



Breastfeeding Practices During Neonatal Period in Benghazi

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ARTICLE HISTORY	Abstract: Breastfeeding is the safest and healthiest infant feeding method; exclusive breastfeeding for the first 6 months of infant life is strongly advised. This study was conducted to assess infant feeding practice and maternal determinants of infant feeding during the first month of life. In a hospital-based cross-sectional survey at the neonatal unit and OPD of Benghazi Pediatric Hospital, mothers were selected by reason of infant age not exceeding 4 weeks. A sample of 306 mothers was collected, and the alarming results are that about (31.8%) of the mothers are either not breastfeeding their babies or practicing inappropriate early weaning (mixing). Moreover, inadequate milk production (25%) was reported as the most common cause of these practices. In addition, the role of the trustworthy education channel about breastfeeding is minimal, if not there, such as mother and child health care. Also, providers are the source of knowledge for only 2.38%. Operative delivery is associated with a marked delay in breastfeeding initiation (Pearson Chi-square =13.2, P=0.001), and older age group mothers are associated with a greater probability of operative delivery, hence it is an in-direct mediator of delayed breastfeeding initiation. These results reflect poor maternal knowledge and attitude about breastfeeding that ultimately resulted in poor practice and low rate of exclusive breastfeeding, in addition to the limited awareness of healthcare providers about the importance of early initiation of breastfeeding to encourage the mothers and guide them to breastfeed their babies immediately after birth.
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ممارسات الرضاعة الطبيعية خلال الشهر الأول من حياة الرضع بنغازي

الكلمات المفتاحية : الرضاعة الطبيعية الحصرية، بدء الرضاعة الطبيعية، الولادة الجراحية، عمر الأم، معرفة الأم.	المستخلص : الرضاعة الطبيعية هي الطريقة الأكثر أماناً وصحة لتغذية الرضع، وينصح بشدة بالرضاعة الطبيعية الحصرية لأول 6 أشهر من حياة الرضع. أجريت هذه الدراسة لتقييم ممارسة تغذية الرضع ومحددات الأمهات لتغذية الرضع خلال الشهر الأول من الحياة. تم اختيار الأمهات وفقاً لعمر الرضيع الذي لا يتجاوز 4 أسابيع، وذلك من خلال مسح مقطعي في المستشفى في مستشفى بنغازي للأطفال. جمعت عينة من 306 من الأمهات، والنتائج المقلقة هي أن حوالي 3/1 (31.8%) من الأمهات: إما لا يرضعن أطفالهن، أو يمارسن الفطام المبكر غير المناسب (الخلط) بالإضافة إلى ذلك، فإن دور قناة التنشيف الجذرية بالثقة حول الرضاعة الطبيعية محدود للغاية إن لم يكن موجوداً، مثل الرعاية الصحية للأم، والطفل، ومقدمي الرعاية الصحية هي مصدر المعرفة لـ 2.38 % فقط. وترتبط الولادة الجراحية بتأخير ملحوظ في بدء الرضاعة الطبيعية (مربع بيرسون تشي = 13.2 ، P = 0.001)، وترتبط الأمهات الأكبر سناً من الفئة العمرية باحتمال أكبر للولادة العملية، وبالتالي فهي وسيط غير مباشر لبدء الرضاعة الطبيعية المتأخرة. وتعكس هذه النتائج ضعف معرفة الأمهات ومواقفهن بشأن الرضاعة الطبيعية التي أدت في النهاية إلى سوء الممارسة، وانخفاض معدل الرضاعة الطبيعية الخالصة، ومحدودية وعي مقدمي الرعاية الصحية بأهمية البدء المبكر في الرضاعة الطبيعية لتشجيع الأمهات، وتوجيههن لإرضاع أطفالهن رضاعة طبيعية مباشرة بعد الولادة.
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INTRODUCTION

Breastfeeding is the ideal method of infant nutrition that should be started immediately after birth and be exclusive during the first four to six months of life, after which a

complementary diet of foods to be given, with the continuation of breastfeeding until the age of two years. It is the optimal scheme of infant feeding that is strongly recommended by the World Health Organization (WHO) (WHO, 2003).

