



# Mothers' views of milk banking: sample of İzmir

Aysun Ekşioğlu, Yeşim Yeşil, Esin Çeber Turfan

İzmir Atatürk Health College, Ege University, İzmir, Turkey

## Abstract

**Aim:** The studies on human milk banking in Turkey, has being carried out at a hospital in İzmir province. There are different point of views about milk banking. The aim of the study is to determine the knowledge and the views of the mothers towards milk banking.

**Material and Methods:** This study is a cross-sectional survey. The study was carried out with 404 mothers who gave birth in a two maternity hospitals and one university hospital in İzmir using the face-to-face interview technique between March 2014 and June 2014. The study data were collected using a 30-item socio-demographic questionnaire.

**Results:** The mothers' mean age was 28.4 years (16-46 years). Of the mothers, 45.5% were primary school graduates, 80.2% were members of a nuclear family, 75.7% had less than three children, 63.4% gave birth by caesarean section and only 79.5 percent were able to breastfeed before being discharged. Of the mothers, 41.6% were aware of milk banking, 71.3% were willing to receive milk bank services and 68.8% were willing to donate breastmilk. 62.2% of those who did not want to make donation stated risk of contagion as a reason, 8.2% of the participants had worked as wet-nurse before.

**Conclusions:** Most mothers revealed positive approaches and opinions about establishment of milk banking and milk donation. However, there were some concerns due to the risk of infectious diseases and religious beliefs. Efforts should be made to raise awareness and mothers should be informed about the importance of breast milk and breastfeeding so that milk banks can be regarded as an additional choice.

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**Keywords:** Breastfeeding, donor milk, milk bank

## Introduction

Breastmilk and nursing is an essential requirement for healthy growth and development of the newborn. In the infancy during which growth and development continues with the highest velocity, adequate and balanced nutrition is provided by breastmilk of the mother for each baby (1, 2). In the nursing period, exclusive breastfeeding and total nursing time are affected negatively by the problems arising sometimes from the mother and sometimes from the baby (3). The World health Organization (WHO) recommends babies who can not receive breastmilk from their own mothers should receive breastmilk

from another mother (donor milk) as another option (4, 5). Donor breastmilk is defined as milk which is donated by another mother and processed by milk bank to be used by a receiver mother who can not nurse her baby (6, 7). Especially in newborns who are preterm and who have other risks, feeding with donor milk is an efficient method for prevention of infectious diseases, and feeding tolerance, and cognitive functions and for other long-term health benefits (8, 9). Studies have shown that use of donor breastmilk provides cost-efficiency in decreasing the problems of necrotizing enterocolitis, late onset sepsis and food intolerance and in shortening the discharge time (10, 11).

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**Address for Correspondence:** Aysun Ekşioğlu, Ege Üniversitesi İzmir Atatürk Sağlık Yüksekokulu, İzmir, Türkiye.  
E-mail: aysun.basgun@ege.edu.tr

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In Turkey, studies related with milk banking are continuing in a hospital in the province of İzmir. There are controversial opinions about breastmilk banking. The aim of this study was to determine the information and point of views of mothers about breastmilk banking. We think that the data obtained in this study will be important in terms of evaluating the views about milk banking and use of donor milk and providing a database enlightening milk banking studies.

### Material and Methods

The study which had a cross-sectional and descriptive design included the mothers who presented to Tepecik Education and Research Hospital, Buca Women's and Children's Hospital and Ege University Medical Faculty, Gynecology and Obstetric wards for delivery between March 2014 and June 2014 in İzmir. Approval was obtained from the ethics committee of İzmir Katip Çelebi University to conduct the study (27.12.2013-260). Before the interview, verbal consent was obtained from the participants by explaining the aim of the study, benefits which would be obtained from the study and the time which would be spent for the interview. The mothers who lived in the province of İzmir, who could talk Turkish and who volunteered to participate were included in the study. In determining the sample of the study, the sample size representing the population which should be reached was calculated to be 353 when a prevalence of 50%, an error margin of 5% and a confidence interval of 95% were considered and 404 mothers were included in the study. A p value of <0.05 was considered statistically significant in the study.

