FACTORS HINDERING EXCLUSIVE BREASTFEEDING IN ZANZIBAR: A CASE STUDY OF MICHEWENI, CHAKE CHAKE AND KASKAZINI 'A' DISTRICTS

Study Report

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Executive Summary

Several studies have shown that exclusive breastfeeding for the first six months plays a great role in preventing morbidity and mortality of under five children. However, in Zanzibar a large portion of children are not exclusively breastfed according to the infant feeding recommendations. Understanding the factors that influence exclusive breastfeeding is crucial to promoting the practice. This study was carried out to identify factors predicting exclusive breastfeeding among mothers in Micheweni, Chake Chake and Kaskazini 'A' districts in Zanzibar.

A community-based cross-sectional study was conducted in October 2015 involving both quantitative and qualitative data. A total of 303 mothers-children pairs were selected randomly. Descriptive statistics was used to compare the prevalence of exclusive breastfeeding under each factor category and a multivariable logistic regression analysis was used to identify independent predictors of exclusive breastfeeding.

Results indicated that overall prevalence of exclusive breastfeeding to six months was 20.8%. The multivariable logistic regression analysis showed that age of children (P = 0.035), age of mother (P = 0.041), age of mother during first delivery (P = 0.043), mothers' level of education (P = 0.050), mothers' occupation (P = 0.019), households size (P = 0.027), marital status (P = 0.033 and birth interval (P = 0.030) were significant predictors of exclusive breastfeeding practice.

Despite some level of awareness on different aspects of breastfeeding among mothers, they have contradicting reasons for early initiation of complementary foods. This implies the need for promoting the system of delivery of maternity and breastfeeding education where outreach programmes into the villages can be added to maternity education offered during clinics days.

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1. Introduction

Breastfeeding is an incomparable way of providing ideal food for the healthy growth and development of infants. It is also an integral part of the reproductive process with important implications for the health of mothers. Although the health benefits of breastfeeding are widely acknowledged, opinions and recommendations are strongly divided on the optimal duration of exclusive breastfeeding. In 2001, the World Health Organization (WHO) recommended exclusive breastfeeding for the first six months (Kramer and Kakuma, 2012). Thereafter infants should receive complementary foods with continued breastfeeding up to 2 years of age or beyond.

Exclusive breastfeeding is defined as feeding the infants only breast milk, be it directly from breast or expressed (squeezed), with no addition of any liquid or solids apart from recommended drops or syrups consisting of vitamins, mineral supplements or medicine, and nothing else.

Breast milk promotes sensory and cognitive development, and protects the infant against infectious and chronic diseases. Exclusive breastfeeding (EBF) reduces infants' mortality due to common childhood illnesses such as diarrhoea or pneumonia, and helps for a quicker recovery during illness. These effects can be measured in resource-poor and affluent societies (Kramer M et al., 2001). Breastfeeding contributes to the health and well-being of mothers; it helps to space children, reduces the risk of ovarian cancer and breast cancer.

Promotion of exclusive breastfeeding is the most cost-effective intervention to reduce infant mortality in developing countries (WHO, 2001; Du Plessis, 2009). It is estimated that sub-optimal breastfeeding, especially non-exclusive breastfeeding in the first six months of life, results in 1.4 million deaths and 10% of diseases in under-fives. In addition, non exclusive breastfeeding has long term impact, including poor school performance, impaired intellectual, reduced productivity and reduced social development. It can also increase the risk of dying due to diarrhoea and pneumonia among 0 – 59 months old children by more than double (WHO, 2001; 2009). Evidence shows that of the sixty percent of under-five mortality caused by malnutrition (directly or indirectly), more than two-thirds are associated with inappropriate breastfeeding practices during infancy.

Despite demonstrated benefits of breastfeeding, exclusive breastfeeding to 6 months is still infrequent. Prevalence and duration in many countries are still lower than the international recommendation of EBF for the first six months of life. The Healthy People 2010 Initiative had

set the following goals; 75% of mothers to initiate breastfeeding, 50% of mothers to be breastfeed exclusively to 6 months and 25% of mothers to be breastfeeding to 12 months (Hafizan et al., 2014). Most babies are not exclusively breastfed and globally, only 39% of babies breastfeed exclusively even in the first 4 months of life (WABA, 2004). Other reports show that not more than 35% of infants worldwide are exclusively breastfed during the first four months of life; complementary feeding frequently begins too early or too late, and foods are often nutritionally inadequate and unsafe (WHO, 2001; 2009; Du Plessis, 2009). Reports show that there is a wide range of variation among developing countries, with the rates of exclusive breastfeeding to four months being: Brazil 58%, Iran 28%, Lebanon 10.1%, Nigeria 20%, Bangladesh 34.5%, Jordan 77% and Ethiopia 56.9% (Oweis et al., 2009; Madhu et al., 2009; Olang et al., 2009; Wenzel et al,. 2010; Alemayehu et al., 2009). The rates of exclusive breastfeeding to six months are even lower.

