

Prevalence of Exclusive Breastfeeding and its Predictors among mothers in Micheweni, Chake-Chake and North 'A' districts, Zanzibar

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Abstract

Objective: Generally, child's feeding practices especially exclusive breastfeeding (EBF) is affected by individual, social, cultural, and health services related factors. Planning, implementation and evaluation of programs to promote Infant and Young child's Feeding (IYCF) require detailed current information about these factors. This study aimed to estimate the prevalence of EBF and identify factors that predicted EBF among mothers in Micheweni, Chake-Chake, and North 'A' districts in Zanzibar.

Methods: This is a community based cross-sectional study conducted among 303 mother-infant pairs aged up to 6 months. Standardised questionnaire was used to record infant's characteristics including age, gender, and place of delivery. Mothers were interviewed about their current breastfeeding practices, their knowledge regarding breastfeeding and support they obtained from their husbands, grandmothers and other family members. Both univariate and multivariate analysis were used to identify prevalence and predictors to EBF.

Results: The prevalence of EBF in this study was found to be at 20.8% (n=63). Mother's knowledge was good regarding some breastfeeding practices, however; many of them didn't practice EBF. After multiple logistic regressions, variables that predicted EBF were: current age of mother, number of children under five, time when a mother is away from her child, place of delivery, support from madrasa and health centres, and knowledge about breastfeeding. The odds of mothers to EBF their babies were found to be significantly higher for: young mothers aged 21-25 years (AOR=7.4; 95% CI, 1.76-31.9), children who were born at the hospital (AOR=2.66; 95% CI; 1.37-5.17), and mothers who were strongly supported from community classes or madrasa (AOR=10.6; 95% CI, 2.8-39.75).

Conclusion: Although majority of mothers have shown a good understanding on the importance of breastfeeding, the prevalence of EBF was still low. Factors affecting EBF are multifaceted; thus, government through its ministries should intensify EBF promotions for reduction of childhood malnutrition.

Keywords: Exclusive Breast Feeding; Factors and Predictors; Prevalence; Breast milk; Mothers and Children; Zanzibar.

Introduction

Malnutrition can impair all aspects of child's growth, motor, cognitive functions and social development [1,2]. In developing countries, more than 50% of all deaths of children are caused by malnutrition [3], with the major determinant and the root cause of it are the methods of feeding. Two-third of infancy deaths are mostly related to poor feeding practices [4]. Unfortunately, mothers don't really understand the proper methods of feeding their babies, especially exclusive breastfeeding (EBF) for less than 6 months [5]. It has been estimated that less than 40% of children under 6 months were exclusively breastfeed in developing countries [6]. Sub-optimal breastfeeding results into more than 30 million deaths of children globally [1]. Furthermore, in many places, complementary feeding for children above 6 months begins too early or too late, and foods are often nutritionally inadequate and un-safe for the baby.

In Zanzibar for example; as other developing countries, various forms of malnutrition for children are highly prevalent. Despite declining proportions of malnutrition in recent years, it remains to be among the major health problems. Current evidence indicates that 30.2% of children under the age of 5 years have chronic malnutrition (stunting), while 12.0% have acute malnutrition (wasting) [7]. These proportions of chronic malnutrition are un-evenly distributed across regions; very high rates are in Unguja north region (40.6%) and Pemba north region (39.3%). The number of mothers who exclusively breastfeed their babies remain to be low in the country; it was found that less than 20% of mothers had exclusively breastfed their babies for 6 months [8], which is against the World Health Organisation's (WHO) goal set of 90% EBF coverage [6]. WHO recommends that children under the age of 6 months to be exclusively breastfed before being given any type food, even a drop of water [9]. Obviously, EBF for 6 months poses immediate benefits of reducing morbidity and mortality due to diarrhoea and infections [10]. It also has many long-term benefits like: increased productivity, increased social development, improved school performances, and reduces the risk to chronic

diseases like diabetes and cardiovascular diseases during adult [2,10,11].

