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POST PARTUM EMOTIONAL DISTRESS IN MOTHERS OF PRETERM INFANTS: A CONTROLLED STUDY

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**POST PARTUM EMOTIONAL DISTRESS IN MOTHERS OF PRETERM INFANTS:  
A CONTROLLED STUDY**

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**ABSTRACT**

**Objective:** To investigate whether mothers of preterm infants experience more psychological distress than mothers of normal full term infants in the immediate postpartum period.

**Design:** Cross sectional prospective study of postpartal women using the Beck Depression Inventory(BDI) and the GHQ-30.

**Setting:** Neonatal intensive care units and the obstetric units of Wesley Guild Hospital, Ilesa and Multipurpose Health Centre, Ilesa(These are component Units of Obafemi Awolowo University Teaching Hospitals Complex, Osun State Nigeria).

**Results:** Of the 60 postnatal women recruited into the study, 33 mothers of preterm neonates formed the index group and 27 mothers of full term normal infants constituted the control group. More mothers of preterm neonates(27.3%) had GHQ-30 scores which categorised them as having significant emotional distress than mothers of full term normal infants(3.7%). Similarly more mothers of preterm neonates(15.1%) were more depressed than mothers of full term normal infants(3.7%). These differences were found to be statistically significant when the mean scores of the two groups on the instruments were compared.

**Conclusion:** These problems are not usually detected nor appropriately referred by the paediatrician/obstetrician to the psychiatrist. This has a number of implications for preventive psychiatry. A multidisciplinary approach is therefore essential in the detection and management of these problems.

**INTRODUCTION**

The postpartum period is a time when women run a high risk of developing psychiatric problems(1). The spectrum of disorders range from mild emotional disturbances at one extreme to florid psychosis at the other end. There is abundant clinical and research work dealing with these conditions(2-5). Some recent studies have demonstrated an association between peri-partum complications and postpartum mental disorders. Preterm delivery has also been implicated as a factor(6,7).

Infant mortality rate is still very high in many developing countries, including Nigeria, with neonatal deaths accounting for over half of such infant deaths(8). This may be responsible for the fatalistic attitude people in this environment have towards ill neonates(8). Neonatal intensive care units are relatively few in developing countries including Nigeria, and the facilities are usually inadequate due to the lean financial resources of most of these countries(9). With the reduced chances of survival of the preterm neonate in Nigeria, the birth of a preterm baby to a family in addition to the stresses

associated with childbirth itself may have an adverse effect on maternal psychological well-being.

The present study was designed to investigate whether mothers of preterm infants experience more psychological distress than mothers of full term infants in the immediate postpartum period.

**MATERIALS AND METHODS**

The study was carried out at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) which provides tertiary health care services to Osun, Ekiti, Ondo and neighbouring states in Nigeria with a catchment population of over 10 million. Ethics and Research committee approval was obtained. Informed consent was obtained from participants after the aims and objectives of the study had been explained.

The index group consisted of mothers of preterm low birth weight (PLBW) babies consecutively admitted into the Neonatal Unit of Wesley Guild Hospital, Ilesa (One of the component hospitals of OAUTHC). Preterm low birth weight cases were defined as mothers with babies of less than 2500 grams plus one or more of the following; gestational age less

than 37 weeks, preterm labour (PTL) or premature rupture of membranes. The mothers were interviewed a week after the babies were born/admitted. This was to allow the mother to adjust to the ward routine and to the admission of the baby. All the babies were assessed by one of us, a consultant paediatrician.

A second group of women who had given birth to normal birth weight infants were used as controls. The controls consisted of women who had delivered at the obstetric unit of Wesley Guild Hospital, Ilesa, or multipurpose Health Centre, Ilesa (another unit of OAUTHC). Selection into this group was done by going through the admission and discharge registers of these units, and picking those whose age and educational status matched those of the index group. The women were interviewed in the well baby clinic when they came for BCG immunization usually one week after delivery. Those with a past history of psychiatric illness were excluded in both groups.

*Measurements:* Socio-demographic information about the mothers was obtained using a specially constructed socio-demographic data schedule. The paediatric data of their babies were also obtained using a prepared proforma and from the hospital records.

The women were then screened using the 30-item General Health Questionnaire (GHQ-30)(10), and the Beck Depression Inventory (BDI)(11). The GHQ-30 and BDI have been standardized and used extensively in Nigeria(12-14). Caseness on the GHQ-30 was defined as a score of 5 and

above. The BDI is a 21-item self assessment of depression severity. Item scores ranged from 0-3, and total scores of 0-9 indicate no significant symptoms, 10-18 mild/moderate, 19-29 moderate/severe, and 30-63 extremely severe depression. The items of the questionnaire were translated into Yoruba, the language of the indigenes of Osun State, and then back-translated in order to confirm the translation.

Literate subjects completed the screening instruments in English or Yoruba. One of us read out the questions and marked the responses of those subjects who were not literate.

Statistical analysis was carried out using SPSS version 7.5 for windows. Normally distributed data in the two groups, were assessed with the students t-test, and categorical data with the chi-square test. The significance level was set at  $P < 0.05$ .

## RESULTS

Of the 60 post-natal women recruited into the study, 33 were mothers of preterm babies, and 27 were mothers of normal full term infants. The demographic and some clinical characteristics of these post-natal women are shown in Table 1.

There were no statistically significant differences when the two groups were compared in terms of the sociodemographic characteristics of mother's, age, educational status and marital status.

