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Barriers of Parenting in Mothers with a Very Low- Birth- Weight Preterm Infant, and their Coping Strategies: A Qualitative Study

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Abstract

Background

Becoming a mother is one of the most important life changing events that a woman experience. The birth of very-low-birth-weight preterm infants imposes many challenges for the mothers. There is insufficient information regarding the mothers' experiences on the process of becoming a mother when their preterm infants are in neonatal intensive care units (NICU). The aim of this study was to investigate the barriers of parenting in mothers with a very low- birth- weight preterm infant, and their coping strategies.

Materials and Methods

This study was carried out in a major neonatal care center in Urmia located in North West of Iran based on qualitative approach and by focusing on content analysis. Eighteen mothers were observed and interviewed while their infants were in NICU. The interviews were recorded and printed out. The data were analyzed according to Graneheim and Lund man. MAXQDA2007 was applied to manage the data.

Results

The participants' experience indicated that they experienced barriers in becoming a mother, so they use some strategies to cope with this situation. Merging the "barriers of parenting" and "applied strategies" resulted in extracting a category which was called "establishment of communication". Each category included subcategories.

Conclusion

It seems that there is an urgent need for healthcare professionals to be sensitive to the need of mothers regarding mothering process with consideration to culture as a bridge to facilitate the new role as a mother.

Key Words: Content analysis, Mothering, Preterm infant, Very low birth weight.

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1- INTRODUCTION

Becoming a mother is one of the most important life changing events that a woman will experience during the course of her life (1). The transition to motherhood of women's lives is an important evolutionary event (2). Becoming mother move from the current and the well-known reality to a new and unknown reality; this period is critical and is more stressful in women's life (3, 4). During this process, women are faced with many challenges and they are vulnerable (5, 6). Mother–infant attachment process evolves through the mother's increasing awareness of creating a new life during pregnancy to post birth when she begins to recognize the infant's unique characteristics and capabilities. Contact with and caring for the infant facilitates mother–infant attachment, as does the infant's increasing responsiveness to care giving (7). Becoming a mother creates significant coping complications for most women and is of particular responsibility to healthcare providers (8, 9).

During this period health and wellbeing of mothers, infants and even their family are threatened (10, 11). When a preterm birth occurs, the added stress complicates mastery of this developmental crisis, which is further complicated when the infant is admitted to neonatal intensive care unit (NICU) (12). However, this period is more critical with premature birth and when the infant is hospitalized in NICU, intensity of stress are increased, neonatal hospitalization in NICU and long term care in hospital are affected on maternal interactions and solidarity of mother and infant ,because most mothers are separated from their infants a long time (13-15). The prevalence of low birth weight (LBW) is different from 5 to 7 percent in developed countries and 19 percent in developing countries (16). A systematic review in Iran showed the prevalence of 7% and its increasing during 1991-2010 (17). Preterm birth and subsequent hospitalization of infants in NICU imply an extraordinary life situation for women in which the maternal role begins and evolves in a public and medically focused context (18). As the number of neonatal intensive care unit (NICU) admissions increase, the parents exposed to prolonged hospitalization associated with this experience also increases (14). Prolonged hospital care intrudes on maternal interactions and mother–infant bonding, especially so in NICUs where mothers and their infants are often separated for long periods of time (19). Although larger numbers of mothers are going through this experience, it remains potentially traumatic because of the sudden onset (20).

The research performed on the available data base show that there was no article about the process of motherhood in Iran. There was no evidence to help nurses and Midwives to understanding the experiences of mothers, who their babies hospitalize in NICU. On the other hand, process of becoming mother was a phenomenon based culture and Life experience of women about this issue can be different from one country to another country. In order to obtain evidence that can be based on help to process of becoming mother in mothers with low birth weight infants, this study aimed to determine barriers of parenting in mothers with a very low birth weight (VLBW) preterm infant, and their coping strategies.