In spite of countless government and non-government efforts to promote EBF, the EBF programs are yet to deliver the desired outcomes. This is due to the fact that challenges that face EBF are numerous and multifaceted including individual, social and other health services related factors [12]; as a result, the rate of EBF is still low. Numerous studies have examined the factors that hinder effective EBF practice for less than 6 months. Socio-economic and demographic factors have been pointed out as the potential determinants for EBF at the first 6 months [13-19]. Furthermore, other studies have reported that inadequate knowledge and awareness about EBF are the major causes of poor breastfeeding practices in developing countries [15-16]. While the common bad feeding practices like pre-lacteal feeding, delay in initiation of breastfeeding and water intake during the first month; have been found to associate with low EBF practice in the previous studies [20-22]. Generally in a conceptual framework which explored factors that affect breastfeeding practice, the factors were divided into three groups namely; individual, social, and group level factors [12]. Therefore, knowing the factors that associated with EBF in a local context; it will help in scaling up our breastfeeding and child's feeding programs. This study aimed to estimate the prevalence of EBF and to identify the associated factors among selected mothers in Micheweni, Chake-Chake and North 'A' districts in Zanzibar.

Methods

Description of the study population

Zanzibar is a part of the United Republic of Tanzania in East Africa, it comprises of two main Islands of Unguja and Pemba. The study was conducted within three districts in Zanzibar which are; Micheweni in the north of Pemba Island, Chake-Chake in the south of Pemba Island, and North 'A' in the north of Unguja Island. These districts were selected due to their high prevalence of malnutrition and associated effects, also for their social and geographical similarities. All these three districts are partly deep soil and partly coral rags especially near and around the coastal areas [23].

The total population of the study area is currently projected at 290,657 (141,692 males and 148,964 females) [24]. In all these districts, agriculture is the major economic activity employing the majority of the population. About 70% of the population is engaged and depend on the agricultural sector for their subsistence. Major food crops are rice, cassava, banana, yams, beans, vegetables and variety of fruits [23]. Moreover, cloves are the major cash crop in deep soil areas particularly in the western villages in Micheweni and Chake-Chake districts, while some households engaged in seaweed farming. Further; tourism, fishing, petty business, and few people are employed in a central government [23,25]

Study design

This study is a community-based cross-sectional survey which collected data from the sampled mothers within three districts. The sample size for this study was determined by 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

North 'A' (104 respondents)-selected according to their respective populations. Then, in each district, respondents (mother-infant pairs) were selected by using a simple random sampling technique.

Data collection

The data were collected by using pre-tested semi-structured questionnaire which contained both open and closed questions. All data were collected in October 2015, one day pre-testing of the questionnaire was conducted on a sample of 15 respondents selected randomly from sampled population; to identify its clarity and relevant to the subject. The questionnaire included data about; household characteristics, socio-economic characteristics of mothers, age of mother at first delivery, the current age of mother, occupation of mother, education status, the number of children under five, the total number of children in the household, and the total number of people in the household. Regarding infant's characteristics, data were collected on child's place of delivery, age, gender, child-space between the last two children, and time when mothers stayed away from her child.

Then, current breastfeeding practices either breast milk only, or breast milk with other food have been collected from mothers. Those who practiced breast milk only were categorised as performed exclusive breastfeeding (EBF). Furthermore, knowledge about breastfeeding was assessed using ten knowledge items, by asking mothers to agree or disagree on a specific item. These items were: knowledge about importance of colostrum, frequency of feeding, quantity of milk produced by mother, safety of breast milk, nutrients and water content of breast milk, importance of exclusive breastfeeding, better position for breastfeed a baby, and milk squeezing and reserving. If the answer was correct, the mother was scored as 1, 0 for wrong and 2 for 'don't know'. Total knowledge about breastfeeding was then summed, the total score less than 5 was considered unsatisfactory/low knowledge and above 5 was satisfactory/high. Moreover, information about the type of support that a mother obtained from different groups either from husband, grandmother, traditional birth attendants (TBAs), general community, informal classes/madressa and health centres were collected. Mothers were asked if they received supports from those groups.