Tanzania National Nutrition Study of 2014 revealed that, the rate of exclusive breastfeeding in Zanzibar is at 19.7% with the rates in rural area being very low (Unguja North, 17.6%; Pemba North, 10.7% and Pemba South, 9.0%). Proportion of continued breastfeeding to 1 year and 2 years of age are 90.1% and 58.8% respectively. Initiation of breastfeeding within one hour of birth is 61.7%. Consequently, the rate of stunting (Height for age) in children aged 0 – 59 months is 24.4%, while the rate of malnutrition (weight for height) is 7.2%. Country wide Zanzibar has, in all, 53,376 under-fives suffering from stunting and 5,217 under-fives suffering from acute malnutrition. The rate of underweight (weight for age) in 0 – 59 months children is 13.9% (TFNC, 2014).

Due to the high prevalence of malnutrition and associated effects, and the importance of exclusive breastfeeding, the Revolutionary Government of Zanzibar developed various interventions, giving due emphasis to key messages of exclusive breastfeeding. These messages were being given both at health institution and at community level. Nonetheless, these efforts were not based on organized evidence on the level of existing practices. This might be due to lack of studies that explored the factors foretelling the low proportion of exclusive breastfeeding. There are no previous studies examined and documented the associated factors of exclusive breastfeeding particularly for Zanzibar. The objective of this study was therefore, to assess factors hindering exclusive breastfeeding among mothers in Micheweni, Chake Chake and Kaskazini 'A' districts in Zanzibar.

2. Methodology

2.1. Description of the Study area

The study was conducted in three districts of Zanzibar: Micheweni in the north of Pemba, Chake Chake in the south of Pemba and Kaskazini 'A' in the north of Unguja Island. These

districts were selected due to their high prevalence of malnutrition and associated effects and also for their social and geographical similarities. All three districts are partly deep soil and partly coral rags especially near and around the coastal areas.

The total population of the study area is currently projected at 290,657 (141,692 males and 148,964 females). In all three districts, agriculture is the major economic activity employing about 70% of the population. Major food crops are rice, cassava, banana, yams, beans, vegetables and variety of fruits. Cloves are major cash crop in deep soil areas particularly in the western villages in Micheweni and Chake Chake districts but some households are currently engaging in sea weed farming. Tourism sector is more pronounced in Kaskazini 'A' compared to the other two districts in the study area (ZIPA, 2004: ZEB, 2011). Others livelihood activities are fishing, petty business and few are employed in central government. Commercial activities are connected on both land and sea network through small ports all along the coastal areas of these districts.

2.2. The study design

The study used a community-based cross-sectional survey to collect both quantitative and qualitative data. The sample size for this study was determined using a formula for estimation of single population proportion assuming an expected prevalence of breastfed children of 0 – 6 months of 5%, 95% confidence level and 5% margin of error. A total of 303 mother-infant pairs were identified using stratified sampling technique from the three districts; Micheweni (99 respondents), Chake Chake (100 respondents) and Kaskazini 'A' (104 respondents), according to their respective populations. Then, in each district, respondents (mother-infant pairs) were selected by using a simple random sampling technique.

2.3. Data collection

Primary data for this study were collected using a semi-structured questionnaire specially designed by the Department of Food Security and Nutrition in collaboration with nutrition officers from the Ministry of Health in Zanzibar. The questionnaire which contained both close and open ended questions was translated into local language (Kiswahili) and contextualized to the local situation. One day pre-testing of the questionnaire was conducted on a sample of 15 respondents selected randomly from the same population to determine its clarity and relevance to the study objective. Mothers of index children were then interviewed to collect data on socio-demographic factors, breastfeeding practices, obstetric factors such as birth intervals, workloads, supports, knowledge and attitude on breastfeeding and health service related factors such as nutrition education and pre- and post-natal counselling.

2.4. Hypothesis

Based on review of the literature and others researchers' work, the following explanatory variables were hypothesized to have an influence on exclusive breastfeeding for six months.

***Current age of mother*:** Age is a continuous explanatory variable. As age of a mother increases, it is assumed that she could acquire more knowledge and experience. Old mothers are more risk averter and their chance to become more adoptive to practicing exclusive breastfeeding increases with age. Thus, it is hypothesized that age of the mother and practicing exclusive breastfeeding are positively correlated.

***Mother's level of education*:** Mothers with higher formal education are most likely capable to understand, analyze and adopting improved practices. It is hypothesized that, the higher the level of literacy, the more likely the mothers have positive attitude towards adopting better child care practice including exclusive breastfeeding for six months.

