



Views of Postnatal Mothers Regarding Human Milk Banking

Yeni Doğum Yapmış Annelerin Anne Sütü Bankacılığına İlişkin Düşünceleri

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ABSTRACT

Aim: This study was carried out to determine the views of postnatal mothers regarding human milk banking.

Material and Methods: The study was conducted on between 25 June 2019 and 1 January 2020 at Zonguldak Bülent Ecevit University Health Practice and Research Center. A questionnaire was applied to 244 mothers who were hospitalized in the obstetrics service. The data were collected using a questionnaire prepared by the researchers. In this form, questions regarding human milk banking prepared in accordance with the literature and the socio-demographic characteristics of the mothers were included. Data analysis was carried out with SPSS 23.0 statistics program.

Results: The mean age of postnatal mothers was 29.9. Of the mothers, 41% were primary school / secondary school graduates, 79.5% were living in nuclear families and 74.6% were unemployed. The majority of mothers (73.4%) wanted human milk banks in Turkey to be active, 72.5% considered donating their milk if there were a milk bank, 57.4% would like to benefit from the milk bank. A statistical difference was found between the socio-demographic status of the mothers (age, education, employment status, family type and number of children alive) and the condition whether or not the milk bank caused problems in terms of religion ($p<0.05$).

Conclusion: It was determined that the majority of mothers would like to donate to the milk bank and get milk there. However, it was also stated that the presence of milk bank would lead to some problems (milk sibling marriage, feeling of inadequacy in mothers, risk of disease transmission and religious reasons, etc.). Despite the benefits of human milk banking, ethical dilemmas, traditional beliefs and attitudes, myths, concerns about the safety of milk and lack of information should be discussed.

Keywords: Human milk bank, Breast feeding, Postpartum

ÖZ

Amaç: Bu çalışma yeni doğum yapmış annelerin anne sütü bankacılığına ilişkin düşüncelerini saptamak amacıyla yapılmıştır.

Gereç ve Yöntemler: Çalışma Zonguldak Bülent Ecevit Üniversitesi Sağlık Uygulama ve Araştırma Merkezinde 25 Haziran 2019-1 Ocak 2020 tarihleri arasında gerçekleştirilmiştir. Obstetri servisinde yatan 244 anneye anket formu uygulanmıştır. Bu formda literatür doğrultusunda hazırlanan sosyo-demografik özellikler ve anne sütü bankacılığına ilişkin sorular yer almıştır. Verilerin analizi SPSS 23.0 istatistik programı ile yapılmıştır.

Bulgular: Çalışmada, yeni doğum yapmış annelerin yaş ortalamaları 29.9754 ± 6.38216 'dır (min 18, max 42). Annelerin %41'i ilkokul/ortaokul mezunu, %79.5'i çekirdek ailede yaşamakta, %74.6'ü çalışmamaktadır. Katılımcıların çoğunluğu (%73.4) anne sütü bankasının ülkemizde uygulanmasını istemektedir, %72.5'i süt bankası olsa sütünü bağışlamayı düşünmekte, %57.4'ü süt bankasından yararlanmak istemektedir. Annelerin sosyo-demografik durumları (yaş, eğitim durumu, çalışma durumu, aile tipi ve yaşayan çocuk sayısı) ile dini açıdan sorun yaratıp yaratmama durumu arasında istatistiksel farklılık saptanmıştır ($p<0.05$).



Sonuç: Annelerin çoğunluğunun süt bankasına bağış yapmak istediği ve süt bankasından süt almak istediği görülmektedir. Ancak süt bankasının olmasının bazı sorunlara (süt kardeş evliliği, evlilik sorunları, annelerde yetersizlik duygusu, bağış yapan annenin sigara ve alkol kullanması, hastalık bulaşma riski ve dini nedenler vb) neden olabileceği de belirtilmiştir. Anne sütü bankacılığının yararlarına rağmen, etik ikilemler, geleneksel inanç ve tutumlar, mitler, sütünün güvenliğine ilişkin endişeler ve bilgi eksikliği tartışılmalıdır.

Anahtar Sözcükler: Anne sütü bankası, Emzirme, Postpartum

INTRODUCTION

Breast milk is the best source of nutrition for babies. It is beneficial for both the infant and mother (1). Only breast milk is recommended in the first six months of infants by the World Health Organization (WHO)(2). Breast milk a unique nutrition that meets all the needs of the newborn.