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Breastfeeding is the single most efficient and cost-effective activity in reducing early childhood morbidity and mortality worldwide. Breastfeeding saves the lives of 800,000 children and about 200 mothers annually. Besides being a nutrition source, breast milk contains immune-related components and various biologically active substances that contribute to efficient nutrient utilization and give the child active and passive protection against infections (Victora et al., 2016). Breast milk cannot be duplicated by any artificial means; it is unique in its composition and function, and no infant formula can even resemble a mother's milk. Moreover, breast milk changes over time, and even over the course of a day, to meet the changing needs of the growing child (Martin et al., 2002). In addition to its innumerable immediate benefits, breastfeeding has long-term advantages as it enhances school achievement, increases intelligence in adulthood, and has other social benefits as it raises productivity and earning capability (Hayatbakhsh et al., 2012). Furthermore, breastfeeding comprises plenty of benefits to mothers: it reduces the risk of breast cancer and ovarian cancer as data suggest that women who do not breastfeed their baby face a higher risk of breast and ovarian cancer, obesity, type II diabetes, metabolic syndrome, and cardiovascular diseases (Stuebe, 2009). Although the benefits of breastfeeding are well documented by many organizations, institutes, and dozens of studies (Jones et al., 2003; Nabulsi et al., 2014; Roberts et al., 2013; WHO, 2000), exclusive breastfeeding rate and early initiation of breastfeeding have not reached the desired level in many countries all over the world. Therefore, it is an area of interest for healthcare providers and researchers (Emmanuel, 2015; Jebena & Tenagashaw, 2022).

In Libya, there are some studies addressing different aspects of breastfeeding, such as the one done in Benghazi assessing the baby's correct position, attachment, and effec-

tive suckling during breastfeeding as practiced by mothers attending hospitals. They concluded that a mother aged less than 20 years and primipara mothers showed the more frequently wrong practice of breastfeeding and recommended that mothers should be observed at the onset of breastfeeding and, if needed, subsequent counseling should be given accordingly (Goyal et al., 2011). In Middle Eastern countries, much research investigated the effect of socio-demographic factors on breastfeeding. For example, in Jordan, a study concluded that breastfeeding was independent of the mother's age, father's education level, and child's gender. In addition, they found mother characteristics associated with less chance of breastfeeding are higher education, employed mothers, and mothers delivered by cesarean section (Khassawneh et al., 2006).

In developing countries such as African countries, breastfeeding can be the difference between life and death for several reasons, including poor hygiene and lack of clean water (Hörnell et al., 2013). Even though breastfeeding is reasonably common practice, in Kenya, for instance, the practice is thought to be sub-optimal, with an initiation rate of 58% within the first hour of birth. Exclusive breast feeding (EBF) is not common, as only 32% of infants below the age of six months are exclusively breastfed. Kenya National Bureau of Statistics (KNBS, 2010). In Ghana, mother's exclusive breastfeeding was affected by a few mother-related social factors, for example, mothers who work in the informal sector of employment were able to exclusively breastfeed their infants and breastfeed more than eight times in the previous 24 hours of data collection, as compared to mothers in the formal sector of employment. Moreover, family support, bed-sharing, flexible work schedules, and cultural beliefs are key factors in exclusive breastfeeding and breastfeeding frequency (Nkrumah, 2017). In Cameroon, some cultural taboos and beliefs

have a negative impact on breastfeeding practices, as traditional beliefs in that community influence mothers to practice mixed feeding. These include pressure by village elders and families to supplement due to the belief that breast milk is an incomplete food and does not increase the infants' weight (Kakute et al., 2005). Despite all the efforts encouraging mothers to lactate their babies; the lack of progress made in improving breastfeeding rates globally over a decline in breastfeeding in many communities was noted by the WHO. That is why more awareness of mothers regarding breastfeeding benefits should be considered and addressed, which will help in providing women and their children with the support and protection they are entitled to (Li et al., 2002). The aim of study were to investigate maternal characteristics regarding adherence to breastfeeding of their infants during the neonatal period, and to know the impact of socio-demographic, obstetrical, and perinatal characteristics on breastfeeding.

MATERIALS AND METHODS

Study design: cross-sectional study Sampling and settings hospital-based convenience samples were drawn during the period from March 2016 to September 2017.

Data collection tool: A questionnaire was used to collect the data from mothers visiting the neonatal outpatient department of Benghazi Paediatric Hospital. The questionnaire contains about 17 questions. Part of them inquires about mother characteristics like age, education level, health, and medications. Another part asks about early infant feeding practices such as time of starting breastfeeding, frequency of feeding, and giving of other feedings besides breast milk, and the last part is informing about delivery related criteria like mode of delivery, gestational age and birth order.

Inclusion criteria:

1- Libyan nationality of the mother.

2- The baby's age is less than 4 weeks.