***Number of under-five children*:** The larger the number of under-five children for index mother, the shorter the space between children and more likely the earlier the commencement of complementary foods. It is therefore hypothesized that the number of under-five children and exclusive breastfeeding are negatively correlated.

***Size of the household*:** Household size refers to the total number of household members who live and consume from the same household. In most cases, it is expressed in adult equivalent, and is an important variable determines the state of household food distribution and expected to have negative impacts on household food security. An increase in household size implies more people to be fed from the limited resources. Consequently, the mother runs deficiency of both energy and nutrients (malnourished) early during pregnancy and during breastfeeding. This is translated into insufficient breast milk discharge both in quantity and quality. The child grows slowly which convinces mother to start complementary food very early.

***Mother's occupation*:** Employed mothers and women farmers use most of their day time away from their home and therefore away from their children. In such cases, many children start complementary food before the age of six months. It is therefore hypothesized that homemakers (house wives) are more likely to breastfeed exclusively compared to employed mothers and mothers who are engaged in farming.

***Marital status*:** Married mothers are persons who are economically and socially supported by their husbands and the husbands' relatives. Usually unmarried and divorced mothers have little support and may need a lot of time looking for other necessities. They are subjected to heavy works. Thus, married mothers are more likely capable to adopt exclusively breastfeeding.

***Place of delivery*:** it is assumed that mothers who deliver at heath delivery services are subject to effective counselling and maternal education including education on exclusive breastfeeding immediately at the delivery centres and through postnatal contacts. They are therefore likely to adopt exclusive breastfeeding compared to mothers who deliver at home.

***Support from relatives and peers*:** Breastfeeding mothers are surrounded by people of different relationships such as the husband, the child grandmother, the traditional birth attendants, the informal classes and the friends. It is assumed that these people have great influence on mothers' decision towards breastfeeding practice.

2.5. Data analysis

All data were translated into English, coded, entered, and analyzed using SPSS for windows version 16.0. Descriptive statistics (frequency and cross tabulation) was carried out to determine the prevalence of exclusive breastfeeding and to identify associated factors (categories) for each independent variable with the outcome of interest (exclusive breastfeeding). Finally, multivariable logistic regression was done to confirm the independent predictor variables of exclusive breastfeeding. The multivariable regression test was two-sided and considered statistically significant at $p \leq 0.05$.

3. Results and Discussion

The study results for demographic characteristics (Table 1) showed that the mean age (± SD) of mothers was 27.4 (± 6.3) years and majority (94.1%) of mothers were married. More than half (55.8%) of respondents were house wives, 28.1% were farmers, only 5% were government employees while the rest 11.2% were business women by occupation.

About one-third (31.7%) of respondents were having no formal education, 37% had lower secondary education and only 2% completed higher education. The rest (29.4%) were primary school leavers.

Nearly 49% of the surveyed children were delivered at home. Birth intervals between the last two children showed that 26.6% of the surveyed children were spaced by more than two years, 35.4% were spaced by two years and for the rest, the birth intervals were one year or less. About 22% of mothers reported that they have three to four children which are still under-five and 46.5% reported the household sizes of more than 6 people (Table 1).

Table 1: Social demographic characteristics of breastfeeding mothers in the study area

Characteristic/factor	Category	Response	
		Count	%
Current age of mother (years)	15 – 20	38	12.5%
	21 – 25	91	30.0%
	26 – 30	86	28.4%
	31 – 35	43	14.2%
	36 – 40	45	14.9%
Mother's age at first delivery (years)	15 – 20	204	67.3%
	21 – 25	77	25.4%
	26 – 30	18	5.9%
	31 – 35	4	1.3%
Mother's level of education	No formal	96	31.7%
	Primary	89	29.4%
	Secondary	112	37.0%
	Higher	6	2.0%
Mother's occupation	Employees	15	5.0%
	Entrepreneur	34	11.2%
	Home makers	169	55.8%
	Farmers	85	28.1%
Marital status	Married	285	94.1%
	Unmarried	6	2.0%
	Divorced	9	3.0%
	Widowed	3	1.0%
Child place of delivery	Health centre	155	51.2%
	Home	148	48.8%
Birth interval	< 1 year	20	7.9%
	1 year	78	31.0%
	2 years	87	34.5%
	> 2 years	67	26.6%
Children U-5	1	87	28.7%
	2	150	49.5%
	3	62	20.5%
	4	4	1.3%
Number of people in the household	1 – 3	39	12.9%
	4 – 6	123	40.6%
	7 – 9	101	33.3%
	10+	40	13.2%

All the 303 children were breastfed during survey, but the prevalence of exclusive breastfeeding for children aged less than six months in the study area was only 20.8% (Table 2). This finding indicates great improvement as compared to the previously reported prevalence of 10.7%, 9%, and 17.6% for Pemba north, Pemba South and Unguja North, respectively; and is slightly higher than the national exclusive breastfeeding prevalence in Zanzibar (19.7%). Probably the improvement was due to combination of interventions including Mwanzo Bora Nutrition Programme, targeting the breastfeeding mothers in groups and the entire community for issues related to nutrition, childcare and breastfeeding. However, the results showed that the prevalence of EBF in the study area is still very low compared to other developing countries such as Jordan (77%), Madagascar (70%), Zambia (74%), Ghana (79%) and Bolivia (65%).

