Exclusive Breastfeeding in Manafwa District, Eastern Uganda - Opportunities and Challenges: A Mixed Methods Community Based Study

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Abstract

Background: The history and importance of breastfeeding is emphasized from anthropology of nutrition studies albeit with challenges. Furthermore exclusive breastfeeding (EBF) is a known economically effective intervention that can help reduce maternal and childhood morbidity and mortality. Moreover the global prevalence of EBF have remained low with Uganda averaging 42.6%.Subsequently in 2012, the World Health Assembly endorsed a Comprehensive maternal, infant and young child nutrition implementation plan with six specific global nutrition targets, one of which was to increase the rate of EBF in the first 6 months to at least 50% by 2025.This study aimed at tracking whether eastern Uganda had met the set target and what factors would be influencing EBF.

Methods: We carried out a mixed methods cross sectional study in Manafwa district, eastern Uganda. We employed both qualitative and quantitative data collection tools. We based on the concepts of habitus and dispositions to explore the EBF through in-depth interviews (IDI). Qualitative data was summarized into tables and analysed using STATA version 14 while qualitative data was analysed using NVIVO version 12.

Results: In total 387 mothers' data was analysed. The average age was 25.2 years. The prevalence of EBF was 63.31% and it was majorly influenced by education level (P= 0.02,AOR=2.4,95%CI:1.39-4.13),religion(P=0.03,AOR=0.4,95%CI:0.2-0.72) and employment status(P=0.002,AOR=0.52,95% CI:1.79-15.18).

During the IDI, several enablers of EBF such as need for spouse support and barriers such as lack of enough time, not feeding well and sexual play involving caressing the breasts emerged and misconceptions such as it being an abomination to breastfeed once gravid, insufficient breastmilk, breastmilk causing sores, and improper feeding.

Conclusions: EBF is above the target in Manafwa district and efforts to strengthen it should involve more community and male involvement and health communication to demystify the misconceptions.

Keywords: Exclusive breastfeeding • Male involvement • Manafwa • Uganda

Introduction

The history and importance of breastfeeding is emphasized from anthropology of nutrition studies albeit with challenges. Anthropological studies have demonstrated the challenges of breastfeeding with some tribes tending to obscure the natural infant feeding method for several days after birth and others introducing prelacteal feeds for severaldays [1]. Although the value of breastfeeding to the baby are recognizable as far as before Christ times(BC) [1] ,it has been a subject of evolutional trends with challenges experienced through introduction of wet nurses, feeding bottles and the manufacturing and overzealous marketing of infant formulas[2].

Nevertheless, World Health Organization (WHO) recognizes exclusive breast feeding(EBF) as a cornerstone of child survival, nutrition and development, and maternal health [3]. The benefits are not limited to geographical locations and populations and are recognizable in high, middle and low-income countries. These benefits are not limited to the child but extend to the mother and family. Global evidence shows robust and consistent importance of (EBF) for improving child health and development reducing infant mortality and morbidity [4-6] and maternal benefits include but are not limited to reduction of the odds for postpartum haemorrhage, type 2 diabetes mellitus, Ovarian and breast cancer [7] and maternal sensitivity [8]. No wonder WHO [9], world alliance for breastfeeding action (WABA) [10] and American college of Obstetricians and Gynaecologists(ACOG) have put EBF as policy recommendations [11].

Exclusive breastfeeding is defined as feeding a baby on breast milk only after birth either directly from the breast or expressed, no other liquids or solids, not even water, with the exception of oral rehydration solution [ORS], or drops/syrups of vitamins, minerals or medicines[12].WHO recommends EBF for the first 6 months of life, followed by continued breastfeeding with appropriate complementary foods for up to 2 years or beyond [3,9,13].

Despite the EBF benefits, global prevalence is still very low and is currently estimated at less than 40%, below the United Nations Children's Emergency Funds (UNICEF) set target of 50% by 2025 [14]. A systematic review involving studies in East Africa reported that only 42% mothers preferred to practice EBF. In a meta-analysis of studies in the four regions 29 Sub-Saharan Africa (SSA) countries, EBF prevalence ranged from 23.70% in Central Africa to as high as 56.57% in Southern Africa [15]. Moreover, Uganda national prevalence of EBF was 42.6% in 2016 [16] and reported to be as low as 42.8% by Nabunya et al. [17] all below the set target of 50% by 2025 [14].