Statistical software and analysis: The data was entered into SPSS version 21 for analysis, and quantitative data were summarized to list the descriptive statistics in the form of a range, mean, and standard deviation for continuous variables and count and percentages for discrete variables with plotting of graphs and curves when necessary. Inferential statistics in the form of correlation assessment and Pearson chi-square were used to find the explanatory variables (factors) that might influence the variation in breastfeeding practice of the studied sample.

Ethical issue: Verbal permission was confirmed prior to data collection from all participants, the study holds no risk or harmful procedure for the study sample, and their privacy is secured as the data is entered anonymously.

RESULTS

Maternal characteristics: This study included data from 306 mothers. The age distribution of the sample is of three age categories; 22.2% of them are less than 25 years, 49% are of age from 25 to 35 years, and 28.8% are above 35 (figure 1). Most of the mothers (81.7 %) are with high education level, followed by primary education (15.4%), and the least (2.9%) for illiterate mothers. Some mothers (22.5%) are experiencing motherhood for the first time. 21.9 have three children followed by 19.6 have two children, and only 13 mothers have seven children or more.

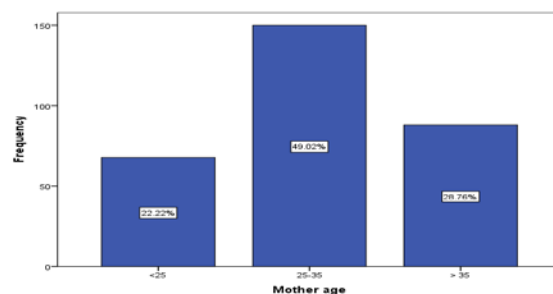


Figure: (1). Mother age distribution of the study sample.

Mothers with previous experience of maternity were asked about breastfeeding their youngest infants (not the current one), their answers were 155 (65.1 %) mothers gave a history of breastfeeding, 62 (26.1%) said that they mix breastfeeding with other feedings, and only 21 (8.8%) said that they did not breastfeed their infants. About 68% of the mothers breastfed their current infants, while 25.9 % gave breastfeeding besides other feedings, and only 5.9% of them are not lactating. In addition, 65% of them breastfed their infants at a regular frequency (figure 2). The time of breastfeeding initiation after delivery is variable. 64.59% of the mothers started breastfeeding after more than one hour, and the remaining 35.41% started correctly within the first hour of giving birth of their babies (figure 3).

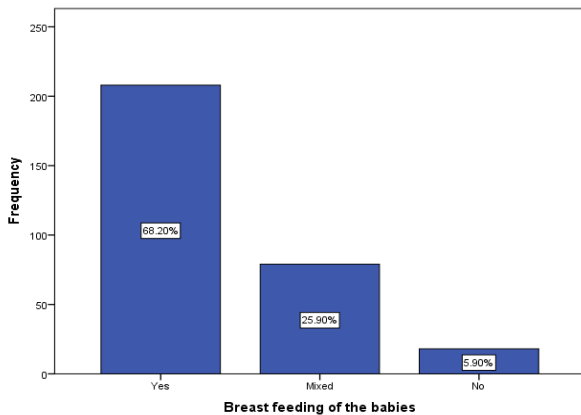


Figure: (2). Mode of infant feeding exclusive breastfeeding, mixed, or no breastfeeding

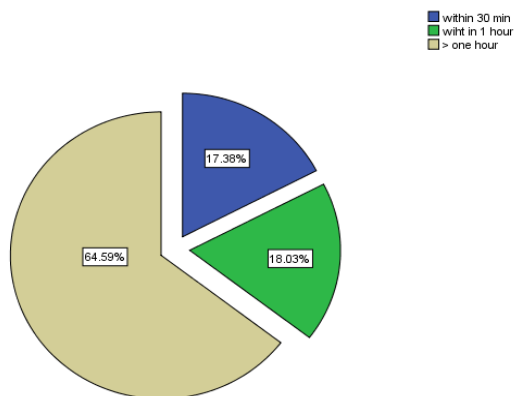


Figure: (3). Time of starting breastfeeding immediately after the birth of the infants

Some mothers included in this study (5.9%) quit breastfeeding their infants, one quarter (25%) of the mothers stopped breastfeeding because of not producing enough milk, another 25% stopped due to infant illness and admission, and 18.75% said that their infant refused to breastfeed (figure 4).