Initiation of breastfeeding within one hour after delivery was 58.7% and 97. 7% continued on breastfeeding the colostrums for the first four days. More than one-third (38.9%) of surveyed children were reported to be given sweet or sour liquids like honey prior to initiation of breastfeeding the colostrums. Of those given sweet or sour liquids prior to initiation of breastfeeding, 22.9% were given for the belief that these liquids are medicines, 40.7% were given due to religious believes (sunna) and 34.4% were given as tradition in the community. Influence of grandmothers on the provision of pre lacteal sweet or sour liquids was on to 46.6% of the children who were given these liquids and 30.5% were given due to the mothers own decision.

Month-specific lifetime exclusive breastfeeding revealed that at the very early age of one month nearly 21% of the children started complementary foods and at the age of four months 69 % of the children were already given complementary foods. Children in the age group 4 days to one month were more than 2 times likely to be breastfeed exclusively (79%) when compared to those children in the age group 1 – 4 months (30.7%). As the age of the children approached 6 months, the rate of exclusive breastfeeding decreased significantly (Fig. 1). These results are similar to the results of the studies conducted in Iran, Uganda, Sudan, and Ethiopia (Alemayehu et al., 2009; Bautista, 1997; Engebretsen et al., 2007). The trend of rapid decrease of the proportion of exclusive breastfeeding with increasing child age might be due to the fact that postpartum care and support for breastfeeding is customarily given in the first few months after birth. The other possible reason for introducing complementary feeding as reported by 71.3% of respondents (Table 2) was the mothers' assumption that breast milk alone would not satisfy their children needs for food and water, which is directly related to lack of knowledge among mothers, on the nutrition value of breast milk and importance of exclusive breastfeeding. Also, 10.4 percent of the mothers reported to be influenced by their children grandmothers to start complementary foods, which is another point in the community that lacks the necessary knowledge and understanding of the exclusive breastfeeding.

Table 2: Mothers responses about breastfeeding practices

Characteristic	Category	Response	
		Count	%
Initiation of breastfeeding	Within 1hr	178	58.7%
	Bet 1-12hrs	99	32.7%
	Bet 12-24hr	10	3.3%
	After 24 hrs	9	3.0%
	No recall	7	2.3%
Continuation of feeding on colostrums in the 1st 4 days	Yes	296	97.7%
	No	7	2.3%
Reasons for no continuation of feeding on colostrums in the first 4 days	Not applicable	296	97.7%
	Very little discharge of	5	1.7%
	Child delayed to accept	1	0.3%
	Delayed discharge of colostr.	1	0.3%
Provision of honey or sweets to the new infants	Yes	118	38.9%
	No	185	61.1%
Reasons for provision of honey	As medicine	27	22.9%
	Religious belief (Sunna)	48	40.7%
	Traditions	43	36.4%
Person who influenced the decision for provision of honey or sweets to the neo child	Mother's own decision	36	30.5%
	Influence of the husband	6	5.1%
	Influence of grandmother	55	46.6%
	Influence of TBA	10	8.5%
	Influence of others	11	9.3%
Current breastfeeding method/practices (n = 303)	Breast milk only	63	20.8%
	Breast milk with compl. foods	240	79.2%
Commencement of complementary foods (n = 303)	1st day	0	0.0% (EB100%)
	Before 4 days	14	4.6% (EB 95.4%)
	Bet. 4 days and 1 month	49	16.2% (EB 79.2%)
	Bet. 1 month and 4 months	147	48.5% (EB 30.7%)
	Bet. 4 month and 6 months	30	9.9% (EB 20.8%)
Reasons for starting complementary foods (n = 240)	Little discharge of milk	28	11.7%
	Belief that BM is not enough	129	53.8%
	BF is shame/outdated	30	12.5%
	Belief that BM cause thirsty	42	17.5%
	Mother is away for job	7	2.9%

	Child sick/weak to suck	4	1.7%

Fig. 1: Prevalence of EBF over child age among breastfeeding mothers in the study area

