

IMPACT OF KNOWLEDGE AND ATTITUDE OF PRIMIPAROUS WOMEN IN ADDIS ABABA, ETHIOPIA, ON ACHIEVING OPTIMAL BREASTFEEDING PRACTICES

A. G. Minas, MPH, Doctoral Candidate

University of South Africa – Health Studies
Email: agirma2005@gmail.com

M. Ganga-Limando, RN, PhD

University of South Africa – Health Studies
Email: gangam@unisa.ac.za

ABSTRACT

Improving infant and young child feeding (IYCF) practices in children 0–23 months of age is critical to improved nutrition and development of children. Despite strong recommendations for optimal breastfeeding during the first six months, the practice remains lower than the desired targets globally. Socio-cultural and psychosocial factors, and mothers' breastfeeding knowledge and attitude, challenge optimal IYCF practices. The study was conducted to assess the impact of breastfeeding knowledge and attitude on the primiparous women's early initiation and exclusive breastfeeding practices during the first six months after delivery. A prospective follow-up health facility-based study design with quantitative methods was used. Both structured and semi-structured questions were used for data collection.



Statistical Package for Social Sciences (SPSS) version 21 was used for data management. Findings at the 95% confidence interval and P-value of 0.05 (5%) were reported as statistically significant. The majority of the respondents (86.5%) had no comprehensive breastfeeding knowledge. Meanwhile, over 60% of the respondents had a positive attitude to breastfeeding. Medium, positive and statistically significant correlation was observed between breastfeeding attitude and exclusive breastfeeding (EBF) practices ($\chi^2(1df) = 2.082$ ($P < 0.00$)), as well as between early initiation of breastfeeding practices and EBF practices ($\chi^2(1df) = 0.973$ ($p < 0.05$)). A positive breastfeeding attitude and early initiation of breastfeeding can predict EBF practices among primiparous women. Therefore, improving primiparous women's breastfeeding attitude and early initiation of breastfeeding practices, as well as further qualitative research to document perceptions and cultural factors affecting the practices of EBF among primiparous women, are strongly recommended.

Keywords: breastfeeding attitude, breastfeeding knowledge, breastfeeding practices, infant and young child feeding, optimal breastfeeding, primiparous women

INTRODUCTION AND BACKGROUND INFORMATION

The World Health Organization (WHO) recommends the protection, support and promotion of breastfeeding as the ideal method of infant and young child feeding (IYCF) during the first six months of life due to its health benefits to both the mother and child. This is because it is the best food for infants and has the ideal compositions of nutrients; it is safe, free of contamination and is at the correct temperature (WHO, 2009:11–12; WHO, 2012). Mothers' antibodies in breast milk provide infants with immunity to different diseases (Spark, 2007). Breastmilk has a significant positive impact on child growth and development and decreases the risk for many acute and chronic diseases, including diarrhoea and respiratory tract infections during infancy (CHERG, 2013).

Infant and young child feeding practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival. Improving IYCF practices in children 0–23 months of age is critical to improved nutrition, health and development of children (WHO, 2007). Among the top 15 child survival strategies, exclusive breastfeeding (EBF) up to six months of age and breastfeeding up to 12 months are viewed as the most effective intervention strategy with complementary feeding starting at six months as the third most effective intervention. The combination of these interventions alone is estimated to prevent almost one-fifth of under-five mortality in developing countries. Exclusive breastfeeding is estimated to prevent potentially over one and half million deaths globally every year among children under five years of age (UNICEF, 2012). However, inappropriate feeding practices during the first years of life are directly or indirectly associated with more than two-thirds of under-fives death due directly or indirectly to malnutrition (WHO, 2013).

Currently, EBF practice is challenged by various socio-cultural and psychosocial factors. As a result, most countries fall far below the global target of EBF of at least 50% (WHO and UNICEF, 2015). The recent Ethiopian Demographic and Health Survey (EDHS) reported that the rate of EBF in Ethiopia was 52% in 2011, and this means that only half of Ethiopian women having children less than six months of age feed their child only breast milk for the first six months (CSA and ICF, 2012).

Breastfeeding knowledge is among the significant predictors of breastfeeding practices, and it is strongly correlated with breastfeeding confidence and actual practice of breastfeeding (Chezem, Friesen & Boettcher, 2002:40–47). Having good breastfeeding knowledge was found to be independently associated with optimal breastfeeding practice among working mothers in Ethiopia (Nigatu and Worku, 2014). A study in Papua New Guinea found that women's knowledge of breastfeeding superiority over infant formula was generally poor among most women, and it was associated with poor EBF practices for the first six months postpartum among the same groups of women (Kuzma, 2013). However, breastfeeding knowledge alone was not enough to promote optimal breastfeeding practices. As an example, according to Saied, Mohamed, Suliman and Al-Anazi (2013:8–12), despite having good knowledge on breastfeeding's health benefits for the baby and mother, several other barriers, such as embarrassment from lactation in public places, poor prenatal and postpartum support, fathers not encouraging breast feeding, too busy to breastfeed, prevent women in Saudi Arabia from breastfeeding their children (Saied *et al.*, 2013).

