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Stress, Anxiety And Depression During Pregnancy: A Prevalence Study.

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ABSTRACT

Anxiety, stress and depression are common in pregnancy and significant levels of anxiety symptoms are experienced by up to half of all women during pregnancy. Aim of the study is to carry out a prevalence study among pregnant women with stress, anxiety and depression in a tertiary care hospital at Erode for 6 months. The objectives are to find out the probable causes, socio demographic status and prevalence of stress, anxiety and depression during gestational period.We conducted this study in pregnant women within the age group of 18-35 years by using DASS-21 questionnaire. We had collected details from 311 candidates and we categorized them into different groups according to DASS 21 questionnaire. From our study we found that participants had low levels of common mental disorders (CMD) who were in the group of 27 to 29 years, who were well educated, multi gravidas, who had no previous history of miscarriages, who are under 2ndtrimester.Studies suggest that it is feasible to integrate a cognitive behavioural intervention into routine care in clinical settings to decrease CMD symptoms. Studies had proved that early detection and treatment of CMD can benefit both mother and child.

Keywords: Stress, Depression, Anxiety, Cognitive behavioural therapy, DASS 21 questionnaire.

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INTRODUCTION

Pregnancy, also known as gestation, is the time during which one or more offspring develops inside a woman. Pregnancy is typically divided into three trimesters.The first trimester is from week 1 through 12 and the possibility of miscarriage (natural death of embryo or foetus) is at its highest. The second trimester is from week 13 through 28. Around the middle of the second trimester, movement of the foetus may be felt. At 28 weeks, more than 90% of babies can survive outside of the uterus if provided with high-quality medical care. The third trimester is from 29 weeks through 40 weeks. Complications of pregnancy may include disorders of high blood pressure, gestational diabetes, iron-deficiency anaemia, and severe nausea and vomiting among others.[1]

Prevalence

National and international studies point to variable anxiety indexes around 23% in a study conducted in Alberta, Canada, 15.6% in a study carried out in Germany and 49% in Pakistan. Prevalence studies in developed countries show a prevalence of 10–15% for depression and anxiety during pregnancy. The prevalence and severity of both anxiety and depression are higher in developing countries than in developed countries.[2]

The common mental disorders (CMD) defined as depressive anxiety and stress disorders classified in ICD-10 as “neurotic, stress related and somatoform disorders” and “mood disturbances‟ appear to be frequent in pregnancy and are important predictors of subsequent postpartum depression.[3] The combined effects of maternal depression, anxiety and stress in pregnancy are associated with adverse obstetrics outcomes such as preterm labour, preeclampsia and more importantly foetal neurodevelopmental outcomes through a process referred as `foetal programming'[4]

Several studies have revealed that young maternal age, lower women’s educational level, lower couple’s income, stressful life events and unemployment are associated with depressive symptoms. Anxiety, stress and depression during pregnancy can leads to many complications such as prematurity, low birth weight and foetal growth restriction, obstetric complications, increased nausea and vomiting, prolonged sick leave during pregnancy, planned caesarean delivery and use of epidural analgesia.[5]

Worldwide prevalence

Studies conducted in worldwide population had proved that most of the women during their gestational period were suffering from common mental disorders (CMD) such as stress, anxiety and depression of which anxiety was predominately high when compared to stress and depression. A study conducted in Malaysia had proved that depression and anxiety are the most common psychiatric disorders during pregnancy with an estimated prevalence ranging from 4 to 25%.[6]

The Malaysian national health and morbidity survey (NHMS) reported an increase in prevalence of poor mental health among Malaysian women from 11.2% to 12.1% within a decade. A study conducted in Malaysian population had proved that the prevalence of common mental disorders was 23.6% in the second trimester and 24.7% in third trimester respectively and it was similar to the study conducted in Iranian population. The study conducted in the Malaysian and Iranian population had reported that, stress, anxiety and depression was higher in pregnant women who were at 1st and 3rd trimester when compared to 2nd trimester. They had also proved that stress, anxiety and depression were higher in pregnant women who had a previous history of miscarriages when compared to pregnant women without previous history of miscarriages.[7,8]

A study conducted in pregnant women of Bangladesh had proved that stress, anxiety and depression was found to be higher in women who were in lower age group when compared to the higher age group and CMD was higher in women with low literacy rate when compared to women with high literacy rate.[9]