Data analysis

All data were translated to English, coded and entered into Ms Excel version 10, then exported to IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, N.Y., USA). Exploratory statistics including counts and percentage were calculated. Descriptive statistics were performed to determine the prevalence of EBF. Multivariate logistic regression was done by using stepwise selection method to identify independent predictors of EBF. All Crude and Adjusted odds ratios of EBF practice were two-sided and considered significant if $p < 0.05$.

Study Ethics

This study was approved by the Ministry of Agriculture, Natural resources, Livestock and Fisheries (MANLF). Permissions were obtained from each local leader of the small administrative unit (Shehia) in Zanzibar within three districts (Micheweni, Chake-Chake and North 'A'). Then, mothers were briefly introduced to the study, its aim and purpose. Mother's consents were obtained from their language before they were interviewed. Then mothers were given the right to withdraw from the study at any time. Confidentiality was also assured to all study participants.

Results

Descriptive Characteristics

Presented in Table 1 are the general characteristics of mothers and their infants. In this study, the majority of mothers (30%) aged between 21 to 25 years, followed by 26 to 30 years (28.4%). Among them, majority of mothers (55.8%) were homemakers and others were farmers (28.1%), entrepreneurs (11.2%) and very few were formally employed (5%). Many of them (37%) reached secondary education, while very few (2%) reached higher education. On the other hand in Table 1, the study involved infants between the age of 1 to 6 months, with the majority of their gender being female (56.8%) than male (43.2%). Many of the infants (44.9%) aged between 5 to 6 months, whereby the majority of infants were born at the hospital (51.2%) (Table 1).

Variables	Labels	N	%
Location of mother (district)	Micheweni	99	32.7
	Chake-Chake	100	33
	North 'A'	104	34.3
Current age of mother	15-20	38	12.5
	21-25	91	30
	26-30	86	28.4
	31-35	43	14.2
	36+	45	14.9
Age of mother at first delivery	15-20	204	67.3
	21-25	77	25.4
	26-30	18	5.9
	31-35	4	1.3
Number of Children under 5	1	87	28.7
	2	150	49.5
	3	62	20.5
	4	4	1.3
Size of the household	1 to 3	39	12.9
	4 to 6	123	40.6
	7 to 9	101	33.3
	≥ 10	40	13.2
Mother's level of education	No education	96	31.7
	Primary	89	29.4
	Secondary	112	37
	Higher	6	2
Mother's occupation	Employees	15	5
	Entrepreneur	34	11.2

	Farmer	85	28.1
	Home maker	169	55.8
Marital status	Married	285	94.1
	Single/divorced/widowed	18	5.9
Sex of child	Male	131	43.2
	Female	172	56.8
Birth interval (n=252)*	Less than 1 yr	20	6.6
	1 year	78	25.7
	2 years	87	28.7
	More than 2 yrs.	67	22.1
Age of infants (months)	1 to 2	61	20.1
	3 to 4	106	34.9
	5 to 6	136	44.9
Child place of delivery	Hospital	155	51.2
	Home	148	48.8
Time when mother is normally away from the child	All time with the child	198	65.3
	1-2 hrs	46	15.2
	3-6hrs	43	14.2
	>6hrs	16	5.3
*Data for only mothers who had more than 2 children P is significant at 0.05 EBF= Exclusive breast feeding			

Table 1: Demographic Characteristics of Mothers with their infants included in the study (n=303).

Feeding Practices and Knowledge of Mothers

Table 2 reports about the responses shown by mothers towards breastfeeding practices and their breastfeeding knowledge. The prevalence of EBF was 20.8% (n=63), whereas the time of initiation of breastfeeding was immediately after birth. More than half of all mothers (58.7%) have started to introduce breastfeeding within 1 hour after delivery, and others have started between 1 to 12 hours after delivery (32.7%). Also, pre-lacteal feeding was very common in this study with 38.9% of mothers have given their babies a honey apart from colostrum immediately after delivery. Many of them (40.7%) believed that this is part of their religion (Sunna).

