

Original Article

Mothers' knowledge about infant and young child feeding practices and their health impacts.

Amaila Fazal , Fahad Lasi  & Saad Ahmed Khan 

Dadabhoy Institute of Higher Education, Karachi-Pakistan.



Doi: 10.29052/IJEHSR.v10.i1.2022.55-63

Corresponding Author Email:

amaila.fazal@gmail.com

Received 30/10/2021

Accepted 20/12/2021

First Published 23/02/2022



© The Author(s). 2022 Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>)

Abstract

Background: Breastfeeding has always been proven beneficial for infant and mother's health in every era. Thus, the present study was conducted to assess mothers' infant and young child feeding practices in Karachi, Pakistan, and their knowledge about the health impacts on their children.

Methodology: A cross-sectional survey-based study including 1200 mother-child pairs was conducted from March to November 2020. Mothers' knowledge toward indicators for assessing infant and young child feeding practices (IYCF) questionnaire was used and scored using a four-point Likert scale.

Results: Out of the total, most of the females were un-educated (97%), and the majority of them belonged to the middle class (49%). It was also found that 96% of the mother had breastfed their child, and more interestingly, 35% breastfed their child for 2 years. Almost 82% of mothers preferred breastfeeding and considered it necessary for the child. It was found that females had excellent knowledge about the young child feeding practices and their health impacts (66%). Furthermore, mother age, marital status, socioeconomic status (SES), number of children, occupation, personal and family disease history were significantly associated with the knowledge level of the mothers ($p < 0.05$).

Conclusion: It was found that females had excellent knowledge about the young child feeding practices and their health impacts. Future research is recommended to compare mothers' knowledge regarding infant and young child feeding practices in different geographical areas and districts of Karachi.

Keywords

Child Feeding, Breast Feeding, Infant Formula Milk, Knowledge.



Check for updates

Introduction

Early development in infants occurs during the first six months after their birth, and the initial source of nourishment is breast milk. But the food industry plays crafty marketing tricks to sell infant formula. Infant milk formula substitutes breast milk for infants with special needs, i.e., lactose intolerance or other medical conditions. However, it cannot replace breast milk as it is essential for infant nourishment and immunity. Breastfeeding has always been proven beneficial for infant and mother's health in every era. Despite all the health benefits and complete diet nutrients, the food industry promotes lab-made infant milk formula equivalent to breast milk. There is scientific evidence that breastfeeding has a long-term impact on a child's health. UNICEF (United Nations International Children's Emergency Fund) and WHO (World Health Organization) recommends and promotes breastfeeding practices for improving infant's health¹.

Human milk or breast milk is naturally composed to provide all the essential nutrients required to develop and protect against diseases, including respiratory tract infection and gastrointestinal tract illness, and diabetes. Breastfeeding reduces the chances of exposure to environmental contaminants that might be introduced through feeding utensils; human milk contains bioactive compounds that aid the development and regulation of the immune system². Furthermore, exclusive breastfeeding could also prevent respiratory diseases. According to a study, 6% of infants under one year are reported to be hospitalized for LRTDs (lower respiratory tract diseases) and, most commonly, asthma in the USA, which is now increasing annually by ten-folds. According to recommendations from the American Academy of Pediatrics, mothers must exclusively breastfeed their infants up to 6 months; but 31% of mothers only continued breastfeeding until the age of 6 months of infants³.

The pursuit of breastfeeding is beneficial for infants and provides health benefits and protection to the feeding mothers. Exclusive breastfeeding lowers the risk of breast cancer in mothers compared to

mothers who never breastfed their infant. Similarly, it was found that women who had breastfed their infants for a short period were at less risk, while women who had never breastfed their child had an increased risk of developing ovarian cancer with 27%. Further, a longer duration of breastfeeding is associated with better maternal health. Another critical factor is psychosocial effects; breastfeeding allows the mother to bond and gets closer with their infants. Breastfeeding might also lower the risk of postpartum depression; it is a severe condition that could affect a mother's and child's health. Most women in our society (13%) experience postpartum depression after childbirth⁴.