In addition the mother's attitude towards breastfeeding is another factor associated with breastfeeding practices. According to a study conducted in Ireland, having been breastfed as a child and having seen a mother breastfeeding are significantly correlated with intention to breastfeed (Giles, Connor, McClenahan and Mallet 2010:285–288).

STATEMENT OF THE RESEARCH PROBLEM

High impact interventions to improve child survival have been implemented by public and non-governmental agencies at both community and health facility levels in Ethiopia. Ethiopia recently achieved the Millennium Development Goal four (MDG 4) in 2014. Ethiopia has also improved some of its nutrition indicators for children under the age of five years. The proportion of under-five years of age children who were chronically malnourished (stunted or were short for their age) was reduced from 44 per cent to 40 per cent during 2011 to 2014. However, these improvements have been without improvements in the practices of early initiation and exclusive breastfeeding during the same time periods (CSA & ICF, 2012:155; CSA, 2014:54).

There were no adequate studies regarding breastfeeding among primiparous women in Ethiopia when this study was conducted. However, studies conducted in other countries showed that primiparous women have no prior experiences on breastfeeding, but they are essentially potential target groups for promoting optimal breastfeeding (Al-

Akour *et al.*, 2010; Al-Ali *et al.*, 2012; Dreesmann, 2014). Therefore, assessing the optimal breastfeeding practices (early initiation and exclusive breastfeeding practices) and associated factors of primiparous women in Addis Ababa, would be beneficial in contributing to improved child survival in Ethiopia.

PURPOSE OF THE STUDY

The study sought to assess the impact of breastfeeding knowledge and attitude on the primiparous women's early initiation and exclusive breastfeeding.

OBJECTIVES

The study objectives were to assess the breastfeeding knowledge and attitude of primiparous women, to assess their early initiation and exclusive breastfeeding practices, and to assess if there is any association between primiparous mothers' breastfeeding knowledge and breastfeeding attitude with their early initiation and exclusive breastfeeding practices.

RESEARCH QUESTIONS

Research questions were: what is the knowledge and attitude of primiparous women on breastfeeding? What is the early initiation and exclusive breastfeeding practices among these women? Is there any association between women's breastfeeding knowledge and attitude with their optimal breastfeeding practices?

DEFINITION OF KEY WORDS

- **Early initiation of breastfeeding:** primiparous mothers' practice of putting their new-born children onto the breast within one hour of giving birth (WHO, 2007).
- **Exclusive early initiation of breastfeeding practices:** the researcher operationally defined exclusive early initiation of breastfeeding as primiparous mothers' practice of giving only breast milk and nothing else during the first hour after delivery.
- **Exclusive breastfeeding practices:** primiparous mothers' practice of feeding their children only breast milk and nothing else (except oral rehydration solutions, drops, syrups, vitamins minerals, medicines as prescribed by the healthcare provider) at least by the five months after delivery (WHO, 2007).

RESEARCH METHODOLOGY

- Study design: This was a hospital based follow-up study design with quantitative methods.
- Data collection periods: data were collected during April 2014 to February 2015.
- Sample size: The single proportion formula for calculating sample size at 95% confidence interval, allowable error of 5% and early initiation of breastfeeding as proportion of interest, and non-response rate of 5%. Considering the rate of early initiation of breastfeeding of 62% in the general population in Addis Ababa (CSA and ICF, 2012), the calculated sample size was 380. However, as the size of the population of interest was not large enough, the finite population correction (fpc) was applied to adjust the sample size. Accordingly, the adjusted sample size was 233.
- Study unit/participants: Primiparous women at their last terms of pregnancy were the study units.
- Sampling procedure: a public hospital with higher clients load and providing comprehensive maternity cares was purposively selected. Study participants attending this study hospital were interviewed.
- Data collection procedure: open and closed-ended interviewer administered questionnaire were used for data collection. Five nurses who had previous experiences in data collection were recruited and trained on identification of study participants, data collection procedure and on the data collection tools. The data were collected in three phases.
 - Phase one: the nurses interviewed the study participants on their socio-demographic variables, breastfeeding attitude and breastfeeding knowledge. This face-to-face interview was conducted in the study hospital as the primiparous mothers came for their antenatal visits, and the interview continued until adequate number of study participants were recruited for the study. The nurses together with the principal investigator developed a register book that was used in phases two and three of the data collection. In the register book, they register study participants who volunteered for phases two and three, and at least two phone numbers through which they would be contacted as well as their expected date of delivery.
 - Phase two: the nurses interviewed the study participants through telephone on their early initiation and exclusive early initiation of breastfeeding practices, and this was within one month of giving birth.
 - Phase three: the nurses interviewed the study participants telephonically on their exclusive breastfeeding practices, and this was after five months of giving birth.

