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FACTORS ASSOCIATED PSYCHOLOGICAL WELL-BEING OF MOTHERS WITH LOW BIRTH WEIGHT (LBW) INFANTS WHO ARE ADMITTED AT NEONATAL INTENSIVE CARE UNITS (NICU)

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ABSTRACT

Psychological well-being is relatively complex notions with a variety of components that may contribute to it. Individuals differ in their overall levels of psychological health and well-being. Mother with low birth weight (LBW) babies required hospitalization especially in the Neonatal Intensive Care Unit (NICU) more exposed to the experience of anxious symptoms. Therefore, it would become a stressful event that might cause psychological distress or even emotional crisis in mother's when their infants were LBW especially premature. Health promotion is very important to prevent this problem. Health promotion efforts aimed at improving infant health status must do so by improving women's health. Improving women's health before, during, and after pregnancy is the key to reduce the human and economic costs associated with infant mortality and morbidity. To improve both women's and infants' health, efforts should include an emphasis on preventive health care services, family-oriented work site options, changes in social norms, and individual behavior modification. Therefore, it is important for health care professionals in NICU to be able to assess the factors associated psychological well-being of mother's with LBW infant.

Keywords: Psychological well-being of mothers, Low birth weight (LBW), Neonatal Intensive Care Units (NICU)

INTRODUCTION

Low birth weight (LBW) in premature babies is associated with hospitalization (Hamilton, Martin & Ventura, 2007). Admission to neonatal unit is usually precipitated by a crisis or problem that means a newborn can be cared for on a normal post natal ward or at home. Ishtiyaq, Aijaz & Qazi (2016) conducted a study in the neonatal I.C.U Skims Soura, India revealed that neonatal mortality due to LBW was 26%, which is in between mortality rates of developing and developed countries. According to Boo *et al.*, (2008) in Hospital Tuanku Jaafar, Seremban, Malaysia, 3341 live births delivered in the hospital, 422 (12.6%) were LBW infants.

Mothers with LBW are at risk for experiencing psychological distress and depression following the child's birth, and although these symptoms tend to decrease over time, some mothers remained depressed (Miles *et al.*, 2007). Research has found links between persistent maternal depression and less optimal child outcomes (Campbell *et al.*, 2007). Study done by Yam & Au (2004) compared the experiences of having sick baby in the Neonatal Intensive Care Unit (NICU) among mothers with and without the right of abode in Hong Kong. The study stated that mothers with having sick baby in the NICU suffered from a high level of stress. Therefore, it is essential to examine predictors of maternal depression trajectories over time in families with LBW infants.

LITERATURE REVIEW

Every pregnant mother wants their baby to be born in normal and healthy conditions. The mother needs to adapt her idealized image of the baby to the real baby who is actually there. However, this adaptation becomes more difficult for the mother with LBW babies, hospitalized in the NICU. This can lead to a experience of anxious symptoms; even when the baby is clinically stable. Therefore, it would become a stressful event that might cause psychological distress or even emotional crisis in mother's when their infants

were LBW especially premature that required to be admitted at NICU. These stressors and experiences in the NICU setting can contribute to feeling of distress, especially in mothers (Davis *et al.*, 2003). Parents of infants admitted to an NICU or Special Care Nursery (SCN) are believed to experience the heightened distress compared to the parents of healthy infants (Halbreich, 2005).

Individuals differ in their overall levels of psychological health and well-being. These individual differences are important because well-being is associated with many positive life and health outcomes (Davis *et al.*, 2003). Murray & Lopez (1996), predicted that depression will be the second greatest cause of premature death and disability worldwide by the year 2020 according to reports by World Health Organization (WHO). The suffering caused by depression is profound yet often underestimated. It can affect every aspect of a person's being: their feelings, thoughts and functioning.