In 2012, the World Health Assembly Resolution 65.6 endorsed a Comprehensive implementation plan on maternal, infant and young child nutrition, and six specific global nutrition targets for 2025 were set, one of which was to increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%[14].

Exclusive breastfeeding rate is largely affected by its early cessation and mixed feeding, cultural beliefs, poverty, employment and other socio-demographic characteristics [17-22].

This study aimed to assess the strides in Eastern Uganda as far as the 2025 target is concerned using Manafwa district as the study area.

Materials and Methods

Research design, study area and study population

This was descriptive cross-sectional study design with mixed methods both quantitative and qualitative methods.

This study was conducted in Manafwa district. Manafwa district is situated in the Mid-Eastern region of Uganda and has a population 353,825 (Uganda Bureau of Statistics, 2014). The district has 10 health facilities

which offer maternal, neonatal and child health services. Among the ten, three public health facilities are considered high volume facilities. These include Bubulo HCIV, Bugobero HCIV and Lwanjusi HCIII. People in this region speak mostly Lumasaba.

Exclusive breastfeeding (EBF), according to WHO, is feeding a baby on breast milk only after birth either directly from the breast or expressed, with no other liquids or solids, not even water, with the exception of oral rehydration solution [ORS], or drops/syrups of vitamins, minerals or medicines [12]. Because WHO recommends EBF for the first 6 months of life, followed by continued breastfeeding with appropriate complementary foods for up to 2 years or beyond [3,9,13], we targeted mothers of children who were between 6 months and 1 year of age. The study therefore required mothers to recall their breastfeeding experiences in the first six months of a child's life. We chose period till 1 year because then, mothers are more likely to recall the events of breastfeeding thereafter.

The age of the child was crosschecked from the child health card if available, and where unavailable, we relied on the mother's word. We studied mothers that had come to attend Young child clinics (YCC) in the four high volume facilities of Manafwa district namely Bugobero IV, Bubulo IV, Lwanjusi III, and Butiru III and their community outreach programmes, Young Child Clinic Outreach (YCCO).

We excluded mothers that had contraindications to breastfeeding and or ones whose children had a congenital anomaly that presented breastfeeding difficulty.

Sample size and sampling techniques

The study sample size was calculated using the below formula for sample size estimation,

$$N = (Z2PQ)/D2$$

Where; N is the study population (100 clients), Z =95% with confidential interval of 1.96, P as the prevalence and D as the precision of estimated error, 0.05.

Using the prevalence from a study by Nabunya et al. in Kampala (Phoebe, 2018) that reported P=42.8%, and taking Q =1-P and a non-response rate of 10%,

$$N = [(1.96)2 \times 0.43 \times 0.57]/ (0.05)2 = 376$$ and finally No= 414

A simple random sampling technique was used to select mothers from the four high volume health facilities and their community outreaches offering in Manafwa district. Purposive sampling was used to select participants for in-depth interviews.

Study outcomes

The study dependent variable was the prevalence of exclusive breastfeeding among infants. The independent variables were socio-demographic factors like mother's age, location, religion, marital status, occupation, parity and level of education; personal factors like mother's knowledge, attitude and preparedness to exclusively breastfeed, social factors like economic status, partner involvement, support by other family members and experienced mothers, culture, myths and beliefs; support from employers and health workers.

Data collection and management

Pretested interviewer-administered questionnaires with closed-ended questions were used to collect data on prevalence, and factors associated with EBF among the mothers in the study. These included the WHO standards questionnaire and one developed for this study.The quantitative data collected, was entered into Microsoft excel spreadsheet and exported to STATA 14 version for analysis. Descriptive analysis was performed, and results presented by tables, graphs and charts. Categorical variables were analyzed as frequencies and percentages chi-square test was performed to check for association between factors and outcome variables before performing logistic regression. Invariable analysis was run to identify variability of factors for multivariable analysis. Variables with p – value ≤0.05 in bivariate logistic regression were considered as factors for multivariable logistic regression. Multivariable logistic regression was performed using backward likelihood ratio methods of variable selection to identify factors independently associated with outcome variable. Strength of association was measured using odds ratio, and 95% confidence interval. A p - value < 0.05 was considered statistically significant. The statistical goodness of fit for the model was checked.

For qualitative data collection, seventeen in-depth interviews (IDI) were conducted with mothers who had exclusively breastfed and those that had not. Data was collected on enablers and barriers of EBF. Each IDI took 45 -60 minutes. We conducted these interviews together with an experienced social scientist. We used Lumasaba language audio recorded information and transcribed it to English verbatim and coded to generate meaningful themes using NVIVO 12.

