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Title: The Prevalence of depression, anxiety & stress among mothers of preterm infants in Omdurman Maternity Hospital, Khartoum state, Sudan

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ABSTRACT

Emotional distress among mothers of preterm infants is common due to events associated with their child's birth & health status, mothers of preterm infants frequently report increased symptoms of stress, depression, anxiety while their babies are admitted into the NICU. Mothers of premature children with a younger gestational age & lower birth weight often report increased psychological concerns. The experience of having a premature child can be particularly difficult for mothers. The emotional strain & stressors commonly associated with having a premature child may not only affect a mother's psychological well-being, but also the behaviours that mothers exhibit during interactions with their babies due to their expectations of having a physically healthy baby.

Key words: NICU, DASS-21, preterm infants, emotional distress, anxiety, depression, stress.

Introduction:

Preterm birth is defined by the World Health Organization (WHO) as all births before 37 completed weeks of gestation or fewer than 259 days since the first day of woman's last menstrual period (WHO,1977), Neonatal Intensive Care Unit (NICU).(1)

The birth of the preterm infant (less than 37 weeks),usually results in hospitalization of the baby in the NICU for uncertain period (1) for special care.(2)

Despite the admission for long time for preterm ,the special care could be provided, still the outcome is uncertain & as a result psychological disturbances to the mother might result.(1,3)

Between 2001 & 2003 a study was conducted in a university healthcare hospital in Scandinavia at tertiary level by the Public Health System, which included mothers of preterm infants <37 weeks gestational age.(4) This concluded that 30% of those mothers were not prepared to confront the premature birth of the infant.(5)

No previous study in Sudan done before to address the issue related to psychological disturbances among mothers with premature babies, beside increase number of premature babies due to improvement in mother & child healthcare.

Objective: To identify the prevalence of emotional distress among mothers of preterm infants less than 37 weeks gestational age in Omdurman.

Method: This study was a descriptive cross sectional hospital based study done in Omdurman Maternity Hospital. The data was collected between January 2013 & April 2013. One hundred consecutive mothers of preterm infants with gestational age less than 37 weeks were screened using the DASS-21 item.

Results: The results obtained using the DASS-21 revealed that 38% of mothers had depression, 43% had anxiety, & 56% had stress.

Conclusion: In this study emotional distress among mothers of preterm infants is common. A preterm birth impacts negatively on maternal psychological symptoms & maternal responsiveness. Early psychological intervention to those mothers while admission will protect against psychological distress.

Conflict of interest: Measuring emotions using a new psychometric scale not used in Sudan

Background:

Preterm birth is defined by the World Health Organization (WHO) as all births before 37 completed weeks of gestation or fewer than 259 days since the first day of woman's last menstrual period (WHO,1977), Neonatal Intensive Care Unit (NICU).(1)

The birth of the preterm infant (less than 37 weeks), usually results in hospitalization of the baby in the NICU for uncertain period (1) for special care. (2)

Despite the admission for long time for preterm, the special care could be provided, still the outcome is uncertain & as a result psychological disturbances to the mother might result.(1,3)

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No previous study in Sudan done before to address the issue related to psychological disturbances among mothers with premature babies, beside increase number of premature babies due to improvement in mother & child healthcare.

Objectives:

To assess & estimate the prevalence & pattern of emotional distress among mothers of preterm infants <37 weeks gestational age

To identify the associated risk factors in mothers of preterm infants leading to psychological problems.

Methodology:

This was a conventional cross sectional hospital based study, conducted in Omdurman Maternity Hospital (obstetrics & Gynecology, a governmental tertiary hospital located in Omdurman city, Sudan, receiving referred patients from the capital of Sudan & from other parts of the country ,with capacity of more than 250 beds.

The NICU have a capacity of 64 beds, 23 incubators, a portable X-Ray machine, a UV Ray device, devices for measuring vital signs & blood gases. The service to those tiny babies is offered by well-trained specialists, registrars, & nurses lead to dramatic decline in the number of neonatal deaths. The hospital running academic activities for upgrading of the staff beside the routine daily work as well as emergency intervention for mothers & baby.100 mothers of preterm babies were enrolled in the study in the period between January 2013-April 2013. The preterm is defined by the WHO as all births before 37 completed weeks of gestation or fewer than 259 days since the first day of a woman's last menstrual period.(WHO,1977)

Inclusion criteria: All Sudanese mothers of preterm babies below 37 weeks in the NICU.