2- MATERIALS AND METHODS

2-1. Study Design and Population

This study was performed qualitatively to examine the experiences of mothers with very low birth weight (VLBW) infants admitted in NICU ward. Mothers whom their infants were hospitalized in NICU of Motahhari Academic hospital in Urmia located in North West of Iran, were recruited in this study.

2-2. Methods

Participants were chosen based on purposive sampling and data were obtained using observation and semi-structured interview forms. In depth individual interviews were performed in an isolated room for the participants' comfort and privacy.

2-3. Measuring tests

The techniques and strategies for gathering information consisted of one-to-one in-depth interviews and participant observation. All data collection was conducted by the first author. Interviews took place in a quiet room in the hospital before their infants discharge from neonatal intensive care unit (NICU). The interviews lasted between one and two hours and were performed in two or three sessions. Totally, 41 interviews with 18 participants (5 people in 3 sessions and 2 sessions were conducted with 13 people), were conducted. All interviews were audiotaped. Notes were made during and immediately after the interview concerning actions and body language of the mother during the interview. The semi-structured interview form was composed of open ended questions in accordance with the qualitative nature of the study. This form consisted of two parts: an introduction and the interview. The introduction section began with questions such as "How do you feel about becoming a mother?"

In addition, each participant was asked the following questions: "What kinds of challenges do you have regarding your baby? Further questions were used to clarify or elaborate on the responses of the participants. In addition, interviews also the observation were used for data collection. Participants in the meeting and breastfeeding times were observed for a week. The purpose of the observation was realizing the interaction between mother and infant in the hospital and collection of more diverse data. After analyzing the interviews in cases needs for clarification the interview was repeated. The descriptive questionnaire form, which asked questions concerning the demographic information of the individuals and their obstetric background, was completed after the semi-structured interview. To avoid bias in the research methods, in-depth individual interviews were conducted using two researchers. Probing questions were asked during the interviews to obtain maximum variation, richness, and depth of responses.

2-4. Inclusion Criteria

Inclusion criteria were included: 1- ability to understand questions, and express one's own opinions; 2- having very low birth weight infant; 3- being nulliparous ; 4- desire to participate in the study; and 5- absence of psychiatric disease (or history of psychiatric disease).

2-5. Exclusion Criteria

Exclusion criteria were included mothers less than 20 years old and mothers with fatal or genetic diseases in their infants.

2-6. Ethical Considerations

Written permission was obtained from ethic committee of Urmia University of Medical Sciences. In addition, the researchers obtained informed consent from the women. Based on the right to privacy, patients have the right to the anonymity and the right to know that the data collected will be kept confidential. Therefore, patients were assured that all materials collected would be handled in the strictest of confidence and that their anonymity would be guaranteed. Thus, we have used numbers when presenting their comments and remarks. Following the in-depth interviews, researchers were available to the participants to provide additional health counselling if required.

2-7. Data Analyses

The interviews were analyzed based on qualitative content analysis according to Graneheim and Lundman (21). Each of the interviews came to represent one unit of the analysis. Each unit was read through several times and the answers to the two interview questions represented the two resulting domains of the mothers experiences of becoming a mother and what is their challenges regarding their infants. Meaning bearing units were then identified and further condensed.

Through further abstraction from the condensed meaning bearing units a higher level of logic is assigned to them with the use of a code. From this process eight subcategories evolved and were further organized into two categories which were more comprehensive. The categories are developed in order to answer the questions about what the women in the study are experiencing in their new situation as a mother. Through a combination of the categories on an interpretive level the studies theme is identified (Table. 1) (21). For management of data MAXQDA2007 software were used.

3-RESULTS

The sampling consisted of eighteen mothers who had low birth weight infants. The demographic factors of the sample were presented in **Table.1**. The aim of this study was to reveal the experiences of mothers with very low birth weight demitted in NICU regarding becoming a mother process. A content analysis of the data led to the extraction of one theme with 2 categories and 5 subcategories. Theme extracted was "scrambling for becoming a mother". Categories include "barriers for becoming a mother", and "establishment of communications", and each of them were included subcategories.

