The psychological effect of coronavirus during pregnancy and its outcome in Bangladesh

Authors
Lt Col Md Fakhrul Alam[1]*, Dr Musammat Shamima Akter[2], Dr Israt Jahan[3]
[1]Commanding Officer, 11 Field Ambulance, Savar Cantonment, Bangladesh
[2]Professor & Head, Department of Gynae & Obs, Eastern medical college, Cumilla, Bangladesh
[3]Assistant Professor, Community Medicine, Col Malek medical college, Manikgong, Bangladesh

Abstract
Background: *Maintaining a mental health to be healthy is a great challenge now a days. Due to pandemic situation people especially cases like pregnant women suffers severe mental issues.*
Objective: *The primary objective of this investigation is to assess the psychological effect of corona during pregnancy and its outcome in Bangladesh.*
Method: *This cross-sectional study was done among a total of 150 pregnant participants who visited their checkup at tertiary medical college and hospital. GAD-7 (Generalized Anxiety Disorder 7) and ISI (Insomnia Severity Index) were utilized to measure sadness, GAD, and insomnia prior to the COVID-19 epidemic as well as during it. During the COVID-19 pandemic, the Impact of Event Scale-Revised (IES-R) was used to measure psychological stress.*
Results: *During the research,, 62.5 percent of the patients were between the ages of 32 and 42. 41.7 percent had recently graduated, 38.9 percent were military members, 70 percent were married between the ages of 18 and 25, and 98 percent had no history of mental illness. Pregnant women reported considerably greater rates of depression (31 vs. 20%), generalized anxiety (20 vs. 15%), and sleeplessness (38 vs. 25%) during the pandemic of COVID-19 than prior to the onset. When compared to the first and second trimesters, the third trimester Insomnia was more common (adjusted Ps 0.01), and pregnant women had considerably more psychological stress in the third trimester than in the first and second trimesters (adjusted Ps 0.01). Besides that, due to mental illness adverse outcome such as 25% cases preeclampsia followed by preterm birth seen 21% cases and Gestational diabetes seen 11% cases documented.*
Conclusion: *To summarize, our findings imply that the epidemic of COVID-19 had a detrimental emotional impact affecting expecting mothers, in specific those in their those in their first and third trimesters, as well as those whose mental psychological difficulties prior to the pandemic. Timely detection and treatment of melancholy disorders in expectant mothers, especially in the midst of a pandemic, is critical for the wellbeing of the mother and fetuses cognitive and emotional health. Professional emotional well-being treatment should be provided to this specific demographic as soon as possible.*
Keyword: *mental health, COVID-19, pregnant women.*

Introduction

Prenatal psychological distress has been shown to affect the mother, the fetus, and, ultimately, the child. Nevertheless, inadequate prenatal psychosocial functioning, parenting difficulties, lower child birthweight[2], earlier infant gestational age[2], offspring psychopathology[3,4] and impaired socioemotional5 and cognitive development have

all been linked to prenatal depression during pregnancy.

elevated anxiety and depressive symptoms when expecting a baby have been associated to changes in fetal and newborn maturation of the central nervous system in female with Pregnancies with a minimal risk of complications, a high degree of education, as well as a good standard of socioeconomic background.

According to research has found that infectious illness pandemics increase the incidence of anxiety and unpleasant emotions in pregnant women. [5-6]

In Chinese study, the risk of depression among pregnant women was much greater after the COVID-19 outbreak was declared than compared to before COVID-19 pandemic. [7]

In the present epidemic of COVID-19, a Canadian research found that 37% of women who are expecting experienced significantly severe sadness and 57% experienced clinically significant anxiety. [8]

A recent meta-analysis found that 31% of expectant mothers were depressed and 37% were worried during the COVID-19 pandemic, respectively.[6]

Objective

To evaluate the psychological effect of corona during pregnancy and its outcome in Bangladesh.

Methodology

This cross sectional study was done among a total of 150 pregnant participants who visited their checkup at tertiary medical college and hospital. During and before the COVID-19 pandemic, researchers employed the GAD-7 and the Insomniac Severity Index (ISI) to measure the severity of depression, generalized anxiety disorder, and insomnia. When the COVID-19 pandemic broke out, people's stress levels were measured using the Impact of Event Scale-Revised (IES-R).

Data entry, quality control and data cleaning had been done following standard method. All forms and surveys that collect information had been checked for any mistakes and made any required adjustments had been generated prior to the entry of data. Data had been added use of an entry program with range and consistency checks already built in (SPSS-23). The prevalence rate had been determined by simple percentages.

Results

In table-1 shows age distribution of the patients 62.5% of patients are between the ages of 32-42 years age group. Mean age was 36±6.28 years. The following table is given below in detail:

Table-1: Age distribution of the patients

	Valid Percent
21-31 years	20.8
32-42years	62.5
>43years	16.7
Total	100.0

In table-2 shows demographic status of the patients where 41.7% just completed their graduation followed by 38.9% patients were service holder, 70% patients married in 18-25 years of age, 98% didn't have any history of mental illness. The following table is given below in detail:

Table-2: Demographic status of the patients

Educational status	%
Primary	8.3%
Secondary	12.5%
SSC	25%
HSC	12.5%
Graduation	41.7%
Occupation	
Service holder	38.9%
Housewife	34.5%
Teacher	16.7%
Student	10%
Income	
10000-15000tk monthly	54.2%
>150000 monthly	45.8%
Marital status:	
Married	85%
Unmarried	15%
Age of marriage	
13-17 years	20%
18-25 years	70%
26-30	10%
History of mental health	
Yes	2%
No	98%

In table-3 shows prevalence of the COVID-19 pandemic and before the onset of minor types of melancholy, generalized anxiety, and insomnia where Pregnant women reported considerably greater rates of depression (31 vs. 20%), generalized anxiety (20 vs. 15%), and sleeplessness (38 vs. 25%) when COVID-19 was first discovered than they were before.

