

CHARACTERIZATION OF NURSING MOTHERS FROM A HUMAN MILK BANK

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ABSTRACT

The objectives were to identify the profile of human milk donors, their reasons or motives for donation and the people who supported this practice; to characterize their behavior for giving it; and to identify factors related to their knowledge about the process of donated milk. It was an observational and cross-sectional study, developed from July/2011 to January/2012, at home of 31 women in Uberaba, through a questionnaire. We used univariate and bivariate analysis. The women were about 27.8 years old; 10.6 years of schooling; they were predominantly married and primiparous; they were mostly inserted in the labor market; and belonged to the middle class. All women received prenatal care and just a few women received guidance about donating. The main reason for the donation was the excess of milk. There was not association of the factors investigated with the mothers' knowledge. Knowing the characteristics of women who donate breast milk provides the appropriate focus of the actions of uptake and dissemination of human milk banks.

Keywords: Milk, human. Milk banks. Women. Nursing care. Social support.

INTRODUCTION

Breast milk is a safe source of nutrition for the human being in early stage of life. Its benefits extend throughout the adulthood, being recommended as the only food for the first six months old and, thereafter, it shall be supplemented with other foods, nutritionally adequate, up to two years old or older⁽¹⁾.

In regarding to the child's health, the benefits of breastfeeding, especially if it is the only food in the first six months old, involve protection against respiratory, urinary and gastrointestinal problems⁽²⁾.

Breastfeeding is especially recommended for premature infants because it has nutritional and immunological properties, promotes the bond between mother and child and decreases the rate of new hospitalizations,

necrotizing enterocolitis and retinopathy of prematurity⁽³⁾.

Despite this recommendation, mothers of premature babies have difficulties with breastfeeding⁽⁴⁾, such as: lack of hospital infrastructure and obstacles for their stay in intensive care units, rigid hospital routines; physiological and neurological immaturity of the child, long periods of hospitalization, anxiety, insecurity, concerns about the care of children and impotence of health professionals for the clinical management of breastfeeding and factors that contribute to the reduction in milk production and ejection⁽⁵⁾.

Thus, the availability of human milk in quantities that meet satisfactorily to infants that, for clinical indications, are unable to breastfeed becomes essential⁽⁶⁾. In this context, it is highlighted the role of the Human Milk Banks (HMB) which act as strategic elements for the promotion,

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protection and support of breastfeeding and public policies in favor of breastfeeding. The HMB is a specialized service, nonprofit, associated to a hospital for maternal and child care. In addition to the promotion, protection and support of breastfeeding, it is responsible for collecting, sorting, grading, processing, quality control and distribution of donated breast milk⁽⁷⁾.

Brazil has the largest network of HMBs in the world⁽⁸⁾, with 211 banks located in all regions of the country. In 2013, more than 89,126 preterm infants received human milk arising out of these banks, which collected about 85,738 liters of milk, donated by approximately 82,500 women enrolled in the whole Brazilian territory⁽⁹⁾.

Voluntary donations of human milk are necessary for the maintenance of milk banks and allow natural breastfeeding for the target population of this strategy, consisting primarily by premature and/or sick newborns⁽⁷⁾.

Nursing mothers are health women who have higher milk production and secretion to their child's demands and who are willing to donate by their own free will their extra production. Moreover, donors may also be those women who are temporarily impeded of breastfeed their children directly in the breasts, for reasons directly or indirectly related to the newborn's health. Those women, whose children are admitted to hospitals and take their own milk to maintain production or to feed exclusively their child, can also be donors⁽⁷⁾.

It has been a challenge for HMBs increase the volume of donations and reach the growing needs of human milk. In this sense, recruit new donors and increase the volume and frequency of donations has become a priority for most HMBs⁽⁸⁾.

Since the success of HMBs depends on their nursing mothers, get a proper

characterization of these women is necessary⁽⁴⁾. This study specifically aimed to identify the profile of donors of human milk, their reasons or motives for the donation and the people who supported this practice; to characterize these nursing mothers' behaviors, and to identify the factors related to their knowledge about the processing of the donated milk.

