www.directivepublications.org

The American Journal of Public Health

ISSN 3064-6677

Research Article

Socio-Demographical Factors That Influence Breastfeeding Practices And Initiation In Women Attending Karbala Teaching Hospital For Children.

Abdul Kareem A. Jasim[1], Abdul Razzaq Oleiwi J[2], Masarrah Hashim Muhsin[3], Yahya Altufaily[4], Abdul Amir H. Kadhum[5]

1.Abdulkareem, Pediatric Department, College of Medicine, Karbala, Iraq College of Medicine, University of Al-Ameed Karbala, Iraq:
Email:*abdulkareem.olaywi@uokerbala.edu.iq:* **ORCID:** *0000-0002-2388-1774*
2.Abdul Razzaq: Department of Community and Family Medicine, College of Medicine, Al-Ameed University, Karbala, Iraq:
E-mail: *dr.razaq3101962@gmail.com:***ORCID:** *0000-0002-3853-9330*
3.Masarrah: College of Medicine, University of Kerbala, Iraq. **Email:** *massara.h@uokerbala.edu.iq:* **ORCID:** *0009-0008-5883-6763*
4.Yahya: Pediatric Department, College of Medicine, University of Al-Ameed, Karbala, Iraq: **Email:** *yahya@alameed.edu.iq.*
5.Abdul Amir: College of Medicine, University of Al-Ameed, Karbala, Iraq; **Email:** *amir1719@gmail.com:* **ORCID:** *000-0003-4074-9123*

Abstract

Background: For healthy growth and development, all mothers can breastfeed provided they have accurate information, and the support of their family, the health care system and society at large.
Objective: To identify the impact of socio- demographical factors that influenced the initiation and practice of breastfeeding amongst women attending Karbala teaching hospital for children.
Methods: A cross-sectional study in which Semi-structured questionnaires were administered to 516 mothers in Karbala teaching hospital of children. Who had infant age <6 months. Infant feeding intentions, feeding practices at birth and during 1st six months. The data were collected in 2015-2016. Sample size was calculated by special formula, identifying the first mother arrived and to get the rest of the required sample size, systematic sampling method was used.Statistical analysis: was done using statistical package for social science (SPSS) program version 21. Chi square test was used for analysis of qualitative variables, while analysis of variance (Anova, F) test was used for analysis of quantitative variables. A probability (P value) of less than 0.05 considered statistically significant.
Results: This study included a total of 516 mothers of children aged less than 6 months were included in the study, of the 516 participants mothers included in the analysis ,from them 308(59.7%) chose breastfeeding and 79(15.9) chose bottle feeding and the rest who were 129(25%) chose mixed feeding for their infants with p. value <0.001, 72% (173 out of 240) who chose breastfeeding were advised by their mother and mother in law 43.6%, 52% of those who chose bottle feeding because they thought they had not enough milk. the social support, crowding index.
Conclusions: Appropriate practice of breast feeding is still influenced by factors such as the health care system, the social support, mother's education, and cultural attitudes, type of labour, admission to the NICU, fluids offered to the babies after birth, employment status and workplace Policies and Barriers, previous feeding methods and pre-delivery woman's intention. Maternal mothers, mothers in law and pediatricians had the lion`s share in influencing breastfeeding practices.

Keywords: breastfeeding, labour, lactation, lifestyles, public health.

***Corresponding Author:** **Abdul Amir Kadhum,** Associate Professor College of Medicine, University of Al-Ameed, Karbala, Iraq.
Email: amir1719@gmail.com.
Received: 06-May-2026, Manuscript No. TAJOPH - 5726**; Editor Assigned:** 07-May-2026 **; Reviewed:** 25-May-2026, QC No. TAJOPH - 5726 **;**
Published: 08-June-2026.**DOI:** 10.52338/tajoph.2026.5726.
Citation: Abdul Amir Kadhum. Socio-Demographical Factors That Influence Breastfeeding Practices And Initiation In Women Attending Karbala Teaching Hospital For Children.The American Journal of Public Health. 2026 June; 17(1). doi: 10.52338/tajoph.2026.5726.
Copyright © 2026 **Abdul Amir Kadhum.** This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

According to the recommendation of the WHO It is very important to start exclusive breastfeeding within the first hour of birth and continuing for at least six months to promote optimal growth and development [1] globally About 44% of infants 0–6 months old are exclusively breastfed [2]. Several programs and Polices to promote breast feeding. Start with educational programs, hospital breast feeding practices together with family and social support , the importance of breastfeeding in the prevention the risk of the infectious illness such as lowered risk of pneumonia, gastrointestinal infection, urinary tract infection and otitis media in the infant are explained by many Clinicians and the mothers are advised to adhere to the guidelines of proper breast feeding including the duration or the exclusivity which is necessary to get protection from the diseases [3]. Training staff who offer breastfeeding counseling to the new mothers about lactation: timing, positioning of the infant on the breast, correct nipple latch and care and to get optimal breastfeeding practices and early discover the problems that might associated with improper breast-feeding technique, a follow up visits may be taken within 24-48 hour after discharging from the hospital [4]. Baby in the post-partum early days, gets a thick yellow colored milk is synthesized by the mammary glands of the mother is called (*colostrum* which is rich in secretory IgA, lactoferrin, leukocytes which protect the infant from bacteria and viruses it is also rich in protein, fat soluble vitamins, sodium, chloride, magnesium. potassium and calcium. Lipid and carbohydrate are present but in lower concentrations [5]. Colostrum helps the newborn to pass meconium and prevent jaundice and because the uterus contracts as the baby suckle the mother will have less blood loss [6]. Breastfeeding can lower a mother's risk of type 2 diabetes [7], high blood pressure, risk of cardiovascular disease, breast and ovarian, osteoporosis, and arthritis. It may also help the mother to recover more quickly from childbirth [8] composition of the Breast milk is a dynamic, and influenced by several maternal factors during the first four postpartum months such as, nutritional status, parity, frequency and heaviness of menstrual cycle. smoking, physical activity, Maternal BMI, and environmental factors, adequate intake of micro and macro nutrients is essential for infant development and health [9,10].

Most common problems of the breast feeding

Nipple pain: as a result of poor infant positioning and wrong latch, mothers complain of painful / sore nipple, it considered the most common complication associated with baby oral candidiasis and mother nipple candidiasis that should be treated [11].

Engorgement: poor feeding technique and incomplete empty of the milk, due to Infants refusal of sucking the milk leading to a physiological fullness of the breast. It is called Engorgement of the breast [12].

Mastitis: breast infection can occur in lactating and nonlactating women is the most common lactating women. The incidence globally is 2% to 33% worldwide. Usually unilateral, characterized by warmth, tenderness, edema, erythema, and may be associated with general symptoms [13].

