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CHAPTER 32

Knowledge of the importance of breast milk and its donation in milk banks

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ABSTRACT

The objective of this study was to collect information through a questionnaire with pregnant women about the level of knowledge and intention to donate surplus breast milk to the Human Milk Bank (HMB) or to a nearby Collection Point. The sample consisted of 60 pregnant women, with an average age of 25 to 30 years, and most of them had elementary and secondary education, were brown and primiparous. About 95% of these pregnant women intended to breastfeed their offspring, often being "when to cry" and, in their majority (80%), choosing not to give any complement to breastfeeding. When asked about information about the HMB, 51 pregnant women were already aware of the presence of the institution, most of whom had a level of knowledge considered average. The main source of information spread about HMB was the Family Health Unit/Hospital itself, and this information was classified as "very important" by the majority of participants (43%). About 73% of the pregnant women wanted to donate breast milk, 85% would use HMB milk and 83% thought the HMB's work was reliable. Of the total number of pregnant women, only 2 (3%) reported that they had already donated breast milk, and their experiences were classified as "very good" or "good", but only 50% of them would donate again. It is imminent that these results will be analyzed by health managers so that they can develop strategies to increase both information and the intention to donate surplus breast milk among pregnant and future breastfeeding women.

Keywords: Human Milk Donation, Nursing Mother, Collection Stations.

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INTRODUCTION

Nutrition in the first six months is crucial, with human milk offering a range of benefits for child development, including protein, sugars, and lipids that promote healthy growth and strengthen the immune system (CARR et al, 2021; PARKER et al, 2021)element. Studies show that children fed exclusively with breast milk show adequate growth and reduce the risk of malnutrition (GEORGE et al, 2021). Breastfeeding also brings advantages to mothers, such as emotional bonding, faster postpartum recovery, and financial savings (VENANCIO, 2015; ROLLINS, 2016). However, preterm newborns require additional care due to their specific nutritional needs (SBP, 2022).

The donation of human milk (HL) in Brazil is an extremely important social issue, due to the numerous benefits that are transmitted to children who receive it, especially premature newborns, low weight newborns or hospitalized in Neonatal Intensive Care Units (ICU). However, in addition to the difficulties and factors that limit the process of collecting and donating LH, it is known that the practice is still little publicized and known among women.

Human Milk Banks (HMB) play a crucial role in promoting and supporting breastfeeding by providing donated milk to babies in various situations. However, the lack of information and incentive undermines the effectiveness of this practice, resulting in the purchase of milk formulas and inadequate nutrition in some communities (BRASIL, 2022). The situation in Colatina, Espírito Santo, despite the presence of a Human Milk Bank in the region, there are no high numbers of breast milk donation. This contributes to the prevalence of nutritional deficiencies and poor health in infants, highlighting the need for more education and support to promote breastfeeding.

In this chapter, information about the knowledge about milk donation among pregnant women who attended the Women's House in the city of Colatina, Espírito Santo, will be addressed, in addition to their intention to donate or not the surplus human milk, as well as their obstacles to not doing so. In addition, the objective was to share the information collected with the population about the social, nutritional and affective importance of the act of donating and receiving breast milk in order to contribute to the health of newborns unable to receive it.

THEORETICAL FRAMEWORK

According to studies, in relation to the protein composition of human milk (formed mainly of lactoferrin, lactalbumin and beta-lactoglobulin), composition of sugars (such as lactose, glucose and galactose) and, finally, its lipid composition (formed by triglycerides and cholesterol) act beneficially in the formation and evolution of the infant in several aspects. In addition, human milk has 45 different types of bioactive factors, such as platelet-activating factor acetylhydrolase (PAF-AH), antioxidants, interleukins 1, 6, 8, and 10, and B cells, which contribute to antimicrobial factors, anti-inflammatory agents, digestive enzymes, various hormones, and neonate growth factors (CALIL,

2003; YI, 2021; NUZZI et al., 2021; DINLEYICI, 2023). With this, obesity, childhood diabetes and allergies are prevented, as well as helping in the development of the immune and motor system and contributing to healthy growth (VENANCIO, 2015; ROLLINS et al., 2016; WHO, 2017). In addition, human milk is a synbiotic, a natural source of lactobacilli and bifidobacteria, which are probiotics, and a natural source of oligosaccharides, which are prebiotics, which, by themselves and independently of all the other substances of which it is composed, constitute protection against infectious and non-infectious diseases at all stages of life, particularly in adulthood (BORBA et al., 2018), (EDWARDS; PARRET, 2002; OKBURAN, 2023)