METHODOLOGY

This was an observational and cross-sectional study, developed at home of the nursing mothers who were enrolled at HMBs of Uberaba, in the State of Minas Gerais, Brazil.

The base population of this study was composed initially by all nursing mothers who donated breastmilk to HMB in the period from July to September 2011, corresponding to a total of 42 women.

The inclusion criteria were: to have donated breast milk in the period of July-September 2011; to live in Uberaba; being at home at least one of the three attempts of home visits and to agree to take part in the research.

Eleven donors did not participate in the study for changes/lack of telephone contact, change of city, some refused to participate or were not found at home after three attempts to visit. Thus the final population was 31 participants.

The data collection instrument was adapted from a model previously tested, and its use was authorized by the authors⁽¹⁰⁾. It comprised questions related to the characterization of the participants, of the prenatal care received and the donation behavior; and to the identification of people who supported this practice, of the reasons or motives for women's donations and of the knowledge about the processing of donated milk.

The data collection happened between July 2011 and January 2012, at

participants' homes. Initially, we found at HMB the addresses and telephone numbers of women eligible for the study. After, these women were invited to participate in the research through telephone contact, when they were informed about the nature and objectives of the research, the ethical aspects and the procedure for data collection. Once obtained the verbal consent, we scheduled home visits, considering the convenience of both parts as to the date and time. The interviews had an average duration of 20 minutes.

The answer variable considered in the study was the knowledge about the processing of the donated milk. The explanatory variables were: age, marital status, educational level, household income, occupation, parity, previous donations, number and location of pre-natal consultations, guidance on donation of human milk and the person responsible for the orientations.

Data were stored in an electronic Excel spreadsheet, and validated by means of duplicate typing. Statistical analysis was performed with the program Statistical Package for Social Sciences (SPSS), version 16.0. Data were presented as absolute and relative frequencies, and as for the quantitative variables, mean values (central tendency measures), standard deviations and minimum and maximum values (variance measures) were calculated. Bivariate analysis was used to identify the relationship between the variable answer and the explanatory variables. Thus, we used contingency tables and their respective measures of association: chi-square (χ^2), Fisher's Exact Test and Prevalence Ratios with a 95% confidence interval. The level of significance of the p-value, adopted for the tests, was α under or equals 0.05.

The study was developed in compliance with ethical standards. For this, we

followed the rules and guidelines that regulate research with humans, established by Resolution 196/96 of the National Health Council. The research proposal was approved by the local Research Ethics Committee of Universidade Federal do Triângulo Mineiro (Process no. 1883/2011), by the board of HMB and by the Health Department of Uberaba. The interviews were conducted after the signing of the Free and Informed Consent Form (FICF), leaving a signed copy with the researcher and another with the interviewee. For participants under age we asked the responsible person to sign the consent form. After data collection, we offered to the participants information and guidances based on their needs.

RESULTS AND DISCUSSION

The table 1 presents the sociodemographic characteristics of the mothers who participated in the study.

The nursing mothers' age ranged from 19 to 41 years old, with a mean of 29.5 years old ($SD=6.0$). The most frequent age group was between 20 and 29 years old (48.4%). The majority (96.8%) of them were adult. A research conducted with donors of two milk banks in the public health system of the Brazilian Federal District⁽¹¹⁾ showed a mean age of 24.8 years old for these women. The maternal age group of 20-30 years old is the one that presents less perinatal risks and is considered excellent for reproduction. However, despite this age group was the most frequent among the donors in the present study, there is evidence showing no relationship between age and practice of donating breast milk⁽⁴⁾.

The study group was composed mostly (74.2%) for married nursing mothers or those ones who was living with a partner. The results of studies conducted in the

Brazilian Federal District^(10,12) and Sao Paulo⁽¹³⁾ corroborated the data found in this research when they concluded that the majority (90.9%, 73.3% and 82.7%, respectively) of nursing mothers were

married or living with a partner. The support received from partners contributes to breastfeeding and human milk donation⁽¹⁰⁻¹¹⁾.

Table 1. Distribution of the donors of the Human Milk Bank of Uberaba, according to sociodemographic variables. Uberaba, MG, 2011.