Inadequate breast milk: the complaint of "insufficient milk" due to multifactorial determinants classified into psychologic, physiological breastfeeding behavior maternal factors, and including, fatigability, stress, breast radiation therapy and certain medical or surgical condition of the breast, smoking and some medications, pregnancy make the production of the milk not enough. Other factors related the baby such as ineffective suckling, baby illness or ankyloglossia [14].

Jaundice: Breast milk jaundice which is expected to occur in the first or second week of life week due to the abnormal accumulation of bilirubin which is not contraindication of breast feeding, and usually spontaneously resolves even without stopping breastfeeding [15].

Factors that may affect the Initiation and practice of Breast Feeding

Timing of feeding initiation: Early initiation of breast feeding by putting the baby at the breast within the first hour of childbirth is considered the cornerstone of ideal breast feeding. The separation between mothers and infants occurs in hospitals specially after cesarean section delivery, in addition, that mothers had more stressful experiences with breastfeeding than mothers who had normal delivery. prolonged separation after birth or C-section delivery can make breastfeeding more difficult to be established [16].

Premature babies .Neonatal care unit support: Support is obtained by Neonatal care unit where the preterm infants , who has immature sucking skill and sucking-swallowing-breathing coordination, start with enteral and oral feeding of the mother's milk on the first day after birth as soon as possible , skin-to-skin contact with her baby and pumping of the breast milk, presence of the parents in the NICU, and the use of bottle-feeding should be restricted. or as soon as possible after birth. The support is not same in all units [17].

Occupation, Education and Economic status of the mother; Lactating employee mothers who work many hours per day they can't manage exclusive six-month breast feeding. Because of many factors related such as early return to work, full-time working, inflexible work schedule lack of privacy, not being cooperated by other workers, all these factors and others may lead to impairment both the initiation and duration of the breastfeeding practices [18]. The opinions about the relation between breast feeding and the socio-economic status of the mothers are contrary; some studies

have shown that the low rate of exclusive breastfeeding was found among high socio-economic status mothers. in contrast to other studies found that mothers with high income had high breastfeeding rate [19]. Some studies found that the mother's education level positively affects exclusive breastfeeding practice, higher educational level of the mothers associated with higher breastfeeding practice [20], in contrast to other study reported that lower maternal education is related to increase in breastfeeding practices [21]. Highly educated women may be more likely to understand the benefits of breastfeeding practice as recommended when compared with less educated one.

Parity and Birth weight of the baby: Several studies have reported that multiparous mothers, are more likely to initiate breastfeeding and mothers with prior breastfeeding experience have a longer breastfeeding duration compared with primiparous mothers [22]. There is a strong belief that breast milk substitute is very important to increase the weight of low-birth-weight infant When maternal breast milk is not sufficient [23]. The practice of discarding the foremilk which is mostly water combined with other nutrients and feeding low birth weight and premature infants predominantly hindmilk which is highly fatty has been shown to increase weight gain [24].

Maternal age, Previous experience with breast feeding: Breastfeeding initiation and longer breastfeeding duration are more likely in Multiparas. Mothers who are familial with breastfeeding are more confident about it and usually successful at breastfeeding [25]. Older maternal age is associated with exclusive breastfeeding and longer duration of breastfeeding [26], prenatally planning for breastfeeding and Family support. The Prenatal Planning for breastfeeding is a reflection of the knowledge, attitude, women's awareness of the importance of exclusive breastfeeding and increase the confidence in their ability to have successful continue breastfeeding. breastfeeding support must be given as part of routine health service provision [27] women who had support from her husband, family and her friends are likely to have longer breastfeeding duration [28].

Socio-demographic variables: There is a difference in the Prevalence of breast-feeding from one country to another and from one society to another, the prevalence of breast feeding was higher among Arab and Islamic communities due to cultural and religious believes [29].

Breast Milk Substitute Marketing: A major public health concern is unregulated breastmilk substitutes (BMS) marketing because it influences negatively the mothers' decisions on infant feeding practices and encourages formula consumption and therefore decrease breastfeeding practice [30]

Objectives

To identify the impact of socio- demographical factors that influenced the initiation and practice of breastfeeding amongst women attending Karbala teaching hospital for children.

METHODS

This is a cross sectional clinical based study targeting of 516 mothers who had been attending Karbala Teaching Hospital for Children. The data were collected over six months from July to December 2016, by a semi – structured questionnaire composed of 42 questions, delivered directly through face-to-face interview which last for 10-15 mints for each. After obtaining the informed verbal consent of the 516 qualified mothers who included in the study. The data collected by the researcher and other medical staff.

Inclusion criteria: the newborn and infant have to be ≤6 month of age, the respondent has to be the infant`s mother, neonates with congenital anomalies interfering with breast feeding were not included in the study. The questionnaire included the following determinants: Personal information ", demographic data" family level of education, their economic status which based on their house size compared with the number of the resident in it, rented or owned or displaced who lives in camps. Also, the occupational status of both parents which help in categorization of economic status and regarding the choice of feeding which the employed mother takes. The residence if urban or rural and if it was affecting the choice of feeding , Baby gender and gestational age. Mode of delivery, Birth weight of the baby. Neonatal care unit admission and it`s duration, and if they let the mother be with her baby during admission [31].

Hospital policy and health-care staff sport regarding breast feeding practice. The family support, Mother choice of feeding her baby. Time of administration of bottle if the choice was bottle fed. Introduction of liquid and food. Source of the knowledge of the mother about baby feeding practices. Mother`s intention of feeding, the main reason behind choosing bottle feeding. The privacy of feeding practices. Work institutions policy regarding employed nursing mothers and their babies, day care, lactation rooms and labor breaks. Sample size was calculated using equation 1.

$$n = \frac{Z^2 pq}{d^2} \qquad 1$$

Where, n sample size, Z^2= 1.96 (confidence interval). The standard normal deviate usually set at 1.96 or simply 2.00 which correspond to 95% confidence level. p=The proportion of target population (0.5=50%). q = 1-p (1-0.5), d =0.05 or 0.0. Therefore: n =384, 10% for none respondents, 384x10/100=38.4. Therefore, the sample size was 384+38=422. Identifying the first mother arrived and to get the rest of the required sample size, systematic sampling method was used.

