ORIGINAL ARTICLE

Existing Antenatal depression among pregnant women attending Antenatal clinic at tertiary care hospital, Karachi

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Abstract

Objective: To assess the frequency of existing antenatal depression and its associated factors among pregnant women attending antenatal clinic at tertiary care hospital, Karachi.

Study design:Cross-sectional study.

Place and duration of study: This study was conducted at "Hamdard Medical University", Karachi from January 2019 - April 2019.

Material and Methods: A total of 150 pregnant women presenting for obstetrics antenatal clinical visits included in the study by the non-probability consecutive sampling technique. Socio demographic variables and obstetric details were compiled. Ethical permission was taken from the Institutional review board of the hospital. Antenatal depression was evaluated as per the Patient Health Questionnaire-9 (PHQ-9) scale, a nine-item module with a score ranging from 0 to 27 with a score of 10 or above set as the cut-off point.

Results: Mean age of pregnant women was 27.45±3.21 years, Patient Health Questionnaire-9 score mean value was 7.65±3.9. 132(88%) women were multigravida and only 18(12%) women were primigravida. History of depression during pregnancy was found in 93(62%) women. Out of these 150 antenatal attendees, 104(69.7%) screened negative for depression (PHQ score < 10), 46(30.7%) screened positive for depression at PHQ scores≥10.

Conclusion: This study concludes that approximately ⅓rd of our study population experienced antenatal depression which is quite high. Furthermore; factors associated with the antenatal depression also identified in this study which shows that young age, low education, low socio-economic status, primigravida, history of miscarriage, history of neonatal death, previous cesarean section, recent stressful event and co-morbidities have significant association with depression among pregnant women. Depending upon the results of our study, we recommend awareness program for depression during pregnancy in order to prevent fetomaternal complications.

Keywords: Antenatal depression, PHQ-9, pregnant women, fetomaternal complications

Introduction:

Psychiatric illness is strongly related to pregnancy. However, depression and anxiety shows great variation during pregnancy. Strong evidence supports this statement. In a study reported, on average between 10 to 15% pregnant women were diagnosed with either major or minor depression.[1] There is huge number of studies supporting the strong relationship between various types of psychiatric illness women had to go through during pregnancy. According to Beck Depression Inventory, less than 25% pregnant females were suffering from depression and more than 50% pregnant women were found to have anxiety according to State-Trait Anxiety Inventory.[2]

The huge occurrence of this illness has led researchers, to study more and found that this illness is reflected with gender variation in different part of the world. The studies conducted

in South Asia used the Edinburgh Post-natal Depression Scale (EPDS) to assess depression. In Bangladesh, less 20% pregnant females suffer depression whereas in Pakistan almost 35% had depression. However, there was 30% anxiety in females who were pregnant in Bangladesh.[3,4] Since, there are immense amount of studies worldwide. In one study, researcher compared occurrence of depression between eastern and western population. It was found that Pakistani pregnant females had most depression around 48% following Canadian pregnant females almost 30% and least that is around 10% pregnant females were Caucasians.[5] Although huge number of literature is available regarding psychiatric illness still it is neglected hugely. The management of psychiatric illness is strongly related to social status hence studies have reported almost 15% of depression is related to females belonging to developed countries and twice the percentage that is 40% females belong to developing countries.[6]

Depression occurs differently in every person. People had sometimes days full of despair or may be full of joy, irritability, unable to focus, and sleep is highly affected. Regarding Antenatal depression, pregnant females have great impact in their body. The depression affects a pregnant body in such a way that it is related to irritation in uterus, hypertension, and pre-eclampsia, post-partum bleeding, decreased uterine artery blood flow and even preterm delivery. Moreover, depression seems to affect babies also. It is found that intellectual and cognitive disorders are present in children of depressed mothers.[7] Depression is subjective to culture, gender and ethnicity. Overall, it ranges from 27 to 62% worldwide.[8–10]