Variables	Labels	Response	
		N	%
Initiation of breastfeeding	1 hr	178	58.7
	1-12 hrs	99	32.7
	12-24 hrs	10	3.3
	> 24 hrs	9	3

	No recall	7	2.3
Continuation of feeding on colostrum in the 1st 4 days	Yes	296	97.7
	No	7	2.3
Reasons for no continuation of feeding on colostrum	Not applicable*	296	97.7
	Very little discharge of colostrum	5	1.7
	Child delayed to accept breast	1	0.3
	Delayed discharge of colostrum	1	0.3
Provision of honey to the new infants	Yes	118	38.9
	No	185	61.1
Reasons for provision of honey (n=118)**	As medicine	27	22.9
	Religious belief (Sunna)	48	40.7
	Traditions	43	36.4
Person who influenced the decision for honey (n=118)**	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	Breast milk only	63	20.8
	Breast milk with complementary foods	240	79.2
Commencement of complementary foods	1st day	0	0
	Before 4 days	14	4.6
	4 days to 1 month	49	16.2
	1 month to 4 months	147	48.5
	4 month to 6 months	30	9.9
Reasons for starting complementary foods	Little discharge of milk	28	11.7
	Breast milk is not enough	129	53.8
	Breast milk is shame/outdated	30	12.5
	Breast milk cause thirsty	42	17.5
	Mother is away for job	7	2.9
	Child sick/weak to suck	4	1.7
Breastfeeding support from husband	Strongly supported	58	19.1
	Slightly supported	82	27.1
	Not supported	163	53.8
Breastfeeding support from Grandmother	Strongly supported	39	12.9
	Slightly supported	45	14.9
	Not supported	219	72.3

Breastfeeding support from Informal class/ Madrassa	Strongly supported	17	5.6
	Slightly supported	91	30
	Not supported	195	64.4
Breastfeeding support from health centre	Strongly supported	248	81.8
	Slightly supported	26	8.6
	Not supported	29	9.6
Breastfeeding support from Community	Strongly supported	69	22.8
	Slightly supported	94	31
	Not supported	140	46.2
Breastfeeding support from TBA	Strongly supported	51	16.8
	Slightly supported	63	20.8
	Not supported	189	62.4
Breastfeeding Knowledge	Low	50	16.5
	High	253	83.5

*Excluding mothers who gave colostrum
 **Excluding mothers who did not give honey
 BF=Breast feeding
 TBA=Traditional Birth Attendants

Table 2: Mother's response toward Feeding practices and breastfeeding support.

Moreover in Table 2, complementary foods were introduced early by many mothers (48.5%) between 1 to 4 months of child's age. This is because, more than half of mothers (53.8%) believed that breast milk alone was not enough for their babies, and 17.5% of mothers responded that breast milk alone caused thirsty to their babies, and 12.5% of mothers responded that breast milk was shame for them. Table 2 also reports that majority of mothers were not strongly supported by their husband (53.8%), as well as their grandmothers (72.3%), informal classes (64.4%), their communities (46.2%) and traditional birth attendants (TBA) (62.4%). As oppose to 81.8% of mothers who were strongly supported from health centres.

Furthermore, Table 3 reports the types of answers from mothers regarding breastfeeding, which showed that majority of mothers (81.2%) understood the importance of colostrum, the adequacy of breast milk (88.4%) and the importance of EBF to the child (79.9%). However, less than half (29%) didn't know about the possibility of squeeze breast milk and storing it for later use. Generally, mother's knowledge about breastfeeding was on a good level; as the majority of mothers (83.5%) obtained a high score of greater than 5 in this knowledge assessment. Details of these are displayed in Table 3.