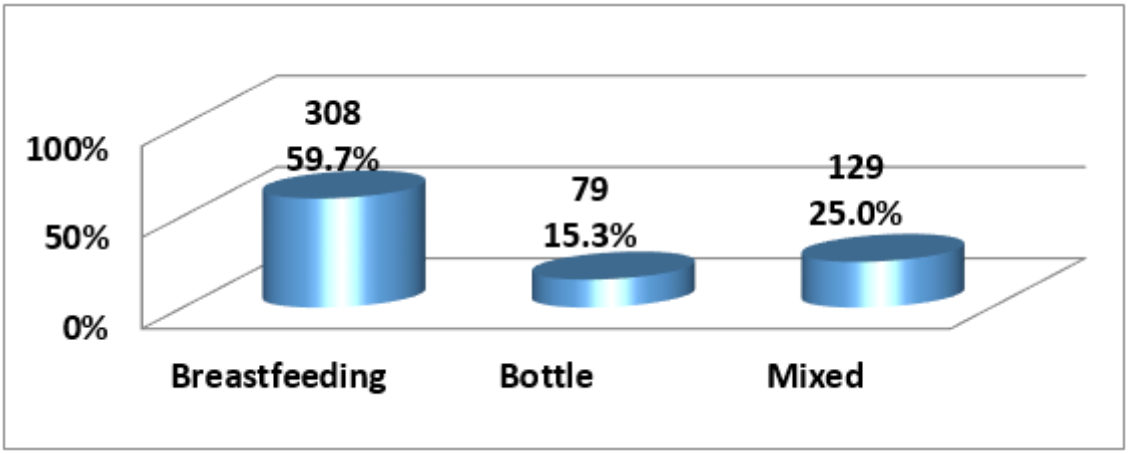
Statistical analysis: was done using statistical package for social science (SPSS) program version 21. Qualitative data were expressed as numbers (N), and percentages (%), while quantitative variables were expresses as N, minimum (Min.), maximum (Max.), mean and standard deviation (SD). Chi square test was used for analysis of qualitative variables, while analysis of variance (Anova, F) test was used for analysis of quantitative variables. A probability (P value) of less than 0.05 considered statistically significant.

Ethical approval for this study was obtained from the Karbala Directorate of Health. Informed consent was obtained from all participants who were informed about the research prior to collection of data. All data were saved in a password computer for research purpose only.

RESULTS

A total of 516 mothers of infant aged less than 6 months were included in the study with response rate of 100%, 308(59.7%) of them declared to have breastfed breastfeeding, 79(15.9%) bottles feeding and 129 (25%) mixed feeding for their infants as shown in **Figure 1**.

Figure 1. type of feeding that had been chosen by the participant mothers.



Among the participants mothers 90(17.4%),107 (20.7%),103(20 %) of them were illiterates, read and write and primary education respectively. the rest of had either secondary or higher education. 80.2% of the mothers were housewives and 19.8% of them were employed. More breastfeeding practice was found in housewives and low educational level mothers. 74.7% of the women lived in rural area declared to have breastfed in front of 56.1% of the women from urban area. (p. value = 0.001). 56.8% of participants infants were male but gender not affecting the choice of breast feeding (p=0.115). 66.3% of the mothers were from low socioeconomic class and 61.0% with crowding index of <3 in one room. (p=0.146). 457 (88.6%) women given birth after 9 months of gestation and 62.6 % of them had breast feeding, those born bellow 9 months gestational age only 59(11.4%) and there were no significant results as (p-value= 0.120) . 294 (57%) had vaginal deliveries, (68.0%) was assisted by episiotomy and 222 (43%) delivered by C/S these results were significantly affecting the type of infant feeding in the 1st sixth months of life as (p-value= 0.001), **Table 1**.

Table 1. Maternal characteristics according to the type of feeding.

Variables	Categories	Total	Type of feeding			P value
			Breastfed	Bottle	Mixed	
		516 100%	308 59.7%	79 15.3%	129 25.0%	
Mother Education	Illiterate	90 17.4%	69 76.7%	9 10.0%	12 13.3%	< 0.001
	Read & write	107 20.7%	63 58.8%	25 23.4%	19 17.8%	
	Primary	103 20%	57 55.3%	17 16.5%	29 28.2%	
	Secondary	111 21.5%	60 54.1%	22 19.8%	29 26.1%	
	Higher	105 20.3%	59 56.2%	6 5.7%	40 38.1%	
Mother Job	Housewife	414 80.2%	247 59.7%	72 17.4%	95 22.9%	0.009
	Employee	102 19.8%	61 59.8%	7 6.9%	34 33.3%	
Residence	Urban	417 80.8%	234 56.1%	65 15.6%	118 28.3%	0.001
	Rural	99 19.2%	74 74.7%	14 14.1%	11 11.1%	
Economic status	Weak	342 66.3%	209 61.1%	63 18.4%	70 20.5%	0.146
	Intermediate	165 32%	90 54.5%	16 9.7%	59 35.8%	
	Good	9 1.7%	9 100.0%	0 0.0%	0 0.0%	
Crowding index (person /room)	< 3	315 61%	182 57.8%	35 11.1%	35 11.1%	0.007
	≥ 3	201 39%	126 62.7%	44 21.9%	31 15.4%	
Child Gender	Male	293 56.8%	174 59.4%	38 13.0%	81 27.6%	0.115
	Female	223 43.2%	134 60.1%	41 18.4%	48 21.5%	
Duration of Pregnancy /month	7.0	16 3.1%	12 75.0%	0 0.0%	4 25.0%	0.120
	8.0	43 8.3%	10 23.3%	20 46.5%	13 30.2%	
	9.0	457 88.6%	286 62.6%	59 12.9%	112 24.5%	
Type of labor	NVD	294 57%	209 71.1%	26 8.8%	59 20.1%	< 0.001
	C/S	222 43%	99 44.6%	53 23.9%	70 31.5%	
NVD + Episiotomy	No	94 32%	61 64.9%	9 9.6%	24 25.5%	0.346
	Yes	200 68%	148 72.9%	17 8.4%	38 18.7%	

The average age of participant's mothers was 26 years. mean of duration of marriage for those who breastfeed, mixed feeding was 7.01, 5.04 years respectively. Age of participants infants ranged from 2-180 days with an average age of 95 days, mean age of those who breastfed were 93 days (p. value=0.482). Infants birth weight ranges from 0.8-5.0 kg (mean=2.84 kg). Duration of

admission were ranged from1 hour-30 days, out of 218 who were admitted to the NICU 98 (44.9%),50 (22.9%) and 70 (32.11%) had breastfeeding, bottle feeding and mixed feeding respectively. This table show the significant relation between type of feeding practice with the duration of marriage and duration of infant stay in prematurity Unit.

Table 2. Relationship Between Feeding Methods and Maternal Age, Marriage Duration, Infant Characteristics, and NICU Admission.