Table-1: Demographic factors of mothers with a very low birth weight in pre-term infant

Characteristics		Frequency	Percent
Age (year)	22-26	8	44.44
	27-31	6	33.33
	32-36	4	22.22
Education	Illiterate	2	11.11
	Elementary	6	33.33
	High school	6	33.33
	College	4	22.22

3-1. Barriers of becoming a mother

The category named ‘barriers of becoming a mother’ demonstrating the challenges the mothers faced in implementing their maternal role when their VLBW infants were admitted in a NICU, was extracted the data. Four factors were identified as barriers to obtain mothering role, which impacts on the experiences of motherhood, including environmental factors, maternal factors and neonatal factors.

3-2. Environmental factors

Environmental factors related to physical and psychological factors in NICU, which effects on different aspects of the experience of motherhood. Our findings showed that at first glance, it was shocking for mothers to see medical equipment attached to their infants. Using equipment and technology in NICU creates a scary environment, also connecting multiple devices to baby, increasing the physical

separation of mothers from their infants. Mother was worried that, they would not be involve in the care of infants, if their infants are a long time to connected equipment, and this disrupts the positive interactions between mother and neonatal. Participant N5 mentioned about this issue: "For the first time I went to see my baby, was hospitalized in the ward, when I saw him/her I was afraid, he was in the glass box (incubator), I could not hold him, because he had serum, he was connected to a tube (22 years old).

Participants believed that the nurses could help them to obtain enough information about the environment of NICU and how they could have interaction with their infants. In fact the mothers did not know what they can do for their infants and what they cannot do, they found that nurses could be responsible to support them and in this regard the nurses could create useful information. Participant N9 said that: "…Nobody told me what I can do for my baby, they (nurses) should at least say me what I do in the ward (22 years old).

One of the most important barriers that could prevent bonding of mother and infant in mothering process was the lack of accommodation facilities in NICU ward to create a condition for mothers to have opportunity to visit their infants and contact them without any limitation. Mothers who were living in other cities, where they were far from the place that NICU were located there, to meet their infant should have traveled daily or find a hotel for accommodation and it was expensive and not affordable for mothers.

On the other hand even for native mothers' full time contact with babies were prohibited because of space limitation in NICU ward. Participant N12 said that: "…I want take more time with my baby, so I need to be with my baby all time but I come from another city, where to stay?, but I do not have a place to roost, I have to come only once or twice a week" (27 years old). An extra barrier that detached the mothers and infants was restrained visiting. Based on the hospital's policy, the mothers could only see their infants for 30 min twice a day. Participant N18 said that: "…I am living here (Urmia) and I am waiting for meeting time to contact with my baby they (nurses) not allowed me to see her. They say there (NICU) is so crowded and there is no enough space for all mothers to stay there (24 years old).

3-3. Maternal factors

Some barriers for creating mothering process were related to the characteristics of the mother. Most women were not educated how to deal with low birth weight infant, so they did not have sufficient knowledge and practice regarding managing their infant. Mothers often were expressing that they are confused and unable to hold the baby and feed them.

The findings reflect this issue: "ever I do not know how hugging the baby, now that he was too small I was afraid to fall him, or was feeling bad in my embrace" (23 years old). Maternal health was another factor that made delay to have relationship and contact with their baby. Mothers, especially those who had high-risk delivery or women who had cesarean section, met their infants after a few hours, sometimes a few days. The following quotes illustrate this issue:

"I did not see my baby after anesthesia, before I gained consciousness they immediately took the baby to the neonatal ward, when I regained consciousness, I was alone, baby was not beside me. I could not know myself mother" (32 years old).
Mothers felt that they are located in dilemma. However they had a baby, but baby wasn't beside them. They could not be assigned the role of their motherhood. This conflict in the role creates difficulties in the process of becoming a mother.