S. No	Knowledge item	Correct n (%)	Incorrect n (%)	Don't Know n (%)
1	Colostrum is a complete food for a new born in his/her 4 first days	246 (81.2)	8 (2.6)	49 (16.2)
2	A child frequently crying is a sign of thrust and hungry	193 (63.7)	98 (32.3)	12 (4)

3	The more mother breastfeed, the more milk is produced	237 (78.2)	44 (14.5)	22 (7.3)
4	It is possible to squeeze breast milk and reserve for later use	88 (29)	120 (39.6)	95 (31.4)
5	Breast milk is clean, safe and cheaper	288 (95)	6 (2)	9 (3)
6	Breast milk is a complete diet for the child up to 6 months age	268 (88.4)	27 (8.9)	8 (2.6)
7	Exclusively breastfed children are better in health	242 (79.9)	24 (7.9)	37 (12.2)
8	Breastfeeding frequently is a means for birth control	160 (52.8)	48 (15.8)	95 (31.4)
9	Breast milk contain enough amount of water for the child up to 6 months age	199 (65.7)	69 (22.8)	35 (11.6)

10	Better positioning of the child is necessary to facilitate breastfeeding	263 (86.8)	8 (2.6)	32 (10.6)
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Table 3: Knowledge of mothers regarding Breastfeeding.

Predictors of Exclusive Breastfeeding

Table 4 shows the results after multivariate logistic regression analysis. It shows that variables that predicted EBF in the final model were; current age of mother, the number of children under 5 years owned by the same mother, the time spent by a mother to the child, place of delivery, type of support from informal classes, type of support from health centre and mother's breastfeeding knowledge. The likelihood of mothers to EBF their babies increased significantly for younger than older mothers. Mothers aged between 21 to 25 years had significantly higher odds (AOR=7.49; 95% CI; 1.76-31.9) of EBF practice than 26 to 30 years (AOR=3.81; 95% CI; 0.87-16.81) and above 36 years mothers (AOR=5.84; 95% CI; 1.25-27.26).

Variables	Label	Crude		Adjusted	
		OR	(95% CI)	AOR	(95% CI)
Current age of mother	15 to 20	1 (Ref)		1 (Ref)	
	21 to 25	4.18	(1.11-14.85) [*]	7.49	(1.76-31.9) [*]
	26 to 30	2.67	(0.73-9.77)	3.81	(0.87-16.81)
	31 to 35	3.09	(0.77-12.39)	4.04	(0.85-19.09)
	36+	3.77	(0.97-14.72)	5.84	(1.25-27.26) [*]
Age of mother at first delivery	15 to 20	1 (Ref)			
	21 to 25	1.87	(1.01-3.44) [*]		
	26 to 30	0.93	(0.26-3.39)		
	31 to 35	4.67	(0.64-34.23)		
Total Number of Children	1 to 3	0.97	(0.48-1.93)		
	4 to 6	0.64	(0.3-1.36)		
	≥ 7	1 (Ref)			
Number of children under five	1 to 2	1 (Ref)		1 (Ref)	
	≥ 3	1.44	(0.76-2.73)	2.09	(1.0-4.4)
Number of people	1 to 3	1 (Ref)			
	4 to 6	0.48	(0.22-1.08)		
	7 to 9	0.49	(0.22-1.13)		
	≥ 10	0.35	(0.12-1.05)		
Mothers education	No education	1 (Ref)			
	Primary education	1.26	(0.61-2.57)		
	Secondary education	1.12	(0.56-2.23)		
	Higher education	2.17	(0.37-12.76)		
Mothers occupation	Employed	1 (Ref)			