Several studies have been conducted previously to determine the prevalence of young and infant child feeding practices among mothers but the comparison data is still inadequate⁵⁻⁷. A study was conducted in 2001 in Bahawalpur and found that the breastfeeding rate among mothers was only 30%⁸. Further, another study found an even lower rate of breastfeeding among mothers that is 16% at six months of age in Multan⁹. Even more, bottle feeding practices were increased (79%) as per the study conducted in Hyderabad¹⁰. Similarly, in India, almost 93% of females bottle-feed their infants, as per the record of WHO¹¹. Pakistan is a developing country facing rapid urbanization with lower economic status and literacy rate. Therefore, research should be conducted to assess infant and young child feeding practices of mothers in Karachi and also the impact of bottle feeding on mother and child health. Thus, the present study was conducted to assess infant and young child feeding practices of mothers in Karachi, Pakistan, and their knowledge about the health impacts on their children.

Methodology

This was a cross-sectional survey-based study including 1200 mother-child pairs of different districts of Karachi city, including Korangi district, Central district, East district, and Malir district, recruited through purposive sampling technique from March to November 2020.

All those females who delivered a child were included, while caregivers/nannies and single females or who never delivered a child were excluded from the study sample. The study protocol was reviewed and approved by the Dadabhoj Institute of Higher Education (Reference no: DIHE/R&D/ERC/2019-04).

The infant and young child feeding practices (IYCF) questionnaire was used for the assessment of knowledge of mothers toward indicators¹². The mothers' knowledge was rated to assess their infant and young child feeding (breastfeeding, infant formula feeding). The scoring was done using a four-point Likert scale, i.e., 1 for strongly agree, and 4 denoting strongly disagree levels, respectively. The cutoff point was 50 for the mother's knowledge.

SPSS version 20.0 was used for statistical analysis. Categorical variables were assessed using frequencies and percentages, whereas the Chi-square test analyzed the associations and correlations. Statistical significance was set at $p < 0.05$.

Results

The total population included in this study was 1200 females aged between 19-60 years of age. Most of the females were uneducated (97%). The majority of the population belongs to the middle class (49%). Most of the studied females had one child (48%). It was found that most of them were housewives (57%) and had a family history of diabetes (49%), whereas most of them were hypertensive (18%) (Table 1).

Table 1: Demographic characteristics of the study participants (n=1200).

Demographic characteristics	N (%)	
Age of mother	< 20 Years	51(4)
	21-25 Years	268(22)
	26-30 Years	541(45)
	31-60 Years	340(28)
Marital Status	Married	751(63)
	Divorced	150(12)
	Widowed	299(25)
Education	School	1153(97)
	College	14(1)
	Under Graduate	33(3)
SES	Lower SES	294(25)
	Middle SES	583(49)
	Upper SES	323(27)
Number of children	One	571(48)
	Two	373(31)
	Three	201(17)
	More than 3	55(7)
Current Occupation	Full-Time Working	247(21)
	Student	41(3)
	Part-Time Working & Students	66(6)
	Self Employed	160(13)
Diseases	Housewife	686(57)
	Diabetes	39(3)
	Hypertension	213(18)
	Cardiovascular	51(4)

	Any Other	780(65)
	None	117(9)
Family History	Diabetes	591(49)
	Hypertension	135(11)
	Cardiovascular	73(6)
	Any Other	387(32)
	None	14(1)

SES-Socioeconomic Status

It was found that 75% of children aged under three years and 85% of mothers were the child's primary caregiver child. It was also found that 96% of the mother had breastfed their child, followed by two years (35%). Almost 82% of mothers preferred breastfeeding. Results also found that 47% of mothers preferred infant formula milk over breastfeeding due to a low breast milk supply (Table 2).

Table 2: Feeding practices of the mother.

Items	N (%)	
Did you ever Breastfeed your child?	No	54(5)
	Yes	1146(96)
If Yes, for what duration did you Breastfeed?	Last than three months	207(17)
	Three months to six months	177(15)
	One year	186(16)
	1.5 years	210(18)
	Two years	420(35)
Why do you breastfeed your child?	Health concern	197(16)
	Can't afford infant formula	2(0)
	Cultural aspects	23(2)
	It's necessary for my child	978(82)
If No, how do you feed your child?	Infant formula child	766(64)
	Powdered milk	48(4)
	Fresh milk	382(32)
	Others	4(0)
Do you think infant formula is better than breastfeeding?	No	1164(97)
	Yes	36(3)
Why do you prefer infant formula milk over breastfeeding?	Low supply of breastfeeding	565(47)
	Mother is ill or die	64(5)
	Anyone can feed the baby	405(34)
	Lactose intolerance	59(5)

It was found that females had excellent knowledge about the young child feeding practices and their health impacts (66%). Whereas 33% of females had average knowledge, and only 1% females had poor knowledge about the infant and young child feeding practices and their health impacts.