Variables	N	%
Age group (years)		
10-19	01	3,2
20-29	15	48,4
30-39	13	41,9
40 ou more	02	6,5
Marital status		
Married/living with a partner	23	74,2
Single	07	22,6
Divorced/Separated	01	3,2
Widow	00	0,0
Education (years of study)		
5-8	03	9,7
9-11	26	83,9
12 or more	02	6,4
Monthly family income (minimum wage)		
One	03	9,7
Two	07	22,6
Three-Six	17	54,9
Seven or more	03	9,7
Don't know	01	3,2
Occupation		
Unemployed	09	29,0
Housewife	04	12,9
Retired	00	0,0
Formal work	10	32,3
Informal work	08	25,8
Total	31	100,0

The women's average formal education was 10.6 years of education (SD=1.9) and it ranged from five to 17 years. The majority (83.9%) had between nine and 11 years of study. The investigations in the HMBs of Hospital Universitário de Londrina⁽⁴⁾ and Brazilian Federal District⁽¹⁰⁾ revealed that 71.5% and 58.3% of donors, respectively, had a higher level than high school. The educational level of the donor can positively influence the decision and adherence to the practice of donating milk, as it interferes with the understanding of the guidance received about breastfeeding⁽¹⁴⁾.

The monthly household income average was 3.9 Brazilian minimum wages (SD=3.2) and ranged from one to 18 minimum wages. The most frequent salary range was between three and six minimum wages (54.9%). The study conducted with nursing mothers of the milk bank of a hospital in Santa Catarina found that the majority (77.8%) of them had a family income less than four minimum wages⁽¹⁵⁾.

In terms of occupation, the majority (58.1%) of the nursing mothers were inserted into the formal or informal labor market. Surveys conducted in Santa Catarina⁽¹⁵⁾ and Brazilian Federal

District⁽¹⁰⁾ revealed that 72.2% and 52.8% of women, respectively, had an unpaid work or were unemployed. The introduction of foods before six months old may be the only alternative found by mothers who return to work. This happens especially with women inserted in the informal market, since the absence of effective social benefits means the early return to work. The beginning of complementary feeding before six months old leads to decreased of milk production, and if this woman is a breast milk donor, it leads to the interruption of donations⁽¹⁶⁾. Despite this fact, most of the participants of this study were inserted in the labor market and also were donating breast milk to HMB. This may occurred due to the quality of work undertaken by the HMB and to the link established between professionals and donors, which encourages and promotes greater adherence of women to the practice of donating

In relation to pre-natal care, all women said that they had professional supervision during pregnancy, and had between four and 15 appointments, with an average of nine consultations (SD=2.5). The Brazilian Ministry of Health recommends that pregnant women perform at least six visits for prenatal care. Whenever possible, consultations should be held monthly until 28 weeks, fortnightly, from the 28th to 36th week, and weekly from 36th to 41th week⁽¹⁷⁾. A research developed in milk banks of the capital of the country revealed that all participants made prenatal care⁽¹⁰⁾.

Regarding the place of prenatal consultations, 54.8% of participants made their monitoring in private services and 45.2% in public ones. It is noteworthy that from the 14 lactating women who were followed in public health network during pregnancy, five (35.7%) held consultations in the prenatal service located at the same

place of the HMB and seven (50%) at Hospital de Clínicas of UFTM which has a Collection Room of Human Milk, for the assistance and guidance of mothers of premature infants hospitalized. This may have contributed to the donation of breast milk by women, in that the contact with the reality of the service and the guidance given by professionals enabled the consciousness and awareness about this social practice.

The prenatal promotes the link between health professionals and pregnant women, configuring it as an ideal time to carry out guidance on breastfeeding and milk donation. Properly targeted women can more easily identify their conditions of potential donors of breast milk and better understand the importance of donation for the public health. Educational activities, of quality and humanized, during the prenatal contribute to the recruitment of donors of human milk^(10,12).

