Profile of Mothers with Premature Neonates in a Neonatal Intensive Care Unit and Aspects of Breastfeeding

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Abstract

Objective: To describe the sociodemographic and clinical profile of mothers with premature newborns admitted to a Neonatal Intensive Care Unit and aspects of breastfeeding.

Method: Cross-sectional, descriptive quantitative study, non-random sample. A semi-structured questionnaire was applied to mothers with children admitted to a teaching hospital of the Unified Health System in the Triângulo Sul Macro region, July 2018 to July 2019.

Results: There were 102 participants with an average of 6.8 prenatal consults, age 28,4 years old and two children, including the current one. Regarding breastfeeding, 72.4% of them did not receive prior information and 98% expressed a desire to breastfeed. All reported favorable knowledge for adequate milk production and have a family and social network to obtain information on the subject.

Conclusion: The results contribute with systematized information on the maternal socioeconomic and clinical profile. In addition, they highlight the gaps involving the quality of prenatal care and ICU care, especially in aspects of breastfeeding.

Keywords: Intensive Care Units; Neonatal; Breast Feeding; Pregnancy; High-Risk; Infant; Premature

Introduction

Breastfeeding confers profound benefits for both the baby and the mother, providing psychological, physiological and immunological advantages to the child [1]. Due to its protein, lipid, enzymatic and mineral components, in addition to being an important source of carbohydrates, vitamins and some living cells, breast milk is the perfect combination of elements for the initial development of the newborn (NB). All these compounds have an essential function within the NB organism, such as the development of the immune system driven by proteins [2]. For this reason, the World Health Organization (WHO) recommends that breastfeeding be exclusive until 6 months, being sufficient to nourish the baby during this period, which can be extended to 2 years or more, as long as it is combined with other foods [1].

In the context of premature newborns, this form of nutrition becomes even more important, since they have less intrauterine development [3] and need this support to combat malnutrition and other adversities. The term prematurity is defined by WHO as the birth that occurs before 37 weeks of gestation, and can be classified as: borderline (35th - 37th week), intermediate (32nd - 35th week), very premature (28th - 32nd week) and extreme (< 28 weeks) [1].

These premature NBs often require greater attention and care from doctors and, therefore, are admitted to the Neonatal and Pediatric Intensive Care Unit (NICU). This environment is uncomfortable for most parents, since it combines disconcerting physical aspects, such as excessive technological equipment, lighting, health professionals and contact restrictions, with psychological aspects such as fear and apprehension of parents. Furthermore, a premature baby already naturally presents difficulties in this form of feeding, both for himself and for the mother [4]. In this sense, these characteristics may reflect on the breastfeeding process, making it difficult.

It is possible to relate some sociodemographic factors of the puerperal woman to the effectiveness in breastfeeding the newborn. One of these factors is age, in which it is perceived that women aged 20 years or more are more efficient in breastfeeding than younger ones, concluding that motherhood in adolescence is a risk factor for successful breastfeeding. Therefore, parity can be related to success in breastfeeding subsequent children, especially in cases where the previous experience is positive [5].

In addition, the prolonged hospital stay of these neonates awakens feelings of anxiety, insecurity and guilt in parents, in addition to uncertainty about the baby's life [6]. All of this is capable of interfering with the breastfeeding process, which, despite its consolidated importance, often does not receive close monitoring and experience from the multidisciplinary team, which plays a fundamental role in this process.

In order to seek information that may help health professionals to improve the prognosis and success in breastfeeding within the NICU environment, this study aims to describe the sociodemographic and clinical profile of mothers with premature newborns admitted to a Neonatal Intensive Care Unit and aspects about breastfeeding.

Method

This is an epidemiological, cross-sectional, quantitative and descriptive study. The study was carried out at the NICU of the Hospital das Clínicas of the Federal University of Triângulo Mineiro (HC - UFTM), a highly complex service that has 20 NICU beds. Furthermore, it is a reference for the macro-region that covers Uberaba plus 26 municipalities. The study was carried out in the municipality of Uberaba, pole of the Health Macroregion of the Southern Triangle, Minas Gerais, with an estimated population of 714,106 inhabitants in 2012 [7].