- Data collection tools: based on the literature reviewed and previously conducted studies regarding breastfeeding knowledge, attitude and practices, a structured and semi-structured questionnaire for measuring the socio-demographic variables, breastfeeding knowledge, breastfeeding attitude and breastfeeding practices were adopted. These tools were then piloted among 28 primiparous women (which is 12% of the sample), who were eventually excluded from the study. The questionnaires were then modified, and were also shared with an experienced researchers in the areas for expertise opinions and feedback before finalising.
- Inclusion and exclusion criteria: being primiparous women, and at the last term of pregnancy, and attending antenatal care at the selected hospital were the inclusion criteria. Meanwhile, being referred to the study hospital from other health facilities due to medical complications, and developing medical complications during delivery were the exclusion criteria.
- Data management: the collected data were checked for completeness, consistency and accuracy on a weekly basis by the principal investigator. Questionnaires found to have inconsistent data and missed values were returned to the enumerators for correction. Each questionnaire was coded before entered into a computer, and a pre-analysis frequency table was done for selected variables before the in-depth analysis. The SPSS version 21 software was used for data entry and analysis. Descriptive and inferential statistics were employed, and findings at the 95% confidence interval and P-value of 0.05 (5%) were reported as statistically significant.
- Validity and reliability: face, content and construct validity of the questionnaires were addressed through adopting them from previously conducted similar research works. They were reviewed by the data collectors during the pilot test and experienced experts as well.
- Ethical clearance: The research was approved by the ethical review committee of the University of South Africa (UNISA) and the Addis Ababa City Administration Health Bureau (AACAHB). Permission to conduct the study was obtained from the study hospital. Informed consent was obtained from study participants at each phase of the data collection process. Confidentiality is maintained as only the researcher has access to the data.
- Variables: dependent variables were early initiation of and exclusive breastfeeding practices, while independent variables were breastfeeding knowledge, and breastfeeding attitudes. Socio-demographic variables, such as age, educational and employment statuses, and family incomes too were considered.

RESULTS

Response rate

The response rates in phase one, two and three of the data collection periods, were 99.6% (232), 89.3% (208) and 67.8% (141), respectively. Analyses were conducted for the 67.8% (n=141) study participants who were interviewed in each phase of the data collection.

Socio-demographic characteristics

Study participants ages range from 17 to 40 years, and the mean age of the respondents was 25.82 (SD: ± 3.76) years, while the median and mode of the respondents age were 26 and 25 years. The majority of the respondents (n=138, 97.8%) were below the age of 36 years. The majority of the respondents (78%, n=110) were Orthodox Christians followed by Protestant Christians (16.3%, n=23) and Muslims (5.7%, n=8).

Similarly, about 4.3% (n=6) of the respondents had no formal education, 23.4% (n=33) had primary education, 31.2% (n=44) had secondary, and 41.1% (n=58%) had post-secondary education. About 92.9% (n=131) were married, 6.4% (n=9) were single and one respondent was separated.

About 46.1% (n=65) were not employed, 15.6% (n=22) were self-employed (i.e. have their own business) and 38.3% (n=54) were either full-time or part-time employed when they were at their last term of pregnancy. Of those full or part-time employed respondents, almost all (98.1%, n=53) had maternity leave. The length of maternity leave was three months (SD: ± 0.48) on average, while it ranged from two to six months. About 92.5% (n=49) respondents would be paid while on maternity leave, while the remaining 7.5% (n=4) would not.

A few respondents did not know their families' average monthly income. However, of those who knew (94%, n= 133), the monthly income was 3441.61 (SD: ± 2621.08) Birr (\$167.35) on average, while it could range from 300 to 15 000 Birr (\$14.59 to \$729.39).

Breastfeeding knowledge

About 68.1% (n=96) respondents knew that breast milk is the ideal food for a newborn baby, while about 60.3%, (n=85) respondents knew that mothers should initiate breastfeeding within an hour of giving birth. Similarly, about 49% (n=69) respondents knew about colostrum and the associated benefits, and about 56% (n=79) of the respondents were knowledgeable on the minimum daily frequency of breastfeeding.

Regarding duration of breastfeeding, about 61% (n=86) of the respondents knew the recommended duration of breastfeeding of up to two years. Concerning the

breastfeeding benefits in strengthening the bond between the mother and the infant, about 67.4% (n= 95) respondents knew that breastfeeding helps develop a strong loving bond between mothers and their infants.

The WHO recommends that breastfeeding should continue during illnesses such as diarrhoea, feeding should even be more frequently, and in this study, about 48.2% (n=68) of the study participants knew that an infant with diarrhoea should be breastfed. Sixty-two per cent (n=88) of the respondents were knowledgeable regarding delaying the introduction of additional liquid or semi-solid food for infants during the first six months of their life. Figure 1 depicts study participants’ knowledge on the different breastfeeding attributes.