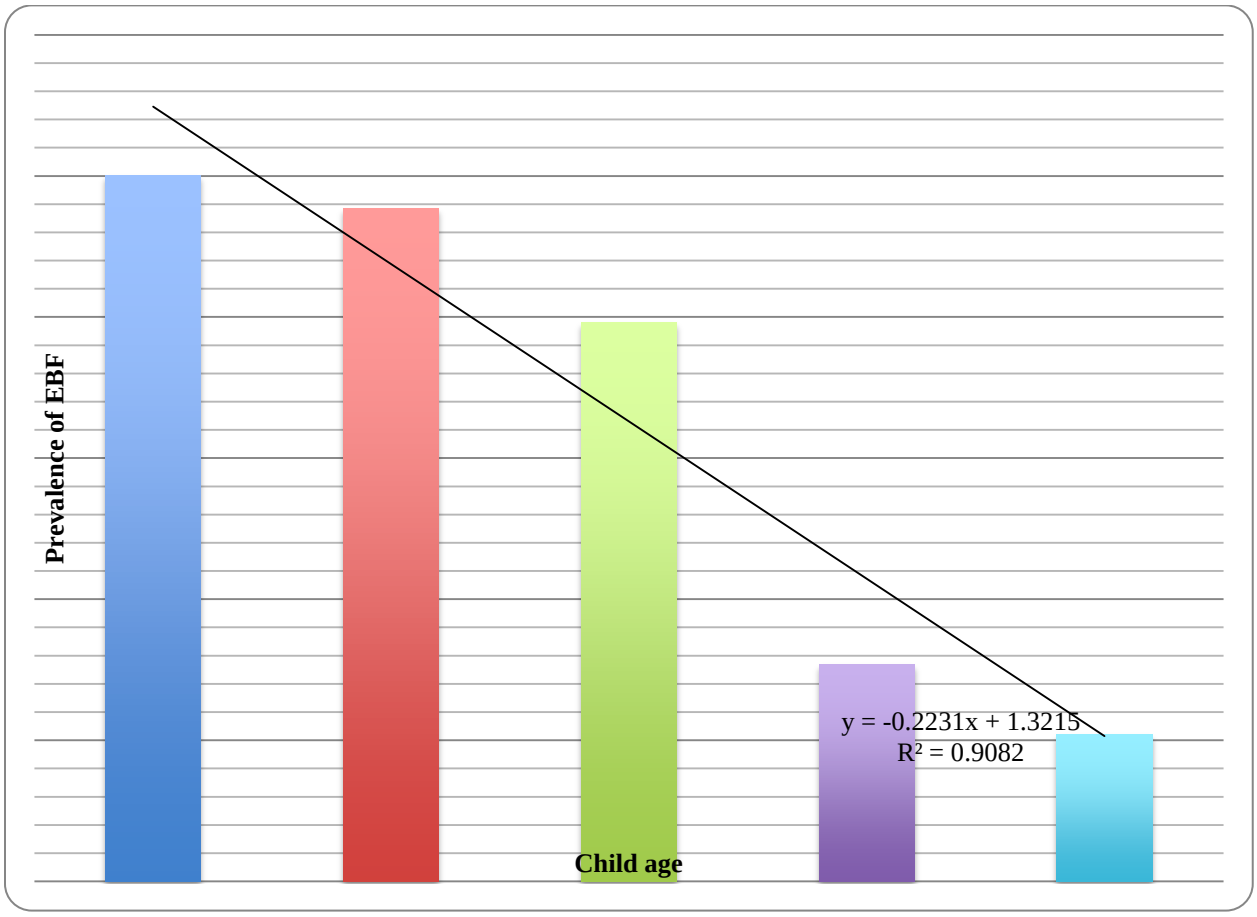

Table 3 presents results of the prevalence of exclusive breastfeeding at each category of every individual factor. These results showed that there was a significant difference in the prevalence of exclusive breastfeeding among age groups of mothers. Young mothers (less than 20 years old) were associated with low prevalence of EBF (7.9%) compared with EBF of 24.4% associated with older mothers (36 years and above). Multivariate regression (Table 4) indicated that from young age group to the older group, we would expect a 0.35 increase in the log-odds of being in a higher level of practicing EBF. Probably, older mothers have more experience, self determination, understandable and easily adopt innovations. Similarly, the results revealed increasing trend of EBF with increasing age of mothers at first delivery. Mothers who got their first babies at the age of 30 years and above were more likely to breastfeed exclusively (50%)

compared with the prevalence of EBF of 17.6% in mothers who got their first babies when they were very young (15 – 20 years). This indicates the need for prevention of early pregnancies.

Also, mothers' education status showed increasing trend of EBF. The prevalence of EBF was 18.8%, 22.5%, 20.5% and 33.3% for the no formal education, primary education, secondary education and higher education groups, respectively. Regression analysis showed that for one unit increase in the level of education, there is expected an increase of 0.11 in the log-odds of being in a higher level of practicing EBF. Literate mothers are probably self-determinant, analytical and risk bearers and therefore they are always early adopters of the new technologies and new practices. These results indicate the importance of educating female children so they become educated mothers.