Results

Quantitative analysis

Socio-demographic factors

The study recruited 414 participants. However 37 were dropped due to incomplete data. We analyzed data for 387participants (93.5%). The mean age of the mothers was 25.2 years (SD 6.03) of whom 54.5% were below 24 years. Moreover, 83% were Christians, 96.4% were married and 69% unemployed. Furthermore, the mean age of the infants was 8.6 months with 54.5% being males (Table 1).

Obstetric factors

Most of the study participants 327(84.5%) reported delivering at the health facility and over 96% had had vaginal delivery. Moreover,

Table 1: Socio-demographic characteristics of 387 respondents.

Socio-demographics	Frequency (N)	Percentage (%)
Mother's age		
<20	61	15.8
20-24	150	38.8
25-34	131	33.9
35+	45	11.6
Mean ± SD		**25.22±6.03**
Religion		
Catholic	194	50.1
Anglican	129	33.3
Other	64	16.5
Education level		
Primary	241	62.3
Secondary & higher	146	37.7
Marital status		
Never married	14	3.6
Married	373	96.4
Employment status		
Formal employment	41	10.6
Informal employment	79	20.4
Unemployed	267	69.0
Family size		
2-3	114	29.5
4-5	142	36.7
6+	131	33.9
Mean ± SD		**5.50±2.37**
Child sex		
Male	211	54.5
female	176	45.5
Child's age (months)		
6-8	181	46.8
9-10	84	21.7
11-12	122	31.5
Mean ± SD		**8.60±2.89**

385/387(99.5%) reported attending at least one ANC visit, 40.8% reported having 2-4 children and 87% reported a negative HIV status while about 8.3% didn't know their status (Table 2).

Prevalence of exclusive breastfeeding among mothers of infants aged between 6-12 months in Manafwa district

More than half of the study participants with children in the age categories, 6-8 months (58% prevalence), 9-10 months (69% prevalence) and 11-12 months (67.2% prevalence) reported practicing exclusive breastfeeding. In regard to sex of the infant, there were no significant differences in breastfeeding pattern with 64.5% of males having had EBF compared to 61.9% females (Table 3).

Association between socio-demographic characteristics and exclusive breastfeeding

Four socio-demographic variables were found to be significantly associated with exclusive breastfeeding; these include mother's age, employment status, religion, and education level with p<0.05. Meanwhile, marital status, family size, child's sex, and child's age did not show significant association with exclusive breastfeeding with p>0.05 (Table 4).

Association between obstetric factors and exclusive breastfeeding among the 387 respondents

Only one obstetric factor, that is, place of delivery was significantly associated with exclusive breastfeeding at bivariate analysis with p<0.059 (Table 5).

After adjusting for confounders, three factors appeared as important independent predictors of exclusive breastfeeding. The factors include; employment status, education level and religion. Two factors did not

Table 2: Obstetric characteristics of the 387 respondents.

Obstetric factors	Frequency (N)	Percentage (%)
Place of delivery		
Health facility	327	84.5
Home/Elsewhere	60	15.5
Mode of delivery		
Vaginal delivery	372	96.1
Caesarean	15	03.9
Parity		
1	112	28.9
2-4	158	40.8
5+	117	30.2
Mean ± SD		**2.88±2.08**
ANC attendance		
No	2	0.5
Yes	385	99.5
Number of ANC visits		
<4	83	21.5
4+	304	78.6
Mean ± SD		**4.45±1.41**
Mother's HIV status		
Negative	337	87.1
Positive	18	4.7
Don't know	32	8.3

Table 3: Prevalence of exclusive breastfeeding by child age and sex.

Characteristic	Frequency,N	Exclusive breastfeeding(n)	Prevalence (95% CI)
Child's age			
6-8	181	105	58.0(50.5-65.3)
9-10	84	58	69.0(58.1-78.9)
11-12	122	82	67.2(58.1-75.4)
Child's sex			
Male	211	136	64.5(57.6-70.9)
Female	176	109	61.9(54.3-69.1)

Table 4: Bivariate analysis of socio-demographic characteristics and exclusive breastfeeding.