A study conducted in pregnant women of Brazil had concluded that stress, anxiety and depression was found to be higher in women who were primi gravidas when compared to multi gravida. They also proved that pregnant women with previous history of miscarriages have higher rate of stress, anxiety and depression

when compared to women without previous history of miscarriages and they also proved that pregnant women who were at 1st and 3rd trimester had higher level of stress, anxiety and depression when compared to women who were at 2nd trimester.[10] Age at current pregnancy and at first delivery, obstetric complications, having no friends in the community, living in a crowded household, lower occupational status, and history of previous psychiatric disorder were found to be associated with CMD in Brazil.[11]

A community based study conducted in Pakistan had found that 18% were depressed and stressed and 25% were anxious. The predictors of depression, stress and anxiety in Pakistan were husband's unemployment, low household wealth, unwanted pregnancy, and partner violence.[12]

Prevalence in India

Studies conducted in Indian population had proved that most of the women were suffering from CMD during their gestational period. In this studies, anxiety was found to be higher when compared to depression and stress. Many of the studies conducted in Indian population had proved that CBT had a vital role in reducing CMD.[13]

A study conducted in pregnant women of Hyderabad had proved that stress, anxiety and depression was high in women who were at lower age group when compared to women at higher age group and they also concluded that women with low literacy rate had higher levels of depression, stress and anxiety when compared to women with high literacy rate.[14]

Studies conducted in Indian population had proved that demographic data such as age, marital status, educational level, employment, income, social support including family support and intimate partner violence and obstetric variables such as parity, previous history of miscarriages, previous caesarean sections, obstetric complications such as hypertension and bleeding during pregnancy, preterm birth or low birth weight plays a vital role in the development of CMD and it can be treated to an extent through CBT.[15] Studies also proved that CBT was the most effective and safest way for treating CMD.[16]

A study conducted in pregnant women of Tamilnadu had proved that stress, anxiety and depression was high in women who were primi gravida when compared to multi gravida. In their study they also concluded that women who were at 1st and 3rd trimester had higher levels of stress, anxiety and depression when compared to 2nd trimester. The prevalence of depression during the third trimester was about 16% among South Indian women.[17]

Impact of cognitive behavioural therapy in stress, anxiety and depression during pregnancy

Anxiety, stress and depression are common in pregnancy and significant levels of anxiety symptoms are experienced by up to half of all women during pregnancy.[18]Studies showed that about 25% of pregnant women suffer from an excessive level of fear of childbirth (FoC) and about 10 to 15% of mothers have depressive symptoms.[19]FoC can be caused due to fear of pain, worry of physical damage or fear of infant's health, listening to horror memories about labour from circle of relatives, friends, and media resources.[20]Postpartum depression involves sleeping disorders, depressive mood, anxiety, loss of concentration and it can influence premature childbirth.[21]

Even mild to moderate perinatal depression, stress and anxiety may cause serious adverse effects on mothers and children which includes preterm birth, low birth weight, child developmental delay, and poor child mental health [22,23,24]and children who are exposed to maternal depression during pregnancy have a higher risk of adverse birth outcomes, together with low birth weight, and greater often show cognitive, emotional and behavioural problems.[25]Without treatment, women with prenatal anxiety and those with prenatal depression preserve to experience signs and symptoms through the postpartum period and into their children's early years of life.[26,27]

Cognitive Behavioural Therapy (CBT) in conjunction with antipsychotic drugs are powerful in lowering distressing symptoms and hospitalizations, in comparison with medications alone.[28] Mindfulness based cognitive therapy (MBCT) is a method for reducing the symptoms of psychological distress and prevents the development of postpartum mood disorders.[29] Patients are asked what their treatment preference might

had been and the answers of preference were blended cognitive behavioural therapy (bCBT) or cognitive behavioural therapy as usual (CBTAU). Studies proved that MBCT in pregnancy had reduced worry, anxiety and comorbid symptoms of depression in pregnant women with clinically elevated symptoms of generalized anxiety disorder (GAD).[30]

Mindfulness based interventions (MBI) are found to be beneficial in improving psychological symptoms.[31] MBIs also have effects on reducing psychological and physiological indices of stress arousal, [32] reduction in blood pressure (BP), improved heart rate variability (HRV) and improvements in sleep quality.[33] MBIs reduces the exposure of foetus towards stress, anxiety and depression, it helps to maintain a more positive intrauterine environment for the developing foetus. MBCT can effectively reduce the symptoms of anxiety and stress and may help in preventing recurrence of depression.[31,32]

