International Journal of Nursing Sciences 3 (2016) 362–366

Contents lists available at ScienceDirect

International Journal of Nursing Sciences

journal homepage: http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132

ORIGINAL ARTICLE

Supporting mothers to bond with their newborn babies: Strategies used in a neonatal intensive care unit at a tertiary hospital in Malawi

Ellemes Phuma-Ngaiyaye [a, *], Fatch Welcome Kalembo [a, b]

[a] Mzuzu University, Department of Nursing and Midwifery, P/Bag 201, MZUZU 2, Malawi
[b] Curtin University, Kent Street, Perth, Western Australia 6102, Australia

ARTICLE INFO

Article history:
Received 22 August 2016
Received in revised form
14 September 2016
Accepted 31 October 2016
Available online 18 November 2016

Keywords:
Maternal–newborn bonding
Neonatal intensive care
Strategies
Maternal involvement

ABSTRACT

Background: Maternal–newborn bonding during the first hours of is crucial to infant development. Effective bonding requires that newborn baby and mother be close to each another, so that the baby can signal his/her needs and the mother can respond. However, normal bonding process is hindered by illness, as the infants will be separated from their mothers and admitted to neonatal intensive care units. No study has explored the techniques applied by nurses and midwives to facilitate bonding between mothers and their sick newborn babies admitted in neonatal intensive care units in Malawi.
Purpose: This study aimed to investigate the strategies for supporting maternal–newborn bonding for mothers whose neonates were admitted to an intensive care unit at a tertiary hospital in Malawi.
Methods: An explorative qualitative design was used, and 15 participants (10 mothers and five nurses/midwives) were recruited. Data were collected by conducting in-depth interviews. Audio recorded data were transcribed verbatim and analyzed by utilizing ATLAS. ti version 7 in accordance with Hennink's stages of content analysis.
Results: It was showed that nurses and midwives used different approaches to facilitate maternal–newborn bonding. The responses revealed two major themes: mother–newborn interaction and mother–nurse/midwife interaction. Mother–newborn interaction involved breastfeeding and maternal involvement in newborn care, whereas mother–nurse/midwife interaction involved effective communication and psychosocial support. Maternal–newborn bonding promotes a mother's successful transition into motherhood, nurses and midwives should actively initiate strategies facilitating early maternal–newborn bonding.
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1. Introduction and background

Bonding is crucial to an individual's lifetime developmental process. Attachment theory describes bonding as a continuous process in which a child creates a relationship with the mother [1]. The first hour of life after birth is the ideal time for maternal–newborn bonding to proceed [1,2]. This process enables parents and infants to involuntarily establish a nurturing connection, which is essential for an infant's future development [1,3]. Bader posited that the development of bonding begins during pregnancy and continues throughout the child's life [4]. Karl et al. observed that an effective maternal–newborn bonding requires that infants and mothers be close to each other, such that can infants can signal their needs and mothers can respond [5]. When their conditions permit, newborns must establish skin-to-skin contact with their mothers soon after birth to promote early initiation of bonding [3]. However, the natural maternal–newborn bonding process and the attachment process are hindered by many factors, such as illness, which requires that a newborn baby be admitted in a neonatal intensive care unit (NICU). The restrictions of NICUs prevent mothers from fostering a connection with their newborn babies [6].

Furthermore, previous studies reported that mothers consider the experience of having their baby admitted to a NICU as devastating, traumatic, and life-altering [7]. Although nurses and midwives provide the necessary care to newborn babies in these settings, parents must deal with being separated from their newborns, relinquishing their power to decide over the care of their newborn, and losing the sense of parental role [7,8]. In addition, the parents' confidence is shaken, as they must now consider their

* Corresponding author.
E-mail address: ephuma@yahoo.co.uk (E. Phuma-Ngaiyaye).
Peer review under responsibility of Chinese Nursing Association.

http://dx.doi.org/10.1016/j.ijnss.2016.10.001
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newborn in their actions. All of these factors lead to problems in maternal–newborn bonding. Johnson observed that the quality of the maternal–newborn bonding during the first hours of life significantly affects the mother's mental health and the newborn's well-being, development, and adaptation throughout life [9]. For instance, a newborn's hospitalization and consequent separation from his/her mother can lead to inadequate mother–newborn bonding because of limited interactions. This phenomenon can induce a long-term negative impact on the physical, cognitive, and pyschosocial develoment of the child [4]. Therefore, these mothers must be given support to ensure that they experience adequate bonding with their babies. Nurses should implement strategies that support maternal–newborn bonding while providing specialized care in NICUs [10,11].