Results for the size of household revealed that small households are related to the high prevalence of EBF. The rate of EBF was 33.3% for mothers in the small size household (1-3 people) compared with EBF prevalence of 19.8% in the large sized households with more than 6 people and 15% in households with more than 9 people. The multivariate analysis showed that for one person decrease in the number of people in the household, there is expected an increase of 0.53 in the log-odds of being in a higher level of practicing EBF. Large households negatively affect food distribution among household's members. In such a case, pre and postnatal nutrition condition of mother is always poor. Most likely, this leads to new infants being very weak and mother's milk insufficient in nutrients, the condition that convinces the mother to start complementary food earlier.

Amusingly, the results of marital status revealed that, the prevalence of EBF was higher (33.3%) among the widowed mothers compared with the EBF prevalence in the group of married mothers (21.4%) and divorced mothers (11.1%). No unmarried mother was found to breastfeed exclusively. Traditionally, widowed mothers are highly supported by relatives and the community and probably this might be the reason for these results. For unmarried mothers, the poorest in the practicing of EBF, the results might probably be due to isolation and more time spent on livelihood activities rather than attending in community gatherings and clinics, the places where other mothers gather for maternal education. In other words, mothers in this group are normally subject to stigma and are less supported.

As regards to mothers' occupation, the results revealed that housewives were more likely to breastfeed exclusively whereby the prevalence was 23.1% compared with farmers (18.8%), entrepreneurs (17.6%) and employee (13.3%). These results are directly related to the length of time the mother is away from the child as indicated in table 3, and the fact that the practice of squeezing breast milk and stored for later use is currently not understood/not agreed among breastfeeding mothers. Multivariate regression (Table 4) uncovered that for one unit increase in

the time spent by the mother away from the child, it is expected a decrease of 0.412 in the log-odds of being in a higher level of practicing EBF.

Table 3: Cross tabulation between independent factors and the breastfeeding method

Characteristics	Category	EBF		Non-EBF	
		Count	%	Count	%
Current age of mother	15 - 20	3	7.9%	35	92.1%
	21 - 25	24	26.4%	67	73.6%
	26 -3 0	16	18.6%	70	81.4%
	31 - 35	9	20.9%	34	79.1%
	36+	11	24.4%	34	75.6%
Age of mother at first delivery	15 - 20	36	17.6%	168	82.4%
	21 - 25	22	28.6%	55	71.4%
	26 - 30	3	16.7%	15	83.3%
	31 - 35	2	50.0%	2	50.0%
Children under 5 belonging to same mother	1	2	50.0%	2	50.0%
	2	15	24.2%	47	75.8%
	3	18	20.8	69	79.3%
	4	28	18.7%	122	81.3%
Size of the household	1-3	13	33.3%	26	66.7%
	4-6	24	19.5%	99	80.5%
	7-9	20	19.8%	81	80.2%
	10-12	6	15.0%	34	85.0%
Mother's level of education	No formal educ.	18	18.8%	78	81.2%
	Pri. Educ.	20	22.5%	69	77.5%
	Sec. educ.	23	20.5%	89	79.5%
	Higher educ.	2	33.3%	4	66.7%
Mother's occupation	Employees	2	13.3%	13	84.6%
	Entrepren.	6	17.6%	28	82.4%
	Farmer	16	18.8%	69	81.2%
	Home maker	39	23.1%	130	76.9%
Marital status	Married	61	21.4%	224	78.6%
	Unmarried	0	.0%	6	100.0%
	Divorced	1	11.1%	8	88.9%
	Widowed	1	33.3%	2	66.7%
Sex of child	Male	27	20.6%	104	79.4%
	Female	36	20.9%	136	79.1%

Birth interval	Less than 1 yr	3	15.0%	17	85.0%
	1 year	11	14.1%	67	85.9%
	2 years	18	20.7%	69	79.3%
	More than 2 yrs.	18	26.9%	49	73.1%

Table 3: (continued)

Characteristics	Category	EBF		Non-EBF	
		Count	%	Count	%
Age of child	1	0	.0%	3	100.0%
	2	16	27.6%	42	72.4%
	3	14	32.6%	29	67.4%
	4	10	15.9%	53	84.1%
	4.5	0	.0%	1	100.0%
	5	12	16.4%	61	83.6%
	5.5	0	.0%	1	100.0%
	6	11	18.0%	50	82.0%
Child place of delivery	Hospital	42	27.1%	113	72.9%
	Home	21	14.2%	127	85.8%
Time duration the mother is normally away from the child	All time with the child	48	24.2%	150	75.8%
	1 – 2 hours	11	23.9%	35	76.1%
	3 – 4 hours	2	7.1%	26	92.9%
	5 – 6 hours	0	0.0%	15	100.0%

Apropos to the birth interval, the prevalence of exclusive breastfeeding for children spaced closely by one year or less was 14% - 15% and for those who were spaced by two or more years the prevalence of EBF was 20.7% - 26.9%.