This research proposes the analysis of data collected by the extension project "Guidance on milking and initiation of breastfeeding", carried out from July 2018 to July 2019, within the HC-UFTM UTINP.

All mothers of live newborns admitted to the HC-UFTM NICU from July 2018 to July 2019 participated in the survey. In addition, this is an intentional, non-random sample. Due to the specificity of the clinic in neonatology, this restriction was of interest to the study regarding the population addressed so that they fulfilled the selection criteria.

Inclusion criteria refer to mothers of live newborns admitted to the NICU of HC-UFTM in the proposed period, aged 18 years or older. Underage mothers were excluded from the sample.

Data collection was carried out by health professionals familiar with the NPITU and trained by the research team on how to properly complete the instruments and how to approach the interviewee, with an average duration of 5 minutes. The data collection period was from July 2018 to July 2019, concomitantly with the patients' hospitalization. The interviews took place in the NICU environment or in the reception room of these mothers and were carried out at different times of the day, according to the scale of the team involved in the project and the presence of the mothers in the place.

The data collection instrument was developed by the researchers, based on the professional expertise of working in the NICU and on conceptual aspects about the management of the mother-baby binomial. The questionnaire consists of 35 questions, being semi-

structured and presenting the following variables: obstetric aspects, social aspects of the mother, aspects of breastfeeding and aspects of knowledge about breastfeeding.

Among the Obstetric Aspects, the variables "type of delivery", "birth weight", "sex", "gestational age", "newborn nutritional status", "time of hospitalization of the newborn", "type of initial milk of the newborn" were analyzed. NB", "weight at discharge" and "age at discharge".

Regarding the mother's social aspects, the variables "mother's age", "mother's education level, marital status, stay in a support home" and "number of children (including the current one)" were analyzed.

Regarding breastfeeding, the following variables were analyzed: had previously breastfed, how long had the other children been breastfed, reason for weaning, whether they had experience with a child hospitalized in the ICU, attended prenatal consultations, how many consultations they attended, received guidance on breastfeeding, type of guidance received, have a desire to breastfeed.

As for knowledge about breastfeeding, the following variables were analyzed: "which of these actions do you consider adequate to maintain milk production", "importance of colostrum", "received instructions regarding milking" and "from whom received these instructions".

The data from the questionnaires obtained from the interviews with the mothers, as well as the data from the NB's medical records, were entered into Microsoft Office Excel 2016 files through double typing. After organizing the data, they were exported to the SPSS version 26.0 statistical program, where statistical analyzes were performed. Initially, a descriptive analysis of quantitative variables was performed using measures such as mean, standard deviation, median, quartiles and minimum and maximum values. Categorical variables were described based on their absolute and relative frequency distributions.

Finally, regarding ethical aspects, CNS resolution 466/2012 was respected, and this research was approved by the Research Ethics Committee of HC-UFTM in 2021, number CAAE 42392220.3.0000.8667, opinion 4,707,563. Data were collected after signing the Informed Consent Form by the interviewees.

Results

A total of 102 mothers of newborns admitted to the Neonatal and Pediatric Intensive Care Unit (NICU)-HC/UFTM from July 2018 to July 2019 participated in the study. Underage mothers were excluded from this sample.

Regarding obstetric aspects, there was a greater number of cesarean deliveries (76.4%) and 72.5% of newborns were adequate for gestational age (AGA). Hospitalization time was ≥ 7 days in 85.2% of the children of mothers selected for the project (Table 1). The sex of the newborns was almost homogeneously distributed, with 49% of the newborns being male (Table 1).

Obstetric aspects	n	%
Type of delivery		
Caesarean section	78	76,4
Normal	16	15,6
Not informed	8	7,8
Sex of the NB		
Male	50	49,0
Female	49	48,0
Not informed	3	2,9

***Table 1:** Obstetric aspects of mothers with children admitted to the HC/UFTM NICU. Uberaba, Minas Gerais, 2022.*

Evaluating information about the NB, it is noticed that the sample has an average of 1914.2 grams (minimum of 465 grams and maximum of 4430 grams) at birth, with a mean gestational age of 33.4 weeks (minimum of 24 weeks and maximum of 40 weeks). The mean weight presented by the NB at discharge from the ICU was 2576.6 grams (minimum of 1420 grams and maximum of 4490 grams) with a mean age of 23.1 days (minimum of 8 days and maximum of 51 days). It is worth mentioning that the discharge from the NICU may have been made to another hospital wing of the HC-UFTM.