CBT is suggested as an early intervention for improving maternal-child outcomes. CBT is an incredibly effective remedy for depression and anxiety. Randomized controlled trials of group-based CBT for new mothers and pregnant women demonstrated that group CBT is appropriate and efficacious in decreasing risk and symptoms of postpartum depression.[30]

The CBT protocol consists of psycho-education, behavioural activation, cognitive therapy and relapse prevention. The final MBCT includes an initial engagement session, which integrated Motivational Interviewing (MI), and three treatment modules: Behavioural Activation (BA), Cognitive Restructuring (CR) and Interpersonal Support (IS).[30]

Without treatment, there is proof that 48% of pregnant women with anxiety and 71% of those with depression continue to experience symptoms throughout the postpartum period.[22] CBT is clinically appropriate, accessible and cost effective and it has been endorsed for treatment of anxiety and depression in the primary care.[23]There is evidence that CBT, at the side of antipsychotic drugs are effective in lowering distressing signs and symptoms and hospitalizations. Consequently, the latest National Institute for Health and Care Excellence (NICE) guidance states that CBT have to be offered to everybody with psychosis or schizophrenia.[24]

EXPERIMENTAL SECTION

Aim and objectives

Aim

To carry out a prevalence study among pregnant women with stress, anxiety and depression in a tertiary care hospital.

Objectives

- To find out the probable causes of stress, anxiety and depression during gestational period
- To find out the socio-demographic status associated with stress, anxiety and depression during gestational period.
- To find out the prevalence of stress, anxiety and depression among pregnant women.

Methodology

Site of study

The study is conducting on a tertiary care hospital in Erode.

Type of study

Prevalence Study

Study period

6 months

Study criteria

Inclusion criteria

- Pregnant women who comes under the age group of 18 to 35.
- Pregnant women who are willing for the study

Exclusion criteria

- Pregnant women who have previous history of psychiatric disorders
- Pregnant women who are suffering from chronic diseases

Sample size

Expected sample size is 300

RESULTS AND DISCUSSION

We conducted a prevalence study on stress, anxiety and depression during pregnancy at a tertiary care hospital in Erode. We had collected details from 311 candidates and we categorized them as normal, depression, anxiety, stress, depression+anxiety, depression+stress, anxiety+stress, depression+anxiety+stress according to DASS 21 questionnaire.

From our study we found that out of 311 candidates, 32 were normal and 279 had at least any one of the CMD (Table1) in such a way that 9 of them had depression, 29 of them had anxiety, 1 had stress, 49 of them had depression+anxiety, 2 of them had depression + stress, 2 of them had anxiety + stress, 187 of them had depression + anxiety + stress (Table 2).

In our study, it was found that majority of them are suffering from depression + anxiety + stress when compared to other categories which is similar to the study conducted by Fariba S et.al

We randomly selected participants between the age group 18 to 35 and we categorized them into different classes such as 18-20, 21-23, 24-26, 27-29, 30-32 and 33-35 (Table:3) and we found that participants within the age group of 27 to 29 had low levels of depression, anxiety and stress (38.09%) when compared to participants within the age group of 18 to 20 (89.33%) which is similar to the study conducted by Lianne M et.al in which they found that the high level of CMD in lower age group was due to low awareness regarding pregnancy. In our study we found that participants in the age group of 33 to 35 also had high levels of CMD (60%) and it is due to previous history of miscarriages (Table 4).

Based on the educational level of our participants, we categorized them into lower primary, upper primary, high school, higher secondary, graduates and post graduates (Table 5). In our study we found that participants who were well educated have lower levels of depression, anxiety and stress (graduates (32.22%)) when compared to participants who were less educated (lower primary (100%)) which is similar to the study conducted by Jeroen R et.alin which they concluded that participants having higher literacy rate had lower levels of depression, anxiety and stress and was due to better awareness regarding pregnancy. We also found that some of the participants who were well educated also had higher level of depression, stress and anxiety (post graduates (77.77%)) (Table 6) and it may be due to less awareness regarding pregnancy, fear of childbirth and complications associated with pregnancy.