When the knowledge level of the mothers was assessed in association with the demographic variable, significant association was found with age of mother (p-value= 0.032), marital status (p-value= 0.015), socioeconomic status (SES) (p-value= 0.04), no of children (p-value= 0.001), current occupation (p-value= 0.002) and disease of a mother (p-value= 0.019) (Table 3).

Table 3: Knowledge level of mothers in association with the demographic variables of the participants.

Demographics Variables	Knowledge Score			p-value
	Poor Knowledge	Average Knowledge	Excellent Knowledge	
Mother Age	Below 20 years	-	7 (0.6)	0.032*
	21-25 years	-	94 (7.8)	
	26-30 years	5 (0.4)	181 (15.1)	
	Above 30 years	5 (0.4)	114 (9.5)	
Marital Status	Married	9 (0.8)	236 (19.7)	0.015*
	Single	-	66 (5.5)	
	Widow	1 (0.1)	94 (7.8)	
Education	School	10 (0.8)	382 (31.8)	0.87
	College	-	3 (0.3)	
	Undergraduate	-	11 (0.9)	
SES	Lower SES	-	103 (8.6)	0.04*
	Middle SES	8 (0.7)	174 (14.5)	
	Upper SES	2 (0.2)	119 (9.9)	
Number of children	One	2 (0.2)	175 (14.6)	0.001*
	Two	2 (0.2)	126 (10.5)	
	Three	6 (0.5)	68 (5.7)	
	More than 3	0 (0)	27 (2.3)	
Current Occupation	Full-Time Working	6 (0.5)	70 (5.8)	0.002*
	Student	-	19 (1.6)	
	Part-Time Working & Students	-	15 (1.3)	
	Self Employed	2 (0.2)	66 (5.5)	
	Housewife	2 (0.2)	226 (18.8)	
Disease History	Diabetes	-	13 (1.1)	0.019*
	Hypertension	-	78 (6.5)	
	Cardiovascular	2 (0.2)	9 (0.8)	
	Any other	6 (0.5)	249 (20.8)	
	None	2 (0.2)	47 (3.9)	
Family History	Diabetes	-	209 (17.4)	0.055*
	Hypertension	2 (0.2)	37 (3.1)	
	Cardiovascular	2 (0.2)	20 (1.7)	
	Any other	6 (0.5)	125 (10.4)	
	None	-	5 (0.4)	

*p<0.05 is considered significant

When the association of infant formula milk was assessed with the increased risk of infant diseases, a significant association was found with a higher risk of acute media otitis (P-value= 0.00), asthma (P-value= 0.00), diabetes (P-value= 0.00), eczema (P-value= 0.00), and obesity (P-value= 0.01) among the children who were consuming infant formula milk (Table 4).

Table 4: Mother's level of knowledge in association with risk of formula milk causing infant diseases.

Variables		Knowledge Level				p-value
		SA	A	D	SD	
Acute Otitis Media	No	192 (16)	418 (34.8)	516 (43)	38 (3.2)	0.00*
	Yes	4 (0.3)	16 (1.3)	8 (0.7)	8 (0.7)	
Asthma	No	134 (11.2)	342 (28.5)	630 (52.5)	58 (4.8)	0.00*
	Yes	4 (0.3)	4 (0.3)	20 (1.7)	8 (0.7)	
Diabetes	No	126 (10.5)	326 (27.2)	658 (54.8)	54 (4.5)	0.00*
	Yes	6 (0.5)	6 (0.5)	16 (1.3)	8 (0.7)	
Eczema	No	136 (11.3)	282 (23.5)	672 (56)	74 (6.2)	0.00*
	Yes	2 (0.2)	10 (0.8)	20 (1.7)	4 (0.3)	
Lower Respiratory Tract Infection	No	124 (10.3)	280 (23.3)	698 (58.2)	62 (5.2)	0.24
	Yes	6 (0.5)	6 (0.5)	20 (1.7)	4 (0.3)	
Obesity	No	204 (17)	470 (39.2)	430 (35.8)	60 (5)	0.01*
	Yes	6 (0.5)	8 (0.7)	22 (1.8)	0 (0)	