3-4. Neonatal factors

Characteristics of very low birth weight infants are barriers of parenting. Mothers in their first contacts with their babies focused in their behavior and physical appearance, these characteristics of neonates were very stressful for mothers, and they were worried about their interactions with their infants, many mothers are frightened and concerned to see a very small baby and avoided to touch them. One of the participants said: "When I saw for the first time my daughter she was in the incubator, several tubes attached to her, she was very quiet, sometimes shaking hands and feet were small. I just, looked at her" (28 years old).

In the process of mothering the behavior of very low birth weight infants was extracted as a barrier. Some mothers expressed that they do not understand the behavior of their infant, so they cannot take care of them. Even when they were allowed to hug their babies they were concerned to hurt them. This is a quote of one mother: "until my baby was not well I don't hug him more, because I thought he does not hurt when he/she was in the incubator. I was afraid to touch her, I thought something might happen to him, especially I was worried about his head, it was very soft and delicate" (25 years old).

3-5. Establishment of Communication

In this study, mothers were using various strategies to remove barriers of becoming a mother, these strategies led to the extraction of the "establishment of communications". By using these strategies mothers were trying to communicate with their infants and staffs to eliminate the conflicts of their mother role. This category has two subcategories "interact with infant" and "getting support".

3-6. Interaction with infant

This sub-category includes two strategies, "physical interaction with infant", and "emotional interaction with infant". This strategy motivated the mothers to create an emotional communication between mothers and infant, it was lasting even when infant was far from the mothers.

3-7. Physical interaction with infant

Findings showed that in this study first interact of mothers with their infants were delayed. This is due to the physical condition of the infant and the feeling of low confidence about their abilities to deal with a very low birth weight baby. However, when the infant's condition was established mothers perusing the ways to interact with her infants. Data obtained from observation of mothers showed that mothers interact with their infants occurs gradually and step by step. At first the mother even with the encouraging of the nurses doubted to touch their babies.

It quoted one mother: " … at first I don't touch my baby with my hands. I was afraid to hurt him, you know he was very weak the force was 1,000 grams..., I was touched him very carefully, most of the time I don't touch him/her" (24 years old).

However with the stabilization of the baby's situation, and with the support and guidance of nurses, mothers touch and embrace their baby with more confidence.
One of the participants quote: "When he was better, I could easily touch him …establishment communicate with my child became easier, I felt that my baby less likely to injure, when I saw nurses around me, it was easier for me" (26 years old). So mothers gradually established physical interaction with their infant, and ultimately participated in care activities of their infant. In addition, mothers believed that physical interaction are an important factor in creating a meaningful relationship and doing the role of motherhood.

"….When I took my child in my arms it causes me feels proximity with my child, especially when breastfeeding; It was a good feeling (mother continued with spite), I was already thinking that this is

not possible…" (25 years old). However, what is certain that mothers could be limited benefit from physical interaction strategy with their infants.

3-8. Emotional interaction with infant

According to the findings, mothers used two methods to interact emotionally with their babies: 1- Awareness and understanding of the nature of very low birth weight infants, and 2- providing required materials of infant. In the first method, mothers tried to play their motherhood role by knowing and understanding their infant problems. One of the mothers said: "The first step to becoming a mother is that you know the needs and problems of baby, at that time you can play role of motherhood" (28 years old).

Mothers need to have information about health condition of their babies and required equipment and treatments methods of very low birth weight newborns to understand and be awareness of the nature of their babies. In this way they gradually would become familiar with the unique features of their infants. Thus by improving their knowledge about very low birth newborns needs and demands, they felt closer to their infants. In addition, mothers were trying to identify and provide required materials of their infants. In deed by taking these kinds of responsibilities they were showing that they are following their responsibilities regarding to obtain mothering role.

