

## Original Research Article

# Donation of women's milk to the neonatology department at the Androva hospital in Mahajanga

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## ABSTRACT

**Background:** The functioning of a milk bank begins with the donation of milk from women donors. The objective of our study was to describe the demographic profile of mothers who donate milk and their practice of donating milk in the neonatology department at the hospital Center Androva Mahajanga.

**Methods:** This is a prospective, descriptive study over a 7-month period, from August 2019 to February 2020. Were included all healthy breastfeeding women who agreed to donate excess breast milk.

**Results:** The participation rate of breastfeeding women in milk donation was 6.6%. Vaginal delivery was the most common (85.9%). The majority had no knowledge about milk donation (83.8%). Manual breast pumping was the most used (43.8%). The average total amount of milk collected by a mother from the beginning to the end of the donation was 613 ml. The average duration of donation by a mother was 6.4 days.

**Conclusions:** The participation and knowledge of mothers on the donation of women's milk was low, although it can improve the survival of newborns.

**Keywords:** Human milk, Knowledge, Lactarium

## INTRODUCTION

Breast milk is the ideal food for every newborn. However, there are circumstances where the child's own mother's milk is not available, where donated milk is the second-best alternative, especially for very small premature babies.<sup>1</sup> In 1990 the Innocenti declaration was ratified, whose main initiators were the WHO and UNICEF.<sup>2</sup> The functioning of a milk bank starts with the donation of milk from the donor women. The objective of our study was to describe the epidemiological profile of mothers who donate milk and their practice of donating milk in the neonatology department of the Androva Mahajanga hospital.

## METHODS

The study was conducted at the mother and child complex (MCC) of the university hospital center professor Zafisaona Gabriel (CHU PZaGa). This is the only neonatal reference hospital in the Boeny region. The first lactarium was created in 2015 at the neonatology department of the university hospital professor Zafisaona Gabriel (CHU PZaGa) in Mahajanga. It ensures the collection, storage, treatment and distribution of breast milk to babies under medical prescription.

This is a prospective descriptive study, over a period of 7 months, from 12 August 2019 to 12 February 2020.

The recruitment was exhaustive, we included all women who agreed to participate in the study and did not meet the exclusion criteria.

Were included in the study all breastfeeding women in the MCC in good health with negative HIV and Hepatitis B serologies, who agreed to donate their breast milk in surplus.

Excluded from study were female donors with a history of taking toxic substances and those who have positive serology for diseases transmitted through breast milk (HIV, hepatitis B and C and syphilis) and newborns hospitalized in the neonatology unit with no nutritional problem.

The socio-economic and demographic characteristics of the donor mothers, their knowledge of milk donation, and the methods of collecting women's milk.

The data were then processed with SPSS 25 software and Microsoft excel 2013.

We obtained the informed consent of all milk donors and their identities were kept anonymous.

## RESULTS

Among the 969 women giving birth at the MCC, 89 agreed to donate their breast milk; of these, 64 were retained, representing a prevalence of 6.6%. The average age of these women was 28 years with extremes of 16 and 40 years. Most of the mothers were between 18 and 35 years of age. Eighty-seven-point five percent (87.5%) or 56 mothers were of urban origin (Table 1). According to their marital status, 47 mothers were married (89.1%). And in 54.7%, these women were housewives (Table 2). Most of the mothers were poor (43.8%).

The average age of pregnancy was 38 weeks with extremes of 34 and 42 weeks, and the majority had given birth to full-term babies, i.e., 57 mothers (89.1%). Most of these mothers had given birth by vaginal delivery, i.e., 55 mothers (85.9%).

Mothers started donating their excess milk within the first 7 days of their baby's life (53.1%). In 83.8% of the cases, these mothers had no prior knowledge of female milk donation. In 84.4% of the cases, the milk was collected within the MCC. Manual breast pumping was the most common method used (43.8%), and manual expression was used in 23.4%; and the majority collected milk after breastfeeding their babies (82.8%). The frequency of milk extraction was mostly 5-7 times per day (Figure 1). The average total amount of women's milk collected was 613ml with extremes of 50ml and 3020 ml (Table 3). Each woman had mostly given milk for 1 to 10 days (79.7%), with an average duration of 6.5 days, and extremes of 1 and 29 days.

**Table 1: Demographic data, (n=64).**

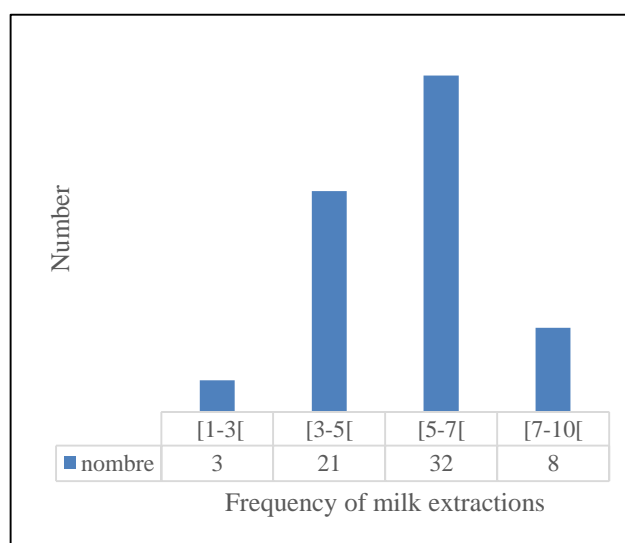
Variables	N	Percentage (%)
<b>Age (Years)</b>		
<18	3	4.69
18-35	45	70.31
>35	16	25.00
<b>Provenance</b>		
City	56	87.50
Rural	8	12.50

