating to postpartum depression<sup>(23)</sup>.

The duration of pregnancy was statistically had significant positive association with depression ( $P = 0.008$ ), this finding was consistent with a study done by Hobfoll S which shows increase prevalence of depression in the first trimester, decrease in the second trimester and re-increase in the third trimester<sup>(24)</sup>.

About 49.7% of the sample have diagnosed complication, in which 82.6% of them were depressed. The presence of complication during current pregnancy was statistically significant correlation with depression ( $P=0.023$ ), the findings were not consistent with Priscila Krauss<sup>(19)</sup>.

About one half of the sample had unplanned pregnancy, most of them were depressed. The pregnancy planning was significantly associated with depression ( $P = 0.030$ ). Unplanned pregnancy could be an indicator for low education and poverty<sup>(15)</sup>. The findings were not consistent with Hashima E Nasreen<sup>(21)</sup>, and Gholam Rezakheirabadi<sup>(15)</sup>. About 5% of the sample

had chronic illness. The presence of chronic illness was statistically not significantly associated with depression ( $P=0.756$ ). This finding was consistent with Priscila Krauss<sup>(21)</sup>.

About 16.3% of the sample have family history of depression, most of them were depressed, this was positive significant association with depression ( $P = 0.002$ ), this finding was consistent with Gholam Rezakheirabadi<sup>(15)</sup> and Priscila Krauss<sup>(19)</sup>.

Depression may be regarded as a normal reaction to longstanding illness, part of symptoms from psychological reaction to life-threatening illness, or the effect of some medication taken by the patient.

In conclusion; High prevalence of depression among pregnant women in Baghdad. Most of the pregnant women suffered from depression throughout their pregnancies, but more during the 1<sup>st</sup> trimester.

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