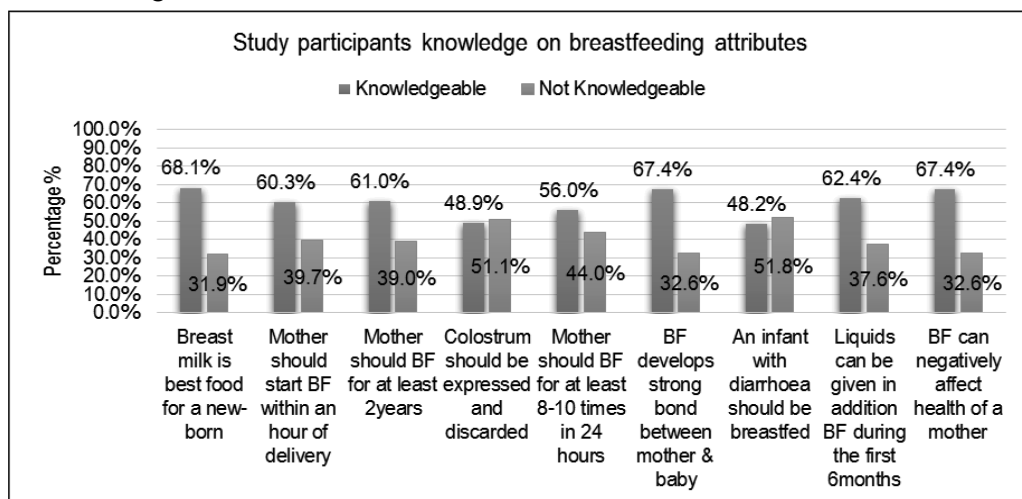


Figure 1: Description of study participants’ knowledge on breastfeeding attributes

These breastfeeding attributes were computed together to measure study participants’ overall comprehensive breastfeeding knowledge. Accordingly, about 13.5% (n=19) of the respondents had knowledge on the overall breastfeeding attributes, while the majority of them (86.5%, n=122) had not.

Of the demographic variables, mothers’ living with a partner had better knowledge of comprehensive breastfeeding than those who were not living with their partners ($\chi^2(1df) = 4.436 (P<0.05)$). Similarly, mothers’ employment status had a weak and statistically significant association with comprehensive breastfeeding knowledge ($\chi^2(2df) = 8.991 (P<0.05)$). Meanwhile there was no statistically significant association between comprehensive breastfeeding knowledge, and each of mothers’ educational status ($\chi^2(3df) = 5.248 (P>0.05)$), marital status ($\chi^2(2df) = 0.774 (P>0.05)$) and age ($\chi^2(2df) = 3.274 (P>0.05)$).

Breastfeeding attitude

About 31.9% (n=45) of the study participants had at least a family member who was breastfeeding a child, while 51.1% (n=72) of the study participants had a close friend breastfeeding her child. Similarly, 91.5% (n=129) of the study participants were breastfed as infants. About 70.2% (n=99) study participants had positive feeling towards breastfeeding, and about 69.5% (n=98) study participants felt that breastfeeding is important for the health of the mother. Meanwhile, about 68.8% (n=97) study participants had a positive stance towards breastfeeding.

Regarding the study participants’ feelings and/or beliefs towards significant others’ attitude on breastfeeding, about 30.5% (n=43) study participants strongly agree that their close friends have a positive attitude to breastfeeding, 29.8% (n=42) agree, 19.1% (n=27) neither agree nor disagree, 14.2% (n=20) disagree and the remaining 6.4% (n=9) totally disagree that their close friend has a positive attitude to breastfeeding. Similarly, of the study participants, 33.3% (n=47) study participants totally agree, 31.2% (n=44) agree, 7.8% (n=11) neither agree nor disagree, 17.7% (n=25) disagree and 9.9% (n=14) totally disagree that their close relative has positive attitude to breastfeeding. This means that 64.5% (n=91) study participants felt that their close relatives have positive attitude towards breastfeeding. Meanwhile, regarding their partner attitude to breastfeeding, 44% (n=62) totally agree, 24.1% (n=34) agree, 7.1% (n=10) neither agree nor disagree, 13.5% (n=19) disagree and the remaining 11.3% (n=16) totally disagree that their partner has a positive attitude to breastfeeding. This means that 68.1% (n=96) of the study participants felt that their partner’s attitude to breastfeeding was positive. The percentages of the participant’s attitude towards breastfeeding are reflected in Figure 2.