### Collection of the data

In collection of the data, a questionnaire form composed of 33 open and closed-ended questions prepared in accordance with the literature was used to evaluate the sociodemographic properties and opinions of the mothers about milk banking. The questionnaire included 10 demographic questions related with age, education, family type, marital status, healthcare insurance, income level and working status, 8 questions related with parity, gender of the baby, previous nursing status, gestational week, mode of delivery and prenatal care and 15 questions related with opinions about nursing and milk banking. After the questionnaire forms were prepared by the investigators, they were examined and evaluated by two academicians who worked in the area of nursing and afterwards the final form of the questionnaire was

applied to 30 mothers who had similar properties with the study sample, but were not included in the sample. The statements in the questionnaire were not changed, since no difficulty was experienced by the mothers in understanding the questions. The questionnaire forms were filled in by the mothers by "self-application" method. Completion of each questionnaire took approximately 15 minutes.

### Statistical analysis

The data obtained at the end of the study were evaluated using Statistical Package for the Social Sciences (SPSS) for Windows 16.0 statistical program. Figure percentage distributions were used in analysis of the findings related with the demographic properties of the mothers and chi-square test was used in evaluation of the relation between the variables. A p value of <0.05 was considered statistically significant.

### Results

#### Demographic properties

404 mothers were included in the study and the mean age of the mothers was  $28.4 \pm 5.9$  years (the youngest: 16, the oldest: 46). Of the mothers 45.5% were primary school graduates, 17.8% were working and 80.2% were living in a nuclear family (Table 1). When the obstetric properties were examined, it was found that 31.4% were primipar and 68.6% were multipar; 75.7% had less than three children, 24.3% had three more or children and 63.4% delivered by cesarean section.

Before discharge 79.5% of the mothers had exclusively breastfed their babies, 59.9% had previous experience of nursing and 23.8% experienced breast problems at the time of the study.

#### Views of the mothers about milk banking

Among the mothers 41.6% were aware of milk banking and the majority (85.7%) learned this from the media. Milk banking was supported by 71.3% and 68.8% stated that they could donate their milk. Among the mothers who did not wish to donate their milk, 62.2% stated the risk of disease as a reason and 37.2% stated that it was not appropriate in terms of religion. The mothers thought of utilizing milk banking with a rate of 47.5% in case of a condition hindering breastfeeding and 26.7% stated they could utilize milk banking even in the absence of a condition hindering breastfeeding. Eight point twenty five% of the participants worked as wet-nurse before (Table 2).

**Table 1. Sociodemographic data of the women**

	Number	%
<b>Age group (years)</b>		
Below 20	22	5.4
20-30	238	58.9
31-40	134	33.2
41-50	10	2.5
<b>Education</b>		
Primary school	184	45.5
Secondary school	83	20.5
High-school	101	25
University	36	8.9
<b>Working status</b>		
Yes	72	17.8
No	332	82.2
<b>Family type</b>		
Nuclear family	324	80.2
Large family	80	19.8
<b>Healthcare institution where regular follow-up was performed</b>		
Public hospital/university	302	74.8
Private hospital	67	16.5
Family health center	35	8.7

When the relation of the age, education and working status, parity and mode of delivery of the mothers who participated in the study with the status of request for milk banking was evaluated, no statistically significant difference was found ( $p>0.05$ ). However, it was observed that the mothers who thought that milk banking was problematic in terms of religion and who did not think of being a donor wished opening of milk banks with a lower rate ( $p<0.05$ ) (Table 3).

## Discussion

The main objective of this study was to determine the opinions of mothers related with milk banking and to examine their approaches to milk donation. Mothers who heard of milk banking were 41,6% and 58,4% had never heard of it. Gürol et al. (9) reported that 90.6% of mothers had not heard of milk banking before. In a study conducted by McKenzie et al. (10), it was shown that a part of the participants had never heard of milk banking or knew that a milk bank was present where they lived, but did not know the