Variable	Type of feeding	N	Mean	SD	P value
Age of mother / year Range (15- 45)	Breast feeding	308	26.61	6.01	0.356
	Bottle	79	27.10	6.94	
	Mixed	129	25.90	6.05	
	Total	516	26.51	6.17	
Duration of marriage / year Range (1- 26)	Breast feeding	308	7.01	4.71	< 0.001
	Bottle	79	7.68	5.61	
	Mixed	129	5.04	3.50	
	Total	516	6.62	4.68	
Age of child / days Range (2- 180)	Breast feeding	308	93.37	55.92	0.482
	Bottle	79	99.66	58.71	
	Mixed	129	99.55	59.97	
	Total	516	95.88	57.35	
Infant birth weight / Kg Range (0.8- 5)	Breast feeding	308	2.85	0.56	0.497
	Bottle	79	2.76	0.75	
	Mixed	129	2.85	0.67	
	Total	516	2.84	0.62	
Duration of stay in Prematurity Unit / hr	Breast feeding	98	114.67	293.62	0.001
	Bottle	50	314.86	583.11	
	Mixed	70	70.03	150.25	
	Total	218	146.25	362.45	

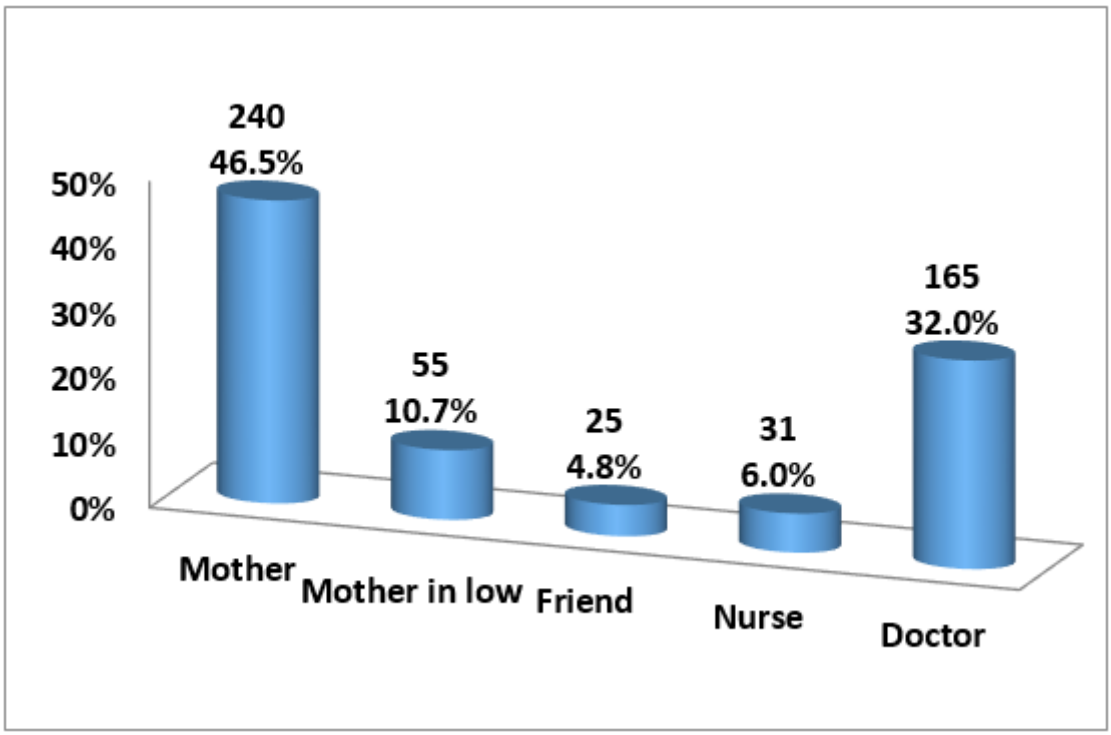
About (60.3%) of the mothers initiated their babies breast feeding with in <2 hours after labor, and (71.4%) of them continue with breast feeding, while only (36.9%) of women who fed their babies after 24 hours chose breast feeding (p. value =<0.001). Among total infants participated in the study 218 (42.2%) were admitted to the NICU, 46.3% of them chose BF and 69.5% of those who were not admitted to the NICU chose BF ,(p value= < 0.001). (59.1%) of the mothers were fed their babies previously with breast milk, from them 73.7% continue with breast feeding, only 20 (31.7 %) out of 63 who previously feed their babies with bottle chose breastfeeding for their current infants (p. value=<0.001). 109 (21.13%) (primi gravida) had no previous experience with any type of infant feeding and not included in the comparison. Participants mothers who did not offer liquids to their infant soon after birth were 325 (63%), about two thirds of them had chosen breast feeding (p. value =<0.001), in front of (48.7%) of respondents who did introduced liquids to their infant soon after birth continue on breastfeeding and higher percentage chose mixed feeding 63 (33.0%) with (p. value=<0.001). about 90% Women who delivered their babies at hospital which encouraged breast feeding, (60.3%) of them chose BF (p .value=0.694). 73% of the mothers took their decision about the way of feeding after delivery (74.7%) of them who breastfeed their baby and (14.6%) were intend to introduce mixed feeding decided prenatally (p. value<0.001). (86.8%) had special place for feeding their infants (p. value>0.05). **Table 3**.

Table 3. Variables related to the sampled mothers in relation to the type of feeding.

Variables	Categories	Total	Type of feeding			P value
		516 100%	Breastfed 308 59.7%	Bottle 79 15.3%	Mixed 129 25.0%	
Initiation of breast feeding	< 2 hrs	311 60.3%	222 71.4%	37 11.9%	52 16.7%	< 0.001
	2-23 hrs	121 23.4%	55 45.5%	19 15.7%	47 38.8%	
	≥ 24	84 16.3%	31 36.9%	23 27.4%	30 35.7%	
Admission to neonatal unit	No	298 57.8%	207 69.5%	29 9.7%	62 20.8%	< 0.001
	Yes	218 42.2%	101 46.3%	50 22.9%	67 30.7%	
Previous feeding methods	Breastfed	305 59.1%	225 73.7%	32 10.4%	48 15.7%	< 0.001
	Bottle	63 12.2%	20 31.7%	28 45%	15 23.8%	
	Mixed	39 7.6%	4 10.3%	10 26%	25 64.1%	
	Non	109 21.13%	0	0	0	
Fluids offered to infant after birth	No	325 63%	215 66.2%	44 13.5%	66 20.3%	< 0.001
	Yes	191 37%	93 48.7%	35 18.3%	63 33.0%	
Policy of hospital	No	55 10.7%	30 54.5%	10 18.2%	15 27.3%	0.694
	Yes	461 89.3%	278 60.3%	69 15.0%	114 24.7%	
Who advise about feeding	Mother	240 46.5%	173 72.1%	29 12.1%	38 15.8%	< 0.001
	Mother in law	55 10.7%	43 78.2%	3 5.5%	9 16.4%	
	Friend	25 4.8%	9 36.0%	13 52.0%	3 12.0%	
	Nurse	31 6%	11 35.5%	12 38.7%	8 25.8%	
	Doctor	165 32%	72 43.6%	22 13.3%	71 43.0%	
When you decide how to fed	Before Delivery	376 73%	281 74.7%	40 10.6%	55 14.6%	< 0.001
	After Delivery	140 27%	27 19.3%	39 27.9%	74 52.9%	
Special place for feeding	No	68 13.2%	45 66.2%	18 26.5%	5 7.4%	> 0.05
	Yes	448 86.8%	263 58.7%	61 13.6%	124 27.7%	