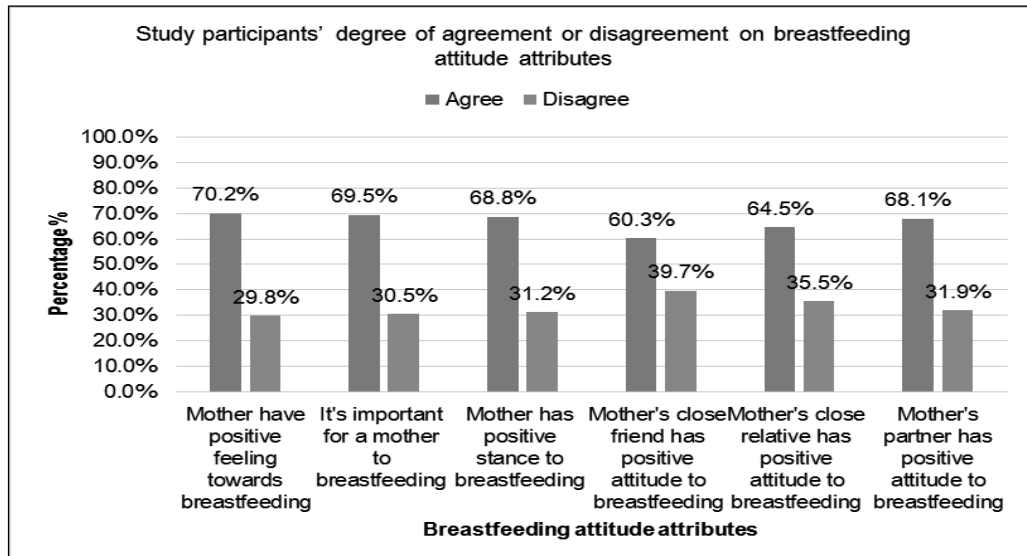


Figure 2: Respondents degree of agreement or disagreement on breastfeeding attitude

Study participants' overall breastfeeding attitude assessment showed that about 68.1% (n=96) study participants' partners had positive breastfeeding attitudes, while the remaining 31.9% (n=45) have negative breastfeeding attitudes.

Early initiation of breastfeeding practices

On phase two of the data collection, the study participants were interviewed within one month of giving birth to assess their early breastfeeding initiation practices. On average the study participants were interviewed in 8.7 days (SD: ± 5.4) after they gave birth regarding their early initiation of breastfeeding. All study participants were interviewed between one and 30 days.

All study participants (n=141) gave birth in a health facility, while the mode of delivery was 60.3% (85) vaginal and the remaining 39.7% (n=56) were by caesarean section. About 99.3% (n=140) of the births were live births, while only one (0.7%) was a still birth. Of the new-borns, 53.3% (n=78) were males and 44.7% (n=63) females.

Of the study participants who gave live births, 64.3% (n=90) of them initiated breastfeeding their infant within one hour after giving birth, while the remaining 35.7% (n=50) study participants did not initiate breastfeeding within an hour of giving birth. Reasons for not initiating breastfeeding within an hour included the mothers who believed that they did not have adequate breast milk (26%, n=13), mothers who believed that their breasts had not started releasing milk within an hour (28%, n=14) and the new-born had medical conditions that prevented early initiation of breastfeeding (26%, n=14).

The average time to initiate breastfeeding among those who did not initiate breastfeeding within an hour after delivery was 19.5 hours (SD: ± 18.99), while all the study participants initiated breastfeeding between two and 72 hours, respectively. However, 20.4% (n=10) study participants had not initiated breastfeeding their infants when they were interviewed for the early initiation of breastfeeding practices.

Mothers' practice of mixed feeding during the first hour after giving birth was assessed. Consequently, non-breast milk and infant formula were found to be the most frequent food and/or liquids mothers gave to their new born babies after giving birth. About 10.7% (n=15) and 10.7% (n=15) study participants gave non-breast milk and infant formula respectively to their infant within the first hour after giving birth. Of those who initiated breastfeeding within one hour, their initiated breastfeeding practices were exclusive among 87.8% (n=79) study participants, while 12.2% (n=11) study participants mixed fed their infants. This means that 87.8% of the mothers who initiated breastfeeding within the first one hour after delivery fed their baby only breast milk and nothing else during the first one hour after birth.

Exclusive breastfeeding practices

On average, study participants were interviewed after 191.10 days (SD: ± 24.31) days, and all mothers were interviewed between 150 (five months) and 235 (7.8 months) days, respectively.

Of the study participants interviewed in all three phases, 140 (99.3%) were found to be eligible for the EBF practice assessment. Of these study participants, 63.6% (n=89) were feeding breast milk to their child at least by the fifth month after they gave birth. Meanwhile, non-breast milk (45%, n=63) and infant formula (22.1%, n=31) were reported to be the most frequent food and/or liquids being given.