Exclusion criteria: Babies outside the definition, mother with psychological problems occurred previously or during postpartum period, critically or seriously ill mothers, or mothers who refused to be enrolled & foreigner patients. Well validated questionnaire was used including demographic variables, information regarding pregnancy, delivery, neonatal follow up & the psychological & psychiatric history for the

mothers. The questionnaire is based on DASS scale & expert specialist in the subject. Pilot study using 20 patients before the commitment into the research to see if the questionnaire is functioning well or not. The study was approved by the SMSB, permission from hospital ethical committee was taken together with consent from mothers. Data was analyzed using descriptive statistic .

Results:

Results as shown in the table below are as follow:

Eighty mothers out of 100 had no stress, 27 mothers out of 100 had mild stress, 56 mothers out of 100 had moderate stress, 8 mothers had severe stress & 1 only out of 100 had extremely severe stress. (Table1)
Eight mothers out of 100 had no anxiety, 14 out of 100 had mild anxiety, 28 out of 100 had moderate anxiety, 43 out of 100 had severe anxiety, & 7 out of 100 had extremely severe anxiety.(Table 2)
30 mothers had no depression, 38 out of 100 had mild depression, 28 out of 100 had moderate depression, 3 out of 100 had severe depression, 1 out of 100 had extremely severe depression.

Table 1

The prevalence of stress according to severity n=100

	Frequency	Percentage%
0-9 (normal)	8	8
10-19(mild)	27	27
20-29(moderate)	56	56
30-39(severe)	8	8
49+(extremely)	1	1

Table 2

The prevalence of anxiety according to severity n=100

	Frequency	Percentage%
0-7(normal)	8	8
8-15(mild)	14	14
16-23(moderate)	28	28
24-31(severe)	43	43

32+(Extremely)	7	7

Table 3

The prevalence of depression in relation to severity n=100

	Frequency]	Percentage%
0-7(normal)	30	30
8-15(mild)	38	38
16-23(moderate)	28	28
24-31(severe)	3	3
32+(extremely)	1	1
Total	100	100

Discussion

Maternal moderate depression symptoms in this current study affect 28% of mothers enrolled in this study according to DASS-21 our findings in this regard was similar to studies done in Bangladesh, low prevalence than that found in Australia however more prevalence that reported among South Africa women where prevalence in these counters reported as 29.3%, 40.3%, 12%-63% respectively.(76) However it is sounded to have similarities in the prevalence with Bangladesh study due to some cultural background, but life style in developed country like Australia quality of life could explain high rate of depression in Australia. Despite South Africa being in the region, have relatively sounded socioeconomic status, but recorded low prevalence of depression might be explained by difference in the rating.

Not only differences in rating but also sample size can affect the overall prevalence, actually this factor of sampling was evident in one Nigerian study where only 60 women enrolled & prevalence found to be 15.1% (91)

In the current study the prevalence of anxiety was disturbed as follows; 8% were normal, 14% was mild, 28% were moderate, 43% were severe, & 7% were extremely severe. In the same study mentioned formerly in the USA 10% developed anxiety disorder, NICU mothers were tested by state & trait anxiety scale which showed significantly higher anxiety scores with a $p<0.5$. A recent study in the USA conducted in March 2013,20% of mothers had clinically significant levels of depression whereas 43% had moderate to severe anxiety using TAI(99). This result as well supports the current study inspite of the different questionnaires used. The majority of mothers described premature birth as a traumatic stressor. Compared to this current study anxiety was found to be higher than the former study.

Significant symptoms of depression were found in 43% of mothers & persisted 1 month after birth.(100) This supports the result found in this study which was found to be 28%. In this study 56% of mothers of premature infants have been reported as having moderate stress, 28% having moderate anxiety, & 28% having moderate depression. This on the other hand supports the results of a study performed in the

Turkey in which the prevalence of emotional distress was found to be between 28%-70% if measured if measured individually. Another study in Portugal in 2004, where the assessment was through STAI & BDI, reports the prevalence rate of emotional symptoms such as anxiety, dysphoria or depression.(101)

Anxiety, stress which fund to be in this current study supported by study done elsewhere human being feelings might be similar despite cultural variations.

Conclusion: Most parents of NICU infants experience a discrepancy between pre-birth expectations & post-birth realities, including the medical condition of the mother & infants, separation from infants, an overwhelming NICU environment, & so on. Parental symptomatology is related to infant prematurity, as well as the stress of having an infant the NICU.

Recommendations: Provision of sophisticated pregnancy, delivery, & high quality neonatal nursery care, should be aligned with psychological care, social care should be an essential part of maternal management for all pregnancies & deliveries particularly when the case is prematurity. Finally multi centre study is urgently needed.

Strengths:

The study address important group of vulnerable population & attract the attention of policy maker to provide psychological care to those group of population.

Limitations:

Sample size was small, many rating system exist & all derived from developed country to be adapted in this study.

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