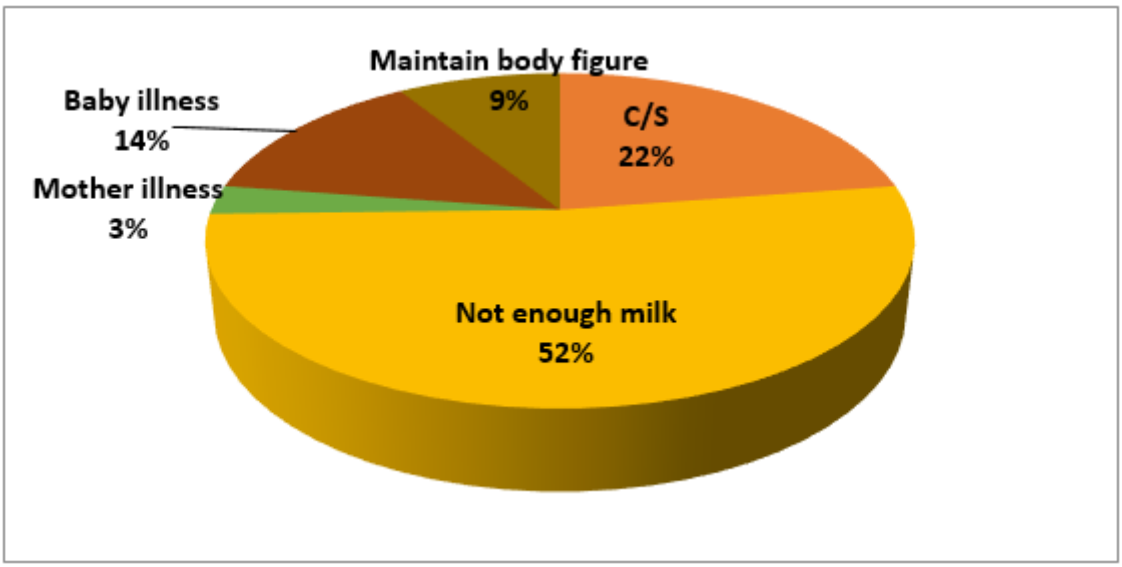
Figure 2 shows mostly the maternal grandmothers 240 (46.5%), followed by doctors 165 (32%). However, 72.1 %, 78.2 % ,36%, 35.5 % and 43.6 % of the mothers who received advice about way of feeding from their mothers, mothers in law, friends, nurses and their doctor chose breastfeeding respectively with (p. value<0.001).

Figure 2. the person who helps mothers to choose the feeding type.



Regarding causes behind choosing bottle feeding, 52% were claimed that they had not enough milk, 22% because of C/S, 14% due to baby illness, and 9% to maintain body figure, and 3% due to mother illness, as showed in **figure 3**.

Figure 3. Main causes for choosing formula.



DISCUSSION

Various psychological, social, emotional, and environmental factors impact whether an infant is breastfed, bottle fed or mixed. Approximately 60% of the respondents chose breastfeeding as a feeding method for their babies, 40% chose bottle feeding or both. nearly equal to the result of study in conducted in Poland [32] and differ from other study in K.S.A where only 28% practiced exclusive breastfeeding for the first six months. In Iran 27.7 % at 6th month and 56.8% at 4th month infants [33]. Age of the mother plays no significant role with EBF in contrast to other study found that maternal age significantly associated with EBF practice [34] while other studies found that young mothers have lower breastfeeding self-efficacy than older mothers [35]. The difference may be due to mothers age were approximately in the same range regarding all types of feeding. significant

relation between type of feeding practice with the duration of marriage and that may be due to longer duration of marriage may associate with multiparty and more feeding experience, same result found by Shamima Akter et al [36]. In the current study about half of primigravida mothers chose bottle feeding and mixed feeding, the higher risk of terminating breastfeeding in mothers with first-born babies might result from that younger age-group had no breastfeeding experience [37,38] Regarding mother's education: there were a strong correlation between mother`s education and type of feeding and about three quarters of illiterates mothers conducted in the study chose breastfeeding, and this was the highest percentage among all, while highly educated mothers which chose mixed feeding, and that because educated mother tend to be employed and has no time for breastfeeding, in the agreement with studies in Saudi Arabia and the United Arab Emirates [39], and not similar to results from various south Asia or Africa countries where breast-feeding practice was more among mothers who completed secondary or higher education than among mothers with low educational levels [40]. May be due to that educated mothers have adequate knowledge gained from mass media or reading about importance of breast-feeding practices to their offspring health [41]. Regarding mother`s job a about one third of employed mothers had a mixed feeding, working for a long time had a negative impact on breastfeeding duration. this finding is consistent with other study found that shorter breastfeeding duration associated with early returning to work and working more than 34hrs per week [42]. Several studies in different parts of the world reported low rates of exclusive breastfeeding among working mothers [43]. This study showed that more than half of the women who had their private place of feeding chose breastfeeding feeding practices, lack such facilities at the workplace can hinder their ability to breastfeed exclusively. In Iraq employed mothers who had nursery rooms in their work place are more likely to choose mixed feeding, while others had maternal leave. Mothers from rural area and low socioeconomic status had higher rates of exclusive breastfeeding than those from urban area, same finding was found by other study [44] and in contrast to other study in which middle income mothers had a less breastfeeding practice compared high income mothers [38]. Among the regional countries, a study from Iran reports that mothers from middle SES were more likely to breastfeed their babies [45]. The current study revealed that the culture of the Karbala is still supportive to breast-feeding since people especially the aged grandmothers provide a culture that encourages breast-feeding. Most of the mothers who received advice about way of feeding from their mothers and mothers in law chose breastfeeding. Half of the mothers who advised by their friends chose bottle feeding. These findings are similar to those from a study done in Turkey [46]. mothers spend a lot of weeks postpartum in their parents' house and may be ordered to breastfeed their babies by older family members and influenced by cultural and religious beliefs. Nurses had little influence choose bottle feeding. Efforts to improve early initiation and exclusive breast-feeding should be taken by staffs in public and private hospitals and to support the baby-friendly hospital. Early initiation of breastfeeding is associated positively with increase rate of breastfeeding practice. More than two thirds of those who initiated feeding in 1st 2 hours chose breastfeeding, same results by other studies [47,48]. In the current study mothers who hadn't introduce prelacteal fluids, about two thirds of them breastfed their babies, the type and duration of prelacteal feeding had significant negative influence on milk production and it is a significant risk factor for shorter BF duration [49] to improve BF outcomes Effective interventions are needed in order to prevent the introduction of unnecessary milk-based prelacteal fluids [48], in this study three quarters of women who intend to breastfeed their babies prenatally breastfed their babies early. other study found that pre-delivery woman's intention is considered strong predictors of breastfeeding [50]. Out of those giving artificial formula the main reason behind this practice was not enough milk followed by C/S delivery, baby illness, mother illness and lastly to maintain body figure, doctors' advice [51] and occupation [52], other study found that mothers with lower levels of education more likely to practice bottle-feeding [5]. Mothers who experienced birth complications like caesarean deliveries, fetal distress, were each associated with a shorter breastfeeding duration, and therefore mothers who had delivered their babies by vaginal delivery are more likely to breastfeed, episiotomy had no influence on feeding type or initiation, higher percentages of neonates that fed during the first day of their lives were belonged to those who delivered by C/S, unfortunately they chose either mixed or bottle feeding. Similar results in other studies [53,54]. Mothers who experienced complications were more likely to discontinue breastfeeding for reasons of post operative pain, delayed milk production, due to physiological and psychological stress, ability of holding the baby [55]. Our study also shows the effect of neonatal intensive care unit (NICU) admission on the choice of feeding, more than two thirds of those not admitted had breastfeeding in front of more than half who were admitted had mixed feeding and bottle feeding, and also duration of stay in NICU had negative impact on breast feeding practice. Furthermore, our study shows that infant birth weight and age have no significant influence on breastfeeding. But a newborn with low birth weight or premature tend to stay longer in NICU and may fed by NG tube and therefore inversely correlated with breastfeeding duration. same finding by other studies [56-58] may be due to the stress and anxiety of the mother and separation of the