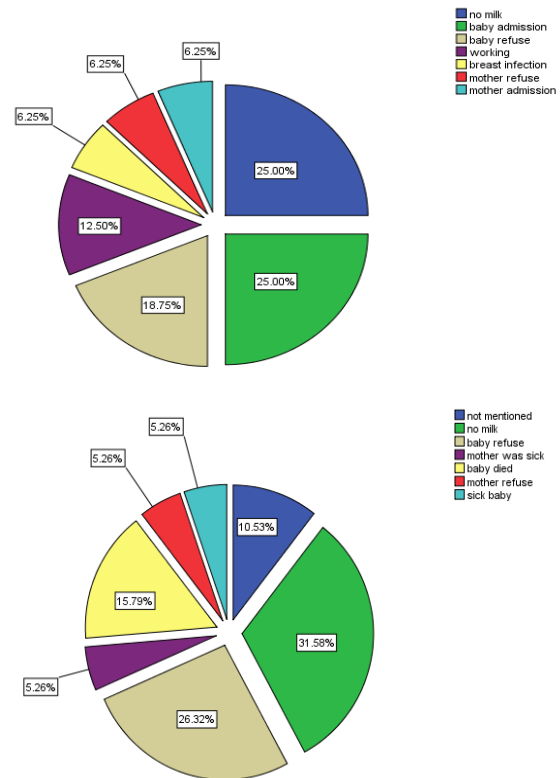


Figure: (4). Causes of breastfeeding stopping for the current baby (left) and previous baby (right)

While the mothers who continued breastfeeding along with other food (early and inappropriate weaning) asserted different causes of mixing, the most commonly reported cause is “not producing enough milk” as it was reported by 38 mothers (48.1 % of those who mixed). Mother working was the second most common cause of mixing (17 mothers, 21.5%). Other reasons might be related to the baby, such as infant illness and hospital admission (4 cases), twin infants (3 cases), baby refusing or not accepting breast milk (2 cases), and cleft lip and palate (1 case). Mother-related factors for mixing are cracked or retracted nipples (4 mothers) and mothers with one breast (2

mothers). Few cases mentioned no reason (Figure 5).

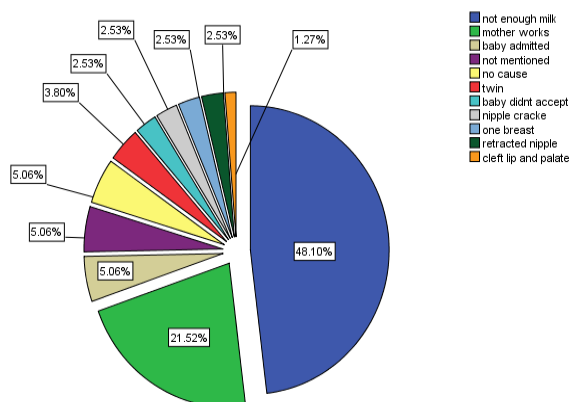


Figure: (5). Causes of mixing feeding of the current baby of the study sample

To compare the practice of breastfeeding of the mothers with other infants, data about the causes of stopping (figure 4) of the previous infant feeding were recorded. Generally, there is a very large similarity between the causes of stopping or early weaning between the current and previous baby, as 31.58% of the mothers quit breastfeeding the previous baby because of not producing enough milk, followed by 26.32% reporting the baby refusing. Whereas the top causes of mixing of previous baby feeding were not producing enough milk and mother work in percentages of 33.33% and 31.67% respectively.

Most of the previously studied (96.1%) mothers have knowledge about the importance of breastfeeding from different sources: the community, their mothers, sisters, mothers-in-law, etc. The other sources of knowledge include their school education, books, obstetricians, pediatricians, and media.

Infant's characteristics: The infants of this study are of age 4 weeks or less. In addition, the great majority of the infants of the mothers included in this study are full term and delivered with good health, as they represent 92.8%. Preterm infants are only 6.9% of the study sample and were not healthy at

birth. The mode of delivery is either normal vaginal in 54.9% or cesarean in 44.8 of the study sample. Moreover, 72.2 % of the infants had a birth weight between 2.5-4 kg, see (Table 1).