Breastfeeding reduces mortality and morbidity in infants. It fortifies the immune system and is essential for optimal growth and development of infants (3). While many infants are breastfed by their mother in the postpartum period, breastfeeding is not possible for some due to a variety of reasons that depend on the mother or newborn (prematurity, insufficient breast milk, maternal mortality, non-development of sucking reflex, nutritional intolerance, low birth weight, etc.). In this case, human milk banks (HMB) are important resources in providing the newborn with the food closest to the ideal. The WHO has recommended that before using formula milk, maternal breastfeeding for at least preterm or sick infants should be supported and human milk bank should be encouraged as the first choice (4, 5). The American Academy of Pediatrics (AAP) states that all preterm infants should take breast milk and pasteurized donor milk if breastfeeding or breast milk is not suitable despite lactation support”(6).

Human Milk Banking is an institution established by health-care professionals to collect, screen, process, store and distribute milk from those who donate breast milk to those in need (7). In order for breast milk banks to run actively, it is essential for every woman to have knowledge about the existence, location, benefits and function of the banks before giving birth. In countries where human milk banks (HMB) are available, counseling by healthcare professionals is recommended in antenatal follow-ups and pregnant education classes due to many concerns and ethical dilemmas. In addition to face-to-face information, brochures and magnets are given to pregnant women and hung in hospitals to increase awareness. Moreover, continuity of milk donation is provided by motivating the mothers giving birth to meet supply and demand (4, 8).

Milk from HMB is not preferred in some cases. Religious beliefs, economic reasons, doubts on screening tests and registration system, not knowing the donor, mixing the collected milk, pasteurizing, the incompatibility of the ages of the donor and recipient's infants, insufficient knowledge on human

milk banking, inadequate support by the health professionals can be considered as the reasons for not favouring donor milk. Different cultures and religions also have different points of view on this issue. There is no problem in terms of sharing breast milk neither in Christianity nor Buddhism nor Hinduism. On the contrary, it is encouraged (9). In Islamic religion, milk sharing is viewed as a virtue. Breastfeeding is encouraged and lots of verses in Koran support breastfeeding. However, the belief that constitutes a problem for the establishment of milk banks in the Islamic world is as follows: the children under two years, who are breastfed by the donor mother, are considered as brothers and sisters with the children of the donor mother even though they do not have any blood ties. According to this belief, these children cannot marry each other as they are siblings (9).

The Islamic Fiqh Academy Council has banned the establishment of milk banks in the Islamic world or forbidden a Muslim child to be fed with the milk from a milk bank and has announced that if it is consumed, sibling marriages may occur in the future (4,10,11). For all these reasons, human milk banking is not accepted in Islamic countries. Different configurations are used to make people accept the milk bank by respecting their belief system. For instance; intensive care units, where the milk is not collected in a centre and the donor and recipient are introduced to each other after necessary tests and screening are completed in Kent Hospital in Malaysia and Adan Hospital in Kuwait, provide the process of milk banking (12). This is an effectively regulated form of milk sharing. In our country, “Human milk bank” project is one of the issues on the agenda of the Ministry of Health in Turkey. It has been in the media for a long time, but it has not been established yet owing to many criticisms and the lack of the infrastructure of the project.

MATERIALS and METHODS

Type of the Study

This study was carried out in a cross-sectional-descriptive manner to determine the views of mothers on human milk banking who had recently given birth at a university hospital.

Place and Date of the Study

The research was conducted between 25 June 2019 and 1 January 2020 with the mothers who recently gave birth in obstetrics clinic in Zonguldak Bulent Ecevit University Health Practice and Research Hospital.

The Universe and Sample of the Study

In 2018, there were 89 normal vaginal and 578 cesarean deliveries in a University Health Practice and Research Hospital. The total number of births (667) in 2018 comprised of the universe of this study. 244 participants were included in the study by calculating the number of samples whose universe was known.

Inclusion Criteria

The women who were 18 years old and over, had healthy/risky newborns, did not have loss of vision and hearing that may hinder communication, could speak Turkish, were literate and agreed to participate in the study and the nurses working in the field of obstetrics were included in the study.