mother and her neonate; the, which may result in depressive disorder [55]. Women with previous breastfeeding experience are more likely to intend to breastfeed than those who never had any experience, in consistent with other study [59].

CONCLUSIONS

- Many of the mothers have a basic instinct and positive attitudes towards breast feeding.
- Appropriate practice of breast feeding is still influenced by factors such as the health care system, the social support, mother's education, and cultural attitudes. Maternal age, type of labor, admission to the NICU, fluids offered to the babies after birth, employment status and workplace Policies and Barriers, previous feeding methods and crowding index
- Maternal mothers and mothers in law, doctors (pediatricians) had the lion`s share in influencing breastfeeding practices.
- Initiation of breastfeeding is a strong predictor for the duration of breastfeeding

Recommendations

- In terms of early initiation during the first hour, implementing the baby-friendly hospital initiatives, and implementing of the international code of marketing of breast milk substitute are strongly recommended.
- Encouragement of doctors specially the pediatricians to attend lectures and conferences about advantages of breastfeeding and to enhance their positive attitude towards breastfeeding practices.
- Also, it is recommended that mothers begin infant feeding education as soon as they get pregnant, so that they can make well informed decisions on how to feed their babies.

Acknowledgment

Authors are grateful to all the women who participated in the study and for Karbala Directorate of Health for its approval to perform the study in the pediatric hospital.

Funding

This research was funded by the University of Al- Ameed.

Conflicts of Interest

No conflict of interest.

REFERENCES

1. World Health Organization (WHO). Breastfeeding. Available online: https://www.who.int/health-topics/breastfeeding#tab=tab_1 (accessed on 1 November 2024).
2. World Health Organization (WHO). Infant and young child feeding. Available online: https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding (accessed on 20 December 2023)
3. Eilzabeth P. Parks, Ala Shaikhkhalil. Feeding healthy infants, children, and adolescents page from (286-287) part VI Nutrition, chapter 45 Nelson 20th edition
4. Fujimori M, França EL, Morais TC, Fiorin V, de Abreu LC, Honório-França AC. Cytokine and adipokine are bifactors can act in blood and colostrum of obese mothers. Bifactors. 2017 Mar;43(2):243-250. doi: 10.1002/biof.1339. Epub 2016 Nov 7.
5. Parvin Abedi, Shayesteh Jahanfar, Farideh Namvar, et al: Breastfeeding or nipple stimulation for reducing postpartum haemorrhage in the third stage of labour. Cochrane Database Syst Rev. 2016 ;2016(1):CD010845. doi: 10.1002/14651858.CD010845.pub2
6. Britta Stordal: Breastfeeding reduces the risk of breast cancer: A call for action in high-income countries with low rates of breastfeeding. Cancer Med. 2022 Sep 26;12(4):4616–4625. doi: 10.1002/cam4.5288.
7. Abdul Razzaq Oleiwi Jasim, Noor Abdul Razzaq, Ali Thoulfikar A. Imeer, Rahem Mahdi Rahem, Abdul Amir H. Kadhum, Ahmed A. Al-Amiery. Epidemiological profile and diabetes control of Type 1 Diabetes Mellitus patients in Karbala Governorate, Iraq. F1000Research. 2023:12:409 DOI: 10.12688/f1000research.126561.1
8. Yahya Al-Tyfaily, Hasanain Ali, Abdul Razzaq Oleiwi Jasim, Ameer Mohammed, Abdul Amir H. Kadhum, Abdul Kareem A. Jasim. Adverse events among pediatric inpatients in Babylon maternity and children teaching hospital. Perinatal Journal 2025;33(1):267-280. doi. org/10.57239/prn.25.03310033.
9. Giuliana Favara, Andrea Maugeri, Martina Barchitta, et al: Maternal Lifestyle Factors Affecting Breast Milk Composition and Infant Health: A Systematic Review. Nutrients 2025, 17(1), 62; https://doi.org/10.3390/nu17010062
10. Agnieszka Bzikowska-Jura, Aneta Czerwonogrodzka-Senczyna, Gabriela Olędzka, et al. Maternal Nutrition and Body Composition During Breastfeeding: Association with Human Milk Composition. Nutrients. 2018 Sep 27;10(10):1379. doi: 10.3390/nu10101379

11. Jacqueline C Kent, Elizabeth Ashton 2,†, Catherine M Hardwick, et al: Nipple Pain in Breastfeeding Mothers: Incidence, Causes and Treatments. Int J Environ Res Public Health. 2015 Sep 29;12(10):12247–12263. doi: 10.3390/ijerph121012247

12. Irena Zakarija-Grkovic, Fiona Stewart: Treatments for breast engorgement during lactation. Cochrane Database Syst Rev. 2020 Sep 18;2020(9):CD006946. doi: 10.1002/14651858.CD006946.pub4

13. Erin F. Morcomb, MD; Carmen M. Dargel, MD, et al; DO: Mastitis: Rapid Evidence Review. Am Fam Physician. 2024;110(2):174-182. PMID: 39172666

14. Mohebati, L. M., Hilpert, P., Bath, S., Rayman, M. P., Raats, M. M., Martinez, H., & Caulfield, L. E. (2021). Perceived insufficient milk among primiparous, fully breastfeeding women: Is infant crying important? Matern Child Nutr. 2021;17(3):e13133. doi: 10.1111/mcn.13133. Epub 2021 Jan 5.

