



MATERNAL MENTAL HEALTH AND ITS ASSOCIATION WITH SOCIODEMOGRAPHIC FACTORS AND DELIVERY RELATED PRACTICES

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ABSTRACT

Background: Maternal mental health problems are one of the major public health challenges. Recent studies on low and middle income countries reported that the prevalence of maternal mental problem ranges from 10-41%.

Objectives: To determine the prevalence and determinants of maternal common mental disorders (CMD) among the study population.

Methods: A community based cross sectional study was conducted in Aligarh, Uttar Pradesh, India, from July 2016 to Dec 2016, among 164 women who had ≥ 1 children in the age group of 0-23 months. A WHO pre-qualified questionnaire SRQ20 (Self Reporting Questionnaire 20) was used to assess the mental health of mothers. Statistical analysis was done by SPSS version 22.

Results: Among 164, 85(51.8%) were positive for Common mental disorders (CMD). Maternal CMD was significantly associated with low socio economic status, low education, high parity among mothers. CMD was also significantly higher among mothers who choose institutional delivery over home delivery.

Conclusions: Maternal Mental health problems are neglected in our country. Measures for early identification, treatment and prevention of maternal mental disorders should be taken.

KEYWORDS : Common Mental Disorders, Maternal, Mental, Health

INTRODUCTION

Maternal mental health problems are considered to be one of the major public health challenges. Mental health problems of pregnant women and mothers of new borns in Low and Middle Income Countries (LMICs) is a serious but under-recognized public health problem which contributes to substantial maternal and infant morbidity and mortality. (WHO *Maternal Mental Health, Report 2008*)

The WHO has defined maternal mental health as "a state of well-being in which a mother realizes her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to her community". (Herrman & Swartz, 2007). Worldwide 10 % of pregnant women and 13 % of women who are postpartum experience some form of mental disorder, primarily depression and anxiety. In developing countries the condition is even worse with prevalence of mental disorder as 15.6 % during pregnancy and 19.8 % after child birth. (WHO, *Maternal Mental Health*)

Recent studies on low and middle income countries reported that the prevalence of maternal mental problem ranges from 10-41%. Severe depression may even lead to suicide, which is an important cause of death among pregnant and post-partum women. Depression and anxiety in mothers leads to poor newborn and child care practices. The poor mental health of mothers is ultimately reflected upon their children's growth and development. (WHO *Maternal Mental Health, Report 2008*) There are increased instances of suboptimal breastfeeding and complimentary feeding practices, reduced mother to child interaction and increased prevalence of medical disorders among their children. (Black et al., 2008). Lancet Series on Global Mental Health has shown evidence on the association between maternal depression and child nutrition. (Prince et al., 2007) Maternal mental health is a public health challenge. The

prevalence of maternal mental disorders is significantly higher in LMICs but still the research and efforts in this area are very minimal. Therefore our study was conducted with the following objectives:

1. To determine the prevalence of common maternal mental disorders (CMD).
2. To determine correlates/determinants of maternal mental health.

MATERIAL AND METHODS:

A cross sectional community based study was done in the registered areas of urban and rural health training centres of Department of Community Medicine of J.N. Medical College, Aligarh, Uttar Pradesh (India). Households were selected using systematic random sampling. All mothers who had children less than 2 years were interviewed through a WHO pretested and prevalidated Questionnaire-Self Reporting Questionnaire (SRQ 20) which contains 20 YES or NO questions. A response of "Yes" is given a score of 1, while "No" is given a score of 0. A cut off score of 8/20 was taken as positive for CMD (Common Mental Disorders). SRQ 20 has acceptable levels of reliability and validity in developing countries and is recommended by the World Health Organization as a screening tool for depression. (WHO, *SRQ 20 User's Guide, 1994*).

Due to the lack of sufficient data on maternal mental health in UP or Aligarh, the study was done as a pilot study in the period between June 2016 to December 2016. A total of 164 participants were taken.

Inclusion Criteria:

Women (15-45years) with ≥ 1 children less than 2 years of age were included in the study.

Exclusion Criteria:

- Women who had youngest child more than 2 years of

age were excluded from the study.

- Mothers who were critically ill and non-compliant with the study or those who did not give consent were excluded from the study.