The social profile of the mothers interviewed showed the predominance of women in stable union with their partners (74.5%), with complete high school education (59.8%) and who did not need to be installed in a support home (73.5%) during the hospitalization period of their NB (Table 2).

Social aspects of the mother	n	%
Education level		
Elementary school	29	28,4
Middle school	61	59,8
Higher education	12	11,8
Marital status		
Stable union	45	44,1
Married woman	31	30,4
Single	24	23,5
Divorcee	1	1
Widow	1	1
Stay in supportive home		
No	75	73,5
Yes	23	22,5
Not informed	4	3,9

Table 2: Social aspects of mothers with children hospitalized in the NICU of HC/UFTM. Uberaba, Minas Gerais, 2022.

With regard to other aspects related to the mothers of newborns admitted to the UTINP-HC/UFTM, they had a mean age of 28.4 years (minimum of 18 years and maximum of 43 years), and the average number of children, including the current one, was 2 children (minimum of 1 and maximum of 8 children). These women attended, on average, 6.8 prenatal consultations throughout the pregnancy of the child included in this study. Among them, 7 women had less than 6 prenatal consultations throughout pregnancy and 7 had only 2 or less consultations, and these values were much lower than ideal. This highlights the still present need for greater coverage of care to the population of pregnant women.

Regarding the aspects about the initial breastfeeding of newborns, there is a lack of information, since this type of data was present in only 13 medical records of the total analyzed.

Still on the initial breastfeeding process given to the NB, of the 13 medical records that presented this information, 84.6% used infant formula, 61.5% used milked breast milk and 46.15% received milk from the milk bank. In this group, the same infant may have received more than one type of milk at the initial feeding. Of the women interviewed, 47.5% already had experience with breastfeeding and only 12.9% had not breastfed the previous child, and in 39.6% of the cases the hospitalized NB was the first child of the hospitalized woman.

The average breastfeeding time of the interviewees who had already had this experience with children prior to the study was greater than 6 months for both the first child (60.9%) of them and the second child (69.6%), in the case of those who had more than two children.

Aspects of breastfeeding	n	%
Received prenatal guidance on breastfeeding		
Yes	26	27,6
No	72	72,4
Type of guidance received*		
Exclusivity up to 6 months	24	92,3
Importance of breastfeeding	23	88,4
Factors that hinder breastfeeding success	20	76,9
Correct grip	19	73,0
Milking of the breasts	18	69,2
Correct positioning of the baby	16	61,5
Use of nipples and pacifiers	15	57,6
How to prevent and/or treat difficulties that can surgir during breastfeeding	15	57,6
Free demand	14	53,8
Factors that increase breastfeeding success	14	53,8
How milk production works	12	46,1
Desire to breastfeed the NB		
Yes	98	96,0
No	2	1,9
Not informed	2	1,9

Table 3: *Aspects related to the experience and knowledge of mothers with children admitted to the NICU about the breastfeeding process. Uberaba, Minas Gerais, 2022.*

*More than one option could be selected.

The main reasons that led to early weaning in pregnancies prior to the current NB were: the child "was already big" (n = 12), the child "did not want more" (n = 11), "dried milk" (n = 11) and return to work or study by the mother (n = 7). It is worth mentioning that, in the absolute frequency of the answers, a mother could indicate more than one option, being analyzed the reasons for up to, at most, 3 previous pregnancies.

Regarding the knowledge about breastfeeding during the prenatal period, 26 women received some type of guidance in their consultations, most of them regarding the exclusivity of breast milk until 6 months of age (n = 24), the importance of breastfeeding in child development (n = 23) and factors that impair breastfeeding (n = 20). On the other hand, the subjects less addressed were the free demand of the NB (n = 14), factors that increase breastfeeding success (n = 14) and how milk production works (n = 12). Moreover, after the hospitalization of their newborns, 96% of the women presented the desire to breastfeed (Table 3).