A study reported that 43% of depression during third trimester of pregnancy and also evaluated risk factors related and its effects on neonates.[11] One more study was conducted and reported around 20% of depression and anxiety where un-employed husbands, low socio-economic status, un-planned pregnancy and abuse were main factors leading to depression during pregnancy.[12] Cultural variation is greatly related to occurrence of depression. In south Asian rural areas, there is dominant gender discrimination and male child birth is preferable over female childbirth which is most important factor leading to depression and anxiety during pregnancy.[13,14]

Since ages, when a female conceives, there is dominant emotional, psychological and physical change in female body. It comes with different complications and it raises depression and anxiety among pregnant females. It is worldwide issue which is a major concern in public health sectors. Furthermore, factors like social status, age, gender, priority for male offspring, history of psychiatric illness, still birth or miscarriages play most important role in exposing females to depression.[15] There are reported studies regarding complicated deliveries and miscarriages in females having depression. Antenatal depression is therefore related to pre-mature birth.[16]

In Pakistan, depression is most prevalent psychiatric disorder in women. However, there is no strong evidence of depression during pregnancy specifically in rural areas. In one study, antenatal depression in women living in rural area was more than 65% following the pregnant women in Hyderabad there was 18% prevalence.[17-19] One more study reported around 81% of prevalence in women residing in Karachi.[20]

The purpose of this study is to determine prevalence and factors leading to antenatal depression among pregnant women who visit tertiary care hospital in Karachi. The prevalence and factors will guide us to promote mental health awareness during pregnancy. The results will help us to work upon these factors though the factors are non-modifiable. Despite, we can discuss such factors with in the appointments hence, reducing further complications during delivery.

Material and Methods:

A Cross-sectional study was conducted at the Hamdard Medical University, Karachi from January 2019- April 2019. Pregnant women were included though non probability consecutive sampling technique. Women visiting out patient

Table-1:Descriptive statistics of patient's demographic characteristics

Variables		Frequency	Percent
Age	Mean± SD	27.45±3.21	
	15-25 years	52	34.7
	26-35 years	98	65.3
Weight	Mean± SD	68.13±4.68	
	56-65 kg	63	42.0
	more than 65 kg	87	58.0
Ethnicity	Urdu	67	44.7
	Sindhi	42	28.0
	Punjabi	32	21.3
	Pashto	5	3.3
	Others	4	2.7
Educational status	Illiterate	23	15.3
	Primary	18	12.0
	Secondary	45	30.0
	Undergraduate	34	22.7
	Graduate	30	20.0
Socioeconomic status	≤15000	50	33.3
	> 15000	100	66.7

Table-2: Distribution of patient's medical history

Variables		Frequency	Percent
Gravida	Mean± SD	2.6±0.9	
	Primigravida	18	12.0
	1-3 children	83	55.0
	4-5 children	38	25.3
	more than 5 children	13	8.7
Past obstetric history	Miscarriage	41	27.3
	Neonatal Death	5	3.3
	Postnatal Complication	2	1.3
	Caesarean section	65	43.3
History of depression during pregnancy	Yes	93	62.0
	No	57	38.0
Hypertension		64	42.7
Diabetes Mellitus		20	13.3
Psychiatric Disorder		5	3.3
Recent Stressful Life Event		60	40.0
Iron supplements		84	56.0
Calcium supplements		5	3.3
Any Other Supplements		10	6.7
PHQ9-score		7.65±3.9	

department who were pregnant aged between 15-45 years either Primipara or multi Para were included. Pregnant women with any other serious medical complications leading to any level of disease related depression were excluded from the study. The study purpose was explained in detail to every participant and each was assured that the information provided by them will be private and confidential. When they agreed to participate, consent was obtained.

The participants were interviewed at the time of their clinical visits. Interview was conducted at medical facility by researcher, which lasted for about a good 10-15 min. Socio demographic variables and details were compiled and then they were screened for depression by using the standard Patient Health Questionnaire(PHQ-9) scale, the questionnaire, scale was translated in the local national language and responses were poised during the interview session. Ethical permission was requested and acquired from the Hospitals where then the research was taken place. Confidentiality was maintained with no compromise.