RESULTS:

As shown in figure 1, the prevalence of maternal common mental disorders (maternal CMD) was **51.8 %** in our study population. Out of 164 subjects, 85 (51.8%) had a score of 8 or more in the SRQ 20 questionnaire and were taken as *CMD positive*. Rest 79 (48.2%) had a score of < 8 and were taken as *CMD negative*. Figure 2 shows the SRQ 20 frequency plot. Mean score of SRQ 20 in our study was **7.13 ± 3.8**. Median score of SRQ 20 was **6.0**.

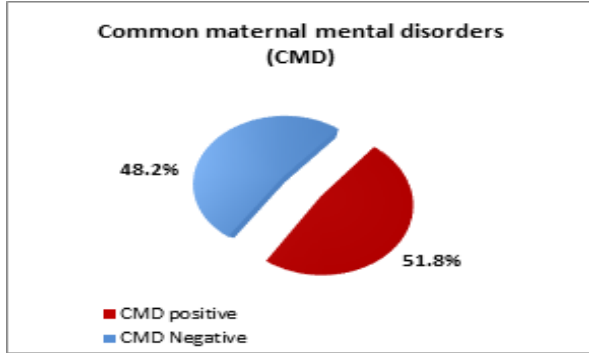


Fig 1 : Prevalence Of Maternal Common Mental Disorders (MaternalCMD)

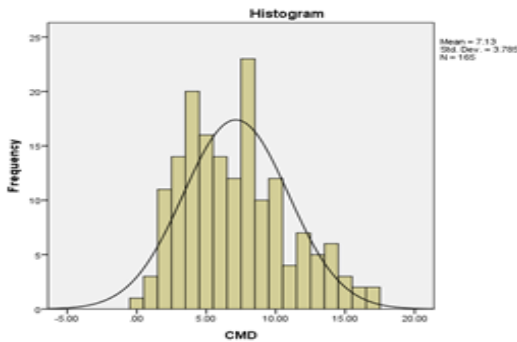


Figure 2 : SRQ 20 Frequency Plot.

Table 1 shows the socio demographic profile of the study population. Out of 164 participants, 74(45.1%) were in age group 21-25 years, 53(32.3%) in between 26-30 years. 13 (7.9%) were less than 20 years and 24(14.7%) were above 30 years. Majority of the study participants [97(59.3%)] were illiterate and had no formal education followed by education of primary [17(10.5%)]; middle school [23(14.2 %)], high school [13(7.9%)]; inter [6(3.8%)]; graduation [4(1.8%)]; and Post graduate [4(2.5%)].

According to modified BG Prasad Classification, majority of the study population belonged to Class IV [86(52.4%)] followed by Class III [31(18.9%)]; Class V [38(23.2%)]; Class II [8 (4.9%)] and Class I [1(0.6%)]. Majority [86(52.4%)] of our participants were living in nuclear families while rest were living in joint family [69 (42.1%)] and 3 generation [9 (5.5%)] family set up.

Table 1: Socio-demographic Characteristics Of Study Population

Characteristics	Frequency(No.)	Percentage (%)
AGE IN YEARS		
<20years	13	7.9
21-25years	74	45.1
26-30years	53	32.3
>30	24	14.7

Total	164	100
EDUCATION OF MOTHERS		
NoEducation	97	59.3
Primary(5 th std)	17	10.5
Middle(upto8 th std)	23	14.2
Highschool(10 th)	13	7.9
Inter(12 th)	6	3.8
Graduation	4	1.8
PG&Above	4	2.5
Total	164	100
SOCIO ECONOMIC STATUS*		
ClassI	1	0.6
ClassII	8	4.9
ClassIII	38	23.2
ClassIV	86	52.4
ClassV	31	18.9
Total	164	100
TYPE OF FAMILY		
Nuclear	86	52.4
Joint	69	42.1
3generation	9	5.5
Total	164	100
PARITY OF MOTHERS		
LowParity(≤3) ^a	124	75.6
HighParity(>3) ^b	40	24.4
Total	164	100

*Modified BG Prasad Classification (2016); ^aLow Parity:< 3 children, ^bHigh Parity: ≥3 children