Table: (1). Infants characteristics of the study sample

Characteristic	Frequency	Percent (%)	Missing (count & %)
Maturity	Full term	284	92.8
	Preterm	21	6.9 (0.3%)
Mode of delivery	Vaginal	168	54.9
	Cesarean	137	44.8 (0.3%)
Birth Weight (kg)	1-1.4	7	2.3
	1.5-2.4	64	20.9
	2.5-4	223	72.9 (0.3%)
	>4	11	3.6
Vaccination	Yes	228	74.5
	No	77	25.2 (0.3%)
Use of traditional therapy	Yes	14	4.6
	No	291	95.7 (0.3%)

Correlation and chi-square assessment: Bivariate correlation was done to determine the factors affecting breastfeeding initiation. The time of starting breastfeeding is significantly associated with the mode of delivery ($p < 0.001$). Mothers who delivered by cesarean section had a significant delay in breastfeeding initiation (chi-square = 13.2, degree of freedom = 2, $p = 0.001$, see Table 2 and Figure 6).

Table: (2) Cross tabulation for breastfeeding initiation according to a mode of delivery

Mode of delivery	Time of breastfeeding initiation				Chi-square
	Within 30 min	Within 1 hour	>One hour	Total	Pearson Chi-square = 13.17
Normal vaginal	38	36	94	168	Degree of freedom= 2 p-value 0.001**
Caesarean	15	18	103	136	
Total	53	54	197	304	

** Highly significant result (P value < 0.05).

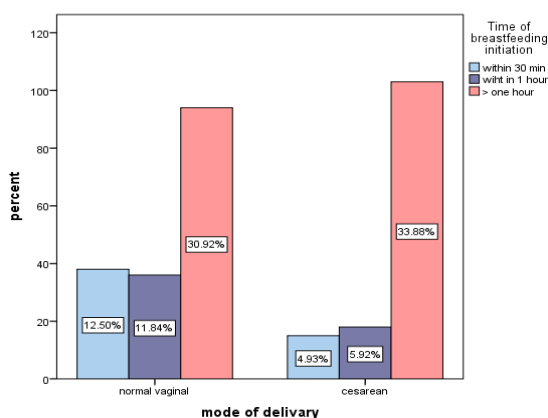


Figure: (6). Time of breastfeeding initiation according to the mode of delivery of the study sample

Whereas the mode of delivery is related to the mother's age ($p < 0.001$). Therefore, the mother's age is indirectly related to the time of breastfeeding initiation through its correlation with a mode of delivery. Consequently older mothers tend to deliver by cesarean section more than younger mothers, a cesarean mode of delivery is associated with late breastfeeding initiation (Table 3 and Figure 7). Other factors such as maternal age, mother education level, infant weight, and infant gestational age were tested to find if they have any effect on the time of initiation of breastfeeding and all were found to be insignificant determinants.

Being a new mother or having other children is not significantly associated with a time of breastfeeding initiation, mode of delivery, or mode of infant feeding.

Table: (3) Cross tabulation of a mode of delivery according to maternal age

Mother's age (years)	Mode of delivery		Total	Chi-square Pearson Chi-square = 8.001
	Normal vaginal	Caesarean		
< 25 y	44	24	68	Degree of freedom= 2 p-value 0.018*
25-35	86	63	149	
>35	38	50	88	
Total	168	137	305	

*Significant result.

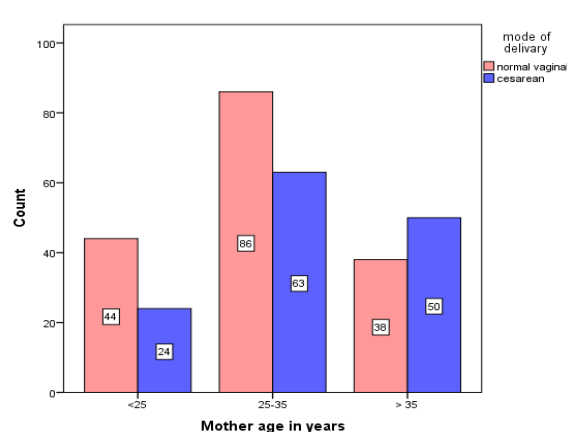


Figure: (7). Distribution of mode of delivery according to the mother age of the study sample

DISCUSSION

Mother characteristics associated with successful breastfeeding practice are an important area to be studied. This study investigated maternal factors determining the initiation of lactation after delivery and the causes of mixing and stopping breastfeeding. About two-thirds of the study sample (around 65) reported late starting of breastfeeding more than one hour after giving birth. The demographic characteristics of the sample of mothers, such as maternal education level, showed an insignificant impact on the time of breastfeeding initiation post-delivery. Obstetrical factors such as mode of delivery are found to be an important determinant of breastfeeding initiation as cesarean section. The mode of delivery is significantly associated with late initiation of lactation compared to normal vaginal delivery. Conversely, a study done in the USA found that cesarean delivery was not associated with breastfeeding initiation. However, they concluded that breastfeeding practices after a first birth are a significant predictor of breastfeeding in subsequent births (Sutherland et al., 2011).