Based upon the parity, we categorized our participants into two groups such as primi gravida (first pregnancy) and multi gravida (two or more times of pregnancy) (Table 7). In our study we found that, primi gravidas had higher level of depression, stress and anxiety (71.96%) when compared to multi gravida (63.95%)

(Table 8) which is similar to the study conducted by Mahen H et.alin which they concluded that participants who were primi gravida had higher levels of depression, anxiety and stress when compared to multi gravida and it was due to poor awareness regarding pregnancy.

Based on the past history of miscarriages we categorized our participants into with previous history of miscarriages and without previous history of miscarriages (Table 9). In our study we found that participants who had previous history of miscarriages have high level of depression, anxiety and stress (81.69%) when compared to participants without previous history of miscarriages (62.01%)(Table 10) which is similar to the study conducted by Kingston D et.alin which they concluded that participants who had previous history of miscarriages had higher levels of depression, anxiety and stress when compared to participants without previous history of miscarriages and it was due to fear of childbirth and further miscarriages.

Based on the trimester of pregnancy we categorized our participants into three classes such as 1st trimester, 2nd trimester and 3rd trimester (Table 11). In our study it was found that participants who are under 1st and 3rdtrimester have higher level of depression, anxiety and stress (1st trimester (65%) and 3rd trimester (57.69%)) when compared to 2ndtrimester (40%) (Table 12) which is similar to the study conducted by Helen W et.alin which they concluded that participants who were in 1st and 3rd trimester had higher levels of depression, anxiety and stress when compared to participants who were in 2nd trimester and it was due to the poor awareness regarding pregnancy, fear of childbirth and complications regarding pregnancy.

LIMITATIONS

- Low literacy rate of the participants was a limitation of this study as it creates low awareness regarding pregnancy and increases fear of childbirth.
- We conducted study in 311 participants which may not be the actual representation of the entire population.

CONCLUSIONS

Our study confirms that depression, stress and anxiety are common during pregnancy, and that illiteracy, intimate partner violence, bad relationships with husbands, a lack of practical support, and previous depressive symptoms are independent factors associated with CMD.

In our study we found that depression, stress and anxiety were common in pregnant women with risk factors such as lower age group, lower literacy rate, previous history of miscarriages, 1st and 3rd trimester of pregnancy.

Studies suggest that it is feasible to integrate a cognitive behavioural intervention into routine care in clinical settings to decrease CMD symptoms. If the cognitive behavioural intervention is efficacious in a larger trial, it can be used as a national model to integrate mental health services to lessen anxiety, stress and depression. Studies had proved that early detection and treatment of anxiety, stress and depression can benefit both mother and child, behavioural therapy is most cost-effective therapy in reducing maternal stress, depression and anxiety when compared to pharmacotherapy.

Table 1 Study participants

Sl No.	Category	Number of participants (N=311)
1	Normal	32 (10.28%)
2	Disorders	279 (89.71%)

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Table 2 Categorization of common mental disorders (CMD)

SI No.	Category	Number of participants (N=279)
1	Depression	9 (3.22%)
2	Anxiety	29 (10.39%)
3	Stress	1 (0.35%)
4	Depression + Anxiety	49 (17.56%)
5	Depression + Stress	2 (0.71%)
6	Anxiety + Stress	2 (0.71%)
7	Depression + Anxiety + Stress	187 (67.02%)

Table 3 Study participants based on age group

SI No.	Age group (in years)	Number of participants (N=279)
1	18-20	75 (26.88%)
2	21-23	64 (22.93%)
3	24-26	73 (26.16%)
4	27-29	42 (15.05%)
5	30-32	20 (7.16%)
6	33-35	5 (1.71%)

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Table: 4 Categorization of CMD based on age group

Sl No.	Age Group (in years)	Depression	Anxiety	Stress	Depression+ Anxiety	Depression+ Stress	Anxiety+ Stress	Depression+Anxiety+ Stress
1	18-20 (n=75)	0 (0%)	2(2.66%)	0 (0%)	5 (6.66%)	0 (0%)	1 (1.33%)	67 (89.33%)
2	21-23 (n=64)	2 (3.12%)	4 (6.25%)	0 (0%)	7 (10.93%)	0 (0%)	0 (0%)	51 (79.68%)
3	24-26 (n=73)	4 (5.47%)	8 (10.95%)	0 (0%)	22 (30.13%)	0 (0%)	1 (1.36%)	38 (52.05%)
4	27-29 (n=42)	3 (7.14%)	10 (23.80%)	1 (2.38%)	10 (23.80%)	2 (4.76%)	0 (0%)	16 (38.09%)
5	30-32 (n=20)	0 (0%)	5 (25%)	0 (0%)	3 (15%)	0 (0%)	0 (0%)	12 (60%)
6	33-35 (n=5)	0 (0%)	0 (0%)	0 (0%)	2 (40%)	0 (0%)	0 (0%)	3 (60%)

