Anthropological Considerations Regarding the Experience and the Acceptance of the Donation of Human Milk

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Abstract: Taking into account the fact that Romania is one of the few European countries with no human milk bank the author attempts to identify the experience and the acceptance of the human milk donation in Romania. The author interviewed a total of 17 mothers, 4 grandmothers and one great grandmother in order to establish if a trans-generational change appeared regarding the issue of human milk donation in Romanian culture. The author identified no difference at the level of experience of milk sharing/wet-nursing between the generations, but a significant difference at the level of institutional human milk banking between the two generations.

Keywords: Human milk donation, Human milk banks, Anthropology, Human milk sharing, Romania, Wet nurse.

INTRODUCTION

There are different definitions that are important to distinguish different terms apart from each other. First, human milk donation refers to milk donated by another mother and processed by human milk banks than distributed to children that can't receive their own mother's milk. Second, the process of human milk sharing refers to the practice in which the mother nourishes with her milk a baby that is not her own through privately negotiated altruistic breast milk gifts, usually refers at human milk donation outside human milk banks [1]. Wet-nursing- old practice when a mother breastfeeds another baby than her own child. This practice in the past was usually considered as a form of employment [1].

The benefits of breastfeeding are well known in the medical field and nutritional sciences.When human breastfeeding/milk is not possible or enough to satisfy the requirement of a nursing baby, the best alternative is donor human milk [2].

The benefits of donor human milk feeding especially for the preterm infants are well documented in different studies [3, 4]. In order to have access to donor human milk there is a need of developing human milk banks as the safe way to use donor human milk [5].

Although there is a rise in developing human milk banks around the world, Romania is one of the few European countries with no human milk bank [6]. Studies regarding the mother's views about milk banking and human milk donation were made worldwide, especially in countries where limits and barriers regarding the establishment of human milk banks were investigated. [7, 8] Studies that took into account these aspects did not speak about any change between the generations regarding human milk donation.

In Romania the use of a wet nurse is a well-known practice in the generation of our parents and grandparents. Use of wet nurses is a very common practice in the high social class in Romania at the beginning of twentieth century, being one of the main possibilities of work for women [9]. Nowadays this is a practice present only in very small communities with a cultural legacy, like gypsy community. In the high class wet nursing is not present any more because the availability of artificial milk and the marketing idea that is "humanized" makes formula more acceptable [10]. Regarding the existence of human milk banks we do not have many data in Romania. At an official level we do not know about the operation of human milk banks in Romania. Perhaps, this study is the only one of this type made about the lack of milk banks in Romania.

The study was conducted in a period, the summer of 2016, where important efforts were made in our country, Romania, to open the first human milk bank. The data obtained in this study are important, giving a better understanding about the experience and the acceptance regarding human milk donation as an important human need and how these aspects changed through generations.

MATERIALS AND METHODS

An observational, transversal study was performed. The data was collected in the summer of 2016.The

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instrument used was the interview that included 18 questions. Before the interview verbal consent was obtained from the participants. The researcher offered information about the main objectives and benefits of the study under investigation. The sample that answered the questions was formed by 22 volunteers: including 17 mothers, 4 grandmothers, one great grandmother. The participants were mainly the persons that came to the breastfeeding support groups held by the author of the article.

The breastfeeding support groups were held on a weekly basis during the summer of 2016, in a friendly tea house in Bucharest, an urban location. In the meetings the author of the article, medical doctor and international board certified lactation consultant, offered information, answered the questions the participants had about breastfeeding. The method of sampling was that of convenience. The interview contained 24 opened and closed-ended questions in Romanian evaluating socio-demographic properties and opinions of participants regarding the experience and the acceptance of human milk donation.

The questionnaire included 6 demographic questions like age, education, number of children, rural/urban, duration of breastfeeding, children's age and 18 questions regarding the participant's experience about milk sharing, wet nursing, and the knowledge or information about human milk banking. The participants completed the interview by "self-application" method. The interview took in average 10 minutes to complete. A follow up of the interview was not performed.