	Entrepreneur	0.71	(0.17-2.93)		
	Farmer	0.74	(0.21-2.6)		
	Home worker	0.69	(0.21-2.31)		
Marital status	Married	2.18	(0.49-9.73)		
	Single	1 (Ref)			
Age of an Infant (months)	1 to 2	1.75	(0.85-3.61)		
	3 to 4	1.44	(0.76-2.72)		
	5 to 6	1 (Ref)			
Sex of an Infant	Male	1 (Ref)			
	Female	1.02	(0.58-1.79)		
Space between children (n=252)**	Less than 1 year	1 (Ref)			
	1 year	0.93	(0.23-3.71)		
	2 years	1.48	(0.39-5.6)		
	More than 2 yrs	2.08	(0.54-7.96)		
Time mothers is away	Always with child	2.24	(0.49-10.21)	1.61	(0.32-8.08)
	1 to 2 hrs	2.2	(0.43-11.22)	1.22	(0.2-7.34)
	3 to 6 hrs	0.34	(0.04-2.66)	0.24	(0.03-2.09)
	6+	1 (Ref)		1 (Ref)	
Place of delivery	Hospital	2.25	(1.26-4.02)*	2.66	(1.37-5.17)*
	Home	1 (Ref)		1 (Ref)	
Support from Husband	Strongly supported	0.59	(0.25-1.35)		
	Slightly supported	1.18	(0.63-2.21)		
	Not supported	1 (Ref)			
Support from grandmother	Strongly supported	0.97	(0.42-2.25)		
	Slightly supported	0.94	(0.42-2.09)		
	Not supported	1 (Ref)			
Support from informal class (madrassa)	Strongly supported	4.36	(1.57-12.14)*	10.62	(2.84-39.75)*
	Slightly supported	1.57	(0.85-2.88)	1.44	(0.73-2.85)
	Not supported	1 (Ref)		1 (Ref)	
Support from health centre	Strongly supported	2.65	(0.77-9.06)	2.81	(0.67-11.79)
	Slightly supported	0.72	(0.11-4.7)	0.35	(0.04-2.93)
	Not supported	1 (Ref)		1 (Ref)	
Support from community	Strongly supported	0.61	(0.29-1.26)		
	Slightly supported	0.55	(0.28-1.07)		
	Not supported	1 (Ref)			
Support from TBA	Strongly supported	0.94	(0.42-2.12)		

	Slightly supported	1.9	(0.99-3.64)		
	Not supported	1 (Ref)			
Knowledge on BF	Low	1 (Ref)		1 (Ref)	
	High	3.5	(1.21-10.12)*	2.53	(0.81-7.93)
Time of Breastfeeding initiation	Within hour	1.18	(0.67-2.09)		
	After 1 hour	1 (Ref)			
*Significant at p<0.05 OR=Odd ratio AOR=Adjusted Odd ratio CI=Confidence Intervals					

Table 4: Multiple logistic regression showing Crude and Adjusted Odds ratio of factors which predicted Exclusive breastfeeding.

Furthermore in Table 4, the odds of EBF practice increased by the increase in number of children under 5 years owned by mothers. The odds were higher for mothers who have more than 3 children (AOR=2.09; 95% CI; 1.0-4.4) compared to those who have less than 2 children; however, it was not statistically significant. Similarly, for place of delivery, the odds of EBF practice were more than twice for children who were born at hospital (AOR=2.66; 95% CI; 1.37-5.17) compared to those who were born at home. In Table 4 also, the likelihood of mothers to practice EBF increased for mothers who were strongly supported by their community classes/ madrassa (AOR=10.62; 95% CI; 2.84-39.75) than those who were slightly supported (AOR=1.44; 95% CI; 0.73-2.85). Similarly, the odds for mothers who were strongly supported by their health centre rose but not significantly (AOR=2.81; 95% CI; 0.67-11.79) than those who were slightly supported by their health centres (AOR=0.35; 95% CI; 0.04-2.93). Also, mother's breastfeeding knowledge was found to be among the predictors for EBF in this study. Mothers who have higher scores in breastfeeding knowledge have more than twice the odds of EBF their babies (AOR=2.53; 95% CI; 0.81-7.93) compared to mothers who have scored low; however it was not statistically significant.

Discussion

This study shows that the prevalence of EBF in Zanzibar was 20.8%, which is low compared to other reported prevalence in developing countries, whereas it is consistent with the previously reported national prevalence in 2014 (19.7%) in Zanzibar [8]. In comparison with other sub-national population in developing countries, EBF prevalence in Ghana was reported to be 38% [15], 70% in Ethiopia [17], 36% in Bangladesh [18] and 24.1% in northern Tanzania [19]; contrary, other study had reported lower than this prevalence [26]. This finding gives indication that there is very slow progress in improvement of EBF in the country.