Regarding the essential maternal advantages, we can mention the increase in the bond with intimate contact between the dyad, the faster decrease in weight gained during pregnancy and the risk of breast and ovarian cancer, in addition to diabetes and heart attack and, finally, an increase in endorphins, the hormone of happiness, and an increase in the woman's self-esteem. essential elements for a smooth postpartum (SBP, 2022). It is also important to highlight the financial savings of this act, since it is free and its production is natural, with no need for supplementation with formulas or other milks. There are cases that need care, such as preterm newborns, since they lack a higher content of macro and micronutrients that are indispensable for their growth. (MEYERS et al., 2006). In view of these advantages, the Human Milk Bank was created in partnership between the Ministry of Health and the Figueira Fernandes Institute (FIOCRUZ), with the main functions of being a specialized center and mandatorily linked to a maternal and/or infant hospital, promoting breastfeeding, being able to perform the collection activity, selection, classification, clinical control, processing and quality control of expressed human milk, being responsible for the operation of the establishment and, in addition, seeking certification of the quality of products and processes. It is the largest and most complex network of milk banks on the planet, and is exported even to other Latin American countries. Per year, donated LH is offered to about 160 thousand newborn children with its 222 banks and 217 collection points (BRASIL, 2022). Even though it is very important, there are several obstacles to the spread of donation and even the implementation of Collection Stations and, finally, of a Human Milk Bank, in addition to scarce information in the pre and postpartum, about its use or even guidance for donations of surplus milk (NEVES et al., 2011). According to the study carried out at the Leonor Mendes de Barros Maternity Hospital (HMLMB), located in São Paulo, where 70% of the Human Milk Banks are concentrated, the lack of information for both nursing and hospitalized women, who really needed the help of the HMB to breastfeed their infants, was negligible and did not have the desired effect, which harmed both the functioning of the bank and the women and newborns who are cared for by them. In Colatina, a city located in the northwest region of the state of Espírito Santo, there is a lack of information and incentive strategies for donating and receiving human milk, even with the presence of a HMB. Families living in these

regions are led to buy milk formulas, when they have the financial conditions accessible to this solution, or even resort to the use of whole cow's milk (MILAN, 2020). As a result of the lack of information and campaigns, the prevalence of nutritional deficiencies, overweight and obesity in infants is facilitated, due to the insufficient or absent use of breast milk, also reflecting on the child's guardians, both psychologically and financially (ARAÚJO et al., 2004).

METHODOLOGY

TYPE OF RESEARCH AND DATA COLLECTION

The present study was cross-sectional, exploratory, where there is a greater purpose of familiarity with the problem, with a view to making it more explicit and provoking solutions (GIL, 2019). The approach of the work was quantitative, that is, an approach based on quantification with data collection and explaining the phenomena that occur in its results (KIRSCHBAUM, 2013). The questionnaire for evaluation had, as standardization, 29 questions, 5 open and 24 closed. As a classification, they were divided into 9 questions about the sociodemographic condition and feeding of the newborn and 20 questions encompassing human milk donation and Human Milk Bank. The approaches were in consonance, awareness and consent of the person responsible for the Women's House with a predetermined time, so as not to interrupt or generate friction in the service related to women. It was an individualized, respectful treatment, with the use of a specific room and comfortable accommodations.

PLACE OF STUDY AND TARGET AUDIENCE

Colatina is a municipality in the state of Espírito Santo, located in the southeast of the country. It is one of the main cities in the interior of Espírito Santo, influencing municipalities in the east of Minas Gerais. Its estimated population in 2022 was 119,992 inhabitants, most of whom were female, reaching 57,497 inhabitants. The Women's House is a humanized care center that facilitates access to services to ensure conditions to confront violence, female empowerment and women's autonomy.

The Women's House serves, in total, per year, about 786 pregnant women who need specialized prenatal care. The sample size was determined by convenience.

INCLUSION AND EXCLUSION CRITERIA

Pregnant women who were aged between 18 and 40 years, who had their prenatal care, on the specific date of collection, at the Women's House. Women who used medications that are incompatible with breastfeeding, used illicit drugs or alcohol, smoked more than ten cigarettes a day,

had an STI during pregnancy, and women who did not sign and did not declare support for the informed consent were excluded.

ETHICAL ASPECTS

According to the criteria of Resolution No. 196/96 of the National Health Council (CNS), the study was approved by the Human Research Ethics Committee of the Federal University of Espírito Santo, UFES campus Alegre – ES according to opinion number 6.251.253. To adhere to the research, it was necessary for the pregnant women to sign the Informed Consent Form (ICF).