INTERVIEW

Table 1: Interview- Questions and Responses

Question Number	Question	Responses Mothers (Total of 17)	Responses Grandmothers and a Great Grandmother (Total of 5)
Q1	Have you heard about children receiving human milk from another mother?	Yes (17)	Yes (4) No (1)
Q2	Have you heard about children breastfed by another mother?	Yes (16) No (1)	Yes (4) No (1)
Q3	Did it happen to you/do you know about birth centers, hospitals that practiced human milk donation?	No (15) Yes (2)	Yes (4) No (1)
Q4	Would you agree that your child would receive human milk from another mother a) yes, if it is tested b) yes, if my doctor recommends c) yes, only from the human milk bank d) yes, if I know the mother e) yes, from anyone f) no	a (6) d (2) e (2) c,d (2) b (1) f (1) a,b,c (1) a,c,d (1) a,b,c,d (1)	a,b,c (2) c (2) a (1)
Q5	Would you agree that your child would be breastfed by another mother?	Yes (14) No (3)	Yes (5)
Q6	If yes, by whom: a) members of my family b) friends c) anyone	a,b (8) c (5) a (1) b (1) No response (2)	a (4) a,b (1)
Q7	If yes, would you pay the mother that donates milk/breastfeeds? a) no, not in any case b) no money, but a gift c) yes	b (10) c (6) No response (1)	b (3) c (2)

Q8	Do you think about possible risks: a) infectious diseases b) mother's diet c) drugs taken by the mother d) something else e) I don't think of any risks	a,b,c (7) a,c (4) a,b,c,d (3) a (1) c (1) e (1)	a,b,c (3) a (2)
Q9	Did you donate human milk?	No (12) Yes (5)	No (4) Yes (1)
Q10	Did you breastfeed another child than your own?	No (12) Yes (5)	No (5)
Q11	Would you donate your milk if you had an oversupply?	Yes (17)	Yes (5)
Q12	Would you breastfeed another child than your own?	Yes (16) No (1)	Yes (5)
Q13	If yes, whom: a) members of my family b) friends c) anyone who needs	c (16) a,b (1)	c (3) a (2)
Q14	If no what is the reason?	No answer	No answer
Q15	If yes, would you like to be paid? a) yes b) no , just the costs for the pump, deposit c) no, even with some costs from my side	c (14) b (2) a (1)	c (4) b (1)
Q16	Did you heard about human milk banks?	Yes (14) No (3)	Yes (3) No (2)
Q17	If yes, from what source?	Internet (11) Friends (3)	Family members (3)
Q18	An announcement was posted on a social network by a mother stating that she had a milk deposit and she wanted to donate it. What is your opinion about this?	Donate to the human milk bank (4) Nice gesture (12) Need more information (1)	Donate to the human milk bank (3) Nice gesture (1) No response (1)

The study concentrated on the experience and the level of acceptance of human milk donation. A database of information was completed based on the answers and questions.

Statistical Analysis

The data obtained at the end of the study were evaluated with the Spearman correlation coefficient for non-parametric distribution data [11], the Kolmogorov-Smirnov test ($p > 0.05$ for a normal distribution of data and $p < 0.05$ for a non-parametric distribution) [12], the z test to calculate the proportions on line, the Mann-Whitney test to compare the median between the two groups. A p value of <0.05 was considered statistically significant.

RESULTS

Demographic Properties

The majority of mothers, 63 %, had the age between 31 and 40 years old. The majority of mothers, 86%, had at least high-school education. With only one exception all the mothers were from urban environment. This can be a limitation of the study taking into account the fact that the breastfeeding support group was held in Bucharest, the capital of Romania. All the participants had breastfeeding experience. In total they breastfed more than 28 years, with an average of more than one year for every participant. 95% of participants knew about practices of human milk sharing. 91% of participants knew about

practices of wet-nursing. 23% of participants (5 participants) knew about human milk sharing/human milk donation in birth centers and hospitals. From these 5 participants- 2 were the mothers and 3 were the grandmothers of the children participating in breastfeeding support groups.

Table 2: Z Score Test for the Two Groups Proportions (Mothers and Grandmothers/Great Grandmother)

	Z-Score	p-Value
Q2	-.96	.33
Q3	2.67	.01
Q4	.55	.57
Q5	-1.01	.31
Q7	-.1	.92
Q9	-.41	.67
Q10	-1.38	.17
Q12	.55	.57
Q16	-1.05	.29

With only one exception, all the participants wanted for their children to receive human milk from another mother. 86% of participants agreed that their children to be breastfeed by another mother, wet-nursed, especially by family members (43%), close friends (23%) and by anyone (23%). Two participants that agreed with the donated human milk feeding didn't agree with wet nursing. Regarding the payment- 59% of participants would give a gift while 36% would pay the donating mother. At the question about human milk donation risks- the participants answered they think about diseases, diet and medication, only one person didn't take any risks into account. 27% of participants donated human milk/human milk sharing, while 23% of participants wet-nursed.