SA=Strongly Agree; A= Agree; SD=Strongly Disagree; D=Disagree

* $p < 0.05$ is considered significant

Discussion

The current results revealed that the infant and young child feeding practices were excellent as per the data obtained by the questionnaire. This is in agreement with the previous studies conducted in Pakistan¹³. The prevalence of breastfeeding was approximately similar to that reported in the Multiple Indicator Cluster Survey (MICS) Sindh 2018-2019 and the study conducted in Gilgit Baltistan, Pakistan¹⁴. The prevalence of infant and young child breastfeeding in the current study was similar to the national rates reported in PDHS of 2006 to 2007 and 2012 to 2013. Almost all (96%) mothers in the current study have breastfed their child once, according to the recent Dera Ghazi Khan and Sindh provincial rates in Pakistan^{15, 16}. It is evident from the data that mothers' education is associated significantly with the initiation of complementary foods on time and feeding practices¹⁴. This might reflect the education system, which provided adequate quality education about nutrition to the mothers¹⁷.

Most of the women who participated in the current study belonged to middle-class families; they preferred breastfeeding over infant formula milk

due to cultural importance, understanding of long-term health benefits of breastfeeding, and sometimes unaffordability of formula milk. Breastfeeding is not only economically friendly but tends to affect the environment positively. Unlike breast milk, infant formula requires adequate packaging to keep it safe from different environmental factors that may adversely alter the composition. Most of the packaging requires disposal either by burning or landfill, while some of the packagings can be recycled¹⁸. Other than that, breastfeeding helps control the birth rate, and it is suggested to prolong and maintain breastfeeding practices to reduce the birth rate in Pakistan¹².

Socioeconomic status, mother's education, support from family members, and professional support from doctors and health care personnel acted as a positive force to maintain breastfeeding. On the other hand, pressure from in-laws as bottle-fed infants are chubby and look healthier. Promotional advertisements of milk formulas can negatively impact and result in the discontinuation of breastfeeding and switching to infant formulas¹⁹. Sometimes quitting breastfeeding is not the mothers' choice but lack of awareness, cultural belief, wellness of mother, and other

misconceptions. Some previous studies also showed that regardless of all benefits of breastfeeding and adverse effects of infant milk formulas, mothers still prefer infant formulas²⁰. Not to forget, there is a massive decline in breastfeeding in urban areas, while in rural areas, the women breastfeed their infants for a longer time but initiate breastfeeding after a few days of childbirth²¹. Another reason why mothers preferred formula milk/bottle feeding was time management. Working women cannot manage feeding practice with working hours²².

According to a WHO report, only 37% of mothers in Pakistan exclusively breastfed infants up to 6 months. This could cause diarrhea, a leading cause of death among infants worldwide²³. Infants fed on formula milk are also associated with weight gain rapidly; however, it is evident that infant formula milk is associated with an increased risk of obesity due to the high content of protein in formula milks^{24,25}. Pakistan alone has reported an estimated 15% to 20% childhood obesity, and Karachi, the metropolitan city, had a proportion of 6% to 19% children suffering from obesity^{22, 26}. Breastfed babies have benefits, and they are less prone to obesity, while babies fed on Infant formula milk are at higher risk of obesity in childhood²⁷.

Similarly, formula feeding had been associated with more childhood infections, most importantly otitis media. Agency for Healthcare Research and Quality (AHRQ) reported that formula-fed children are at increased risk of chronic diseases such as obesity, asthma, and diabetes type 2, which are major chronic diseases in children in the United States of America and increasing over time⁴.

Breastfeeding has also been found to be associated with decreased risk of sudden infant death syndrome (SIDS) in developed countries. Infants feeding on formula milk are at a higher risk of SIDS; other studies conflict with the idea of the link between SIDS and infant formula⁴; however, a meta-analysis study showed that exclusively breastfed infants develop resistance and protection against SIDS^{28, 29}. Some studies report indirect or direct links of breastfeeding with

reduced risk of asthma and other respiratory tract infection³⁰. More than 378,000 babies die within the first year of their life, and this is evident through a study that proves that 22% of deaths could be prevented if mothers initiate exclusive breastfeeding practices, and 13% of deaths can be prevented if breastfeeding practices are increased up to 90% in Pakistan²². Another obstacle in breastfeeding is the burden on mothers belonging to middle-class families. They have to manage all house chores, and they don't have enough time for infant care; it is the responsibility of other family members to play their part³¹.