Regarding milk production, almost all the women interviewed believe that eating well and drinking enough water help in proper milk production. In addition, in relation to colostrum, the first milk produced during breastfeeding, 97.0% of the women believe that it is important for the NB. On the other hand, a detrimental factor to breastfeeding emerges when 24.5% of the women interviewed believe that leaving the breast full helps in the process (Table 4).

After delivery, 92.2% of the women received some type of guidance on milking, and this guidance was provided by nursing professionals in 96.8% of the cases (Table 4).

Aspects of knowledge about breastfeeding	n	%
Which of these actions do you believe is appropriate for the milk production*	n = 102	
Alimenta-se bem	101	99,0
Drink plenty of water	101	99,0
Staying calm	97	95,0
Emptying the breasts	80	78,4
Milk every 3 hours	62	60,7
Leaving the breast full (harmful factor)	25	24,5
Think the first milk (colostrum) is important		
Yes	99	97,0
No	2	1,9
Not informed	1	0,9
Received guidance on milking after childbirth		
Yes	94	92,2
No	8	7,8
From whom you received guidance on milking*	(n = 94)	
Nurse or nursing technician	91	96,8
Doctor	11	11,7
Family	7	7,4
Neighbors or friends	2	2,1
Speech therapist	1	1,0

Table 4: Knowledge of mothers with children hospitalized in the NICU of HC/UFTM regarding breast milk and type of guidance received for the breastfeeding process.

*More than one option could be selected.

Discussion

The data analyzed in this study provided more information about the sociodemographic characteristics of the mothers of newborns admitted to the NICU of the HC-UFTM. The recognition of the set of maternal attributes, such as socioeconomic conditions, age, education and occupation, allows greater precision in the assessment of social inequality and risks for newborns [8]. In addition, it was also possible to understand the knowledge of these women about the breastfeeding process as well as the existence or not of previous experiences of these mothers with breastfeeding.

The particularities of the maternal profile, such as age, level of education, marital status and social support are often determinant for seeking help during pregnancy and can influence the way the mother commits herself to the development and health of her baby after delivery [9]. This type of information is relevant to help the NICU health team itself to plan the best way to guide and sensitize these mothers about the importance of breastfeeding for the development of newborns.

The task of discussing the cesarean section rate in a high-complexity teaching hospital seems fairer if based on the specificities of the reality of this unit and this population. The results of the study show a predominance of cesarean sections in the population, having been performed by 83% of the women interviewed. Because it is a regional referral center, high-risk pregnancies with various complications are referred to this hospital, a factor that may interfere in the prevalence of this type of delivery in relation to those found in maternity hospitals in general [10].

Another important aspect is that the study analyzes the profile of mothers with children admitted to the NICU, which also corroborates a high prevalence of cesarean sections. In the scientific literature, the proper discrimination between the outcomes related to indicated and elective cesarean sections was not identified [11]. Considering cesarean sections in general, there is evidence of their association with adverse perinatal outcomes, such as the occurrence of prematurity and the need for hospitalization in the NICU. Thus, because it is a population of NB hospitalized in the NICU, the high prevalence of this type of delivery is expected due to the specificities of this population [11].

Regarding maternal variables, the majority of the study population has completed high school (88.2%) with 12 years of schooling, while in the southeast region, studies show an average of 8.1 years of schooling of mothers, in general [8]. It is worth mentioning that mothers under 18 years of age were excluded from the study, so that adolescents were not included, which may mask a reality of school dropout in adolescence and, consequently, a drop in the years of schooling.

Obstetric results in Santa Catarina identify that higher risk of hospitalization in the NICU, greater prematurity and mortality are found among mothers with unfavorable socioeconomic indicators, especially low schooling, considered a marker of the socioeconomic condition of the mother and her family [12]. On the other hand, better maternal schooling has been shown to be related to reduced rates of low birth weight, declining infant mortality rates and improved prenatal coverage [12].