Depression was evaluated as per the Patient Health Questionnaire-9 (PHQ-9) scale, a nine-item module with a score ranging from 0 to 27 with a score of 10 or above set as the cut-off point. The questionnaire included information about demographic and other potential risk factors for antenatal depression.

Sample size is calculated with WHO software for sample size determination. Taking statistics of antenatal depression 81% 20, confidence interval 95% at margin of error 6.5% sample size was calculated to be 140-150 pregnant women.

Data Analysis:Data were entered and analysed using SPSS version 23. Demographic information and medicalhistory were analysed using descriptive statistics. For the statistical analysis Chi-square test was applied to observe relation of various demographic and other relevant variables on the antenatal depression. P values≤ 0.05 was considered statistically significant.

Results:

A total of 150 pregnant women were enrolled in this study. Descriptive statistics was presented in [table-1]; mean age of subjects with SD was 27.45±3.21 years, mean value of gravid

Table-3:Relationship of antenatal depression with demographic characteristics

Variables		Antenatal Depression		Total	P-values
		Yes	No		
Age	15-25 years	27(51.9%)	25(48.1%)	52	0.0001
	26-35 years	19(19.4%)	79(80.6%)	98	
Weight	56-65 kg	21(33.3%)	42(66.7%)	63	0.55
	more than 65 kg	25(28.7%)	62(71.3%)	87	
Ethnicity	Urdu	25(39.1%)	39(60.9%)	67	0.016
	Sindhi	9(21.4%)	33(78.6%)	42	
	Punjabi	6(18.8%)	26(81.2%)	32	
	Pashto	4(80%)	1(20%)	5	
	Others	2(50%)	2(50%)	4	
Educational status	Illiterate	8(34.8%)	15(65.2%)	23	0.06
	Primary	6(33.3%)	12(66.7%)	18	
	Secondary	18(40%)	27(60%)	45	
	Undergraduate	6(13.3%)	39(86.7%)	34	
	Graduate	8(26.7%)	22(73.3%)	30	
Socioeconomic status	≤15000	25(50%)	25(50%)	50	0.0001
	> 15000	21(21%)	79(79%)	100	

Table-4: Relationship of antenatal depression with Medical history

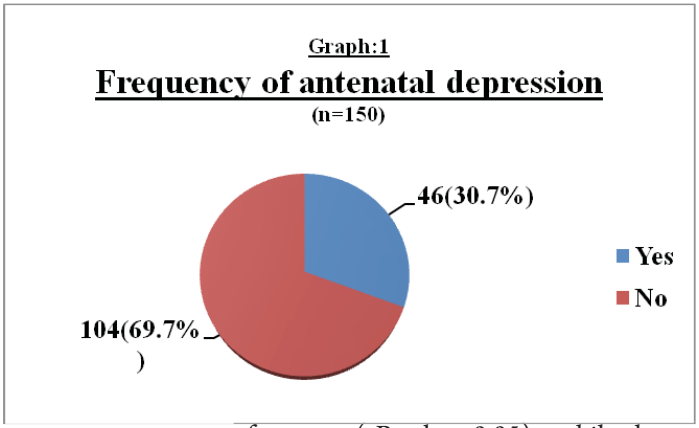
Variables		Antenatal Depression		Total	P-values
		Yes	No		
Gravida	Primigravida	16(88.9%)	2(11.1%)	18	0.0001
	Multigravida	30(22.7%)	102(77.3%)	132	
Past obstetric history	Miscarriage	32(78%)	9(22%)	41	0.0001
	Neonatal Death	5(100%)	0(0%)	5	0.001
	Postnatal Complication	1(50%)	1(50%)	2	0.55
	Caesarean section	30(46.2%)	35(53.8%)	65	0.0001
History of depression during pregnancy	Yes	38(40.9%)	55(59.1%)	93	
	No	8(14%)	49(86%)	57	
Hypertension	Yes	30(46.9%)	34(53.1%)	64	0.0001
	No	16(18.6%)	70(81.4%)	86	
Diabetes Mellitus	Yes	12(60%)	8(40%)	20	0.002
	No	34(26.2%)	96(73.8%)	130	
Psychiatric Disorder	Yes	3(60%)	2(40%)	5	0.148
	No	43(29.7%)	102(70.3%)	145	
Recent Stressful Life Event	Yes	36(54.5%)	30(45.5%)	60	0.0001
	No	10(11.9%)	74(88.1%)	84	