Sl No.	Education	Number of participants (N=279)
1	Lower Primary	4 (1.43%)
2	Upper Primary	37 (13.26%)
3	High School	90 (32.25%)
4	Higher Secondary	49 (17.56%)
5	Graduates	90 (32.25%)
6	Post Graduates	9 (3.22%)

Table 5 Study participants based on educational level

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Table: 6 Categorization of CMD based on educational level

Sl No.	Educational level	Depression	Anxiety	Stress	Depression+ Anxiety	Depression+ Stress	Anxiety+ Stress	Depression+Anxiety+ Stress
1	Lower primary (n= 4)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (100%)
2	Upper primary (n= 37)	1 (2.7%)	0 (0%)	0 (0%)	2 (5.4%)	0 (0%)	0 (0%)	34 (91.89%)
3	High school (n= 90)	0 (0%)	2 (2.22%)	1 (1.11%)	11 (12.22%)	0 (0%)	2 (2.22%)	74 (82.22%)
4	Higher secondary (n= 49)	1 (2.04%)	4 (8.16%)	0 (0%)	5 (10.2%)	0 (0%)	0 (0%)	39 (79.59%)
5	Graduates (n= 90)	7 (7.77%)	22 (24.44%)	0 (0%)	30 (33.33%)	2 (2.22%)	0 (0%)	29 (32.22%)
6	Post Graduates (n= 9)	0 (0%)	1 (11.11%)	0 (0%)	1 (11.11%)	0 (0%)	0 (0%)	7 (77.77%)

Table 7 Study participants based on parity

Sl No.	Parity	Number of Participants (N=279)
1	Primi gravida	107 (38.35%)
2	Multi gravida	172 (61.64%)

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Table: 8 Categorization of CMD based on parity

Sl No.	Parity	Depression	Anxiety	Stress	Depression+ Anxiety	Depression+ Stress	Anxiety+ Stress	Depression+Anxiety+ Stress
1	Primi gravida (n=107)	2 (1.86%)	6 (5.6%)	0 (0%)	20 (18.69%)	1 (0.93%)	1 (0.93%)	77 (71.96%)
2	Multi gravida (n=172)	7 (4.06%)	23 (13.37%)	1 (0.58%)	29 (16.86%)	1 (0.58%)	1 (0.58%)	110 (63.95%)

Table 9 Study participants based on previous history of miscarriages

SI No.	Category	Number of Participants (N=279)
1	With history	71 (25.44%)
2	Without history	208 (74.55%)

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Table: 10 Categorization of CMD based on previous history of miscarriages

SI No.	Category	Depression	Anxiety	Stress	Depression+ Anxiety	Depression+ Stress	Anxiety+ Stress	Depression+Anxiety+ Stress
1	With history (n=71)	1 (1.4%)	5 (7.04%)	0 (0%)	7 (9.85%)	0 (0%)	0 (0%)	58 (81.69%)
2	Without history (n=208)	8 (3.84%)	24 (11.53%)	1 (0.48%)	42 (20.19%)	2 (0.96%)	2 (0.96%)	129 (62.01%)

SI No.	Trimester	Number of participants (N=279)
1	1st	100 (35.84%)
2	2nd	75 (26.88%)
3	3rd	104 (37.27%)

Table 11 Study participants based on trimester

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Table: 12 Categorization of CMD based on trimester

SI No.	Trimester	Depression	Anxiety	Stress	Depression+ Anxiety	Depression+ Stress	Anxiety+ Stress	Depression+Anxiety+ Stress
1	1st (n=100)	2 (2%)	25 (25%)	2 (2%)	2 (2%)	2 (2%)	2 (2%)	65 (65%)
2	2nd (n= 75)	1 (1.33%)	20 (26.66%)	1 (1.33%)	15 (20%)	3 (4%)	5 (6.66%)	30 (40%)
3	3rd (n= 104)	2 (1.92%)	14 (13.46%)	2 (1.92%)	10 (9.61%)	8 (7.69%)	8 (7.69%)	60 (57.69%)

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