Socio-demographics	Exclusive breast feeding		Total (%)	p-value
	No (%)	Yes (%)		
Mother's age				*p<0.05*
<20	29(7.5)	32(8.3)	61(15.8)	
20-24	47(12.1)	103(26.6)	150(38.7)	
25-34	44(11.4)	87(22.5)	131(33.9)	
35+	22(5.7)	23(5.9)	45(11.6)	
Religion				*p<0.05*
Catholic	64(16.5)	130(33.6)	194(50.1)	
Anglican	44(11.4)	85(22)	129(33.4)	
Other	34(8.8)	30(7.8)	64(16.6)	
Education level				*p<0.05*
Primary	108(27.9)	133(34.4)	241(62.3)	
Secondary & higher	34(8.8)	112(28.9)	146(37.7)	
Marital status				p>0.05
Unmarried	04(1.0)	10(2.6)	14(3.6)	
Married	138(35.7)	235(60.7)	373(96.4)	
Employment status				*p<0.05*
Formal employment	12(3.1)	29(7.5)	41(10.6)	
Informal employment	08(2.1)	71(18.3)	79(20.4)	
Unemployed	122(31.5)	145(37.5)	267(69.0)	
Family size				p>0.05
2-3	37(9.6)	77(19.9)	114(29.4)	
4-5	52(13.4)	90(23.3)	142(36.7)	
6+	53(13.7)	78(20.2)	131(33.9)	
Child sex				p>0.05
Male	75(19.4)	136(35.1)	211(54.5)	
Female	67(17.3)	109(28.2)	176(45.5)	
Child's age (months)				p>0.05
6-8	76(19.6)	105(27.1)	181(46.7)	
9-10	26(6.7)	58(15.0)	84(21.7)	
11-12	40(10.3)	82(21.2)	122(31.5)	

Table 5: Bivariate analysis of obstetric factors and exclusive breastfeeding.

Obstetric factors	Exclusive breastFeeding		Total number(%)	p-value
Place of delivery	NoNumber, (%)	Yesnumber, (%)		*p<0.05*
Health facility	111(28.7)	216(55.8)	327(84.5)	
Home/Elsewhere	31(8.0)	29(7.5)	60(15.5)	
Mode of delivery				p>0.05
Vaginal delivery	137(35.4)	235(60.7)	372(96.1)	
Caesarean	05(1.3)	10(2.6)	15(3.9)	
Parity				p>0.05
1	39(10.1)	73(18.9)	112(29.0)	
2-3	54(14.0)	104(26.9)	158(40.9)	
4+	49(12.7)	68(17.6)	117(30.5)	
ANC attendance				p>0.05
No	01(0.3)	01(0.3)	02(0.6)	
Yes	141(36..4)	244(63.0)	385(99.4)	
Number of ANC visits				p>0.05
<4	28(7.2)	55(14.2)	83(21.4)	
4+	114(29.5)	190(49.1)	304(78.6)	
Mother's HIV status				p>0.05
Negative	121(31.3)	216(55.8)	337(87.1)	
Positive	10(2.6)	08(2.1)	18(4.7)	
Don't know	11(2.8)	21(5.4)	32(8.2)	

independently predict exclusive breastfeeding that is mother's age and place of delivery (Table 6).

Qualitative Analysis: Theoretical conceptual frame work

In order to better understand the enablers and barriers to exclusive breastfeeding, we carried out a qualitative study based on Bourdieu's habitus and dispositions concepts. These concepts are used to explain that "food and eating is much more than a process of bodily nourishment: but rather an elaborate performance of gender, social class and identity" [23].

The concept habitus denotes social structures and history of individuals that interrelate to define perceptions and actions in relation to their social environment [24].

Also, the concept of dispositions depicts preferences. It therefore contends that the behavioural tendencies that a person exhibits due to cultural beliefs are passed on to the next generation through unconscious memories of attitudes and practices [25].

Furthermore, the concepts of habitus and dispositions are used to understand challenges mothers encounter in relation to exclusive breastfeeding practices. Social structures may pose challenges for mothers in their attempt to comply with breastfeeding practices. This may largely depend on how the mother views breastmilk and what value she attached to it. For instance, the type of the complementary food a mother gives to her child may be informed by how she perceives 'food'; whether food is for the nourishment of her child or for satisfaction. This may be complicated by the various roles played by mothers at homes in most African communities. These are in most cases stressful and sometimes time consuming [26,27].

In such situations, appropriately adopting exclusive breastfeeding and complementary feeding may be hindered and hence influence their perceptions and actions. How society defines food may challenge her intention of complementarily feeding her child. Again, the inability of a mother to provide adequate and appropriate foods for her child is partly determined by what a mother can afford, access and what foods society expects her to feed her child. Hence, the definition of food by a mother is being informed by social structures (habitus) and by preferences (dispositions).