DATA ANALYSIS

Data analysis was performed using Microsoft Excel 2016, which were tabulated and presented in the form of tables, for better visualization.

RESULTS AND DISCUSSION

60 pregnant women were interviewed, who agreed to the project's Free and Informed Consent Form, as well as the application of the questionnaire.

Table 1 – Sociodemographic characteristics of the participating pregnant women.

Categories	**n**	**%**
Maternal age		
18 – 19 years old	1	2
20 – 24 years old	12	20
25 – 30 years old	19	32
31 – 35 years old	16	27
36 – 40 years old	12	20
Maternal schooling		
Incomplete Elementary School	5	8
Complete Elementary School	13	22
Incomplete High School	13	22
Complete High School	13	22
Incomplete Higher Education	9	15
Complete Higher Education	7	12
Skin color/race		
White	18	30
Yellow	3	5
Black	16	27

Brown	23	38
He can't tell	0	0
Number of children		
1	27	45
2	14	23
More than 2	19	32

There is a prevalence of women with an average education of complete elementary school and incomplete higher education, both of which are completed by more than 40% of the interviewees. It is noticeable that, for the most part, the level of education greatly influences the understanding of the capture of the message about the practice of breastfeeding, making them breastfeed for longer. In these cases, it is preferable for mothers to have a higher level of education (ESCOBAR et al., 2002). It is stated that the average age among nursing mothers is 24.8 years, ranging from 20 to 30 years. Finally, understanding and analyzing the number of children is essential. Of the mothers surveyed, half were considered primiparous, which indicates that the first practice of motherhood and breastfeeding, and consequently, insecurity and inexperience become present, causing a search for information and instructions by health professionals from the HMB. For this reason, the chance of the pregnant woman practicing the act of LH donation is greater, decreasing with the increase in the number of children (WESCHENFELDER et al., 2012).

Table 2 – Possible methods of feeding the newborns of the pregnant women interviewed.

Variables	**n**	**%**
Baby feeding		
You want to give it to your baby		
Breast milk	57	95
Fórmula láctea	5	8
Whole cow's milk	1	2
And how often do you intend to give?		
When to cry	23	38
3/3 hours	22	37
Pediatrician's recommendation	20	33
Are you going to give other types of liquids?		
Yes, water	8	13
Yes, tea	3	5
No, only breast milk	48	80
No, only milk formula	1	2
No, only whole cow's milk	0	0

According to Table 2, it is noticeable how much breast milk is still valued by society, being the "gold standard" diet in 95% of the pregnant women analyzed. The evidence regarding breastfeeding is totally satisfactory, since the practice of breastfeeding is recommended until the age of two, with the main advantages of digestive, immunological and neurological evolution for the

newborn and, for the mother, protection against breast cancer, natural contraceptive, among others (SANTANA et al., 2013). In addition, the stimulation of milk for longer periods of time during breastfeeding causes the ideal surplus for donation to HMB, making other children enjoy the expressed and capable human milk for their nutrition. Regarding the frequency of breastfeeding, mothers were divided, however, the World Health Organization (WHO) recommends that breastfeeding be done on demand, that is, when the baby wants, and not to control a schedule every 3 hours (WHO, 2009).

Regarding the complementation of breastfeeding, most mothers were in line with the WHO recommendation that breastfeeding should be exclusive in the first six months, with the offer of only breast milk, without the presence of other liquids for cases of "hunger" or "thirst". This attitude is appropriate, since the composition of breast milk is adequate enough to meet all the needs of the infant. When complementary feeding is chosen before the appropriate stipulated age (6 months), there is a high risk of chronic diseases such as diabetes, obesity and high cholesterol, which impair the patient's life in the future (CAETANO et al., 2010).

Table 3 - Research on knowledge about HMB.

Variables	n	%
Research on the HMB		
Have you ever heard of the Human Milk Bank?	51	85
How much have you heard about the Human Milk Bank?		
Little	5	8
More or less	40	67
Very much	6	10
And where did you hear about the Human Milk Bank?		
By family members	3	5
For friends	8	13
Na USF/Hospital	25	42
On television	7	12
On the internet	8	13
On the radio	0	0
On posters or flyers	1	2
This information that you have received, you classify as...		
Very important	26	43
Important	18	30
Unimportant	2	3
He can't tell	0	0