In this context, nine (29.0%) donors received during the prenatal care guidance about human milk donation. The primarily responsible for guidelines were health professionals (64.5%) and family (16.1%). It is noteworthy that among these nine nursing mothers who had received guidance, five (55.6%) made their prenatal care in private services and four (44.4%) in public ones, two (22.2%) in the pre-natal service at HMB and two (22.2%) at the Hospital of UFTM which includes the Collection Room of Human Milk. Study conducted in Brasilia found that 46.7% of women received guidelines about human milk donation⁽¹²⁾. It was expected that all nursing mothers receive guidance on of breast milk donation during the prenatal. The lack of guidance on the subject, during pregnancy, portrays the need for health professionals to raise awareness and update on the subject, and from that, to provide health education and mobilize

actions to support and improve the rates of human milk donation.

In regarding to parity, 61.3% of women were primiparous. This result is consistent with those found in studies conducted in the South and Southeast of Brazil, with nursing mothers of HMBs of São Paulo⁽¹³⁾ and Londrina⁽⁴⁾, where 51% and 56% of interviewees, respectively, were primiparous. Primiparity may be a factor that leads women to look for help and health care services, as a result of their inexperience, insecurity and complications of breastfeeding. This quest also gives them through health professionals the access to information about the existence of HMBs and the possibility of making donations. Moreover, these nursing mothers with only one child have greater availability for milking and for preparation of materials for storage, procedures inherent to the donation process. Moreover, those women who have breastfed before usually have greater confidence in their ability to breastfeed and do not seek health services frequently and may be unrelated to the existence of banks and the potential to become donors⁽⁴⁾.

Among the 12 multiparous participants, 66.7% did not donate to HMB in previous pregnancies. A research conducted in Italy showed that 81% of nursing mothers did not donate previously⁽¹⁸⁾. The reasons given were: they're unaware of the existence of HMB in the city (62.5%); unaware about the procedures and flows for donation (25%); and have little quantity of milk (12.5%). A study in the Midwest region of the country revealed that among multiparous interviewed, 41.7% were donating breast milk for the first time by shame, ignorance about the possibility of donation, lack of guidance from professionals in hospitals and lack of own initiative. Therefore, some of these women could have been nursing mothers

and, however, they did not have the opportunity to do so, reinforcing the importance of institutional support and the information about the human milk donation⁽¹⁰⁾.

About women who donated milk in previous pregnancies, 50% did not continue to do this because the milk had dried up and 50% returned to work. Brazilian authors stated that the return to daily activities (work, school), the reduction of milk production, the consciousness of having donated for a long time and breast pain caused by excess of milk are motives that lead women to stop donations⁽¹⁰⁾.

Factors that interfere in breastfeeding are directly reflected in the donation of breast milk. The insertion of foods and/or baby bottle in baby's dietary decreases the stimulus generated by the suction and thus reduces milk production. This justifies the hypogalactia as one of the reasons that led the study participants to discontinue donations in previous pregnancies. Other factors that can lead to hypogalactia are errors in breastfeeding techniques, feelings of fear, shame and lack of confidence, which inhibit milk ejection reflex⁽¹⁾.

The reasons that led women to donate their milk to HMB in the present pregnancy were: excess of milk produced (58.1%), altruism (32.3%) and complications in the breast (9.7%). Similar reasons were frequent in a study conducted in the Brazilian capital⁽¹⁰⁾. In Londrina, in 65% of cases, the reason that led mothers to seek help at HMB and become donors were problems related to breastfeeding, especially breast engorgement⁽⁴⁾. A similar result was found in Tubarão, Santa Catarina⁽¹⁵⁾.

In regarding to the frequency of donations, they were done by women once a week. In the Brazilian Federal District, the HMBs had collected milk from nursing mothers weekly (69.4%) or fortnightly

(30.6%) at home. This frequency depends on the operation and organization of the institution, such as availability of transportation and human resources⁽¹¹⁾. The nursing mothers must be accompanied by a professional who is able to guide them and check weekly, the occurrence of complications that hinder breastfeeding and donating practices⁽⁷⁾. Although the donation only happens once a week, the milking happens daily and usually more than once per day.