Collection of Data

In the collection of data, a questionnaire form consisting of 21 questions prepared in accordance with the literature regarding the socio-demographic characteristics of mothers and nurses, the state of hearing the human milk bank and of wanting human milk bank application in our country, the reasons for not wanting and the problems that may arise due to the milk bank was used (13-16). The data were collected using the data collection form and face-to-face interview method.

Ethical Aspect of the Study

To conduct the study, the approval was obtained from Zonguldak Bulent Ecevit University Non-Interventional Clinical Research Ethics Committee (Decision no: 2019/09). For

the departments in which the study was going to be carried out, permission for the application from the institution and written and verbal consents of the mothers by explaining the purpose and plan of the study were obtained.

Evaluation of the Data

The data were evaluated by using Statistical Package for the Social Sciences (SPSS) 23.0 program. Numerical and percentage values were used for categorical variables. The differences between groups in terms of categorical variables were analyzed using the Pearson Chi-square test. Statistical significance level was accepted as $p < 0.05$.

RESULTS

The mean age of postnatal mothers was 29.9754 ± 6.38216 (min 18, max 42). As shown in Table 1, 41% of the mothers were primary school / secondary school graduates, 79.5% were living in nuclear families and 74.6% were unemployed. It was found that 36.9% of the mothers had their first pregnancy and 55.3% had a child alive (Table 2).

The rate of mothers not hearing the milk bank previously was 69.3%. 82.7% of those hearing the milk bank stated that they heard it from the media (TV, newspaper, internet). The majority of the participants (73.4%) wanted the milk bank to be applied in our country. While 72.5% of the mothers said they would consider donating milk if there were milk banks, 57.4% said that they wanted to make use of the milk bank. When the reasons for not wanting to make use of the milk bank were examined, they mostly stated that there was

Table 1: Socio-demographic characteristics of recently given birth mothers (n=244).

Socio-demographic characteristics	Subjects	
	n	(%)
Age		
18-27	84	34.4
28-33	84	34.4
34-42	76	31.2
Education status		
Primary/secondary	100	41.0
High school	100	41.0
University and over	44	18.0
Employment status		
Employed	62	25.4
Unemployed	182	74.6
Type of family		
Nuclear family	194	79.5
Extended family	47	19.3
Broken family	3	1.2

Table 2: Stories of mothers on pregnancy and number of children alive (n=244).

Pregnancy and number of children alive	Subjects	
	n	(%)
Number of Pregnancy		
1 st pregnancy	90	36.9
2 nd pregnancy	55	22.5
3 rd pregnancy	80	32.8
4 th pregnancy	6	2.6
5 th pregnancy	5	2.0
6 th pregnancy	5	2.0
9 th pregnancy	3	1.2
Number of children alive		
A child	135	55.3
Two children	67	27.5
Three children	34	13.9
Four children	3	1.3
Five children	5	2.0

Table 3: Views of recently given birth mothers on breast milk bank (n=244).

Views on Milk Bank	Subjects	
	n	%
The State of hearing milk bank previously		
Yes	75	30.7
No	169	69.3
The Place where she heard*		
Health professionals	11	14.7
Media	62	82.7
Relatives, friends	2	2.6
The State of wanting the milk bank in our country		
Yes	179	73.4
No	56	23.0
Not sure / not know	9	3.6
The State of being a wet-nurse before		
Yes	17	7.0
No	227	93.0
Thinking of donating milk if there were milk banks		
Yes	177	72.5
No	64	26.3
Not sure / not know	3	1.2
Thinking of making use of the milk bank if there were		
Yes	140	57.4
No	92	37.7
Not sure / not know	12	4.9
The reason for not wanting to make use of the milk bank*		
The risk of disease transmission	42	17.2
Religiously inappropriate	45	18.4
Other**	19	7.8
The State of milk bank's causing problems religiously		
Yes	73	29.9
No	126	51.6
Not sure / not know	45	18.5
The State of wanting to get milk from the milk bank according to gender		
Yes	178	73.0
No	66	27.0
The State of application to the milk bank when the milk is safe and its health screening has been done		
Yes	183	75.0
No	61	25.0
The State of donating milk to the milk bank according to the gender		
Yes	212	86.9
No	32	13.1
Is it a sin to get milk from the milk bank and donate milk		
Yes	47	19.3
No	191	78.3
Not sure / not know	6	2.4

*Multiple methods were specified and percentages were taken from total n.