All mothers were trying to have breast feed and if they couldn't afford of accommodation in Urmia, they were sending their breast milk for their own infants by husbands. They were preparing other required items such as cloths, toys, diapers and bottles. Mothers indicated that doing these kinds of duties makes them to feel more effective to do their role so they mentioned them as the factors which creates emotional interacts with their babies. In other word initially mothers for pursuing the mother role tried to have physical interaction then by recovering the baby they struggled to promote the emotional interact with their babies.

3-9. Getting support

Our finding showed that mothers for manage the challenges of becoming a mother processes, motherhood, were pursuing and searching the supportive system. Three supportive systems extracted from the data: "staffs support", "family support", and "Similar mothers support".

3-10. Staffs support

Mothers were emphasizing that physicians and especially the nurses had informative supportive roles in the other word they received impressive information from nurses regarding their baby care. They reminding that how nurses were helping them and improving their confidence continually all the time when they were with their babies.

One of the mothers such quotes: "The first time they (nurses) hugged my baby, I was not able to do that, they asked me not to be afraid and the assured me nothing will happen, so I felt confidence and hugged my child" (23 years old). Mothers highlighted that received support from medical staffs were very essential in transmission to the new role.

3-11. Family support

Most participants expressed that their mothers and husbands were a source of strong support to help them to cope with the challenges of being a mother. Grandmothers were sharing their experiences with new mothers to have confidence and husbands were motivating them to have hope in the new role were playing their supporting role. Sometimes mothers preferred to ignore the baby so they refused to have contact with baby because of losing their own hope for

baby's survival. In this disaster condition husbands had very supporting and encouraging role. One of the mothers such quotes: "..., I did not want to feed my baby, because I thought If feed him; I would be in dependent with him, because I was not sure about his life. But my husband asked me to continue feeding him and he remembered me "God is with hopeful people", so I found myself more energetic to restart my baby breastfeeding (25 years old).

3-12. Similar mothers support

Other mothers who were waiting in a room behind the NICU ward always were discussing with each other about their babies. They were listening to each other's fears, anxious, worries and were sharing their experiences to cope with these kinds of concerns, so they made a supportive group to motivate each other.

One of the mothers such quotes: "Others cannot understand the feeling of us, only those who have been faced with this problem fully understand us" (24 years old). The findings showed that similar mothers support is a unique and special support. These mothers had a common sense of feeling with each other and their lived experiences were very survival in the processing of being a new mother.

4- DISCUSSION

The findings of this study showed that mothers of very low birth weight infants are faced with barriers in the becoming a mother process and applied some strategies to overcome to these barriers. These findings are consistent with the results of other studies which indicated that very low birth weight, together with the admission of their infants to the NICU, invented an unexpected crisis for mothers (22, 23). The birth of VLBW preterm infants poses considerable challenges for all mothers (7, 17, 20). Researchers have demonstrated that skin-to-skin, kangaroo care in NICUs encourages positive parenting (24-26). However, as indicated earlier, mothers did not employ kangaroo care, because of the environmental limitations. However, the findings showed that the Iranian mothers created alternative channels of contact with their hospitalized, premature infants using emotional connections, while the physical interactions were certainly limited. Consisting with the previous studies (26, 27), all of the Iranian mothers said that the physical interactions with their preterm infants were important to them, but they indicated that the emotional connections were also crucial and meaningful for them.

In agreement with the findings of the current study, Rogan et al. also indicated that some factors involved in the process of motherhood. According to their findings previous experience, social support and child behavior are factors affecting the process of becoming a mother, the defects in each of the factors, can create challenges in the process of becoming a mother (28). Iranian cultural factors created synergistic role in the process of mothering, and in the current study mothers not only did not consider the cultural factors as a barrier but also the motivations which were received from grandmothers in the process of mothering were crucial.