In this study, more than half of all mothers have reported to initiate breastfeeding within 1 hour after the baby was born (Table 2). This finding agrees with the reported finding from the Tanzania National Nutrition Survey [8], which showed that early initiation of breastfeeding was highest reported (61.7%) in Zanzibar than any other region in Tanzania. Despite this high initiation of breastfeeding, still more than half of all mothers (79.2%) didn't practise EBF in this study. This suggests that mothers don't continuously breastfeed their children as they grow older. This has been proved from previous researches that

EBF practice decreases as the child's age increase [15,18,27]. For example; a study in Alberta month-specific feeding practices showed a significant decline of EBF from 54% at 3 months to 15.3% at 6 months [27]. This decline of EBF practice is common in many places, which might also account for low EBF practice in this study.

This study also found some cases of inappropriate feeding practices by mothers. It showed the majority of mothers have introduced complementary foods between 1 to 4 months (Table 2). This is against the recommended time for initiation of complementary foods. As suggested by WHO/UNICEF, the minimum recommended time for the introduction of complementary food is 6 months, and not below [9]. Mix-feeding before 6 months places the child at the risk of diarrhoea and acute respiratory infections [26]. Considering the reason pointed out by many mothers; 'breastmilk alone was not adequate to meet the need of their infants.' This perception of milk inadequacy was also reported previously as a cause of breastfeeding cessation in other studies [12,27]. Therefore, when planning for breastfeeding promotion, changing of this mother's wrong perception should be taken into consideration.

Moreover, the study shows that social and cultural preferences seems to influence mother's feeding practices. In this study, colostrum was given to nearly all (97.7%) children within the first 4 days after birth, which is a good practice due to that it reduces the risk of diseases and boosts the child's immunity [26]. Contrary to other places, it was regarded as a taboo and finally discouraged by the society [28]. On the other hand, the introduction of honey to a new born was practiced by many mothers (38.9%) in this study. This practice was highly contributed by belief that; this is recommended in Islamic religion. This agrees with other studies; however, others have reported to introduce water, glucose, juice or sometime even soil to a new born-only due to their traditions or religious teaching [19-22]. Therefore, introduction of food other than breastmilk (honey, glucose, water etc.) must be discouraged below 6 months. According to previous research, many mothers understood that some of these local foods or herbs which are given to a new born; are for treatment of diseases like gastrointestinal upset and abdominal pain [18], while others knew that it prevents the child from a 'bad luck' or an 'evil eye' [28]. Until now, no any research has already proved these believes scientifically; therefore must be restricted in any society.

This current study showed significantly higher odds of EBF practice for younger than older mothers (Table 4). Mothers aged between 21 to 25 years were 7.5 times more likely to EBF than those aged above 36 years. This study doesn't articulate the possible reasons for this, however; we speculate that this could be due to little awareness about EBF for older mothers than younger mothers. In addition, in this study having more than 3 under 5 children owned by mothers was associated with more than 2 times likely to EBF compared to mothers who have less than 2 under 5 years children; however it was not significant (Table 4). In comparison, multiparity was found to associate with EBF practice elsewhere [27]. This could be attributed by the fact that multiparous mothers are more experienced in terms of breastfeeding and have a good understanding of proper means of child feeding than primiparous mothers [27].

This study continues to prove that availability of health facilities like hospital, is very important for child health. The study found that EBF practice increased for children who were born at hospital compared to children who were born at home. This is similar to the finding reported previously by Nkala and Msuya [29], who observed among women in western Tanzania that; the likelihood of EBF practice increased more than twice (OR=2.9) for children born within health facilities compared to children born at home. This supports the fact that institutional delivery including hospital delivery plays a big role in improving the behaviour of mothers to EBF. The influence of hospital delivery to EBF is attributed by the counselling efforts shown by health care providers in the hospitals. In contrast, place of delivery either home or hospital was not found to be associated with EBF practice in other studies [18-21,30].