**Other reasons are; 'I do not want others to breastfeed my child', 'I cannot trust', 'because of the problems of being a wet-nurse', 'They are the people whom I do not know'.

a risk of disease transmission (40.4%) and it was religiously inappropriate (43.3%). Of the mothers, 73% and 75% stated respectively that they would apply to the milk bank if the milk was suitable for their child's gender and the necessary screening and controls were made with a secure registration system (Table 3).

No statistical difference was found between the age of mothers participating in the study and the number of children alive and the status of wanting a human milk bank. However, a statistical difference was found between the type of family, employment and education status and the status of wanting the application of human milk bank ($p < .05$). In the advanced analysis, that difference was caused by the fact that those living in the nuclear family, working mothers, and mothers with high educational status wanted milk banks more (Table 4).

There was a statistical difference between the socio-demographic characteristics of mothers who had recently given birth (age, educational status, employment status, family type and number of children alive) and the situation whether or not breast milk bank may cause religious problems. It was seen that the difference in the age group was caused

by the fact that more women in the 35-42 age group compared to other groups said that the human milk bank may cause problems. The differences in terms of education and employment status were found to be due to the fact that women who were primary/secondary school graduates and unemployed said more than others that they were not sure about the application of human milk bank (Table 5).

DISCUSSION

The mean age of the mothers having just given birth and participating in the study was 29.9. While 41% of mothers were primary/secondary school graduates and 79.5% of them were living in the nuclear family, the vast majority (74.6%) were unemployed. When we examined the literature, the results of the studies were similar and seemed to support the socio-demographic results of our study (15-18).

In our study, the rate of mothers hearing human milk banking previously was 30.7%. In other studies conducted in this field, there were some studies whose rates of mothers hearing human milk banking were similar to the findings in our study (41.6%) (15), were less (9.4%) (Gürol et al., 2013) or more than ours (62.5%) (13). The results of our study were in line with the results of the study conducted.

Table 4: Distribution of the socio-demographic characteristics of mothers according to the state of wanting human milk bank (n=244).

Socio-demographic Characteristics	Does The Human Milk Bank Cause Problems in terms of Religion?						X ²	p
	Yes (n=179)		No (n=56)		Not sure (n=9)			
	Number (n)	Percentage (%)	Number (n)	Percentage (%)	Number (n)	Percentage (%)		
Age								
18- 27	60	33.5	24	42.9	0	0.0	9.354	0.053 ^a
28-34	66	36.9	15	26.8	3	33.3		
35-42	53	29.6	17	30.3	6	66.7		
Education status								
Primary / secondary	78	43.6	16	28.6	6	66.7	10.984	0.027 ^a
High school	65	36.3	32	57.1	3	33.3		
University and over	36	20.1	8	14.3	0	0.0		
Employment status								
Employed	53	29.6	9	16.1	0	0.0	7.308	0.026 ^a
Unemployed	126	70.4	47	83.9	9	100		
Type of family								
Nuclear family	141	78.8	47	83.9	6	66.7	13.817	0.008 ^a
Extended family	38	21.2	6	10.7	3	33.3		
Broken family	0	0.0	3	5.4	0	0.0		
Number of children alive								
One	99	55.3	30	53.6	6	66.7	0.538	0.764 ^a
More than one	80	44.7	26	46.4	3	33.3		

^aPearson Chi-Square Test

Table 5: The distribution of the socio-demographic characteristics of mothers in terms of the fact that human milk bank may cause problems religiously (n=244).

Socio-demographic Characteristics	Does The Human Milk Bank Cause Problems in terms of Religion?						X ²	p
	Yes (n=73)		No (n=126)		Not sure (n=45)			
	Number (n)	Percentage (%)	Number (n)	Percentage (%)	Number (n)	Percentage (%)		
Age								
18- 27	18	24.7	48	38.1	18	40.0	12.156	0.016^a
28-34	21	28.8	48	38.1	15	33.3		
35-42	34	46.5	30	23.8	12	26.7		
Education status								
Primary / secondary	28	38.3	42	33.3	30	66.7	29.083	0.000^a
High school	37	50.7	60	47.6	3	6.7		
University and over	8	11.0	24	19.1	12	26.6		
Employment status								
Employed	17	23.3	45	35.7	0	0.0	22.562	0.000^a
Unemployed	56	76.7	81	64.3	45	100		
Family type								
Nuclear family	62	84.9	102	81.0	30	66.7	15.505	0.004^a
Extended family	8	11.0	24	19.0	15	33.3		
Broken family	3	4.1	0	0.0	0	0.0		
Number of children alive								
One	18	24.7	90	71.4	27	60.0	41.396	0.000^a
More than one	55	75.3	36	28.6	18	40.0		