Post Partum Depression (PPD)

Post Partum Depression (PPD) is defined as a non-psychotic depressive illness of moderate severity that can last for several weeks, months or even a year after childbirth if left untreated (Chan *et al.*, 2002). Mostly parents of LBW premature babies often have feelings of resentment or guilt. Davis *et al.* (2003) reported that 40% of mothers reported significant depressive symptoms at one month after preterm delivery. It is supported by Eriksson & Pehrsson (2002), who found that the premature birth of an infant and the following neonatal intensive care cause psychological distress among mothers and can have a traumatizing effect on parents. A mother's experience of having her baby admitted to a neonatal intensive care unit is often described as an 'emotional chaos' (Flacking *et al.*, 2006).

According to Miles & Holditch-Davis (2007), the most commonly reported emotional responses are anxiety, helplessness and loss of control, and fear, uncertainly and worry about the outcome for their infant. The parents of the premature infant would experience high stress and sense of hopelessness in NICU which mostly is due to inadequate knowledge and awareness on how to play their parental role and how to interact with their premature infant during hospitalization. Therefore, great care must be taken by caregivers to be considerate of the myriad emotions experienced by parents while care is given to their infant. Thus caregivers should be prepared to provide additional support to the family.

In the study by Singer *et al.*, (1999), the severity of maternal depression was linked to less favorable child cognitive development outcome for infants born with low birth weights. The lack of sleep in the hospital may be due to the presence of other women and their babies and the hospital routine which may then contribute to the fatigue state of the mothers; factors related to an infant's medical status can influence parental stress levels. Parents are also commonly reported to be suffering from a feeling of guilt and shame, depression and sadness, and a sense of failure and disappointment. This is supported by Carter *et al.*, (2005), where parents of premature infants experience greater amounts of stress, depression, and anxiety while their infant is in the NICU, especially since this is an unexpected and stressful event. Mothers of preterm infants experience more severe levels of psychological distress in the neonatal period than mothers of full-term infants.

Psychological well-being is a relatively complex notion with a variety of components that may contribute to it. Psychological health contains two factors: psychological distress and psychological well-being (Wilkinson & Walford, 1998). They point out that psychological distress is usually operationalized by measures of anxiety and negative effect, while psychological well-being is usually operationalized by measures of life satisfaction, happiness and positive affect. They also mention that depression may be presented in both psychological distress and psychological well-being. Research has shown that depressed mothers speak less to their infants and touch and cuddle their infant less (Herrera, Ressland & Shepard 2004), which effects the attachment formed between mother and infant (Chase-Brand, 2008).

Neonatal Intensive Care Unit (NICU)

NICU is "a unit of a hospital specializing in the care of ill or premature newborn infants"(NICUs: definition, 2006). The infants admitted to an intensive care unit are sicker than infants in a special care nursery. The atmosphere in the neonatal intensive care unit has an aura of emergency with its heat; noise, presence of critically ill newborns; high-tech biomedical equipment and the large number of health care professionals

intensely preoccupied often overwhelm the parents. The technological advances and the improved understanding of pathophysiology of neonatal problems have increased the survival rate of the preterm infants, especially the ELBW and VLBW infants. But these advances have had negative effects on the parents and their infants.

Special Care Nursery (SCN)

SCN unit is a place along with the pediatrics department of a hospital, where the infants receive special attention but are not in a condition that requires intensive care. The admission criteria for the SCN are infants who require any one or more of the following conditions: (1) continuous non-invasive cardio respiratory monitoring, (2) oxygen therapy, (3) intravenous therapy, (4) tube feeding, (5) phototherapy, (6) frequent glucose or bilirubin monitoring, (7) constant supervision and observation for transient problem, and (8) special investigations, unhealthy or convalescing low birth weight babies will also be admitted to the SCN. Due to the advances in technology and the presence of monitoring equipment in the SCN, there are now considerable similarities between the environment of NICU and SCN (Phoebe, 2006).