15. Genevieve L Preer, Barbara L Philipp. Understanding and managing breast milk jaundice. Arch Dis Child Fetal Neonatal Ed 2011;96(6): F461-6. doi:10.1136/adc.2010.184416. Epub 2010 Aug 5.

16. Smith ER, Hurt L, Chowdhury R, Sinha B, Fawzi W, Edmond KM. Neovita Study Group. Delayed breastfeeding initiation and infant survival: A systematic review and meta-analysis. PLoS ONE. 2017;12(7): e0180722. doi: 10.1371/journal.pone.0180722.

17. Silnes Tandberg, Hege Grundt, Ragnhild Maastrup, et al.: Practices supporting cue-based breastfeeding of preterm infants in neonatal intensive care units across Europe Bente International Breastfeeding Journal. 2025; 20:2 https://doi.org/10.1186/s13006-024-00697-y

18. Gordon Abekah-Nkrumah1, Maame Yaa Antwi, Jacqueline Nkrumah et al. Examining working mothers 'experience of exclusive breastfeeding in Ghana. International Breastfeeding Journal. 2020; 15:56. doi. org/10.1186/s13006-020-00300-0.

19. Ekanem, I., Ekanem, A., Asuquo, A. and Eyo, V. Attitude of working mothers to exclusive breastfeeding in Calabar municipality, Cross River State, Nigeria. Journal of Food Research. 2012; 1(2):71-71. DOI:10.5539/jfr.v1n2p71.

20. Hamze L, Mao J, Reifsnider E.: Knowledge and attitudes towards breastfeeding practices: a cross-sectional survey of postnatal mot there in China. Midwifery. 2019:74:68-75. doi: 10.1016/j.midw.2019.03.009. Epub 2019 Mar 18.

21. Tinuade A Ogunlesi. Maternal socio-demographic factors influencing the initiation and exclusivity of breastfeeding in a Nigerian semi-urban setting. Maternal and Child Health Journal. 2010;14(3): 459-465. doi: 10.1007/s10995-008-0440-3. Epub 2009 Jan 21.

22. Nicole M Hackman, Eric W Schaefer, Jessica S Beiler, et al: Breastfeeding Outcome Comparison by Parity. Breastfeed Med. 2015;10(3):156–162. doi: 10.1089/bfm.2014.0119.

23. Qureshi, A.M., Oche, O.M., Sadiq, U.A. &Kabiru, S. Using community volunteers to promote exclusive breastfeeding in Sokoto State, Nigeria. Pan African Medical Journal. 2011; 10. http://dx.doi.org/10.4314/pamj.v10i0.72215.

24. Jayasrinivas S Gandikota, Shankargouda V Patil, Mallanagouda Patil, et al: Role of Hindmilk in Weight Gain of Preterm Low-Birth-Weight Neonates: A Prospective Comparative Study. Cureus. 2024;16(8):e67717. doi: 10.7759/cureus.67717.

25. Sharon Radzyminski, Lynn Clark CallisterMother's Beliefs, Attitudes, and Decision Making Related to Infant Feeding Choices. J Perinat Educ. hers in China. Midwifery. 2019;74:68–75. doi: 10.1891/1058-1243.25.1.18.

26. Anne Chevalier McKechnie, Audrey Tluczek, Jeffrey B Henriques: Maternal Variables Influencing Duration of Breastfeeding Among Low-Income Mothers. Infant Child Adolesc Nutr. 2009;1(3):126–132. doi: 10.1177/1941406409334379.

27. Kerri M Raissian, Jessica Houston SuThe best of intentions: Prenatal breastfeeding intentions and infant health. SSM Popul Health 2018;5:86–100. doi: 10.1016/j.ssmph.2018.05.002.

28. Hunter T, Cattelona G.: Breastfeeding initiation and duration in first-time mothers: exploring the impact of father involvement in the early post-partum period. Health Promote Perspecta. 2014;4(2):132–6. doi: 10.5681/hpp.2014.017

29. Wafa F Khasawneh, Azza H Ahmed, Megan E Petrov: Breastfeeding Practices and Associated Factors among Immigrant Muslim Arab Women Living in a Metropolitan

Area of the Southwest of United States. Clin Med Insights Pediatr. 2023;17:11795565231200798. doi: 0.1177/11795565231200798

30. Rollins NC, Bhandari N, Hajeebhoy N, et al: Why invest, and what it will take to improve breastfeeding practices? Lancet. 2016;387(10017):491–504. doi.org/10.1016/ S0140- 6736(15)01044-2.

31. Hadeel Abdulameer Shamkhi Alshlah, Banan Natiq Turkey, Abdul Amir H. Kadhum. Immediate versus delayed cord clamping and its effect on neonatal outcomes in vaginal deliveries: A randomized controlled trial. Perinatal Journal 2025; 33(1):189-196. doi. org/10.57239/prn.25.03310026

32. Anna Rozensztrauch, Magdalena Klaniewska, Marta Berghausen-Mazur, et al: Factors affecting the mother's choice of infant feeding method in Poland: a cross-sectional preliminary study in Poland. Ir J Med Sci. 2021 Sep 18;191(4):1735–1743. doi: 10.1007/s11845-021-02751-8.

33. Nada A Alyousefi: Determinants of Successful Exclusive Breastfeeding for Saudi Mothers: Social Acceptance Is a Unique Predictor. Int J Environ Res Public Health 2021;18(10):5172. doi: 10.3390/ijerph18105172

34. Aubrey R. Maonga, Michael J. Mahande, Damian J. Damian, et al: Factors Affecting Exclusive Breastfeeding among Women in Muheza District Tanga Northeastern Tanzania: A Mixed Method Community Based Study. Maternal and Child Health Journal 2016:20:77–87. doi: 10.1007/s10995-015-1805-z.

35. Ingrid Nilsson, Marianne Busck-Rasmussen, Henriette Knold Rossau, et al: Breastfeeding trajectories of young and short-term educated mothers and their partners; experiences of a journey facing tailwind and headwind. Midwifery. 2022: 13: 103436. https://doi.org/10.1016/j.midw.2022.103436

36. Pei-Chi Chang1, Sin-Fong Li1, Hsin-Yi Yang, et al: Factors associated with cessation of exclusive breastfeeding at 1 and 2 months postpartum in Taiwan. Chang et al. International Breastfeeding Journal. 2019: 14:18 https://doi.org/10.1186/s13006-019-0213-1

37. Dawit Alemayehu Chekol, Gashaw Andargie Biks, Yalemzewod Assefa Gelaw, et al: Exclusive breastfeeding and mothers' employment status in Gondar town, Northwest Ethiopia: a comparative cross-sectional study. Int Breastfeed J. 2017 Jun 17;12:27. doi: 10.1186/s13006-017-0118

38. Fatimah Alsada, Tunny Sebastian, Zainab Alzayer, et al: Determinants of infants and young children feeding practices among mothers living in Saudi Arabia: a cross-sectional study. BMC Public Health. 2025;25:388 https://doi.org/10.1186/s12889-025-21606-w

39. Neves P.A.R., Barros A.J.D., Gatica-Domínguez G., Vaz J.S., Baker P., Lutter C.K. Maternal education and equity in breastfeeding: Trends and patterns in 81 low- and middle-income countries between 2000 and 2019. Int. J. Equity Health. 2021;20:20. doi: 10.1186/s12939-020-01357-3.