The mothers in this study were waiting eagerly to establish close relationships with their infants and they practiced many strategies to ensure that they would maintain connections with them. In this way, according to the findings, mothers of very low birth weight infants to overcome the barrier of mothering they applied the physical and emotional interaction, to achieve this goal. Thus, initially when the baby's physical condition was not favorable they tried to create emotional connection and then with improving the physical condition they started to establish physical connection for development of

mothering process. The mothers in this study expressed their breast milk and sent it to NICU by their husbands, making themselves feel that they were helping their infants. Previous studies have also shown that mothers who were not able to have physical contact with their babies they substituted the alternative methods such as emotional relationships with their own babies (26, 29). So Iranian mothers who were deprived to have skin to skin contact with their babies, developed emotional relations through establishing a sense of knowing and a sense of doing and that these were crucial for them to overcome the barriers of attachment. In the study conducted in Australia mothers attempted to construct themselves as 'real mothers', which involved establishing connection with their infants and normalizing them (30). This finding did not agree with some earlier findings carried which suggests that mothers of premature infants often feel alienated from their infants during their NICU stay (31), and lower levels of maternal engagement appear to persist after their infants have recovered and returned home (32).

In the present study mothers appreciated several sources of support that motivated them to overcome the difficulties and challenges they encountered. Regarding this issue they indicated that health staff and especially nurses supported mothers to develop bonding and attachment. However, healthcare professionals have an especially important role to play in supporting parents during their infant's hospitalization (33-35). In the current study mothers expressed that they desired to be acquainted on the special awareness and knowledge possessed by the medical staffs about their infants. Lupton and Fenwick in Australia found the same results (30). Other studies also demonstrated that the nurses' attitude to and treatment of the mothers was crucial in the improvement of the mothers' relationship with their infants in the nurseries, and this impact continued after discharge of the infants (36, 37). Mothers perception, their interactions with the nurses were key factors in their experiences in neonatal care, the nursing staff held an important position in helping mothers press forward in their parenting experiences (38, 39). On the other hand, inadequate support from nursing staff and lack of communication acted as barriers to parenting. The importance mothers placed on the nurse–mother relationship confirms the triadic nature of the mother–infant–nurse interaction (40, 41).

Other supportive sources that mother indicated were their husbands, grandmothers and similar mother's helps. One of the important supportive sources similar to other studies (42, 43) that mothers mentioned was peer supports as the most facilitative and supportive aspect of developing the maternal role in the NICU. In agreement with our results regarding fathers supportive role, other studies also revealed that parental intervention was effective in reducing stress-role alteration in mothers intervention in a NICU (44, 45).

4-1. Limitations of the study

The data collected was drawn from only one hospital in this present study. In addition, the sample was restricted to those mothers who had attended in hospital and the mothers who had to take rest at home because of side effects of caesarian section and delivery and were not able to visit their infants were excluded.

5- CONCLUSION

This study led to understand researchers the experiences of mothers of very low birth weight infants from becoming mother, the finding of our study led to gain awareness about how the transition to motherhood in women with very low birth weight infants. This awareness in health

staff, especially nurses help to identify and eliminate barrier of becoming mother and facilitate the obtaining of mother role, and ultimately promote quality of care of infants which would be provide with their mothers. In fact, nurses as a support system can help to mothers to interact with their very low birth weight babies ,and finally play their motherhood role .In addition, according to study results in mothers with very low birth weight to help the process of becoming a mother attention of the authorities is necessary; this means that by providing the necessary facilities, especially created convenient location, The continued presence of the mother with baby can facilitate the process of becoming mother. Finally, it seems obvious to suggest that there is an urgent need for healthcare professionals to enforce health policy makers to make facilities for implementing kangaroo mother care in NICU.

6-AUTHORS CONTRIBUTIONS

- Study design: FMT, SA, MR.
- Data Collection and Analysis: FMT, SF.
- Manuscript Writing: FMT, SN.
- Critical Revision: MR, SA.

7- CONFLICT OF INTEREST

The authors had not any financial or personal relationships with other people or organizations during the study. So there was no conflict of interests in this article.

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