Table 6: Multivariate logistic regression analysis of socio-demographics and obstetric factors with exclusive breastfeeding.

Variable	COR(95% CI)	p-value	AOR(95% CI)	p-value
Age				
<20	Ref		Ref	
20-24	2.0(1.08-3.65)	***0.027****	1.54(0.80-3.00)	0.199
25-34	1.8(0.86-3.33)	0.065	1.66(0.86-3.23)	0.134
35+	0.9(0.44-2.05)	0.891	1.15(0.50-2.64)	0.742
Religion				
Catholic	Ref		Ref	
Anglican	0.95(0.59-1.52)	0.835	0.9(0.54-1.50)	0.689
Other(Muslim, Pentecostals, Seven day Adventist, traditionalist)	0.43(0.24-0.77)	***0.004****	0.4(0.20-0.72)	***0.003****
Education level				
Primary	Ref		Ref	
Secondary & higher	2.7(1.69-4.24)	***0.000*****	2.4(1.39-4.13)	***0.002****
Employment status				
Formal employment	Ref		Ref	
Informal employment	3.7(1.36-9.92)	***0.010****	5.2(1.79-15.18)	***0.002****
Unemployed	0.5(0.24-1.00)	0.052	0.8(0.36-1.81)	0.592
Place of delivery				
Health facility	Ref		Ref	
Home/Elsewhere	0.5(0.28-0.84)	***0.010****	0.6(0.31-1.07)	0.081

*Note: *significance at p<0.10, **significance at p<0.01, ***significance at p<0.001*

We held seventeen in-depth interviews with mothers who attended child health care services at high volume health facilities in Manafwa district. Most of the participants were interviewed from Bubulo Health centre IV, 41.2%. Moreover most mothers were multiparous, 70.6%, middle aged (25-34 years),and had delivered from health facilities 76.5% (Table 7).

Table 7: Characteristics of the mothers that participated in In-depth interviews.

Variable	Number, n (%)
Age	
19 and below	01 (6.7)
20-24	05 (33.3)
25-35	06 (40)
>35	03 (20)
Parity	
primiparous	05 (29.4)
multiparous	12 (70.6)
Place of delivery	
Health facility	13 (76.5)
Home /elsewhere	04 (23.5)
Address	
Lwanjusi health centre III	04(23.5)
Bugobero health centre IV	06 (35.3)
Bubulo health centre IV	07 (41.2)

During qualitative data analysis, three major themes were generated; knowledge about exclusive breastfeeding, importance of exclusive breastfeeding, consequences of none exclusive breastfeeding, the enablers and the barriers of exclusive breastfeeding. Themes and subthemes were constructed to further understand this phenomenon.

Theme 1: Knowledge about EBF

Sub theme 1: definition of EBF

When mothers were assessed for awareness about EBF, most of them said that they had ever heard about it. Their common source of information was health workers at the health facilities. However, when we further assessed for the definition of EBF, it did not come out clearly although most had a clue on duration of exclusive breastfeeding whereby majority knew about the standard duration or thereabout.

"….. At 6 months", BGR2 "…. For seven months BGR1"

Only one mother, 5.9% (1/17) had no idea of what it is.

"Not knowledgeable. I don't know what it means", BBR13, 35 GR2

The mothers said that they learnt about exclusive breastfeeding either from health workers in hospitals, grandmothers, peers or by themselves.

For example, a mother said, *"for us they taught us that if you start the baby on food early it can get worms, BBR14"*

Subtheme 2: benefits of EBF

Mothers were assessed for knowledge on benefits of EBF, consequences of introducing other feeds to baby so early during their growth. Almost all were able to mention the benefits of EBF to the baby when they were asked

"…Yes, health growth of the child, limits sickness of the child". BGR, 24, G2.

Others importance of breastfeeding exclusively were identified.

"Baby does not become sick when breastfed exclusively, baby gets energy, breastfeeding boasts baby's fight against diseases, breast milk contains all food nutrients, creates bondage between mother and baby, boasts baby's immunity, milk has vitamins that are helpful, and baby gets energy" BGR, 34, G2.

Mothers were much aware of undesirable outcomes of early introduction of other feeds. Mothers identified the following as consequences of non-exclusive breastfeeding; retards baby's growth, baby over cries, malnutrition, poor weight gain, and sickly baby. Statements to this testimony included:

"*Get sick easily, Retarded in growth" BGR15:"*

The problems they get if the baby refuses breastmilk early and mother says that there's no breastmilk, that baby grows when is not healthy. Some can grow when is weak and looking dull" BBR14:

Some mothers said that the baby can get worms if given other feeds like porridge early.