Similar to the practice in most Western countries, newborn babies are separated from their mothers during the course of care in NICUs in Malawi [12]. Mothers are allowed limited visits to their infants in NICUs, and they cannot be present during medical ward rounds, nursing shift handovers, and other routine care. For breastfeeding, mothers visit their newborns in NICUs at three-hour intervals. However, the separation of mothers from their babies is reportedly a stressful ordeal that adversely affects both the mothers and the newborns [4,7,8,12]. Although several studies in other countries have reported various strategies for facilitating adequate bonding between mothers and neonates in NICUs, no information is available as regards the strategies used by nurses and midwives working NICUs in Malawi [4,10–12]. To address this gap, we investigated the strategies used to support maternal–newborn bonding for mothers whose neonates were admitted to a NICU at a tertiary hospital.

2. Methodology

2.1. Research design

We employed an explorative, qualitative approach.

2.2. Study setting and sampling

The study was conducted in a tertiary hospital in Malawi. The recruited participants consisted of mothers with newborns admitted in the NICU and the nurses and midwives working in that unit. The two groups of participants were recruited purposively and were deemed knowledgeable about the strategies for supporting maternal–newborn bonding because of their experience of having and caring for newborns in the NICU, respectively, [13]. The participants were selected by convenience sampling. All mothers, nurses, and midwives who were eligible for the study and available during the data collection process were contacted to participate. A total of 15 participants (i.e., 10 mothers and 5 nurses and midwives) volunteered and consented to participate. This sample size was reached following the attainment of data saturation.

2.3. Data collection

Participants were subjected to in-depth interviews using an interview guide. The interviews were conducted in *Chichewa*, which is a Malawian vernacular language, for mothers, and in English for the nurses and the midwives. On the one hand, the interviews of the mothers were focused on their experience of having a newborn baby in the NICU and their perceived support provided by healthcare providers to help them bond with their newborns. The questions included: Describe your experience of having your newborn baby admitted in the NICU? How do the nurses/midwives help you bond with your newborn baby in the NICU? Participants were asked probing questions to gather further explanations about their experiences and clarify their views. On the other hand, the nurses and the midwives were asked to recount how they supported the mothers to bond with their newborns. The interviews lasted for 25 min–50 min depending on the amount of details provided by the interviewees. The interviews were ended when no new information was elicited from the study participants. The interviews were recorded, transcribed, and translated, for subsequent analysis.

2.4. Data analysis

Data collection and analysis were conducted concurrently to examinethe information and ascertain the emerging issues. Content analysis, systematic coding, and categorization were applied for data organization [14]. Two research assistants transcribed the data verbatim, and then the researcher repeatedly read through the transcribed data while listening to the recorded audio to obtain a thorough understanding of the content. Utilizing the qualitative software ATLAS.ti version 7, the researcher identified codes and themes on the basis of similarities, which were then categorized under two main themes.

2.5. Trustworthiness

The trustworthiness of this study was achieved by the use of multiple informants (mothers, nurses, and midwives) and peer checking. Peer checking verified the credibility of the results. Furthermore, the researcher invited colleagues to independently identify codes and themes from the data, which were later compared with the researchers' developed codes and themes. Differences were discussed, and harmonization was reached among the members.

2.6. Ethical considerations

Ethical clearance was granted by the National Health Sciences Research Committee. Permission was sought from the management of the tertiary hospital. Each participant gave both verbal and written consent prior to their participation. The integrity, privacy, and confidentiality of the participants were maintained throughout data collection and reporting.

3. Results

The findings demonstrate that nurses and midwives utilize different strategies to support maternal–newborn bonding in the NICU. Two main themes were identified: *maternal–newborn interaction and maternal–nurse/midwife interaction.*

3.1. Maternal–newborn interaction

The findings revealed that nurses and midwives assisted the bonding between mothers and their newborns by promoting and encouraging early maternal–newborn interaction. This was achieved by using different approaches, such as early initiation of breastfeeding, involvement of mothers in the care of their newborns, and skin-to-skin contact through kangaroo mother care.