**Table 2. Opinions of the mothers in relation with milk banking**

	Number	%
<b>Status of having heard of milk banking</b>		
Yes	168	41.6
No	236	58.4
<b>Source<sup>a</sup></b>		
Healthcare worker	24	14.3
Media	144	85.7
<b>Status of request for breastmilk banking</b>		
I do wish	288	71.3
I do not wish	116	28.7
<b>Previous wet nursing status</b>		
Yes	33	8.2
No	371	91.8
<b>Status of the children being wet nursed</b>		
They were wet nursed	44	10.9
They were not wet nursed	360	89.1
<b>Status of thinking donating her breastmilk if there were a milk bank</b>		
I would donate	278	68.8
I would not donate	126	31.2
<b>Status of request for utilizing milk banking in case of a condition hindering breastfeeding</b>		
I would like to utilize	212	52.5
I would not like to utilize	192	47.5
<b>Status of request for utilizing milk banking even if there is no condition hindering breastfeeding</b>		
Yes, I would like to utilize	108	26.7
No, I would not like to utilize	296	73.3
<b>The reason for not wanting utilizing milk banking<sup>a</sup></b>		
Risk of disease transmission	120	62.2
Nor suitable in terms of religion	74	37.8
<b>Would breastmilk banking create a problem in terms of religion?</b>		
Yes	146	36.1
No	172	42.6
I don't know	86	21.3

<sup>a</sup>The ones who responded

operation properties of this bank (transfer of milk, sterilization etc.) and paralleled milk donation to blood donation. We think that the finding that the majority of the mothers in our study were aware of milk banking was related with the fact that the study was conducted in İzmir which is one of the western cities with relatively more opportunities and this issue was recently emphasized in the media more frequently.

**Table 3. Examination of the status of requirement of breastmilk banking by the mothers in terms of some variables**

Variables	The ones who wanted opening of a milk bank (n=87)		The ones who did not want opening of a milk bank (n=222)		Total (n=309)		p
	Number	%	Number	%	Number	%	
<b>Age</b>							
Below 20 years	14	4.9	8	6.9	22	5.4	0.08
20-30	181	62.8	57	49.1	238	58.9	
31-40	87	30.2	47	40.5	4	33.2	
41-50	6	2.1	4	3.5	10	2.5	
<b>Education status</b>							
Primary school	133	46.2	51	44.0	184	45.5	0.85
Secondary school	61	21.2	22	19.0	83	20.5	
High-school	69	24.0	32	27.6	101	25.1	
University	25	8.6	11	9.4	36	8.9	
<b>Working status</b>							
Employee	51	17.7	21	18.1	72	17.8	0.51
Unemployed	237	82.3	95	81.9	332	82.2	
<b>Parity</b>							
Primipar	91	31.6	36	31	127	31.4	0.51
Multipar	197	68.4	80	69	277	68.6	
<b>Mode of delivery</b>							
Normal delivery	102	35.4	46	39.7	148	36.6	0.25
Cessarean section	186	64.6	70	60.3	256	63.4	
<b>Gender of the baby</b>							
Female	156	54.2	55	47.4	211	52.2	0.13
Male	132	45.8	61	52.6	193	47.8	
<b>Breast problem</b>							
Experiencing	64	22.2	32	27.6	96	23.8	0.16
Not experiencing	224	77.8	84	72.4	308	76.2	
<b>Finding problematic in terms of religious aspect</b>							
Yes	77	26.7	69	59.5	146	36.1	
No	149	51.7	23	19.8	172	42.6	0.00
<b>Thinking of being a donor</b>							
Yes	258	89.6	20	17.2	278	68.8	0.00
No	30	10.4	96	82.8	116	31.2	

The majority of the mothers (85.7%) learned milk banking application from the media. One of the main sources used for informing the issues of nursing and breastmilk is the media (12). In the study of Ünsür et al. (13), the informing sources related with breastmilk were examined and 22.7% of the mothers were found

to have obtained information from the media organs. This rate was 28.8% in the study of Koç and Tezcan (14) and 7.8% in the study of İnanç (15). Starting from the second half of the twentieth century, the interest of the media for milk sharing has increased. News showing nursing of babies by another volunteer mother who

had lost their mothers because of earthquakes, diseases and war, were given place in the media (16, 17). In Turkey, initiation directed to milk banking has been announced more widely by way of the media, since it is a new application. In our study, it was found that a small portion of the mothers heard about milk banking from healthcare workers and this findings suggests that healthcare workers have a lack of knowledge in this area.

It was observed that the majority of the mothers (71.3%) supported milk banking. In the study of Mackenzie et al. (10) it was reported that mothers thought of milk banking positively with the thought that breastmilk was an important food for the baby and it should be preferred to formulas. In our study, the majority of the mothers (68.8%) stated that they could donate their milk, if a milk bank was opened. Similar findings were observed in two studies conducted in Turkey: in the study of Gürol et al. (9) 64.0% of the mothers stated that they could donate their milk and this rate was 56.2% in the study of Aykut et al. (8). In the study of Azema and Callahan (3), it was shown that the mothers donated their milk with the thoughts that they had excess amount of milk, they would like to help others, milk donation was healthy and natural and they would like to use milk banks if they needed.