with SD was 2.6±0.9, mean weight with SD was 68.13±4.68 kg, PHQ- score mean value was 7.65±3.9. Out of total 63(42%) women had weight 56-66 kgs and 87(58%) of women had their weight more than 68 kg. Half of the women were Urdu speaking and reaming were from different ethnicities. 34(22.7%) of women were graduate, 34(22.7%) women were under graduates and remaining were illiterate or just passed primary or secondary level.100(66.7%) of the subjects had their monthly income more than 15,000 and 50(33.3%) subject's monthly income was less than 15,000.

Distribution of medical condition and history was presented in [table: 2]; where it was stated that most of the study subjects 132(88%) women were multi-gravida and only 18(12%) women were primi-gravida. Past obstetric history was followed as, 41(27.3%) women had history of miscarriage, 5(3.3%) of women with history of neonatal death.Only 2(1.3%) women had history of post natal complication in their previous pregnancies while 65(43.3%) had-gone through C/sections.History of depression during pregnancy in previous was found in 93(62%) women. Co-morbidities like hypertension was observed among 64(42.7%) women and 20(13.3%) women had diabetes. Psychiatric disorder was presented in 5(3.3%) women while 60(40%) women recently went through stressful life event. Further medication recorded also stated.

In [Graph -1] Distribution of antenatal depression was stated; Out of these 150 antenatal attendees, 104 (69.7%) screened negative for depression (PHQ score < 10), 46 (60.7%) screened positive for depression at PHQ scores≥10.

In [table-3] antenatal depression association was states with demographic variables. In younger women aged <25 years, depression was much more common 27(51.9%)then the older aged women 19(19.4%) it was observed that there was a statistical significant association between age and antenatal depression(P-value=0.0001). there was no statistical significant association found between antenatal depression and weight



of women (P-value>0.05), while there was a significant association observed between antenatal depression and ethnicity, educational status and socio economic status (P-value<0.05).

In [table-3&4] antenatal depression association was states with medical history related variables. In this study we observed that primi-gradia as a factor of depression 16(88.9%) women screened positive as compared to multi-gravida women those observed 30(22.7%) depression (P-value=0.0001), while past negative obstetric history also found a reason of depression among pregnant women (P-values<0.05). Those who have history of depression in their previous pregnancy were observed as more prone to have depression in current pregnancy as well. Hypertension and diabetes also showed association with antenatal depression (P-value<0.05). More women with psychiatric disorder had depression than those without (60% vs. 29.7%). this is true with those women with a recent stressful event and those who are not (54.5% vs. 11.9%) also have significant (P-value=0.0001).

Discussion:

The results of our study showed 30.7% antenatal depression. This finding is similar to few Pakistani studies. In contrast with a Pakistani study, results showed around approximately 65% pregnant women had depression The Edinburgh Postnatal Depression Scale (EPDS) > 12. There were multiple reported factors leading to depression during pregnancy. However, highest reported factor was domestic violence almost 95% which was leading to major depression during pregnancy.[20]

Another Pakistani study conducted in Rawalpindi supports high incidence of depression during pregnancy.[21] In a study conducted in Lahore, reported that The Edinburgh Postnatal Depression Scale (EPDS) score of 10 was found in 75% women and 66% had EPDS score of 12. This finding is quite high in comparison with several studies conducted in Pakistan and also showed two times higher frequency of antenatal depression as compared to our study findings. Depression is contributory factor in pregnancy. The hormonal transition of female aggravates depression and anxiety levels. However, where multiple factors are leading cause of depression, pregnant women had to suffer most severe form of depression.[23,24–26]