There were a few limitations for this study; most women did not cooperate with the surveys as they were not comfortable talking on a topic outside their comfort zone. The primary difficulty in this study occurred due to the pandemic situation, the data was only collected from specific areas of Karachi, and most data collection was done online. The survey area was not vast due to the restrictions placed by the government on travel considering the virus outbreak; thus, this study still has room for improvement and can be furthered post-pandemic to be more thorough and better versed.

Conclusion

It was found that females in different districts of Karachi had excellent knowledge about the young child feeding practices and their health impacts. Further, breastfeeding decreases the likelihood of childhood diseases related to breastfeeding. Plausible explanations for the observed association might be related to the theory that breastfeeding has always been proven beneficial for infant and mother's health in every era. Human milk or breast milk is naturally composed to provide all the essential nutrients required for the development and protection against diseases, including respiratory tract infection and gastrointestinal tract illness, and diabetes. However, future research is recommended to compare mothers' knowledge regarding infant and young child feeding practices in different geographical areas and districts of Karachi.

Conflicts of Interest

The authors have declared that no competing interests exist.

Acknowledgment

The authors would like to thank Hafsa Binte Farghan, Quratulain Zahid, Hasin Munir, and Osama Zubair, the students of the Food Science Program of Faculty of Science Dadabhoy Institute of Higher Education, for helping in data collection.

Funding

The author(s) received no specific funding for this work.

References

1. Binns C, Lee M, Low WY. The long-term public health benefits of breastfeeding. *Asia Paci J Pub Health*. 2016;28(1):7-14.
2. Siregar AY, Pitriyan P, Walters D. The annual cost of not breastfeeding in Indonesia: the economic burden of treating diarrhea and respiratory disease among children (< 24mo) due to not breastfeeding according to recommendation. *Int breastfeeding J*. 2018;13(1):1-10.
3. Bachrach VRG, Schwarz E, Bachrach LR. Breastfeeding and the Risk of Hospitalization for Respiratory Disease in Infancy. *Arch Pediatrics & Adolescent Med*. 2003;157(3):237.
4. Feltner C, Weber RP, Stuebe A, Grodinsky CA, Orr C, Viswanathan M. Breastfeeding programs and policies, breastfeeding uptake, and maternal health outcomes in developed countries. *Comparative Effectiveness Review*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2018: No. 210.
5. Laisiriruangrai P, Wiriyasirivaj B, Phaloprakarn C, Manusirivithaya S. Prevalence of exclusive breastfeeding at 3, 4 and 6 months in Bangkok Metropolitan Administration Medical College and Vajira Hospital. *J Med Assoc Thai*. 2008;91:962-967.
6. Miharshahi S, Ichikawa N, Shuaib M, Oddy W, Ampon R, Dibley MJ, Kabir AI, Peat JK. Prevalence of exclusive breastfeeding in Bangladesh and its association with diarrhoea and acute respiratory infection: results of the multiple indicator cluster survey 2003. *J Health Popul Nutr*. 2007;25(2):195-204.
7. Pechlivani F, Vassilakou T, Sarafidou J, Zachou T, Anastasiou CA, Sidossis LS. Prevalence and determinants of exclusive breastfeeding during hospital stay in the area of Athens, Greece. *Acta Paediatr*. 2005;94(7):928-934.
8. Knechi GQK, Woraich E, Baiwa SN. Patterns of Breast Feeding in Children Under two Years of Age in Bahawalpur. *Pak J Med Sci*. 2001;17(2):94-98.
9. Afzal M, Quddusi AI, Iqbal M, Sultan M. Breast feeding patterns in a military hospital. *J Coll Physicians Surg Pak*. 2006;16(2):128-131.
10. Memon Y, Sheikh S, Memon A, Memon N. Feeding beliefs and practices of mothers/caregivers for their infants. *J Liaquat Uni Med Health Sci*. 2006;5(1):8-13.
11. Kulsoom U, Saeed A. Breast feeding practices and beliefs about weaning among mothers of infants aged 0-12 months. *J Pak Med Assoc*. 1997;47(2):54-60.
12. World Health Organization. Indicators for assessing infant and young child feeding practices. Geneva, World Health Organization. 2007. Available at: http://apps.who.int/iris/bitstream/handle/10665/44306/9789241599290_eng.pdf;jsessionid=0139CBD5DDA34554C03EFE6A4275F013?sequence=1.
13. Hafeez N, Quintana-Domeque C. Son preference and gender-biased breastfeeding in Pakistan. *Eco Deve Cultu Change*. 2018;66(2):179-215.
14. WHO/UNICEF. Global strategy for infant and young child feeding. Geneva, World Health Organization. 2003. Available at: <http://apps.who.int/iris/bitstream/handle/10665/42590/9241562218.pdf;jsessionid=077AE55247298270CDD1652359442199?sequence=1>
15. Black RE, Allen LH, Bhutta ZA, Caulfield LE, De Onis M, Ezzati M, Mathers C, Rivera J, Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet*. 2008;371(9608):243-260.
16. World Health Organization. Global Strategy for Infant and Young Child Feeding, The Optimal Duration of Exclusive Breastfeeding. Geneva: WHO:2001. Available at: <https://apps.who.int/iris/handle/10665/78801>
17. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS, Bellagio Child Survival Study Group. How many child deaths can we prevent this year?. *Lancet*. 2003;362(9377):65-71.
18. McGuire S. US Dept. of health and human services. The surgeon General's call to action to support