The influence of social networks and family supports to breastfeeding have been documented previously; and their effects to EBF [31]. If fathers and family members are supportive of breastfeeding, the mother is more likely to breastfeed her baby for longer [31]. This study found that mothers were not strongly supported to breastfeeding from many of the family members; husband, grandmother, community classes and from TBAs (Table 2). Therefore, support from family and social network is very critical for the success of EBF. Surprisingly, our study showed that type of support from community classes/madrassa is among the predictors to EBF (Table 4). Mothers who have been supported from their madrassa were more than 10 times likely to EBF their babies than those who were not supported. This might be due to that, in these informal classes, mothers are encouraged to breastfeed their babies for two years, as part of religious instruction [28].

Furthermore, this study reveals that having adequate breastfeeding knowledge alone cannot guarantee EBF practice. Thus, despite majority of mothers (83.5%) scored higher in the knowledge assessment; there was low EBF practice in this study. Also it showed that mother's breastfeeding knowledge was among the predictors to EBF (Table 4). The associations of mother's breastfeeding knowledge to EBF practice have been well explained previously [19,22,29]. Moreover, when it is absolutely essential to leave the baby at home; mothers have to be aware on the alternatives to breastfeeding, and schedule things carefully so that they satisfy the nutritional needs of their babies. This study reported that majority of mothers (31.4%) didn't know the alternatives to breastfeeding—that is milk squeezing and bottle feeding of mother's milk (Table 3). Consequently, this will lead to a mix-feeding before 6 months due to the fact that some mothers need to be at their workplaces, while others need to go to their farms (Table 1); this might be a possible reason which accounts for low EBF practice in

this study. Additionally, due to that majority of mothers in this study delivered their babies at hospital (Table 1), therefore, health care providers should use this as an opportunity to counsel mothers on different alternatives of breastfeeding their babies; several previous studies have proved that counselling during antenatal and intra-natal visits improved EBF practices [19,22,32]. If possible, government should provide breast-milking machines; however, their use should not be routine as it might reduce the critical importance of breastfeeding and bonding.

This study doesn't find any association between education status of mothers, employment and their marital status, as opposed to other previous studies [12,22,27,32]. Similarly, other studies didn't find the influence of marriage [15], employment [15,20] and education status [20,30] to EBF practice. Therefore, more researches are needed to find out why there are substantial variations in association between mother's socio-economic factors to EBF practice.

This study may be limited to the selection of the mothers only in three districts, which may not generalize for the whole country. As well as, during the interview, the ability of mothers to recall from the day of birth may display recall bias from mothers. The cross-sectional nature of this study may be another limitation; because, some mothers will currently be on EBF practice, but, days after, they might shift to mix feeding before 6 months. However, this study has some potential strength including, it is the first study in Zanzibar to look at the potential predictors of EBF. This study also focused on the most vulnerable districts to malnutrition. To the best of our knowledge, this study may draw stakeholders and government attention to EBF promotion.

Conclusion

The presence of low prevalence of EBF in this study indicates that actions should be established immediately to improve the current child feeding practices. Current age of mother, place of delivery of a child, support from the community classes, support from health centres are predictors to EBF. Although there are some existing government policies and programs like Infant and Young Child Feeding programs being implemented to improve the EBF practice; through its ministries, government should now try to think on engaging international initiatives like establishment of Baby Friendly Hospitals in the country, to intensify the programs.

Implication to Child Health Research

As the sub-optimal breastfeeding being an area of concern regarding child health globally; this study highlights some of major factors in low income countries. Without spending much effort in setting up breastfeeding promotional strategies, more longitudinal researches are needed in the area of Infant and Young Child's feeding, these researches should incorporate the aspects of socio-economic, cultural and social practices to child's feeding practices; for the purpose of profoundly reduction of child's feeding problems and ultimately reducing childhood malnutrition. Nevertheless, findings of this study facilitate the redirection of resources and efforts to certain local factors affecting EBF.

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Conflict of interest

All Authors confirmed that no conflict of interest to declare regarding this publication.

Author's contribution

AGK analysed the data and wrote the first draft of the manuscript. AMA designed the study, analysed the data and edited the manuscript. ASA edited the first draft of the manuscript. FSA improved the final draft of the manuscript.

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