As shown in Table 2, among the socio demographic correlates low socioeconomic status (p=0.026) and low education (p=0.049) was significantly associated with common maternal mental disorders (CMD). Maternal CMD was higher in women in higher age group. However, this was not found to be statistically significant. Mothers with high parity (3 or more children) had significantly higher chance of having common maternal mental disorder compared to mothers with low parity (<3 children) (p=0.006). Further, among the antenatal care and delivery related practices, mothers who chose institutional delivery over home deliveries were found to be less likely to be CMD positive and this result was statistically significant (p=0.01) [Table 3]

Table2:AssociationofmaternalCMDwithSocio-demographicfactors:				
Determinant	CMD present No(%)	CMD absent No(%)	Total No(%)	
Social Class^a				
ClassI	0	1	1(100)	$\chi^2=5.7, df=4, p=0.026, \text{Significant}^*$
ClassII	3(37.5)	5(62.5)	8(100)	
ClassIII	15(39.5)	23(60.5)	38(100)	
ClassIV	48(55.8)	38(44.2)	86(100)	
ClassV	19(61.3)	12(38.7)	31(100)	
Type of family				
Nuclear	49(56.9)	37(43.0)	86(100)	$\chi^2=2.279, df=2, p>0.05, \text{Insignificant}$
Joint	31(44.9)	38(55.1)	69(100)	
3Gen ^b	5(55.5)	4(44.4)	9(100)	
Agegroupofmothers				
<20yrs	4(30.7)	9(69.2)	13(100)	$\chi^2=3.3, df=3, p>0.05, \text{Insignificant}$
21-25yrs	37(50)	37(50)	74(100)	
26-30yrs	30(56.6)	23(43.4)	53(100)	
>31yrs	14(58.3)	10(41.7)	24(100)	
Education of mothers				
Illiterate	54(55.7)	43(44.3)	97(100)	$\chi^2=8.8, df=7, p=0.049, \text{Significant}^*$
Primary	8(47)	9(53)	17(100)	
Middle	14(60.8)	9(39.1)	23(100)	
10 th Std	5(38.5)	8(61.5)	13(100)	

Inter	2(33.3)	4(66.6)	6(100)	
Graduation	2(66.7)	2(33.3)	4(100)	
PG&Above	0	4(100)	4(100)	
Parity of mothers				
Lowparity ^c	57(45.9)	67(53.6)	124(100)	$\chi^2=6.99,$ $df=1,$ $p=0.006,$ Significant*
HighParity ^d	28(70)	12(30.0)	40(100)	

^cp<0.05(Significant);^aBased on Modified B.G.Prasad Classification; ^b3 generation family; ^cLow Parity:≤ 3children, ^dHigh Parity: ≥ 3 children ; CMD: Common Mental Disorders, χ^2 : Chi square; df: degree of freedom.

Table3: Association Of Maternal Cmd With Delivery Related Practices

ANCCheck ups	CMD Present No(%)	CMD Absent No(%)	Total No(%)	
NoANC	14(56.0)	11(44.0)	25(100)	$\chi^2=0.6,df=2,$ $p>0.05,$ Insigificant
≤3ANCVisits	33(54.09)	28(45.9)	61(100)	
>3ANCVisits	38(48.7)	40(51.2)	78(100)	
Type of delivery	CMD Present No(%)	CMD Absent No(%)	Total No(%)	
Home Delivery	48(76.1)	15(23.8)	63(100)	$\chi^2=26.9,$ $df=2$ $p<0.000,$ Significant*
Government	29(33.7)	57(66.3)	86(100)	
Private	8(53.3)	7(46.7)	15(100)	

^cp<0.05(Significant); CMD: Common Mental Disorders, ANC: Antenatal Care; χ^2 : Chi square; df: degree of freedom.