According to the result of the present study, parity has been found to be insignificantly associated with breastfeeding initiation. However, a previous study found that a first-time mother is less likely to practice

exclusive breastfeeding compared with her multiparous counterpart, suggesting that previous breastfeeding experiences have an important role in shaping the current feeding practice, (Februhartanty, 2008) Not producing enough milk is the most frequently reported cause of cessation of breastfeeding among the sample of this study. This result was similar to that of a study in Saudi Arabia, as they found that 49.6% of the studied population reported that inadequate breast milk is the most common cause of mixing or stopping breastfeeding (Al-Hreashy et al., 2008).

These results reflect the reality of wrong knowledge and practice of mothers as it is well known that milk production during breast-feeding is increased by breastfeeding frequently due to the effect of infant suckling in the stimulation of milk production so that the more frequently breastfed infant is associated with more milk production and vice versa. Agreeing with this fact, a study in the United Kingdom showed that exclusively breastfed infants were required to be fed more frequently than infants who were bottle or mixed-fed (Casiday et al., 2004). Mother work is another frequently mentioned obstacle against the good practice of breastfeeding among the sample of this study, as they need to mix infant feeding due to their absence while they are at work (Kamal et al., 2021).

In Ghana, a study done to find the effect of maternal work on exclusive breastfeeding practice concluded that mother work has been identified as one of the factors that negatively impact exclusive breastfeeding in the first six months of life. They found that mothers engaged in the formal sector of employment are unable to exclusively breastfeed after maternity leave because facilities at their workplaces and conditions of work do not support exclusive breastfeeding (Nkrumah, 2017) Another reported cause of infant feeding mixing is multiple births which is a known cause of inappropriate in-

fant feeding. A study revealed that insufficient milk for the twins and time for breastfeeding are common causes of early cessation of breastfeeding among mothers of twins (Damato et al., 2005). Though most of the mothers (96%) included in this survey have some knowledge of breastfeeding, it is inadequate, and for others, not correct because the source of knowledge might be not reliable, as more than 68% of mothers rely on the surrounding community, as their mothers, sisters, mothers-in-law, etc., while the role of a formal reliable channel of health education seemed to be very limited, as obstetricians or antenatal care providers represent the source of knowledge for only 2.4% of the sample, this result reflects poor knowledge and subsequently, incorrect practice of breastfeeding.

Searching the previous studies demonstrates that few studies have been done on sources of information and the influence of maternal knowledge on the practice of breastfeeding. Generally maternal prenatal intention to breastfeed has an impact on infant feeding practices, so high intention and self-efficacy increase the likelihood of breastfeeding for 6 months. Therefore, all women should be guided to plan for breastfeeding their children in the antenatal period (Donath et al., 2003) The basic criteria of the sample of this study show an insignificant association with breastfeeding initiation. However, maternal age was found to be indirectly associated with breastfeeding initiation through its association with the mode of delivery. Consequently, older age mothers of this sample were predominantly delivered operatively compared to younger age ones, and mothers with operative delivery showed a significant delay in breastfeeding initiation for more than one-hour post-delivery. This result partly agreed with the available literature on this concern, as it is generally suggested that the relationship between maternal age and infant feeding practices differs according to the place of study. For example, one study found that older age is associated with

low rates of exclusive breastfeeding compared to younger mothers (Brown et al., 2011). On the other hand, other studies demonstrated that older maternal age is associated with exclusive breastfeeding and longer duration of breastfeeding (Bolton et al., 2009).

CONCLUSION

To sum up, maternal knowledge, attitude, and practice about breastfeeding is an extremely important domain of mother and child health in any community. This study showed poor results regarding breastfeeding practice during the first 4 weeks of infant life, many infants are fed incorrectly, as those who were breastfeeding represent only about two-thirds of the sample, and the others either have mixed feeding or are not breastfeeding, these figures during infancy are greatly disappointing.

Most mothers know about breastfeeding. However, the source of knowledge is not trusted. Therefore, the clearly wrong practice of infant feeding was detected within this sample. Operative labor is the single detected cause of late breastfeeding onset, whereas older mothers are more frequently delivered by cesarean section. Therefore, older mothers might show a later onset of breastfeeding due to operative delivery.

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