All the participants would donate human milk/wet nursed if they had an oversupply. Only one participant said she would donate but she wouldn't wet nurse explaining she was thinking about infectious diseases that can pass through the milk/breast from the recipient to her own baby. 86% of participants would donate human milk to anyone, 9% to the family members, 5% to family members and friends. 82% of participants would donate without any payment even with some costs from their side, 14% would donate without any payment but with no costs from their side, while 4%, one person, said she would like a payment, depending on the situation. 77% of participants heard about human milk banks, especially from internet. Asked about a situation of human milk sharing through a

Tabel 3: Descriptive Statistical Data for the Experience Indicator

			Statistic	Std. Error
Indicator experience	Mean		9.64	.576
	95% Confidence Interval for Mean	Lower Bound	8.44	
		Upper Bound	10.83	
	5% Trimmed Mean		9.65	
	Median		9.50	
	Variance		7.290	
	Std. Deviation		2.700	
	Minimum		5	
	Maximum		14	
	Range		9	
	Interquartile Range		4	
	Skewness		-.181	.491
	Kurtosis		-.752	.953

The level of acceptance was calculated taking into account the answers at the questions Q4, Q5, Q6, Q7, Q11, Q12, Q13, Q 15. The indicator of acceptance had values between a minimum of 7 and a maximum of 12, with an average of 10.50 (non-parametric distribution, Kolmogorov-Smirnov = .23, p = .00).

Table 4: Descriptive Statistical Data for the Acceptance Indicator

			Statistic	Std. Error
Indicator acceptance	Mean		10.05	.326
	95% Confidence Interval for Mean	Lower Bound	9.37	
		Upper Bound	10.72	
	5% Trimmed Mean		10.11	
	Median		10.50	
	Variance		2.331	
	Std. Deviation		1.527	
	Minimum		7	
	Maximum		12	
	Range		5	
	Interquartile Range		2	
	Skewness		-.702	.491
	Kurtosis		-.435	.953

There wasn't any statistical significant correlation between the level of experience and the level of acceptance (r = -.15, p = .51).

social network, 41% said it is a nice gesture, while 23% said they should donate to the human milk bank.

The level of experience was calculated taking into account the answers at the questions Q1, Q2, Q8, Q16 and Q17. This indicator of experience had values between a minimum of 5 and a maximum of 14, with an average of +/-SD = 9.64+/-2.7 (normal distribution, Kolmogorov-Smirnov = .13, p = .20).

Table 5: The Spearman Correlation Coefficient for Non-Parametric Distribution Data

			V34	V32
Spearman's rho	Indicator acceptare	Correlation Coefficient	1.000	-.148
		Sig. (2-tailed)	.	.511
		N	22	22
	Indicator informare	Correlation Coefficient	-.148	1.000
		Sig. (2-tailed)	.511	.
		N	22	22

A Mann-Whitney U test with the Monte Carlo method [13] showed there wasn't a statistically significant difference between the median values of the experience between the mothers and the grandmothers/great grandmother. (U = 39.50, p = .84).

Table 6: A Mann-Whitney U Test with the Monte Carlo Method Significance Regarding the Median Values of the Experience between the Mothers and the Grandmothers/Great Grandmother

Test Statistics[a]			
			Indicator experience
Mann-Whitney U			39.500
Wilcoxon W			192.500
Z			-.237
Asymp. Sig. (2-tailed)			.813
Exact Sig. [2*(1-tailed Sig.)]			.820[b]
Monte Carlo Sig. (2-tailed)	Sig.		.840[c]
	99% Confidence Interval	Lower Bound	.831
		Upper Bound	.850
Monte Carlo Sig. (1-tailed)	Sig.		.418[c]
	99% Confidence Interval	Lower Bound	.405
		Upper Bound	.430
a. Grouping Variable: Varsta			
b. Not corrected for ties.			
c. Based on 10000 sampled tables with starting seed 2000000.			

A Mann-Whitney U test with the Monte Carlo method showed there wasn't a statistically significant difference between the median values of the acceptance between the mothers and the grandmothers/great grandmother. (U = 22.50, p = .10).