- breastfeeding. US Dept. of health and human services, Office of the Surgeon General. *Adva Nutri.* 2011;2(6):523-524.
19. Shaheen Premani Z, Kurji Z, Mithani Y. To explore the experiences of women on reasons in initiating and maintaining breastfeeding in urban area of Karachi, Pakistan: An exploratory study. *Inter Scholar Res Notices.* 2011.
 20. Morisky DE, Kar SB, Chaudhry AS, Chen KR, Shaheen M, Chickering K. Breastfeeding practices in Pakistan. *Pak J Nutri.* 2002;1(3):137-142.
 21. Appleton J, Russell CG, Laws R, Fowler C, Campbell K, Denney-Wilson E. Infant formula feeding practices associated with rapid weight gain: A systematic review. *Matern. Child Nutr.* 2018;14(3):e12602.
 22. Intiful FD, Tette EM, Pobee R, Enos JY. Exclusive Breastfeeding: A Review of Barriers and Enhancers to Practice in Africa and Asia. *Asia J Dietetics.* 2020.
 23. Zakar R, Zakar MZ, Zaheer L, Fischer F. Exploring parental perceptions and knowledge regarding breastfeeding practices in Rajanpur, Punjab Province, Pakistan. *Int. Breastfeed. J.* 2018;13(1):1-2.
 24. Zafar SN, Bustamante-Gavino MI. Breastfeeding and working full time experiences of nurse mothers in Karachi, Pakistan. *Inter J Caring Sci.* 2008;1(3):132.
 25. Saeed OB, Haile ZT, Chertok IA. Association between exclusive breastfeeding and infant health outcomes in Pakistan. *J pedia nursing.* 2020;50:e62-8.
 26. Ahmed J, Laghari A, Naseer M, Mehraj V. Prevalence of and factors associated with obesity among Pakistani schoolchildren: a school-based, cross-sectional study. *East Mediter Health J.* 2013;19(3):242-247.
 27. Woo JG, Martin LJ. Does breastfeeding protect against childhood obesity? Moving beyond observational evidence. *Curr Obesity Reports.* 2015;4(2):207-216.
 28. Thompson JM, Tanabe K, Moon RY, Mitchell EA, McGarvey C, Tappin D, Blair PS, Hauck FR. Duration of breastfeeding and risk of SIDS: an individual participant data meta-analysis. *Pediatr.* 2017;140(5).
 29. Oliveira AM, Andrade PR, Pinheiro EM, Avelar AF, Costa P, Belela-Anacleto AS. Risk and protective factors for sudden infant death syndrome. *Revista brasileira de enfermagem.* 2020;73.
 30. Brahm P, Valdes V. Benefits of breastfeeding and risks associated with not breastfeeding. *Rev Chil Pediatr.* 2017;88(1):15-21.
 31. Marinelli KA, Ball HL, McKenna JJ, Blair PS. An integrated analysis of maternal-infant sleep, breastfeeding, and sudden infant death syndrome research supporting a balanced discourse. *J Human Lacta.* 2019;35(3):510-520.