DISCUSSION:

Although pregnancy and childbirth are generally viewed as a joyful time to most families, they also put women at risk of developing mental problems. The prevalence of maternal depression varies across the region in the world. These differences might be due to differences in the type of instrument and cutoff score used, cultural variables, differences in perception of mental health, differences in socioeconomic environments, levels of social support or its perception, as well as biological vulnerability factors.(Gavin, N. I., et al., 2005). In our study among 164 women, 85(51.8%) had common mental disorders(CMD). In a multi-national community based study conducted among mothers using SRQ 20, instrument, it was found that the overall prevalence of maternal depression was about 30% in India, 33% in Ethiopia and 30% in Peru. (Harpham, 2005). In a cross sectional survey among adults (16-65 years) who attended primary care clinics in Goa (India), the prevalence of CMD was 46.5%.(Patel et al., 2008) Data in relation to maternal mental health in India is very minimal and deficient. However, studies conducted world wide in developing countries have shown high prevalence of common mental disorders among mothers. In a study, Nguyen et al found that maternal CMD ranged from 31% in Vietnam to 49% in Bangladesh (Nguyen et al., 2014) while Khan et al reported a prevalence of maternal CMD as 46.2 % among mothers in Bangladesh.(Khan & Flora, 2017). In another study conducted among mothers in a rural sub-district of Pakistan it was found that over one-quarter of mothers suffer from depression shortly before and after childbirth.(Rahman et al., 2003). Studies in the past particularly in the developing countries have concluded similar findings. In a study in south Africa the prevalence of CMD in women during the antenatal period was reported as 39%.(Hartley et al., 2011) Depressed mothers were significantly more disabled, had more threatening life events, and poorer social and family support than non-depressed mothers.(Rahman et al., 2003) Due to lack of proper mental health screening programs and adequate research on maternal mental health in India, the actual

situation still remains inconclusive. Therefore, more research is needed in this regard.

Our study reports that mothers belonging to low socioeconomic status were significantly at higher risk for developing maternal common mental disorders (CMD). Many studies in the past have reported that low socioeconomic status and low family income have been found to be a strong predictor of mental health issues among mothers. In a systemic review Fisher J. et al. found that low socioeconomic status was significantly associated with depression in mothers. (Fisher et al., 2010) Low socio economic status was a strong predictor of poor maternal mental health in studies conducted in Pennsylvania (US)(Abbasi et al., 2013) Brazil(Paffer et al., 2012) and Australia.(Woolhouse et al., 2015) Low family incomes puts families at risk for insufficient daily domestic supplies which may further elevate the stress levels among mothers and may lead to mental health issues among them.

In our study it was found that mothers who were illiterate or had low education levels were at significantly higher risk of having CMD compared to their more educated counterparts. In a multinational systematic review by Fisher et al found that poor education of mothers was a strong predictor of maternal common mental disorders.(Fisher et al., 2012) Similar association were also reported in studies conducted in other developing countries like Pakistan (Saeed et al., 2017), Brazil(Paffer et al., 2012) and Ethiopia (Senturk et al., 2011). Education plays an important role in quality of life and may contribute towards better understanding of both physical and mental health.

Our study reports that mothers who choose institutional delivery (private or government) had significantly lower rates of CMD. This association is important since it enhances the fact that a healthy mind resides in a healthy body. Mothers who have a better health care seeking behaviour would be physically more healthy and thus the chances of their mental well-being are high.

Our study shows that CMD was significantly higher among mothers who had high parity (≥3 children). Similar association has been reported in studies conducted in the past in developing countries.(Nhiwatiwa et al., 1998; Senturk et al., 2011)

In our study, maternal CMD was higher in mothers living in nuclear families and those who were in higher age groups. However, these associations were not found to be significant.

Social support was demonstrated to be important in the transition to motherhood and has an impact on emotional coping.(Tefera et al., 2015). It gives direct effects on emotional stability, attenuated effects of stressful life events, and prevents depression. Early treatment of prenatal and postnatal mental health problems would not only benefit the mother's mental health, but also the child's physical health and development. Attention to mental health is fundamental in attaining the Millennium Development Goals of improving maternal health, reducing child mortality, promoting gender equality and empowering women, achieving universal primary education and eradicating extreme poverty and hunger.(World Health Organization, 2005)

CONCLUSION:

The prevalence of maternal common mental disorders are variable across nations. However its prevalence is relatively higher in developing countries. Our study found that 51 % of mothers tested positive on SRQ 20 test which is a screening

questionnaire for common mental disorders. Mothers from low socioeconomic status, living in nuclear families, had no or minimal schooling, and with high parity were at a greater risk for development of common mental disorders which includes depression and anxiety disorders. Measures for early identification, prevention and treatment of common maternal mental disorders including depression and anxiety should be taken. More research related to maternal mental health is needed.

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