^aPearson Chi-Square Test

When the mothers were asked where they heard the information about milk bank, 14.7% stated that they heard from healthcare professionals, 82.7% from the media (TV, newspaper, internet, etc.) and 2.7% from their friends. In the literature, the rate of media seems to be high. The studies conducted by Kimani-Murage et al. (74%) (19) and Ekşioğlu et al. (85.7%) can be shown as samples (15). The media are mostly used in order to get information about human milk banking. Ünsür et al. examined the sources of information about breast milk and 22.7% of the mothers were found to receive information from the media (20). It was observed that the mothers participating in the study actively used the media and other studies seem to put the media forward. In addition, in our study, healthcare professionals were given as an answer with a rate of 14.7% by mothers and this rate was found to be less than the media's. Similar results were found in the study of Ekşioğlu et al. and they support our findings. Benefiting from healthcare professionals was determined to be low on this issue (15).

The majority of parents (73.4%) wanted the application of human milk banking in Turkey. When similar studies were examined, Gürol et al. stated that 64.3% of the mothers reported that the application should be started (13). Ekşioğlu

et al. pointed out that the participants supported the milk bank by 71.3% (15). In another study result, it was proposed to establish a human milk bank (21). It was also reported that breast milk was an important nutrition for the infant and should be preferred to formulas (4). The findings of our study were in line with similar studies and application of milk bank was preferred.

72.5% of the mothers thought of donating their milk if there were human milk banks. This view is compatible with the literature. It was determined that although the rate of mothers wanting to donate their milk showed varieties according to the culture, population and residential area the study was conducted in (21), the rate was found to be high in general studies. Gürol et al. found this rate as 64.0% (13), Ergin and Uzun 78.3% (16), Aykut et al. 56.2% (14), Ekşioğlu et al. 68.8% respectively (15).

57.4% of the mothers said they wanted to make use of the breast milk bank. Examining the literature, in the study of Ekşioğlu et al., 47.5% of the mothers considered making use of human milk bank on a condition preventing breastfeeding while 26.7% stated that they could make use it even if there was no condition preventing breastfeeding (15). In

the study of Azema and Callahan, it was indicated that mothers donated their milk with the idea that they had a large amount of milk, they wanted to help others, milk donation was healthy and natural and they wanted to make use of breast milk banks when they needed (22).

When the reasons of those who did not want to benefit from milk bank were examined, 40.4% did not prefer it as there was a risk of disease transmission, 43.3% thought it was religiously inappropriate, 16.3% did not prefer for other reasons (I did not want someone else to breastfeed my child, I could not trust, wet-nurse caused problems, etc.). When the literature was examined, in the study of Şenol and Aslan, 45.9% of women stated that the donation of breast milk was inappropriate (17). The reasons put forward were that milk was not clean (18.9%) and infectious diseases could be transmitted from donors (19.8%) (17). In the study of Ergin and Uzun, 80.9% of the participants did not think of donating their milk to the breast milk bank, 76.8% and the rest rejected it due to the possibility of marriage among siblings in the future and the risk of disease transmission, respectively. In the same study, mothers familiar with the concept of wet-nurse reported that marriages between siblings had been disapproved and rejected for religious reasons. Another reason for mothers against donation was fear of infection (16). In the study of Ekşioğlu et al., among the mothers not wanting to donate their milk, 62.2% stated the risk of disease and 37.2% stated that it was religiously inappropriate as excuses (15).

In Australia, most of the mothers stated that they would use donor breast milk for their infants if they were sure that it was safe and appropriate (4). Kimani-Murage et al. found in their study that the idea of establishing a human milk bank was opposed in Kenya (19). The main reason for this opposition was HIV and diseases infected from breast milk. According to the study, three main reasons for those who opposed the idea of donating their own milk to a milk bank were personal discontent (44%), insufficient milk perception for donation (39%) and fear of disease transmission (18%). Apart from those, the risk of HIV transmission, hygiene anxiety, concern that emotional bonding between the mother and infant would be negatively affected, cultural or religious non-conformity, encouragement to irresponsibility, fear of transferring genetic and personal characteristics, fear of family diseases (19). The reasons stated by the mothers in the studies conducted in this context and the reasons stated by the mothers in our study had similarities. In most of the studies, it was not found suitable due to the risk of disease transmission, the problems arising from the collection, processing and distribution of milk in the milk bank, worry of the milk's not being separated by its characteristics, the risk of infection for newborns and especially preterm babies (4,12,15,17,23,24). Religious reasons, fear of disease transmission and infection are among the primary reasons.