Another relevant factor was that 74.5% of the women interviewed had a partner, either by marriage (30.4%) or stable union (44.1%). Studies that related this factor to the prognosis of the NB reported that the presence of a partner with the mother was a favorable variable for the improvement of these children [12,14,15]. This is probably due to the presence of a support network both for the mother, who accompanies the child, and for the NB himself, who is hospitalized, since both are in a situation of vulnerability during the period in which the child remains in the NICU [8].

The need for installation in support houses, a reality for Brazil, which are residential units specialized in welcoming people (patients and/or companions) who leave their places of origin in search of specialized health services [13], was a reality for 23.5% of the women, all of whom did not come from Uberaba/MG.

Although the proposal to assist several mothers, allowing proximity to the hospitalized children, one should take into account the fact that geographical and socioeconomic barriers hinder the contact of these mothers with their relatives and friends, so that they were more distant from their support network [14]. This situation alone generates a lot of stress, since the distance from the family and the needs that this represents are aspects that interfere with the emotional stability of the women in the study. Moreover, this reality reinforces the role of the hospital as a reference center in high complexity for a macro-region composed of 27 municipalities.

Regarding the obstetric data of these mothers, the average number of prenatal consultations was 6.8 throughout pregnancy, a value above the value considered ideal by the Ministry of Health, which is 6 consultations [1]. In this sense, it is possible to perceive with the present study that even though most of the mothers presented an adequate amount of consultations, they still had their children referred to the NICU. The causes for this outcome can range from conditions intrinsic to the baby to a reality of low-quality consultations. It is worth investing in research that seeks to detail such causes and the reality of mothers with children in the NICU, in order to improve the variables that can be modified.

Although the average number of prenatal consultations presented by the women in the present study is in agreement with the ideal average, it can still be observed that few had access to information on breastfeeding. This fact may indicate a precariousness in the quality of prenatal consultations in this aspect and a lack of preparation or even negligence on the part of the professionals responsible for this type of instruction to mothers. However, in-depth and more specific studies are needed to reach substantial conclusions on this point.

In addition to the other aspects discussed, the study also recorded the causes of weaning of previous children reported by the mothers interviewed. The influence of maternal concepts and their knowledge is clear and determinant to the health of infants and the duration of breastfeeding, being also greatly influenced by cultural, social and family issues, and not only by the degree of medical information to which they had access.

Regarding the type of initial breastfeeding of the NB, there is a lack of information in this regard, being present in only 13 medical records of the total analyzed. There are some possibilities that would justify this reality, such as the fact that manual medical records are analyzed, which is still the most common in Brazil, despite the growing implementation of electronic medical records [16].

The lack of information in this aspect is a limitation to the study, hindering possible analyses. It is worth emphasizing the importance of the quality of completion of the medical records data by the professionals. Moreover, the data extraction script is not a validated instrument. However, it was made by professionals with scientific technical expertise in the area of the study theme.

Because it is a descriptive cross-sectional study guided by a convenience sample, the potential for generalization of the findings is related to similar scenarios, involving the NICU of public teaching hospitals in Brazil.

Conclusion

It is concluded that regarding the population studied, it is observed that the sociodemographic profile of mothers with premature neonates is close to the national reality regarding marital status and schooling. The mean age of the participants being 28.4 years is related to the exclusion of minors from the study. Another fact to be aware of is related to the average number of prenatal consultations among the participants being 6.8 consultations, higher than the one presented nationally. However, attending these consultations did not guarantee, according to the reports of the interviews, access to qualified information about breastfeeding. In addition, they present as a source of support for obtaining information beyond health professionals, including the social and family network.

Above all, there are few studies that analyze aspects of breastfeeding in a neonatal ICU environment. Thus, the results contribute to bring medical education closer to the gaps that involve the quality of prenatal care and ICU care, especially in aspects related to guidance on breastfeeding. For health services, the study contributes with systematized information on the maternal socioeconomic profile and its vulnerabilities. Further research is oriented towards the recognition of the quality of information on breastfeeding during prenatal care and the factors that influence the adoption of this reality.

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