3.1.1. Early initiation of breastfeeding

The majority of both groups of participants reported that the mothers were encouraged to breastfeed their babies in the NICU. The mothers were allowed to visit the NICU for 30 minutes every three hours. Breastfeeding was viewed as an important practice promoting maternal–newborn attachment and bonding, as

revealed by the following statement:

> *"When the neonate is admitted in this unit …, we encourage the mother to visit for breastfeeding every three hours … [F]eeding their babies is important … for attachment as well."* (Nurse/Midwife)

By breastfeeding, mothers experienced the role of being a mother, and the practice made them closer to their babies, as revealed by the following statement from a mother: *"We visit the ward … for breastfeeding. In that way, I feel close to the child … I get that feeling of 'So this is my baby,' you know … that feeling."*

3.1.2. Maternal involvement in caring for the newborn

The majority of both groups of participants reported that during their visits in the NICU, the mothers were encouraged to participate in the care of their newborns. For example, apart from feeding their newborns, the mothers were encouraged to change nappies, touch their babies, and talk to their newborns. This finding was revealed in the following statement from a mother:

> *[T]hey assist us. They also involve us in feeding the baby, which we do by ourselves. Sometimes, we change nappies. The nurses also encourage us to talk and play with our babies.*

Echoing the same sentiments, the nurses and the midwives acknowledged that encouraging the mothers to participate in the care of their newborn helped them to develop confidence. Furthermore, the nurses and the midwives demonstrated to the mothers how they could care for their babies in the NICU, as revealed in the following response:

> *During visiting hours, we encourage the mothers to interact with their newborns. It's their baby, so we encourage them to feed the baby and make sure the baby is clean. We demonstrate to them how to do it to raise their confidence.*

3.1.3. Skin-to-skin contact

The findings revealed that mothers were supported to bond with their newborns through kangaroo mother care (KMC), which enabled a continuous skin-to-skin contact. Both groups of participants reported that for premature newborns, the mothers were encouraged to provide KMC as soon as the baby's condition was stable to withstand the kangaroo care position. Using this approach, the mothers felt close and responsible for the care of their newborn, as revealed in the following statement from a mother:

> *This method is good. I am caring for my own baby. I am always close to my baby, feeding him and changing nappies. In this way, the baby knows that I am his mother, because we are always together.*

Another mother expressed confidence in caring for the baby, as the physical contact provided by the KMC approach enabled the mother and the newborn baby to know each other better and stay connected. This finding was revealed in the following statement from a mother:

> *With Kangaroo care, I am always connected to my baby. We are used to each other. I have that feeling that I have my baby. I feel comfortable breastfeeding her and caring for her. We are always together and not separated.*

3.2. Maternal–nurse/midwife interaction

The findings revealed that the interaction between mothers and nurses and midwives in the NICU plays a vital role in promoting maternal–newborn bonding. Two approaches were identified under this theme: psychosocial support and effective communication.

3.2.1. Psychosocial support

The majority of both groups of participants reported that providing mothers with psychosocial support was crucial for facilitating maternal–newborn bonding. The nurses and the midwives acknowledged that a newborn's hospitalization in the NICU was a stressful ordeal for mothers. Thus, the nurses and the midwives ensured that the mothers were supported through counseling and guidance. Furthermore, the nurses and the midwives built a trusting relationship with the mothers by ensuring that they did not express judgment during their interactions. This was revealed in the following statement from a nurse and midwife:

> *The mothers are usually anxious, and sometimes even depressed. Seeing your baby in this environment brings a lot of fear to the mothers. So, as care providers, we help them … counsel them, and supporting them psychologically. We try to be positive. You cannot establish a relationship if you are judgmental. So, we make sure that we are always positive toward them, so that they can express their concerns. In this way, they can easily bond with their newborns.*

Similarly, the mothers reported that nurses who were friendly and supportive toward their needs provided a conducive environment for maternal–newborn bonding. The mothers reported that meeting friendly nurses and midwives in the NICU made them feel accepted and recognized as mothers. Such feeling raises their confidence in caring for their babies, as revealed in the following statement from a mother:

> *Sometimes when I visit, I meet friendly nurses who are willing to assist you in the care. The NICU environment is stressful, so they help us, support us, and encourage us to care for the baby. In this way, I become familiar with the environment and feel accepted as a mother. I do not think of concerns like 'how should I hold the baby?' I do not feel afraid, because the nurses are always there to assist.*

This experience encouraged the mothers to stay close to their newborns, thereby facilitating attachment and maternal–newborn bonding.