Analysis on EBF practice showed that the proportion of study participants who were exclusively breastfeeding at least by the fifth month after they gave birth were 34.3% (n=48). Meanwhile, the majority of the study participants (65.7%, n=92) were giving additional foods and/or liquids in addition to breast milk. Reasons for giving additional liquids and/or foods among those who practise non- EBF (mixed breastfeeding) include mothers' belief that they had low milk supply (34.8%, n=24), child not satisfied (24.3%, n=17), and mothers resume working (41.4%, n=29).

Breastfeeding knowledge and attitude versus breastfeeding practices

The Spearman Rank Order Correlation (Spearman rho correlation) was used to explore the strength, direction and level of significance regarding correlation between comprehensive breastfeeding knowledge and breastfeeding attitude with early initiation and exclusive breastfeeding practices.

Accordingly, there was no correlation observed between comprehensive breastfeeding knowledge and early initiation of breastfeeding ($\rho=0.003$). On the contrary, there was a small and positive correlation between study participants' comprehensive breastfeeding knowledge and exclusive early initiation of breastfeeding ($\rho=0.066$). However, the correlation was not statistically significant ($p\text{-value} = 0.439$). The correlation between study participants' comprehensive breastfeeding knowledge and EBF was small and positive ($\rho=0.109$), but it was not statistically significant ($p\text{-value}=0.199$).

There was no correlation between study participants' breastfeeding attitude and their early initiation of breastfeeding practices ($\rho=0.012$). Meanwhile, there was a statistically significant, small and positive correlation between breastfeeding attitude and exclusive early initiation of breastfeeding ($\rho=0.208$, $p\text{-value}= 0.014$). This means that respondents with a positive breastfeeding attitude tend to initiate and give only breast milk to their infants within one hour after giving birth rather than those with negative breastfeeding attitude.

Similarly, there was a statistically significant, medium and positive correlation between breastfeeding attitude and EBF practices ($\rho=0.368$, $p\text{-value}=0.000$). This

indicates that study participants with a positive breastfeeding attitude tend to exclusively breastfeed at least for the first five months when compared with those with a negative attitude to breastfeeding. The correlation between attitude and EBF is reflected in Table 1.

Table 1: Correlation between respondents breastfeeding attitude and EBF (n=140)

			Breastfeeding attitude	EBF at least by fifth month
Spearman's rho	Breastfeeding attitude	Correlation Coefficient	1.000	0.368**
		P-value	.	0.000
	EBF at least by fifth month	Correlation Coefficient	0.368**	1.000
		P-value	0.000	.
**. Correlation is significant at the 0.01 level (2-tailed).				

There was also a statistically significant, positive and small correlation between exclusive early initiation of breastfeeding and EBF at least by the fifth month ($\rho=0.224$, p -value <0.01). This means that mothers who give only breast milk to their infants in the first hour after delivery are more likely to exclusively breastfeed for the first five months compared with those who gave additional liquids/foods to their child after delivery.

Multiple logistics regression analysis showed that there was no statistically significant correlation between breastfeeding attitude and exclusive early initiation of breastfeeding when other variables were controlled. However, the multiple logistics regression analysis showed there was statistically significant association between each of the respondents' breastfeeding attitude and early exclusive breastfeeding practices with EBF under a controlled situation. Accordingly, study participants with a positive attitude were found to be eight times more likely to exclusively breastfeed than those with negative breastfeeding attitudes. Similarly, study participants who exclusively initiate breastfeeding within one hour were found to exclusively breastfeed their child two times when compared with those who did not exclusively initiate breastfeeding within one hour after birth when other factors were controlled. Table 2 depicts multiple logistics regression for determinants of EBF.

Table 2: Multiple logistic regression identifying determinants of EBF practices among primiparous women (n=140).

	B value	S.E.	Wald	Degree of freedom	P-value	Adjusted Odds Ratio (AOR)	95% C.I. for the AOR	
							Lower	Upper
Breastfeeding attitude	2.082	0.568	13.438	1	0.000	8.023	2.635	24.426
Exclusive early initiation of breastfeeding	0.973	0.490	3.950	1	0.047	2.646	1.014	6.908
Constant	2.980	.645	21.358	1	.000	.051		

DISCUSSION

Although most of the study participants had satisfactory knowledge on the individual breastfeeding attributes such as on the benefits of colostrum, duration of and types of breastfeeding, the proportion of study participants who were knowledgeable on all the breastfeeding attributes was low. Therefore breastfeeding health promotion activities should go beyond providing an individual breastfeeding attributes. Rather they should address and provide the overall and complete breastfeeding information and key messages, including the initiation, duration and type of breastfeeding, feeding during illnesses, as well as the benefits associated with breastfeeding for the child, mother, family and society at large.