When the rates of not wanting to benefit from the milk bank were examined in the study, 43.3% of the participants stated that it was not religiously appropriate. Considering the literature, the rate of those having similar beliefs in Islam and allowing their children to be fed with breast milk was found to be lower (39%) compared to Christian mothers (60%) (19). Additionally, in countries where the majority of the population was Muslim, human milk banking was not as common as in western countries (25). It was observed that mothers, thinking of human milk bank religiously inappropriate and not wanting to be a donor, preferred the milk bank to be opened at a lower rate (15). Because according to Islam, the children of the mother who gives milk cannot get married to the milk recipient. The probability of a marriage arising from this situation causes concern (11). Aykut et al. stated that most of the mothers (75.4%) did not find the milk bank appropriate and sympathetic, and did not consider milk donation favorable because of the possibility of marrying the milk sibling (14). Gürol et al. found in their studies that 36.3% of mothers perceived religious reasons and 28.9% perceived social and ethical reasons as obstacles in donating milk (13). The reason for that is the concern which marriages between siblings, forbidden in Islam, may cause problems (11,13,25). In fact, breastfeeding and giving/taking milk are very important in Muslims. It is essential for the families of the donor and the recipient to know each other, thus preventing the problems that may occur in the future. The baby is considered to be the child of the donor. Marriage between the recipient of milk and the children of the donor is prohibited. Like in most western countries, human milk banks use donor milk in the pool. The privacy of both the donor and the recipient is reserved. When detailed records are kept in human milk banking, under the circumstance that the donors and recipients know each other well and are registered, and mothers are given enough information, the human milk bank does not have a religious disadvantage (9,26).

In the study, it was found that individuals with high educational level, employed and living in the nuclear family want to benefit from milk banks more. The low education level of women is an effective factor in developing a negative attitude towards human milk banking and affecting their desire to donate milk. As the level of education increases, the attitude and sympathy towards human milk banking will change and a positive view will be obtained. The studies conducted previously also confirm our findings (16,19,27).

The limitations of this study are that the views of health professionals were not collected. Also the study cannot be generalized to the whole society due to the fact that it was conducted in a single city and hospital constitutes the limitation of the study.

In our country, human milk banking has not been put into practice since the necessary infrastructure has not been created. Reasons for that are the reactions to the concept of wet-nurse, religious, cultural, personal, ethical and legal aspects. When the studies are examined, it is seen that the majority of mothers want to donate to the breast milk bank and want to get milk from there.

It is very significant to educate mothers about human milk banking, raise the awareness of the society, increase awareness about the significance of breast milk and find solutions by dealing with the concerns in a comprehensive manner. In addition, awareness should be raised in terms of the value of breast milk. While creating this awareness, it is essential that breastfeeding be encouraged and mothers be informed about milk donation. Development can be achieved through an effective communication and health education, the improvement of health literacy and the active role of religious institutions. Authorities, especially health-care professionals, should cooperate with religious leaders and experts to achieve more positive attitudes towards breastfeeding and banks, and the necessary infrastructure should be established within the legal and ethical aspects.

Acknowledgment

Not applicable.

Author Contributions

Authors indicated that all contributions are equal.

Informed Consent

Data collection was performed based on the voluntary participation of the individuals enrolled in the study. Mothers having recently given birth were informed about the aim of the study and the confidentiality of all data, and their written consents were received. The research conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Brazil 2013).

Conflicts of Interest

The authors declared that they had no conflict of interest.

Financial Support

No financial support was used for this study.

Ethical Approval

Ethics committee approval for the study was obtained from Zonguldak Bülent Ecevit University Clinical Research Ethics Committee (Date: 12/06/2019 and approval No. 2019/09). The written permission was obtained from the administration of the Zonguldak Bülent Ecevit University Health Application and Research Center.

Review Process

Externally and extremely peer-reviewed.

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