Concerning the knowledge about what happens to the milk after donation, 64.5% of the mothers reported not knowing the process and 35.5% said, correctly, that the donated milk is pasteurized and then sent to the children who need it. In Brazil, the protocol for processing human milk follows these steps: i. freezing the milk after milking, as this type of storage retards the occurrence of undesirable enzymatic and chemical reactions; ii. defrost and heat transference to the milk, avoiding that the temperature exceeds 5°C; iii. selection and classification of milk, such as: packing conditions, presence of dirt, color, off-flavor, Dornic acidity, lactation, energy content; iv. re-bottling, step where the milk is transferred from one container to another, aiming at the standardization of packaging; v. pasteurization; vi. microbiological quality control; and vii. distribution⁽⁷⁾.

In respect to the support received by nursing mothers during the process of donation, 25.8% were supported by family, 19.4% by family and partner, 12.9% by family, partner and friends, 6.5%, only the partner and 35.5% did not receive support. According to the study carried out in two milk banks in the Brazilian Federal District, 88.9% of the participants were supported and encouraged to donate their milk. This support was evidenced in several ways,

such as verbal incentives and practical help⁽¹¹⁾. From these data, we found that it is still limited the people's access to information concerning the donation of milk, and that, possibly, the lack of knowledge about its importance interfere in its practice. The social network in which the woman is inserted reflects directly on her attitudes. Thus, the diffusion of information provides better assimilation and awareness on the subject and hence the incentive to carry out this practice.

In bivariate analysis, the Chi-square Test (χ^2), the Fisher Exact Test and the prevalence ratios showed that knowledge about the processing of donated milk was not associated to the factors investigated. However we observed descriptively that 90.9% and 81.8% of the mothers who knew the process had more than six prenatal consultations and an education level over than nine years of study, respectively. This suggests that the information and guidance given to women during pregnancy contribute to the dissemination of HMBs and to the promotion of donating acts and, consequently, to the increase of the awareness and knowledge of this population.

In this context, the women need a support network that, many times, it is not found. This network should include health professionals properly trained and aware of the importance of donating human milk⁽¹⁹⁾ as a practice permeated by social, cultural, historical, economic and psychological values.

These professionals must commit themselves to the promotion, protection and support of breastfeeding and offer, since prenatal guidance about the benefits of this practice, the existence of HMBs and the possibility of donation⁽¹²⁾. In this context, the increased amount of donors

may be related to the implementation of specific training for health care professionals, with respect to the donation of human milk⁽⁸⁾.

The main limitation of this study is related to the number of participants, reflecting the small number of donors registered at the HMB of the city. The fact that the donors were recruited at home may have caused loss of sampling, mainly by the change of address and telephone contact. Based on previous partnerships of the authors of the study with the HMB of the city, we expected a monthly average of 30 to 40 active donors, with a small flow of inputs and outputs each month, which would allow a greater number of donors in three months of data collection. However, we observed a decrease in the number of donors, and this reinforces the need and the importance of characterizing women who donate breast milk to HMBs so that catchment strategies can be developed intersectorally.

On the other hand, the results allowed the comparison of the participants' profile with donors from other regions of the country, what did not have large regional and even international differences⁽²⁰⁾. Such information is useful for the development of campaigns, programs and national policies that favor the recruitment of new donors to HMBs, as well as for the maintenance of the regular donors⁽⁸⁾.

We emphasize that were not found in the national and international literature studies about HMBs in the State of Minas Gerais, nor, studies that seek to identify factors related to knowledge about the processing of the donated milk.

CONCLUSION

From these results, we conclude that the study participants, had on average 30 years old; were married or was living with a partner; had high school education; were

inserted in the labor market; had a monthly household income of approximately four minimum wages; and did prenatal care in private health service. Thus, they had a good socioeconomic status, suggesting that the work of encouraging breastfeeding and human milk donation for this population has been effective.