Gorman et al reported that around 7% rate of depression in pregnant women. He further reported that antenatal depression at score more than 13 on The Edinburgh Postnatal Depression Scale (EPDS) was measured around 9% its quite low when it compared with the results of local and regional studies.[26]

A systemic review reported around 11 % Antenatal depression in initial days of pregnancy reaching to almost 13% in the mid pregnancy.[22] This study showed a unique sets of results. High number of young mothers < 20 years had high rate of depression. The result is self-explanatory for lack of experience or im-maturity. In our study young age is found as a major reason of antenatal depression as in our study approximately half of the young pregnant women were diagnosed as depressive patients during their antenatal period while in elder women it was not found too high.[27, 28]

Rich-Edwards JW et al also stated that the younger the mother is, higher are the chances for depression the results are similar to our study, during pregnancy and post pregnancy. This might be due to financial problems or lack or partner support. As factors has great geographic variation. Similarly; in our study low socio economic status was found a significant factor for antenatal depression.[28]

In the present study, results showed that fear of child birth, separation from husband are statistically significant factors causing depression. This is analogous to findings of Karmaliani R et al. study.[12]

Ahmed W et al. studied depression and anxiety through Hospital Anxiety and Depression Scale (HADS) score. The study explained that pregnant women were sufferers of anxiety and depression both. The high score showed higher incidence of depression and anxiety.[29] In our study the most significant factors identified for Antenatal depression were, prim gravidity, past obstetric history like miscarriage, or neonatal death etc. co-morbidities, history of pregnancy depression or any recent stressful event. Blackmore ER et al carried out a study and explain various factors leading to depression during pregnancy and post pregnancy. Factors such as emotional torture, lost pregnancy, un-planned conception, were leading factors for anxiety and depression. These finding were also confirm by other study conducted in Pakistan.[31,32]

In another Pakistani study, depression was assessed using Hamilton scale. The findings of the study showed that around 5 to 11% pregnant women were very extremely depressed to extremely depressed.[32]

Child health is highly affected with greater rate of depression in mothers. There is higher risk of depression in pregnant women and post pregnant women that leads to adverse outcomes in their foetus. Despite of most prevalent and leading health issue in public health sector, our main goal is to emphasize further in depth causal study.

Pregnant women are fighting from depression every single day. There is already different transition of hormonal changes in pregnancy and women have to cope with it, depression as a factor contributes to overall welness of pregnant females leading to morbidity and complication during delivery and worst outcomes in their babies. Depending upon results of our study, we recommend awareness program for depression. Since there are many traditional factors that refrain patient to discuss about their mental health. Hence, counselling should be more accessible in pregnant women. Healthcare workers should reach rural areas and find pregnant women to counsel them in order to prevent morbid fetomaternal complications.

Within the limitation of this study, the research sample size could not be generalized as most of the population is urban. Due to lack of resources, rate of depression could not be monitored throughout pregnancy.

Conclusion:
We conclude that approximately 1/3rd of our study population experienced Antenatal depression which is quite high. Furthermore; factors associated with the Antenatal depression also identified in this study which shows that young age, low education, low socio-economic status, primi-gravida, history of miscarriage, history of neonatal death, previous cesarean section, recent stressful event and co-morbidities have significant association with Antenatal depression among pregnant women. Depending upon results of our study, we recommend awareness program for depression during pregnancy in order to prevent feto-maternal complications.

Conflict of interest: None

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Role and contribution of authors:
Dr Sadia Saeed, conception, acquisition of data & Final review.

Dr Syeda Fariha Hasnny, conception, design of study, acquisition of data & Final review.

Dr Tahmeena Ali, helped in collecting the data, references and also helped in discussion writing.

Dr Aamna Tanweer, helped in collecting data, Drafting & literature search.

Dr Asma Ali, Revised review.

Maryam Younus, did data analysis, interpreta-

tion Drafting and review.

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