**Table 2: Distribution of mothers by profession, (n=64).**

Profession	N	Percentage (%)
Housewives	35	54.7
Primary sector	15	23.4
Secondary sector	10	15.6
Tertiary sector	4	6.3

**Table 3: Distribution of mothers according to the average daily quantity and the total quantity of women's milk collected at the end of the donation, (n=64).**

Variables	N	Percentage (%)
<b>Average daily quantity (ml)</b>		
0-49	29	45.3
50-99	24	37.5
100-149	8	12.5
>200	1	1.6
<b>Total quantity (ml)</b>		
<499	38	59.4
500-999	16	25
1000-1499	4	6.2
1500-1999	4	6.2
2000-2400	1	1.6
>3000	1	1.6



**Figure 1: Frequency of milk extractions per day.**

## DISCUSSION

### *Prevalence of milk donation*

The prevalence of female milk donors in our service was 6.6%. A higher participation rate was found in Ethiopia (11%).<sup>3</sup> Meneses et al also found low participation in donation. High participation was related to having received information on breast milk expression, having been encouraged to donate breast milk and having received help with breastfeeding.<sup>4</sup> A study in France showed that the main barrier to donating milk was fear of difficulty with breastfeeding and beliefs about the quantity or quality of milk.<sup>5</sup>

### *Demographic profile of female donors*

Our donors were mostly young, aged 18 to 35 years, with an average age of 28 years; the same as in other studies such as in Ethiopia where women were on average 27.7 years old.<sup>3</sup> They were mostly from the urban area of Mahajanga I, which was also found in a study in Ethiopia where 68.8% came from urban areas<sup>3</sup>. This could be explained by the fact that our institution is located in the city of Mahajanga I.

Taking into account the marital status of our donors, 89.6% were married, similar to what was found by Gelano et al.<sup>3</sup> The stable family status allows the donor women to take care of their child regarding breastfeeding as well as to participate in the donation of surplus breast milk. It can be said that the father plays an important role in the practice of breastmilk donation because he provides psychological support, help on the use of breast pumps and encourages his wife to help other fragile babies.

It was found that 53.1% of the mothers had completed high school, similar to what was found in Spain where the secondary school level was 65.3%.<sup>6</sup> This may reflect the fact that mothers who had attended school could better understand the awareness and usefulness of milk donation.

In terms of the employment status of donors, the majority of mothers were housewives, i.e., 54.68%, which was also found by Balachandran et al in India (75.12%).<sup>7</sup> Housewives may have more time to donate milk than working mothers. In Bordeaux, Hitte et al showed that lack of time was an obstacle to milk donation.<sup>8</sup>

Pauciparity predominated, in line with that found by Ergin et al (40.4%).<sup>9</sup> This could be explained by the fact that mothers who had already had other children, had already received assistance in feeding their babies, and had previously been reassured about the characteristics of their milk, quantity and quality.<sup>7</sup>

Vaginal delivery was the most frequent, at 86%, similar to what was found in Ethiopia.<sup>3</sup> The initiation of

breastfeeding is compromised by caesarean section.<sup>10</sup> On the other hand, both maternal and foetal stress, which is higher especially during emergency caesarean sections, can interfere with the initiation of breastfeeding, by decreasing oxytocin production during suckling.<sup>11</sup>

### *Knowledge and practice of donors on milk donation*

Female milk donation was little known by the donors, only 16.2% had known about the existence of the lactarium in the department; similar to that found by Gelano et al.<sup>3</sup> While in a survey conducted in France, it was found that mothers seem to be well informed about the existence of lactarium.<sup>5</sup> According to Hitte et al lack of information was a barrier to milk donation<sup>8</sup>. Thus, it would be beneficial to strengthen information, education, communication of all women on the existence and importance of the milk bank.

The collection of milk was mainly done within the hospital (84.4%), and 10.9% continued at discharge. This could be explained by the fact that the sensitization of mothers was mainly done within the hospital. And for this collection, the manual breast pump was the most used (43.8%). Fewtrell et al showed in a study that mothers who used electric breast pumping often pumped for less time than those who used manual breast pumping; that the flow rate and total volume of milk were significantly greater with manual breast pumping; that manual breast pumping was significantly better rated by mothers; and that the lipid composition did not differ between the two methods.<sup>12</sup>

More than three quarters of donors had donated milk for less than 10 days (79.7%), with an average duration of 6.5 days, whereas in developed countries such as Spain, the average duration was 189 days.<sup>13</sup> A study conducted in France showed that the main obstacle to donating milk was the fear of difficulty with breastfeeding as well as beliefs about the quantity or quality of milk.<sup>5</sup>

At the end of the donation, the average amount of milk collected per donor was 613 ml, with extremes of 50 ml and 3020 ml. Compared to that found by Colomina et al it was lower, they found that the median amount of milk collected was 3.11 (1.3-8.31). They found that previous donation, lower gestational age of the baby, and initiation of donation in the early stages of lactation were associated with a greater amount of human milk donated to the milk bank.<sup>14</sup>

The present study has limitation such a mono-centricity.

## CONCLUSION

The woman's milk remains the best food for any newborn. In the absence of the mother's own milk, human milk is the second-best option. Donating milk is a generous act that can save many new-borns. The functioning of a milk bank starts with the existence of

donors. However, it is not well known, and few women have agreed to donate their breast milk. Thus, to increase the prevalence and the assiduity of mothers to donate milk, it would be necessary to strengthen information, education, and communication on the existence, importance, benefits obtained from women's milk and milk bank.

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