Place of delivery was another predictor of EBF. The higher prevalence (27.1%) was associated with children delivered at health facilities and the low prevalence (14.2%) was found with the home delivered children. Multivariate analysis showed that for mother to delivery at the health centre, there is expected an increase of 0.842 in the log-odds of being in a higher level of breastfeeding exclusively compared to those delivered at home. Probably, this is due to effective counselling from health workers during the time the mother is at the centre before and after birth. Sex of children showed that male children (EBF 20.6) and female children (EBF 20.9%) were equally treated in breastfeeding.

The current study also revealed that breastfeeding mothers are getting less support from institutions around them. Health centres are the only institutions reported to have reached 91.4% of the 303 interviewed mothers for maternity and breastfeeding education during clinics days. Community assistance to breastfeeding mothers normally through group mobilization and trainings in villages was reported by 53.8% of 303 respondents. Results showed that less than half (46.2%) of respondents reported to have got breastfeeding support from their husbands. The proportion of breastfeeding mothers reported to have been assisted by grandmothers to breastfeed exclusively was 27.8%, by madrasa colleagues 35.6% and the by TBAs 37.6% (Table 5).

Despite great effort put by the health centres and the community as seen in their level of support, the adoption of exclusive breastfeeding is still limited. For instance, from 274 mothers reported to have supported by the health centres, only 60 of them (21.9%) practice exclusive breastfeeding. From 163 mothers reported to have been supported by the community, only 27 of them (16.6%) were practicing exclusive breastfeeding (Table 6). The trend was the same for those who reported to have got support from other institutions.

The in-depth interview to identify the level of awareness of the importance of EBF among breastfeeding mothers showed that they have quite significant information in some of the aspects (Table 7). Surprisingly, the level of adoption of EBF is very low. It is well known that adoption of EBF is not only to impart knowledge but needs a full package to bring behavioural change. Mothers should also have access to day-to-day skilled practical help from trained health workers and peer counsellors. The results of this study indicate that, probably there is no follow-up and monitoring once mothers are giving maternity and breastfeeding education regardless the institution providing the education. In that case, breastfeeding trainings, seminars and other type interventions have not been much effective.

Concerning type of complementary foods, results showed that at the age of two months most of children are already given porridge and rice and at reaching four months most of them are fed on variety of foods including any type of homemade food. In general, the results found that guidelines for infants and young children feeding are highly violated from food types to type of vessels and containers used to prepare and serving the food. In most case mothers reported to use baby bottles, plastic bottles and bare hands to feed the children.

Table 4: Multivariate logistic regression results showing factors associated with exclusive breastfeeding in the study area

Parameter Estimates									
	Variables in the model	Estimates	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Breast milk only	Intercept	.503	1.435	.123	1	.726			
	Current age of mother	.348	.226	2.367	1	.041*	1.417	.909	2.208
	Age of mother at first delivery	.217	.275	.624	1	.043*	1.242	.725	2.128
	Number of children	-1.243	1.171	1.126	1	.289	.289	.029	2.865
	Children under 5	.536	.245	4.788	1	.029*	1.709	1.057	2.760
	Size of the household	-.533	.242	4.864	1	.027*	.587	.366	.942
	Mother's education status	.110	.193	.325	1	.050*	.896	.614	1.308
	Mother's occupation	-.090	.181	.247	1	.019	.914	.640	1.304
	Marital status	-.077	.374	.043	1	.033	.926	.445	1.927
	Age of child	.196	.106	3.398	1	.035*	.822	.668	1.012
	Sex of child	-.075	.306	.060	1	.807	.928	.509	1.691
	Birth interval	.118	.142	.694	1	.030*	1.126	.852	1.487
	Time mother is away	-.412	.167	6.100	1	.014*	.662	.477	.918
	Place of delivery	.842	.322	6.811	1	.009*	.431	.229	.811
	Support from the husband	.062	.198	.097	1	.756	1.064	.721	1.568
	Support from the grandmother	-.196	.213	.845	1	.358	.822	.541	1.249
	Support from informal classes	.631	.239	6.963	1	.008*	.532	.333	.850
	Support from health centers	.641	.327	3.850	1	.050*	.527	.278	.999
	Support from community	.270	.194	1.942	1	.016*	1.310	.896	1.914
	Support from TBAs	.005	.191	.001	1	.981	1.005	.691	1.460

a. The reference category is: Breast milk and complementary foods. * = Predictor of exclusive breastfeeding