Existing evidence regarding the impact of mothers' knowledge on the practices of optimal breastfeeding practices is wide ranging. Some studies show that breastfeeding is important in the promotion of optimal breastfeeding practices. For instance, Babakazo, Donnen, Akilimali, Mala Ali and Okitolonda (2015:5–7) found that low level of breastfeeding knowledge is found to be associated with breastfeeding discontinuation in a study conducted in the Democratic Republic of the Congo (Babakazo *et al.*, 2015). However, some other studies show that knowledge of breastfeeding alone is not enough in the promotion of optimal breastfeeding practices. For example, a study conducted in Malaysia found that knowledge and attitude alone are not sufficient to ensure successful breastfeeding practices among mothers. Measures to improve breastfeeding practices should address issues about culture and traditions as well as improving deliverance of readily available support and its continuity (Ishak *et al.*, 2014). Onah, Osuorah, Ebenebe, Ezechukwu, Ekwoch and Ndukwu (2014:7–8) also found that knowledge and awareness do not translate to practice of EBF among Nigerian women. More effort by health workers and policy makers should be directed to mothers along the fault lines to encourage the practice of EBF (Onah *et al.*, 2014).

About two-thirds of the study participants had a positive breastfeeding attitude. Some other evidence also showed that a positive breastfeeding attitude is associated with breastfeeding intent and practices. For instance, according to Persad and Mensinger (2007:56–58), mothers with a positive attitude towards breastfeeding are more likely to promote and exercise optimal breastfeeding practice, as well as avoid misconceptions (Persad and Mensinger, 2007). Therefore, maternal and neonatal health interventions aimed at improving optimal breastfeeding practices should consider improving breastfeeding attitudes too.

Social and behaviour change communication intervention can play a great role in addressing the impacts of breastfeeding knowledge and attitudes on optimal breastfeeding. This is through identifying and addressing the underlying socio-cultural barriers, facilitating participatory dialogues and promoting adoption of positive desired behaviours on breastfeeding (Lamstein *et al.*, 2014).

A reasonable proportion of study participants (64.3%, n=90) initiated breastfeeding within an hour of giving birth. Meanwhile, about 12.2% (n=11) of the study participants gave additional liquids and/or food besides initiating breastfeeding within an hour. This is a concern as mixed feeding during the first hours after giving birth can expose infants to various infections, including diarrhoea.

The proportion of study participants breastfeeding their child by the fifth month after giving birth was 63.6% (n=89). However, it was 34.3% (n=48) of study participants who were exclusively breastfed by the fifth month after delivery, and the finding is even smaller than that of the 2011 and 2014 EDHS, which reported that about 52% of women in Ethiopia exclusively breastfeed their child for six months (CSA, 2014; CSA and ICF, 2012). The difference could be due to difference in the sample size and the fact that this study targeted primiparous women with no prior experiences of breastfeeding. It was also much below the global target of achieving EBF of 50% set to be achieved by 2025 (WHO and UNICEF, 2015). This is another challenge in the promotion of optimal breastfeeding and child survival, as EBF is among the high impact child survival interventions recommended by the WHO, and the 2008 lancet series (Lancet, 2008).

CONCLUSION

It can be concluded that positive breastfeeding attitudes and early initiation of breastfeeding can predict EBF practices among primiparous women. It can be concluded that the findings of this study could contribute to the improvement of child survival programmes through providing evidence that will be important for designing policy and programmes, as well as emphasise implementation of existing programmes. As a result, maternal and child health programme managers, health care providers, health promoters, researchers and women of the reproductive age group could benefit from this study's findings.

RECOMMENDATION

Although no statistically significant association was found in this study regarding the impact of breastfeeding knowledge on optimal breastfeeding, improving the comprehensive breastfeeding knowledge of primiparous women could be an essential element in the promotion of optimal breastfeeding. This could be achieved during group and individual health education sessions either in community-based or health facility-based services. Health education on breastfeeding should emphasise giving clear, precise and complete information regarding breastfeeding, its benefits, recommended breastfeeding choices and durations.

Primiparous mothers' breastfeeding attitude appears to be an important factor in the promotion of optimal breastfeeding practices as a statically significant association was found in this study. Thus interpersonal, group and mass communications should be in place to address some of the attitudinal issues regarding breastfeeding. Early initiation of breastfeeding practice was found to be statistically associated with EBF practices. Therefore, improving primiparous women's breastfeeding attitude and early initiation of breastfeeding practices among primiparous women are strongly recommended. Social and behaviour change communication interventions could play a great role in this regard. Promoting and maintaining exclusive early initiation of breastfeeding could also be used as a means to improve the practice of EBF among primiparous women.

Special emphasis should be given for primiparous women as they could easily be influenced by significant others such as their close friends and relatives on their breastfeeding practices. Further research is recommended, mainly qualitative research, among those groups of women to document perceptions and cultural factors affecting the knowledge, attitude and practices of optimal breastfeeding during the first six months.

LIMITATIONS OF THE STUDY

This was a prospective follow-up study, and it shares the limitations of a longitudinal study including those who were lost to a follow-up. Those who lost from the study in the due course could have different knowledge and attitude, and their practices of breastfeeding could also be different. Meanwhile, this was a health facility-based study, and there could have been social desirability biases. Community-based studies could give some different findings.