The following table is given below in detail:

Table-3: Prevalence of mild forms of depression, generalized anxiety and insomnia during the COVID-19 pandemic and before the outbreak

Level	Before Covid-19, %	After Covid-19, %
Mild depression	20%	31%
Mild anxiety	15%	20%
Mild insomnia	25%	38%

In table-4 shows Slight distress, generalized anxiety, and sleeplessness were shown to be more common during the COVID-19 pandemic than during any of the other pregnancy trimesters, according to research published in the third trimester. (Depression: P = 0.01; insomnia: P 0.01; psychological stress: P 0.01).

Further research discovered that pregnant women in their first trimester were more likely than those in their third trimester to suffer from depression (adjusted P 0.01).

Insomnia was more common in the third trimester than in the first and second trimesters (adjusted Ps 0.01), and pregnant women had considerably more psychological stress in the third trimester than in the first and second trimesters (adjusted Ps 0.01). The following table is given below in detail:

Table-4: Prevalence of mild forms of depression, generalized anxiety and insomnia trimester

Level	First trimester, %	2nd trimester, %	3rd trimester, %	P value
Mild depression	38%	35%	32%	0.01
Mild anxiety	15%	19.8%	22%	0.50
Mild insomnia	25%	25.5%	35%	<0.01
Mild phycological stress	10%	12.8%	17.5%	<0.01

In table-5 shows differences of the total score of PHQ-9, GAD-7 and ISI during the COVID-19 pandemic and before the outbreak where GAD-7 and ISI total scores were substantially higher during the COVID-19 pandemic than before the pandemic (GAD-7: 2.05 2.90 vs. 1.502.90, Z = 15.27, P 0.01; ISI: 5.704.44 vs. 4.704.44, Z = 21.09, P 0.01). The following table is given below in detail:

Table-5: Differences of the total score of GAD-7 and ISI during the COVID-19 pandemic and before the outbreak

Score	Before Covid-19, mean ± SD	After Covid-19, mean ± SD
GAD-7	1.50±2.90	2.05±2.90
ISI	4.70±4.44	5.70±4.44

In table-6 shows distribution of the patients according to adverse pregnancy outcomes where 25% cases preeclampsia followed by preterm birth seen 21% cases and Gestational diabetes seen 11% cases. The following table is given below in detail:

Table-6: Distribution of the patients according to adverse pregnancy outcomes

Pregnancy outcome	%
Preeclampsia	25%
Preterm birth	21%
Gestational diabetes	11%

Discussion

In the midst of the COVID-19 outbreak, expectant mothers had significantly greater rates of depression and sleeplessness.

A latest research in China found that 29.6 percent of expectant mothers experienced symptoms of depression during the COVID-19 outbreak,[7] while another research found that depression is on the rise was 36.4 percent during the epidemic of COVID-19.[8]

A recent meta-analysis found that the occurrence of depression was 31%, which was consistent with our findings.[9]

The prevalence of sleeplessness was greater (2.6 percent) than in another research.[9] Since the proclamation of the COVID-19 outbreak in Bangladesh in March 2020, strict pandemic preventive strategies such as minimizing superfluous social gatherings, a work that is adaptable in structure, and a policy of quarantine have been implemented.

Another factor for the disparities in mental condition rates might be the use of various Scales that can be used in the clinic to determine emotional health.

The prevalence of stress among pregnant women was not considerably elevated during the epidemic of COVID-19, which might be attributed to the deployment of thorough preventative and control methods.

A subgroup study revealed that psychological state differed between pregnant trimesters.

The first trimester was associated with an increased risk of depression and higher depressive sign levels, whereas the third trimester was associated with increased levels of sleeplessness and stress on the mind. The trends are consistent with earlier research. [10-11]

One potential reason might be that expected mother went to the hospital just once during the first trimester for normal prenatal care, and outside activities fell dramatically as a preventative measure during the pandemic.

Thus, house quarantine and the resulting segregation might have harmed pregnant women's mental health. Depression in the first trimester is linked to depression and anxiety later in pregnancy, as well as postpartum depression, and is linked to a poor birth outcome and baby development.[12]

In the third trimester, pregnant women were more likely to experience clinically confirmed sleeplessness.

Significantly greater psychological stress levels in the early pregnancy may be attributed to elevated hospital visits and concerns of hazard of infection after labor, particularly in a COVID-19 approved institution.

Previous psychological state was shown to be a risk factor for the current incidence of the assessed mental health disorders in logistic regression analysis, but stronger family support was found to be a protective factor. According to our findings, a lack of social support predicted the likelihood of depression. Reduced mother mental health outcomes were negatively impacted by reduced assistance throughout pregnancy.

During this COVID-19 pandemic, family support may aid in minimizing mental health issues in pregnant women.[3-15]

Conclusion

To summarize, our findings imply that the COVID-19 epidemic had a detrimental emotional impact on expected mother, especially those in their first and third trimesters and those who had emotional health difficulties before to the pandemic. Early detection and treatment of mood disorders in expected mother, especially in the midst of epidemic, is critical for the mother's and fetus' physical and mental health. Professional mental health treatment should be provided to this specific demographic as soon as possible.

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