3.2.2. Effective communication

The majority of both groups of participants reported that the anxiety of mothers was relieved when the nurses constantly informed them about their newborn's condition and treatment, such that the mothers understood the health status of their babies. For instance, a nurse and midwife reported that:

> *We constantly provide information to the mothers. These newborns are brought here in critical condition from the labor ward. The mothers have been fully informed about the condition of their baby. So, when they come here, we ensure that we explain to them the condition of their baby, and we constantly update them about any progress. This practice alleviates maternal anxiety. Consequently, mothers participate fully when they visit the baby, and they feel free to ask questions. Effective communication also affects the bonding process.*

Similarly, the mothers reported that the updates they received from the nurses and the midwives as regards the health status of their newborns were helpful in mitigating their fears, allowing them to develop a "connectedness" with their babies. This was revealed in the following statement from a mother:

> *When I visited my baby in this ward, the nurse explained to me what was wrong with my child, and I understood. Each time I come to visit and breastfeed my child, the nurse always explains to me about the progress of my child. Sometimes, she just comes to fill out her chart, but she assists me in holding my baby for breastfeeding. This is good. I feel relaxed. I can feed my baby and care for my baby even if it is for a short period.*

This type of interaction between nurses and mothers was perceived as a crucial factor for the development of maternal confidence and participation in the care of their newborns, thereby contributing to maternal–infant bonding.

4. Discussion

The findings revealed that both groups of participants recognized the importance of early attachment and bonding between mothers and their sick newborn babies. Thus, healthcare providers promoted the maternal–newborn bonding process by employing different approaches, namely, *maternal–newborn interaction as well as maternal–nurse/midwife interaction.*

In this study, the nurses and midwives promoted maternal–newborn bonding by initiating early breastfeeding, maternal involvement in the care of the newborn, and skin-to-skin contact. Breastfeeding has also been reported as a way of creating a mother's feeling of "being close to the child" and enhancing the experience of "motherhood." This finding is similar to the reports of previous studies. For example, Buckley et al. reported that apart from providing nourishment, breastfeeding fosters a close contact between the mother and her newborn baby, thereby facilitating maternal–newborn attachment [10,15]. According to Buckley, the physical contact during breastfeeding increases the levels of maternal and newborn beta-endorphins, thereby reinforcing maternal and newborn interactions [15]. On this basis, Crenshaw recommended that nurses and midwives should actively promote breastfeeding among mothers with newborn babies in NICUs to maximize maternal–newborn contact [16]. Furthermore, by encouraging and supporting mothers to breastfeed their newborns in the NICU, the mothers experience a sense of importance, which contributes to their maternal role attainment, making them less anxious.

Maternal involvement in the care of the newborn was reported as another approach used by nurses and midwives to facilitate bonding between mothers and their newborns. Maternal involvement promoted self-esteem, as the mothers developed confidence in the care of their newborn babies. This finding concurs with that of Kearvell and Grant, who reported that parental involvement in the care of newborns in NICUs develops the confidence of parents and foster a connection with their baby [10]. A newborn's hospitalization in the NICU was found to be a stressful ordea [17,18] that prevents mothers from assuming the role of a primary caregiver. Kearvell and Grant observed that attachment and bonding are more likely to occur when the mother can see and have physical contact with her baby after birth [10]. In addition, Young highlighted that maternal–newborn bonding can result from positive bonding moments, such as eye contact or a gentle massage [1]. In this way, mothers developed confidence, a connection, and a "sense of being involved" with their newborn, all of which contributes to positive neonatal developmental outcomes. Maternal involvement in the care of their newborns enabled the mothers to have physical contact with their baby and respond to his/her behavioural cues, thereby establishing a secure attachment relationship and bonding through both physical and psychological contact [8].