ACKNOWLEDGMENT

We want to extend our appreciation and deepest acknowledgment to all: families, friends, colleagues and the research communities, who directly and indirectly contributed to this study. Special thanks should be extended to the following individuals: Prof Thandisizwe R. Mavundla, for the support and motivation; the Ethics Review Committees at UNISA, and AACAHB; the study hospital, for providing permission to conduct the study; all

the study participants for sharing their time, input and patience during the study; the data collectors for making it possible to complete the data collection processes and for the great patience; and the staff at UNISA for the excellent assistances in all academic and administrative issues including registration, library search, and finance. Finally, we want to extend our appreciation to the UNISA for financially supporting the study.

REFERENCES:

- Al-Akour, N. A., Khassawneh, M. Y., Khader, Y. S., Ababneh, A. A. & Haddad, A. M. 2010. Factors affecting intention to breastfeed among Syrian and Jordanian mothers: A comparative cross-sectional study. *International Breastfeeding Journal*, 5.
- Al-Ali, N., Hatamleh, R. & Khader, Y. 2012. Female Public Jordanian University undergraduate students' intentions and attitudes toward breastfeeding: application of self-objectification theory. *Breastfeeding Review*, 21:31–42.
- Babakazo, P., Donnen, P., Akilimali, P., Mala Ali, N. M. & Okitolonda, E. 2015. Predictors of discontinuing exclusive breastfeeding before six months among mothers in Kinshasa: A prospective study. *International Breastfeeding Journal*, 10.
- CHERG. 2013. Breastfeeding promotion interventions on breastfeeding rates. Available at <http://cherg.org/projects/List-summaries/breastfeeding-promotion.html> (Accessed 11 February 2013).
- CSA. 2014. *Ethiopia Mini Demographic and Health Survey 2014*.
- CSA & ICF. 2012. *Ethiopia Demographic and Health Survey 2011*. Addis Ababa & Calverton, USA: CSA & ICF International.
- Dreesmann, F. F. 2014. Breastfeeding knowledge among low-income first-time pregnant women. Master's dissertation, California State University,.
- Ishak, S., Adzan, N. A. M., Quan, L. K., Shafie, M. H., Rani, N. A. & Ramli, K. G. 2014. Knowledge and beliefs about breastfeeding are not determinants for successful breastfeeding. *Breastfeeding Medicine*, 9.
- Kuzma, J. 2013. Knowledge, attitude and practice related to infant feeding among women in rural Papua New Guinea: A descriptive, mixed method study. *International Breastfeeding Journal*, 8.
- Lamstein, S., T. Stillman, P. Koniz-Booher, A. Aakesson, B. Collaiezzi, T. Williams, K. Beall & Anson, M. 2014. Evidence of effective approaches to social and behavior change communication for preventing and reducing stunting and anemia findings from a systematic literature review. Arlington, VA: USAID/Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project.
- LANCET. 2008. The 2008 Lancet's Series on Maternal and Child Undernutrition. Executive Summary. Lancet.
- Nigatu, Y. T. & Worku, N. 2014. Optimal breastfeeding practice and associated factors amongst working mothers. *East African Journal of Public Health*, 11:704–715.
- Onah, S., Osuorah, D. I., Ebenebe, J., Ezechukwu, C., Ekwochi, U. & Ndukwu, I. 2014. Infant feeding practices and maternal socio-demographic factors that influence practice of exclusive breastfeeding among mothers in Nnewi South-East Nigeria: A cross-sectional and analytical study. *International Breastfeeding Journal*, 9:1–18.

- Persad, M. D. & Mensinger, J. L. 2007. Maternal breastfeeding attitudes: Association with breastfeeding intent and socio-demographics among urban primiparas. *Journal of Community Health*, 33:56–58.
- Saied, H., Mohamed, A., Suliman, A. & Al Anazi, W. 2013. Breastfeeding knowledge, attitude and barriers among Saudi Women in Riyadh. *Journal of Natural Sciences Research*, 3.
- Spark, A. J. 2007. *Nutrition in public health: principles, policies, and practice*. United States: Taylor & Francis Group, LLC.
- UNICEF. 2012. *Programming guide: Infant and young child feeding*. New York: UNICEF.
- WHO. 2007. *Indicators for assessing infant and young child feeding practices. Part 1: Definitions*. Washington D.C.: WHO.
- WHO. 2013. *Promoting proper feeding for infants and young children*. Available at <http://www.who.int/nutrition/topics/infantfeeding/en/index.html> (Accessed 1 April 2013).
- WHO & UNICEF. 2015. *Global nutrition targets 2025: Breastfeeding policy brief*. Available at http://who.int/nutrition/publications/globaltargets2025_policybrief_breastfeeding/en/ (Accessed 26 August 2015).