Factors associated psychological well-being of mother with LBW infants

Hospital and NICU environments factor

Hospitalization of the premature infant in the NICU is considered as a psychological crisis in the family, causing feelings of powerlessness and stress, especially for the mothers (Linhares *et al.*, 2000; Davis *et al.*, 2003). The parents may be frightened and overwhelmed by the sights and sounds of the NICU environment, with its plethora of monitoring equipment, health care professionals who tend to speak in unfamiliar jargon, the intense care and control provided, and the sight of other unusually small and sick infants. Improved neonatal intensive care facilities over the last few decades have led to the increased survival of low birth weight babies (Meadow *et al.*, 2004). The unfamiliar environment can cause feelings of anxiety, apprehension and exclusion and limit mothers' ability to verbally express their individual needs (Flacking *et al.*, 2006).

According to Miles (1989), the greatest sources of stress for the parents whose premature infants were admitted to a special care nursery appeared to emanate from two sources: (i) the appearance and behaviors of the infant, and (ii) the delay in being able to perform the normal parental care giving activities. Miles (1989) proposed that preparatory interventions with parents whose infants are admitted to NICU/SCN should include the provision of prior information on the physical appearance and behaviors of premature infants to be expected, both for their own and others' babies.

Within the context of the neonatal intensive care/special care nursery (NICU/SCN), there is a potential for delay in the parent-infant attachment process. Bialoskurski, Cox & Hayes (1999) reported that attachment is a complex human experience that requires early physical contact and in the NICU/SCN environment as the focus of care is the infant, based on essential technology (e.g. presence of monitoring equipment) and procedures (e.g. routine cranial ultrasound). These do not promote an environment conducive to parent-infant interactions. Bialoskurski, Cox & Hayes (1999) identified that the immediate attachment process occurs when the mother's feelings are positive toward the infant. This is more likely to occur if the mother is able to see the infant immediately after birth and when the physical contact occurs between the mother and the infant. When the infant is premature the delayed attachment process may occur as the infant's appearance and behaviors do not conform to maternal expectations. If there is a break up of a relationship between the partners, or when the infant is handicapped or premature at birth, the difficult attachment process may occur, making attachment a problematic process for the mother and the father.

Previous study reported that especially mothers had feelings of guilt, helplessness, anxiety, psychological distress, being out of control and irritability as they perceived the SCN environment was stressful to them including signs and sounds, the infant's appearance and behavior, staff communication, and parental role alteration (Miles *et al.*, 1999). Stimuli from the SCN environment (e.g. the physical sights and sounds of the nursery, infant's appearance and behaviors) and the quality of staff communication and relationships (psychosocial sources) also contribute to the stress experience.

Socio-demographic factors:

Socioeconomic status (SES) is an individual's or family's economic and social position relative to

others, based on family income, education and occupation (usually of mother's and father's). There are some indications in the literature that for parents of ill neonates, family functioning, socioeconomic status, parent perceptions of infant illness, high trait anxiety and available sources of support all contribute to parents' perceptions of stress (Pinelli, 2000). These factors may also contribute to the mothers' perceptions of stress.

Various maternal socio-demographic factors contribute to the onset of depression in the postpartum period, such as lower socioeconomic status (Beck, 2001). The socioeconomic level has been shown to be lower in highly stressed mothers of preterm infants than in less-stressed mothers of preterm infants or mothers of full term infants (Muller-Nix *et al.*, 2004). In addition, in the data from Borghini *et al.*, (2006) study, the socioeconomic status was lower in a group of high-risk preterm infants than in groups of low risk preterm infants and full term infants.

In another study low professional achievement with lower life satisfaction connected to other factors (e.g. infant's low birth weight and disappointment with delivery) were associated with risk of depression (Bergant *et al.*, 1999). Belsky *et al.*, (2007) found that socioeconomic status and family structure are associated with the quality of the mother–infant relationship and the infant's development. Mothers in the low, medium and high socio-economic categories had LBW incidence of 3.2, 2.0 and 0.1% respectively (Amosu *et al.*, 2010). Family income is generally considered a primary measure of a nation's financial prosperity. Income or poverty status had a statistically significant effect on both low birth weight and the neonatal mortality rate.