The findings of this study also showed that skin-to-skin contact promoted the physical contact between mothers and their newborns. This approach was applied using kangaroo care strategy, particularly for mothers with premature babies. Unlike mothers who visited their newborns every three hours, mothers with premature babies stayed with the newborns to provide the kangaroo care. In this way, the mothers can provide a continuous physical contact with their newborns, making them feel close and responsible for the care of their newborns. Kangaroo care assists in the early establishment of positive relationships between mothers and newborns, and it decreases the risks of abandonment and abuse, thereby promoting maternal–infant bonding [19]. Similarly, Stevens et al. reported that parents involved in kangaroo care expressed that this strategy generated feelings of "warmth, calmness, and comfort" for bonding, as it provided both the mother and the newborn the opportunity to get to know each other in an intense and positive way [20]. Furthermore, skin-to-skin contact breeds the confidence of mothers to respond to the newborn baby's needs, further improving their bonding [19].

Maternal–nurse/midwife interaction was reported as another strategy that facilitated maternal–newborn bonding in the NICU. The study revealed that nurses and midwives provided psychosocial support to the mothers to reduce anxiety. As such, the mothers felt accepted and recognized as capable of fulfilling their role as mothers. The mothers were encouraged to stay close to their newborns. Consequently, the mothers' confidence is increased, leading to positive attachment and bonding with their newborns. In other studies, the nurses' continuous support for the parents of newborns in NICUs has also been associated with feelings of confidence and reduced confusion [21]. According to Lilo et al. parents who are supported, feel welcomed and empowered to participate in the care of their newborn, feel satisfied and are able to manage their stress, leading to the establishment of a positive relationship with their newborn [21]. Considering that parents are primary caregivers to their newborn babies [18], supporting and empowering them to attain their role increases their abilities and confidence, leading to a decrease in separation between the mother and her newborn thereby facilitating bonding and development [8].

Furthermore, effective communication such as the provision of information and updates on the infant's condition to the mother were reported to be important in facilitating maternal–newborn bonding. The participants, both mothers, and nurses, observed that when the mothers were given adequate information regarding their baby's condition, they became less anxious and participated in the care of their newborn baby. Provision of information and updates to mothers of newborns in NICU has also been reported by other researchers as key to the establishment of maternal–newborn bonding. When nurses provide information, the mothers understand the health needs of their newborn [10], become less anxious [17], become encouraged and participate in decision-making and care of their newborn [18] thereby enhancing close contact and development of maternal–newborn bonding.

5. Recommendations

Maternal–newborn bonding and attachment is key to the development of the newborn baby. The initial bonding process has been reported to provide support and foundation for the child's future emotional, social and developmental milestones. As such, nurses need to be active in facilitating maternal–newborn bonding

and attachment in the neonatal intensive care units to prevent long term effects resulting from ineffective bonding process. This study reveals that nurses used different strategies to promote maternal–newborn bonding; however, no reports on psychosocial networks for mothers to link with their fellow mothers with similar experience exist. Support networks have been reported to help mothers reduce hospital-related stress [10], leading to an improved maternal–newborn relationship. As such, neonatal intensive care units need to create and link the mothers to support networks to minimise stress.

6. Limitation

This study was conducted at one tertiary hospital, of the three tertiary hospitals providing neonatal intensive care services in the country. Accordingly, the findings in this study may not represent the practice of the other tertiary hospitals. In addition, this study focused on the strategies used to support maternal–newborn bonding in neonatal intensive care units; further research is needed to evaluate factors contributing to maternal–newborn bonding and attachment, as well as response to separation.

7. Conclusion

This study reveals that nurses and midwives working in the neonatal intensive care units recognise the importance of maternal–newborn bonding as the primary goal of care to enhance neonatal development. As such, the nurses and midwives encouraged maternal–newborn interaction through breastfeeding, maternal participation in newborn care, and skin-to- skin contact. In addition to maternal–nurse/midwife interaction, the nurses and midwives promoted maternal–newborn bonding through psychosocial support and communication. These strategies were perceived to facilitate maternal role attainment and development of confidence thereby promoting the establishment of maternal–newborn bonding and attachment. Considering that maternal–newborn bonding is important for successful transition into motherhood, nurses need to be active in initiating these strategies to facilitate early maternal–newborn bonding and attachment.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgement

The researchers wish to thank the management of Zomba Central Hospital for allowing the researchers entry as well as all the participants for their contributions.

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