40. Md Tariqujjaman, Md Mehedi Hasan, Mustafa Mahfuz 1J Oan Y., et al: Association between Mother's Education and Infant and Young Child Feeding Practices in South Asia Nutrients. 2022;14(7):1514. doi: 10.3390/nu14071514.

41. Kate P.C., Jennifer A.M. Maternal Education and Investments in Children's Health. J. Marriage Fam. 2016;78:7–25. doi: 10.1111/jomf.12253.

42. Bidisha Mandal, Brian Roe, Sara Beck Fein: The Differential Effect of Full-time and Part-time Work Status on Breastfeeding. Health Policy. 2010; 97(1):79-86. doi:10.1016/j.healthpol.2010.03.006

43. Lauer EA, Armenti K, Henning M, et al. Identifying barriers and supports to breastfeeding in the workplace experienced by mothers in the New Hampshire special supplemental nutrition program for women, infants, and children utilizing the total worker health framework. Int J Environ Res Public Health. 2019;16(4):529. doi: 10.3390/ijerph16040529

44. Satoshi Kaneko3and Yasuhiko Kamiya4: Correlates of exclusive breast-feeding practices in rural and urban Niger: a community-based cross-sectional study Mami Hitachi1, Sumihisa Honda, et al. International Breastfeeding Journal. 2019;14:32 https://doi.org/10.1186/s13006-019-0226-9.

45. Demirtas B, Ergocmen B, Taskin L. Breastfeeding experiences of Turkish women. J Clin Nurs. 2012;21(7–8):1109–18. doi: 10.1111/j.1365-2702.2011.03848.x. Epub 2011 Sep 20.

46. Alhanouf F. Altamimi, Rayyana Ababtain, Mariah S. Alahmari and Bader A. Altulaihi : Factors affecting breastfeeding initiation among mothers in Riyadh

primary healthcare clinics: a cross-sectional study. Journal of Health, Population and Nutrition 2025;44(83). https://doi.org/10.1186/s41043-025-00831-4

47. Margaret Rukindo, Mathias Tumwebazeorcid, Elizabeth Manimake Mijumbi: First Hour Initiation of Breast Feeding & Associated Factors, among Mothers at Post Natal Ward in Fort Portal Referral Hospital, Uganda. Open Journal of Epidemiology 2021: 11(1):1-15. doi:10.4236/ojepi.2021.111001

48. Rafael Pérez-Escamilla, Amber Hromi-Fiedler, Elizabeth C Rhodes, et al: Impact of prelacteal feeds and neonatal introduction of breast milk substitutes on breastfeeding outcomes: A systematic review and meta-analysis. Matern Child Nutr. 2022;18(Suppl 3):e13368. doi: 10.1111/mcn.13368

49. Rafael Pérez-Escamilla, Gabriela S Buccini, Sofia Segura-Pérez, et al: Perspective: Should Exclusive Breastfeeding StillBeRecommendedfor6Months?AdvancesinNutrition 2019;10(6):931-943. doi: 10.1093/advances/nmz039

50. Lauren Sartor, Chantal Pyram-Vincent, Hung-Mo Lin, et al: Race and Intention to Breastfeed are the Strongest Predictors of Exclusive Breastfeeding: A Retrospective Study. 2024;11(6):3704-3713. doi: 10.1007/s40615-023-01819-8. Epub 2023 Oct 5.

51. Safaa Tawfik 1, Dina Saied 1, Ola Mostafa 1, et al: Formula Feeding and Associated Factors among a Group of Egyptian Mothers. Open Access Maced J Med Sci. 2019;7(11):1854–1859. doi: 10.3889/oamjms.2019.462.

52. Kebebe T, Assaye H. Intention, magnitude and factors associated with bottle feeding among mothers of 0-23 months old children in Holeta town, Central Ethiopia: a crosssectional study. BMC Nutrition. 2017;3(1):53. doi: 10.1186/s40795-017-0174-y. https://doi.org/10.1186/s40795-017-0174-y.

53. Pierro J, Abulaimoun B, Roth P, Blau J. Factors Associated with Supplemental Formula Feeding of Breastfeeding Infants During Postpartum Hospital Stay. BREASTFEEDING MEDICINE. 2016;11:4. doi: 10.1089/bfm.2015.0091. https://doi.org/10.1089/bfm.2015.0091 PMid: 27027901

54. Sofia Zwedberg, Maja von Hofsten and Oskar Jurell: Formula Feeding After Emergency Cesarean Section – A Descriptive Retrospective Cohort Study. J Preg Child Health. 2015;2:3 doi.org/10.4172/2376-127X.1000159

55. Imhonde, H., Shaibu, H., Imhonde, J. &Handayani, L.Type of Birth, Depression and Anxiety as determinates of Breastfeeding Attitude among Nursing Mothers. International Journal of Public Health Science (IJPHS). 20121;(2): 49-54. doi: http://dx.doi.org/10.11591/ijphs.v1i2.1253

56. Rozeta Sokou, Stavroula Parastatidou, Georgios Ioakeimidis, et al: Breastfeeding in Neonates Admitted to a NICU: 18-Month Follow-Up. Nutrients. 2022;14(18):3841. doi: 10.3390/nu14183841.

57. Laborie S., Abadie G., Denis A., Touzet S., Fischer Fumeaux C.J. A Positive Impact of an Observational Study on Breastfeeding Rates in Two Neonatal Intensive Care Units. Nutrients. 2022;14:1145. doi: 10.3390/nu14061145.

58. Jiang X., Jiang H. Factors associated with post NICU discharge exclusive breastfeeding rate and duration amongst first time mothers of preterm infants in Shanghai: A longitudinal cohort study. Int. Breastfeed. J. 2022;17:34. doi: 10.1186/s13006-022-00472-x.

59. Yi Huang, Yan-Qiong Ouyang, Sharon R. Redding, et al: Previous breastfeeding experience and its influence on breastfeeding outcomes in subsequent births: A systematic review. Women and Birth 2018: 32(4). DOI:10.1016/j.wombi.2018.09.003