In our study, the mothers who did not wish to donate their milk stated the risk of disease risk and inappropriateness in terms of religion as the reasons. Similarly, 38.4% of the mothers in the study of Aykut et al. (8) stated that they did not find milk banking suitable, 75.4% did not thought of milk donation positively because of the possibility of marrying with milk sibling and 16.9% did not thought of milk donation positively because of the possibility of transmission of disease by way of milk. According to the study of Gürol et al. (9), 36.3% of the mothers perceived religious reasons and 28,9% perceived social and ethical reasons as obstacles in milk donation. In countries in which the majority of the population are Muslims breastmilk banking is not encountered frequently as it is in western countries (18). Probably because of concern of marriages between milk siblings that is forbidden in Islamic religion (9, 18, 20, 21). In the majority of the studies, milk banking is not found suitable because of the risk of transmission of diseases, problems arising from collection, processing and distribution of milk in the milk bank, concern that milk is not separated

in accordance with the characteristics of the newborn and the thought that it may create an infection risk especially for preterm babies (4, 10, 22, 23).

In our study, 47.5% of the mothers thought of utilizing milk banking in case a condition hindering nursing occurred, whereas 26.7% stated that they would utilize milk banking even if no condition hindering nursing occurred. In cases where the mother can not breastfeed her baby, the most ideal and nutritious food for the baby is breastmilk and should be preferred to formula. However, wishing to utilize milk banking when there is no condition hindering nursing can be thought of as a state preventing the baby from receiving his/her own mother's breastmilk. This condition may be related with insufficient knowledge of the mother about nursing and the importance of breastmilk and the mother's social and economical conditions. In the study of Katke and Saraogi (7) in which the effects of the socioeconomical factors on donation to milk banks were examined, it was shown that the individuals with a lower education and income level donated their milk with a higher rate. Studies have shown that mothers needed information about nursing (13, 14). In the study of Mackenzie (10), a portion of the mothers stated that healthcare workers did not support them for nursing and recommended formulas for nursing. It is important that mothers know the ideal nursing periods, the right nursing techniques and how to cope with nursing problems and that they are supported in order to initiate and maintain successful breastfeeding (24). However, studies have recommended that newborns should be fed with the breastmilk of their own mothers, donor milk should be provided only in neonatal intensive care units and should be used in preterm and low birth weight babies who can not receive the breastmilk of their own mothers (5). In this context, the methods of increasing breastmilk production of mothers, nursing and breastfeeding should be investigated for preterm babies in neonatal units. The politics and applications of hospitals in relation with milk production, milking and keeping milk should be examined (25).

Wet nursing was observed among the mothers who participated in the study. Although there is no accurate data about the frequency of wet nursing in our country, it is very traditional. In a study conducted in Kayseri, 5% of the mothers wet nursed a child and 5.2% had a child who had been wet nursed (8). In the study of Can et al. (26), 17% of the participants stated that they wet nursed a child and 14.7% stated that their child was wet

nursed by another mother. The finding that approximately half of the mothers heard of milk banking and this majority supported milk banking and stated that they would donate their milk if a milk bank was opened is a positive result. However, religious drawbacks as well as concerns about the risk of disease transmission may be considered important obstacles in terms of operation of the milk banking system. The approach of the media in introduction of milk banking may be a solution to eliminate these obstacles. In the initiations directed to milk banking, providing potential receivers information as much as possible by way of educating healthcare workers including mainly midwives, nurses, gynecologists and pediatricians is important in strengthening the trust of individuals about donation safety. The concerns of individuals about milk banking should be addressed and procedures including screening, donation, pasteurization and storage should be demonstrated by developing education materials. Milk banking should be applied as an extension of national breastfeeding politics. It should be recommended that each baby be breastfed with his/her own mother's milk, if this can not be realized, relactation should be encouraged and nursing should be reinstated. Otherwise, milk banking should be preferred as another option.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the ethics committee of İzmir Katip Çelebi University.

**Informed Consent:** Written informed consent was obtained from people who participated in this study.

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