Table 7: A Mann-Whitney U Test with the Monte Carlo Method to Test for Differences in Levels of Acceptance between the Mothers and the Grandmothers/Great Grandmother

Test Statistics[a]			
			V4
Mann-Whitney U			22.500
Wilcoxon W			37.500
Z			-1.615
Asymp. Sig. (2-tailed)			.106
Exact Sig. [2*(1-tailed Sig.)]			.120[b]
Monte Carlo Sig. (2-tailed)	Sig.		.101[c]
	99% Confidence Interval	Lower Bound	.093
		Upper Bound	.109
Monte Carlo Sig. (1-tailed)	Sig.		.055[c]
	99% Confidence Interval	Lower Bound	.049
		Upper Bound	.061
a. Grouping Variable: Varsta			
b. Not corrected for ties.			
c. Based on 10000 sampled tables with starting seed 299883525.			

DISCUSSION AND CONCLUSION

Although the sample studied is small, this is the only study of this type conducted in Romania, one of the few countries with no human milk banks in Europe. 95% of participants heard about practices of human milk sharing and 91% heard about wet nursing, showing that these practices are still popular. An explanation can be the fact that the participants already had a big experience of more than one-year breastfeeding, and knew other breastfeeding mothers being participants in breastfeeding support groups.

Using the Z-score there isn't any significant difference between the group of mothers and the group of grandmothers and a great grandmother. This can show a legacy that is carried on to the next generation regarding these aspects. Only 23% of participants know about practices of human milk donation in the birth centers and hospitals. From the 5 participants that answered yes at this question 2 are from the mothers group and 3 are from the grandmothers group. The Z-score is 2.2624 with a p value of 0.023, <0.05, showing a significant result. One of the grandmothers described a form of human milk banks in the birth center in 70s-the milk from all the mothers was collected, boiled and than distributed to the babies that didn't receive own mother's milk.

The result shows a significant change between the generations. At the generation of the grandmothers the human milk banks existed in medical units, while after 80's we don't have information about human milk banks. The practices described by the 2 mothers in the study refer to unofficial milk sharing (without human milk banks) in the birth centers.

A possible explanation for this situation can be the HIV epidemic in Romania in 80's that could lead to a massive closure of human milk banks [14].

The fact that despite the lack of legislation in the field of human milk donation, the medical staff practices an unofficial human milk sharing, an illegal practice, shows that the medical staff will support and encourage the use of donor human milk, but also shows the need of information regarding the risks of milk sharing. In Romania there is a big concern regarding the HTLV-1 infection. Romania seems to be the only true endemic zone for HTLV infection in Europe [15]. The same situation is with tuberculosis- Romania has the biggest incidence in Europe [16].

So, although at the level of experience of human milk sharing/wet nursing there isn't a difference between the two generations, at the level of institutional human milk banks there is a significant difference. This can show the fact that human milk banks in Romania can develop in a society with a solid legacy regarding human milk donation and also with a history of human milk banks, in addition to a rigorous health check for the donors, and the facilities that collect the donations.

This study can anticipate a positive reaction from the society about the development of human milk banks. Regarding the other aspects present in the interview, the author didn't find any significant difference between the two generations. It is interesting that the two groups (mothers and grandmothers/ great grandmother) had similar answers about the acceptance of donated human milk, wet-nursing, and also about the possible risks regarding human milk sharing. There is a difference between the source from which the participants found out about the human milk bank- grandmothers and the great grandmothers especially from family members, while mothers found out from the Internet.

Other important aspects: many would like to give milk to anybody but are cautious about receiving from anybody. The majority of participants want to donate human milk with no payment even with costs from their side. This shows a great importance the participants give to their milk and the possibility to help other children.

It is interesting that although at the beginning of the 20th century the high class in Romania employed wet-nurses, the generation of grandmothers and a great grandmother see the human milk as a donation and not as a form of work that implies payment. The same shift happened in United States during the 20th century [17].

Although the majority of participants pay attention to the mother's diet, medication, diseases, at the last question, only a few note the fact that the social network doesn't guarantee the safety about human milk donation. These aspects show there is a need for a better information about the difference between the informal human milk donation, human milk sharing, and the human milk banks, especially about the risks of human milk sharing to the general population, to possible donors, to possible receivers but also to medical staff.

The study gives also useful information about the general portrait of a typical donor. The results are similar to the study made by Azema *et al.*: the possible donors are characterized by altruistic and optimistic features regardless the generation they belong to [18].

CONCLUSIONS

These findings can be used for the development of human milk banks. Although at the level of experience of human milk sharing/ wet-nursing there isn't a difference between the two generations, at the level of institutional human milk banks there is a significant difference. This can show the fact that human milk banks in Romania can develop in a society with a solid legacy regarding human milk donation and also with a history of human milk banks. This study can anticipate a positive reaction from the society about the development of human milk banks.

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