Given this scenario, we realize that there is a gap in the care provided by health professionals during the pregnancy-puerperal cycle to women with a lower socioeconomic status. This population is mainly assisted in the public health services, the primary focus of the National Policy for the Promotion, Protection and Support of Breastfeeding, which has the Brazilian Network of Human Milk Banks as one of its strategic axes. Thus, empowerment and awareness of health professionals about the importance of publicizing, promoting and supporting breastfeeding and human milk donation in this context are needed. This limitation in the performance of health professionals was evidenced by the reasons given by nursing mothers for not donating and for the interruption of donations on their previous pregnancies; and by the following data: despite all the donors have received prenatal care, just 44.4% received guidelines on the practice of human milk donation; 35.5% did not receive support from people in their social circle, which reflects the lack of access of the population in general, to the information regarding the donation to the HMBs.

Therefore, the identification of the profile of women who donate breast milk and the recognition of the scenario support of donations allow us to identify gaps in this knowledge area and propose some reflections about the improvement and encouragement of the performance of health professionals in promoting and supporting this social practice, especially

those in the primary care. The planning, design, implementation and evaluation of programs to capture and dissemination of HMBs must occur at all levels of health care, through concrete actions such as: pregnant and postpartum women groups; visits to HMBs during the prenatal; dissemination and guidance given during

prenatal; active search for the mothers by community health workers; partnerships between primary sector, maternities and HMBs, with effective referral; donation milk campaigns; and dissemination in the media and social networks. Changing the paradigm of care is a challenge that must be overcome.

CARACTERIZAÇÃO DE NUTRIZES DOADORAS DE UM BANCO DE LEITE HUMANO

RESUMO

Os objetivos deste estudo foram identificar o perfil de mulheres doadoras de leite humano, suas razões ou motivos para a doação e as pessoas que apoiaram esta prática; caracterizar o comportamento de doação destas nutrizes; e identificar os fatores relacionados ao seu conhecimento sobre o processamento do leite doado. Estudo observacional e transversal, realizado de julho de 2011 a janeiro de 2012, no domicílio de 31 nutrizes doadoras de leite, em Uberaba, Minas Gerais, por meio de um questionário. Foram utilizadas as análises univariada e bivariada dos dados. A idade média das nutrizes foi de 29,5 anos; possuíam 10,6 anos de estudo; eram, predominantemente, casadas ou viviam com companheiro e primíparas; estavam, em sua maioria, inseridas no mercado de trabalho formal ou informal; e possuíam uma renda familiar média de 3,9 salários-mínimos. Todas fizeram pré-natal e poucas receberam orientações sobre a doação de leite. O principal motivo para a doação foi o excesso de leite. Não houve associação dos fatores investigados com o conhecimento das nutrizes. Conhecer as características das mulheres que doam leite materno permite o adequado enfoque das ações de captação e divulgação dos Bancos de Leite Humano.

Palavras-chave: Leite Humano. Bancos de Leite. Mulheres. Cuidados de enfermagem. Apoio social.

CARACTERIZACIÓN DE NODRIZAS DONANTES DE UN BANCO DE LECHE HUMANA

RESUMEN

Los objetivos fueron identificar el perfil de mujeres donantes de leche humana, sus razones o motivos para la donación y las personas que apoyaron esta práctica; caracterizar el comportamiento de donar de estas nodrizas; e identificar los factores relacionados con su conocimiento acerca del procesamiento de la leche donada. Estudio observacional y transversal realizado de julio de 2011 a enero de 2012, en el domicilio de 31 nodrizas donantes de leche, en Uberaba, Minas Gerais, a través de un cuestionario. Fueron utilizados los análisis univariado y bivariado de los datos. La edad media de las nodrizas fue de 29,5 años; poseían 10,6 años de estudio; eran, predominantemente, casadas o vivían con el compañero y primíparas; estaban, en su mayoría, insertadas en el mercado de trabajo formal o informal; y poseían una renta familiar media de 3,9 salarios-mínimos. Todas hicieron el prenatal y pocas recibieron orientaciones sobre la donación de leche. El principal motivo para la donación fue el exceso de leche. No hubo asociación de los factores investigados con el conocimiento de las nodrizas. Conocer las características de las mujeres que donan leche materna permite el adecuado enfoque de las acciones de captación y divulgación de los Bancos de Leche Humana.

Palabras clave: Leche Humana. Bancos de Leche. Mujeres. Cuidados de enfermería. Apoyo social.

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