Recent studies have found some significant differences in birth weight among different social and economic groups; the more disadvantageous groups experience lower mean birth weights (Dickute *et al.*, 2004; Ramachandran, 2000). Low income adversely affects food and nutrition security, thus increasing the risk for poor pregnancy outcomes. However, in contrast Conley & Bennett (2000), found that the maternal income during pregnancy has no effect on the risk of delivery of LBW babies. Social scientists have more recently identified LBW as a powerful indicator of developmental and socioeconomic outcomes (Reichman, 2005). The social, emotional and financial impact of a low birth weight baby on families is considerable.

Conley & Bennett (2000) examined the association between birth weight and life chances in a bidirectional framework, finding that the relationship between income and low birth weight may be counterintuitive. Specifically, they found that income during pregnancy has no effect on the risk of delivering a low birth weight (less than 2,500 grams, or five pounds, eight ounces) baby when hereditary risk is controlled, either through inclusion of parental birth weight status or by deployment of family fixed-effects models.

INFANT FACTORS

Regarding infant-related factors, preterm delivery infant's health problem was associated with post partum depression (PPD) (Tamaki, Murata, & Okano, 1997). In the study of Miles *et al.*, (1999), the findings indicated that mothers of medically fragile infants experienced both distress and growth as the result of their child's illness. Worries about their babies and their childcare abilities are particularly stressful to new mothers as they are the primary caregivers. Stressed mothers had less positive feelings towards their infants and were less likely to respond to infant cues. Study done by Hopkins, Campbell & Marcus (1987) stated that depressed mothers rated their infants as more difficult, fussy and unadoptable than infants of those non-depressed subjects.

DISCUSSION

Support and knowledge is necessary towards the mothers of LBW to handle low birth weight infant especially premature infant. Since parents of LBW especially premature infants are frequently psychologically and emotionally distressed immediately after the delivery, it may be necessary for staff to repeat essential information to them several times before it is well understood by them. Mothers' situations could be improved if nurses had increased knowledge and understanding about how mothers experience this situation. NICU professionals should be more careful about depressive symptoms of NICU mothers and should provide counseling when it is necessary.

However, still fewer studies have examined factors (maternal, infant or obstetric) that may modify the

relationship between preterm birth and PPD. Maternal anxiety was also assessed on the basis of reports on mothers' experiences related to the separation from their full-term babies, hospitalized at an NICU.

The implementation of psychological intervention programs is recommended for the purpose of promoting meeting between mothers, in a protected setting, so that mothers feel free to express their feelings. Implementation of multi-professional services in Neonatal Units is also recommended to meet the needs of these patients and their families. Health care professionals working in the NICU often do not expect parents to be stressed because the infants are relatively well, not ill and they have been admitted for observation only or mainly because of their prematurity. It is important for the nurses, doctors and allied health staff to understand the experiences of these parents and to consider from the onset, ways of responding to the stress experiences of these mothers especially during the first few days and week following the unexpected early birth of their infant.

As a result, a high level of stress or even depression may ensue and affect mother's perceptions of psychological well-being. Higher levels of distress have been reported in parents with an infant admitted to the NICU compared to parents of healthy full-term infants (Carter *et al.*, 2005). Various intervention programs have been developed in an effort to provide additional support for the parents. Some of the programs have been found to lead to better outcomes for mothers on parents-infant interaction and home environment (Newnham, Milgrom & Skouteris, 2009).

CONCLUSION

Health promotion is very important to prevent this problem. Health promotion efforts aimed at improving infant health status must be promoted along with the improvement of women's health. Improving women's health before, during, and after pregnancy is the key to reduce the human and economic costs associated with infant mortality and morbidity. To improve both women's and infants' health, efforts must targeted to long-term, societal elements that involve policy or legislative changes. These efforts should include an emphasis on preventive health care services, family-oriented work site options, changes in social norms, and individual behavior modification. Therefore, it is important for health care professionals in NICU to be able to assess the psychological well-being of mother's with LBW infant. The effects of mothers stress should be attenuated by the NICU nurses who have the direct contact with the mothers.

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