Table 1

*Demographic and Clinical Variables of Mothers and Babies*

	Index (N=33)	Control (N=27)	
Mothers mean age in years ( $\pm$ SD)	28.27 (5.0)	28.51 (5.9)	t=0.18 df=58, NS
Marital Status			
Single	2	0	Fisher's Exact =0.497, NS
Married	31	27	
Parity			
Primiparous	13	7	X <sup>2</sup> =1.4, NS
Multiparous	20	20	
Babies Birth Weight (Mean $\pm$ SD)	1.55 (0.34)	2.93 (0.26)	t=16.28, df=58, P=0.001
Mode of Delivery			
Normal	29	26	Fisher's Exact =0.367, NS
Caesarean Section	4	1	
Abortions			
Previous	9	4	X <sup>2</sup> =2.6, NS
No previous	24	23	
Educational Group			
Nil	3	3	X <sup>2</sup> =2.0 df=3, NS
Primary	9	8	
Secondary	14	7	
Tertiary	7	9	
GHQ-30(Mean $\pm$ SD)	3.12 (4.05)		t=2.932, df=58, P=0.005
BECK Inventory (Mean $\pm$ SD)	4.27 (4.59)	0.66(1.73) 1.25(2.87)	t=2.965, df=58, P=0.004

**GHQ-30 scores:** There were 10 women who scored above the cut-off point on the GHQ-30; nine (27.3%) out of 33 in the index group, and one (3.7%) out of 27 in the comparison group.

The GHQ-30 mean score was 3.12 for the mothers of preterm babies and 0.66 for mothers of full term infants. This difference was statistically significant ( $t=2.932$ ,  $df=58$ ,  $P=0.005$ ).

**Beck-Depression Inventory (BDI) Scores:** The BDI was able to pick six women with mild to moderate depression (BDI scores of 10 to 18) in the study sample; five (15.1%) out of, 33 in the index group and one (3.7%) out of 27 in the comparison group.

The mean BDI score was 4.27 for the mothers of preterm babies and 1.25 for the mothers of full term infants. This difference in scores was statistically significant ( $t=2.965$ ,  $df=58$ ,  $P=0.004$ ).

**Obstetric Factors:** There were no significant differences when the two groups were compared in terms of parity (primiparous vs multiparous;  $X^2=1.4$ , NS), mode of delivery (Normal delivery vs caesarean section; Fisher's Exact=0.367, NS), or previous abortions (previous abortions vs no previous abortions;  $X^2 = 2.6$ , NS).

**Comparison within the index group:** The mothers of the preterm infants were divided into two groups according to the birth weight of their babies for the purpose of possible analysis. Mothers of very low birth weight (VLBW) (birth weight less than or equal to 1,500 grams) and low birth weight (LBW) (birth weight greater than 1,500 grams but less than 2500 grams) infants. There were 13 mothers of VLBW infants and 20 mothers of LBW infants. The mothers of VLBW infants had higher GHQ-30 mean scores (3.53), than mothers of LBW infants (2.85). This difference did not reach statistical significance ( $t = 0.471$ ,  $df=31$ , NS). No significant relationship found between GHQ-30 caseness and non caseness (GHQ-30<5 vs GHQ-30>5) and the birth weight groups (Fisher's Exact=1.00, NS). Mothers of VLBW infants also had higher mean BDI scores (4.76) than mothers of LBW infants (3.95). This difference did not reach statistical significance ( $t=0.495$ ,  $df=31$ , NS). Of the 33 mother-infant pairs, 31 babies (93.9%) had complications. Twenty four (72.7%) of these babies had neonatal Jaundice (NNJ). Out of the 24 babies with NNJ, eight had apnoeic attacks in addition, four also had convulsions and two had apnoeic attacks with convulsions. Of the nine babies who did not have neonatal jaundice four had apnoeic attacks, two had apnoeic attacks with convulsions and one had intestinal obstruction. There were only two babies out of the 33 who had no complications.

## DISCUSSION

The study has shown that significant levels of post-natal emotional distress are experienced by mothers of high-risk infants in the immediate post partum period.

The mothers of preterm infants had more GHQ-30 caseness (27.3%) than mothers of normal full term infants (3.71%). Maternal depression also occurred more frequently in mothers of preterm infants (15.1%) in contrast to (3.7%) rate shown by mothers of full term infants. These findings in mothers of preterm infants are in support of previous studies (15,16). Even though the prevalence of depression (15.1%) in our sample is lower than 55% reported by Locke *et al* (15), this could have been due to methodological differences, but our findings are comparable. In their study they found that 17 out of 31 mothers manifested depression on the Centre for Epidemiologic studies-Depression Scale (CES-D), and maternal depression was related to severity of initial neonatal illness.

It is noteworthy that thirty one (93.9%) out of 33 preterm babies in our cohort had various complications, and 24 of them (72.7%) had neonatal jaundice in contrast to full term babies in the control group who had no associated problems. The neonatal health status could have adversely affected maternal well being in our study sample. It was also observed that mothers of babies weighing 1,500 grams, or less had higher mean GHQ-30 and BDI scores than mothers of babies weighing more than 1,500 grams but less than 2500 grams, even though these differences did not reach statistical significance. A previous study carried out by Demier *et al* (16) showed birth weight to be a risk factor for postnatal emotional distress.

Emotional problems are thus common in mothers of high risk preterm infants in the immediate postpartum period and they are not usually detected nor appropriately referred by the obstetrician/ paediatrician to the psychiatrist. This has a number of implications for preventive psychiatry. A multidisciplinary approach is therefore essential for appropriate detection and management of these problems.

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