Of the pregnant women interviewed, 84% of them knew about the Human Milk Bank located at the São José Hospital and Maternity, which served all of them regardless of the neighborhood in which they lived. However, most classified the information about the place as "Average", that is, it was not satisfactory information. In Galvão et al. (2009) it is emphasized that the information was only disseminated when the participants were about to give birth, that is, they were not instructed

about the HMB and its benefits in the prenatal period, which is considered worrying, since they could have been welcomed, informed and clarified, in order to ensure positive experiences of dissemination, helps in decision-making and reorientation in the practices exercised by health professionals (DIAS et al., 2006). When asked about the main vehicle for disseminating information about the HMB that they had contact with, the main and most important was obtained through the USF/Hospital, which could be during prenatal care for primiparous women and at the time of delivery for multiparous women. This result reinforces how important it is to know about breastfeeding from conception to delivery, so that women do not feel insecure and insufficient in this period of life. Therefore, it is necessary to carry out campaigns to reach all audiences and specialized training for health professionals, so that they feel able to manage and guide pregnant women (WESCHENFELDER et al., 2012).

Table 4 - Investigation about knowledge of the process of collection and donation of human milk and intention to donate and use of milk from the HMB.

Variables	**Yes**		**No**	
Information about the HMB	n	%	n	%
Do you know the process of collecting and donating human milk?	27	45	26	43
If you haven't donated, do you feel like donating?	44	73	9	15
If your baby needed it, would you use human milk from Human Milk Banks?	51	85	2	3
Do you find the work of Human Milk Banks reliable?	50	83	3	5

It was observed that about 45% of the interviewees were unaware of the process of collecting and donating human milk, which encompasses the physical, chemical, and microbiological processes until the offer of milk to the newborn in need, which was reflected in the study by Ellsworth et al. (2021), which illustrated that 49% of pregnant women interviewed had minimal knowledge and had restrictions when asking about the same problem. Regarding the intention to donate milk, 85% of the interviewees agree to donate LM to HMBs. Some reported that they would do this thinking, mostly, *of the mother of the child in need*, since they would not want to go through the same situation and not have the support they need. Those who opposed it cited factors such as *fear of not having milk, insufficient milk, and weak milk*. These answers, however, reflect the lack of information they have about breastfeeding and insecurity, which is a determining factor for them to find it necessary, in the future, to use inadequate complementary foods (MARQUES et al., 2011).

Table 5 - Investigation about the process of collection and donation of human milk and intention to donate breast milk again to HMB.

Variables	n	%
Research on the HMB		
Have you ever donated human milk to Collection Stations and/or Human Milk Banks?	2	3
And did you find it easy to donate?	1	2
Would you donate breast milk again to the Collection Stations and/or Human Milk Banks?	1	2
And how was your experience?		
Very good	1	2
Good	1	2
Median	0	0
Regular	0	0
Bad	0	0
How much did you donate?		
Very much	1	2
More or less	0	0
Little	1	2

The table expresses the tiny number of women who have had previous pregnancies, and who had experience in donating breast milk, with only two out of 33 pregnant women. Only one of them found it easy to donate the milk to the HMB, contradicting the study by Seidl (2009) who, according to the donors' reports, said that the action was quick and worry-free.

Regarding the intention to donate again, only 1 of the pregnant women who had already donated said they would do it again. Although the experience was considered good or very good by the donors, with all of them rating their experiences positively, other factors may be discouraging repeat donation. In addition, the amount of milk donated was also minimal, with 1 pregnant woman reporting having donated "a lot" and the other "a little". The variability in the amount donated may be related to individual factors, such as milk production or the availability of time and resources to donate continuously. According to Rodrigues et al. (2017), adequate support during the lactation period, such as guidance and follow-up, can positively influence both the amount and frequency of donations. These results indicate that, despite some positive experiences, there are significant barriers that limit the donation of human milk among pregnant women. Factors such as the perception of difficulty in the donation process, the lack of continuous support and the lack of adequate incentive are aspects that need to be addressed by public policies and incentive campaigns. In addition, it is essential that Human Milk Banks offer additional support to make donation a more common and accessible practice among pregnant women.

CONCLUSION

It was found in this study that there are still many obstacles, such as fears, fears and lack of information that directly affect the number of human milk donors, consequently failing to help

newborns and mothers who need this milk for survival. It is necessary to use other means of communication, such as social media and television, to reach more women who intend to donate and, thus, further foster this desire, in order to maintain adequate milk stocks in HMBs.

It is imminent that these results will be passed on to the Health Departments, so that pregnant women and others involved expand their knowledge and information about breast milk donation. The adoption and implementation of these measures will contribute to the health of newborns and improve the quality of life of the population. In addition, it is essential that there is an improvement in the distribution of information so that it reaches pregnant women properly.

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