Table 5: Level of supporting breastfeeding mothers from different institutions

Characteristic	Category	Overall response	
		Count	%
Support from the husband	Supported	140	46.2%
	Not supported	163	53.8%
Support from the grandmother	Supported	84	27.7%
	Not supported	219	72.3%
Support from informal classes/madrasa	Supported	108	35.6%
	Not supported	195	64.4%
Support from heath centres/breastfeeding education	Supported	274	90.4%
	Not supported	29	9.6%
Support from the community	Supported	163	53.8%
	Not supported	140	46.2%
Support from the TBA	Supported	114	37.6%
	Not supported	189	62.4%

Table 6: Effect of delivered support on the adoption of exclusive breastfeeding

Characteristics	Category	EBF		Non-EBF	
		Count	%	Count	%
Supported by husbands		28	20.0%	112	80.0%
Supported by grandmothers		17	20.2%	67	79.8%
Supported by informal classes/madrasa		30	27.8%	78	72.2%
Supported by heath centers		60	21.9%	214	78.1%
Supported by the community		27	16.6%	136	83.4%
Supported by the TBAs		28	24.6%	86	75.4%

Table 7: Mothers' responses on important aspects of breastfeeding

Characteristic	Category	Response	
		Count	%
Colostrums is a complete food for new born in his/her 4 first days	Agree	246	81.2%
	Disagree	8	2.6%
	Uncertain	49	16.2%
Childs frequently crying is a sign of hungry/thirsty	Agree	193	63.7%
	Disagree	98	32.3%
	Uncertain	12	4.0%
The more the mother breastfeeds, the more milk is produced	Agree	237	78.2%
	Disagree	44	14.5%
	Uncertain	22	7.3%
It is possible to squeeze breast milk and reserve for later use	Agree	88	29.0%
	Disagree	120	39.6%
	Uncertain	95	31.%
Breast milk is clean, safe and cheaper	Agree	288	95.0%
	Disagree	6	2.0%
	Uncertain	9	3.0%
Breast milk is a complete diet for the child up to 6 months age	Agree	268	88.4%
	Disagree	27	8.9%
	Uncertain	8	2.6%
Exclusively breastfed children are better in health	Agree	242	79.9%
	Disagree	24	7.9%
	Uncertain	37	12.2%
Breastfeeding frequently is a means for birth control	Agree	160	52.8%
	Disagree	48	15.8%
	Uncertain	95	31.4%
Breast milk contain enough amount of water for the child up to 6 months age	Agree	199	65.7%
	Disagree	69	22.8%
	Uncertain	35	11.6%
Better positioning of the child is necessary to facilitate breastfeeding	Agree	263	86.8%
	Disagree	8	2.6%
	Uncertain	32	10.6%

4. Conclusion

The study revealed that there is great improvement in the prevalence of exclusive breastfeeding to six months in the study area compared with findings reported in the previous survey in 2014. Despite that development, the prevalence is still very poor in relation to other countries and to the international exclusively breastfeeding target of 75% exclusively breastfeeding. According to this study, the current situation of EBF is contributed by several factors. For instance, the age of breastfeeding mothers showed that young mothers were more likely not to exclusively breastfeed their babies. Early pregnancies, illiteracy among mothers, large size households, small birth intervals, home delivery, more time spent for work and low level of support to breastfeeding mothers appeared to be important factors hindering exclusive breastfeeding to six months in the study area.

The study revealed that breastfeeding mothers are aware of many aspects of breastfeeding, and in fact more mothers can breastfeed exclusively provided they have accurate information, and strong support within their families and communities and from formal institutions. However, the low prevalence of exclusive breastfeeding in the study area, and the reasons mothers provided for early initiation of complementary foods contradicts. This situation proves the need for improving the system of delivering maternity education, breastfeeding education and nutrition education. Interventions made should target not only the breastfeeding mothers, but more groups to build the breastfeeding support base in the community and to make the behaviour change easier. Continuous follow-ups and monitoring of interventions is necessary to prevent sub-optimal exclusive breastfeeding and associated factors.

Specifically the interventions to address birth control (family planning), control of early marriage and prevention of early pregnancies, improving households' food security and nutrition, reducing mothers' workload and provide more time for mothers to breastfeed, are recommended for promotion of EBF. New interventions need to consider assisting mothers especially employed, farmers and entrepreneurs to acquire practical skills and facilities for expressing and storing breast milk for later use and make this practice agreed. In addition, it is necessary to strengthen the capacity (in terms of knowledge and practical skills) of health workers, the community and the peer counsellors parallel to extending accessibly of health service and delivery centres nearer to the villages and remote areas. This will help to create strong institutions that can facilitate to build mothers' confidence, improve feeding techniques, and prevent or resolve breastfeeding problems.

As a role of care for children and reducing disease infections, it is recommended to establish effective interventions for complementary foods. This will include the extension of trainings over a large population of mothers, on processing and preparation methods of nutritionally adequate, safe and appropriate complementary foods from locally available ingredients.

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