Mothers knew the benefits of exclusive breastfeeding.

For example, a mother said, *"…breastfeeding the baby up to six months is very good because it helps the baby to grow energetically, and again breastmilk fights diseases and also baby gets energy and grows when is healthy. Proper growth from breastmilk makes the baby strong' BGR14, 40 yr Gr 11*

"Myself, I decide to breastfeed for six months" while another said, mother I decided that let me give milk and porridge".

Others included misconceptions like *"…breastfeeding exclusively brings different diseases"LWR1,22yr GR 2*

Theme 2: EBF enabling factors

The enablers of exclusive breastfeeding were identified as; presence of cow's milk to be taken by mother, health worker's advice, personal motivation, good feeding, being educated on excusive breastfeeding, proper planning for the baby, baby breastfeeding, enough time for the baby, no stress, and having the perception that breastfeeding prevents pregnancy.

Subtheme 1: Good feeding.

Mothers retaliated that their ability to EBF largely depends on their own feeing. They arelikelytoexclusivelybreastfeed if they fed well.

"…I ate well and also accessed foods that helped me to have milk to breastfeed e.g. milk, I would take and hence breastfeed my child," echoed BBR2, 29yr Gr 3

"It was because of eating well; with a lot of drinks all were there the breastmilk was there" BBR12, 22yr Gr2.

Mothers who had exclusively breastfed had their sound reasons for being able to.

"Only gave the baby breast milk for 6 months and was able to do this because I could take porridge to help me have milk throughout LWR4 22yr Gr2"

Subtheme 2: Education about breastfeeding

Advice from health workers was cited by several mothers as a reason for why they decided to exclusively breastfeed their babies.

"For me, in my thoughts, I looked at the health worker since she has learned more I knew that what she tells me is the truth and the way she told is what I did". BGR14:

"I only followed the advice given during polio visits" BBR4 22yr Gr1

Theme 3: barriers to EBF

Among the key sub-themes that were generated under reasons for why mothers fail to breastfeed exclusively include

Subtheme 1: Little breastmilk

Most mothers that had not practiced EBF admitted that they could not have done that because they lacked enough breastmilk to sustain the baby to that age and thus resorted to complementary feeding.

"…Because of poor income, I don't have enough milk for the baby to get satisfied", LWR11, 30yr GR 2

"Sickness can lead to drying and not eating well", BGR3, 20yr Gr1

"Uhuu, I lack enough milk. My income is low.I lacking what to eat",BBR4 22yr Gr1

Subtheme 2: infections

Concerning mothers' health status, HIV was commonly mentioned as a deterrent to EBF.

They expressed fear of infecting their young ones but also added that they were following the health workers' directive.

"Ehe, sickness can lead to drying and not eating well, how then do you breastfeed! wondered BGR15 G7

"Some of these mothers have infections especially those who have HIV', BGR1 35yr Gr1

"I heard that HIV positive mothers have to breastfeed to a particular age"…..but I also heard over the radio, that mothers who are HIV+ should breastfeed to certain age not 6 months" BGR3 20yr Gr1.

"HIV positive mothers also refuse to breast their babies at birth e.g. there was a mother who come from Manafwa, she had given birth the previous day at 5am, for 11 hours she could not breastfeed her baby,"re reported because in Hospital she was told, the baby has to be given some syrup then after breast fed." reported BBR7

Subtheme 3: cultural beliefs

Several misconceptions and misperceptions about breastfeeding emerged in our study.

"…When a man sucks the breast of a mother, babies are not breastfed because they believe it will die." BBR13 22yr G2

"…So some rituals are done in that there is the medicine they are applied to the mother's breast, then the baby can breastfeed"BGR14 40 yr Gr2.

"It's an abomination to breastfeed a child once you are carrying another one", echoed LWR 9 32yr GR3

"……. When you are pregnant you stop breastfeeding. Even when you realize when the baby" is two months you stop LWR11, 27yr GR3"

Subtheme 4: EBF as time consuming

Mothers expressed reservation about its practicability.They complained about EBF being a time consuming activity that needed mothers whose work is to just sit there and breastfeed.

"How do you tell your boss that you are at home to breastfeed for 6 months!" exclaimed one, BGR3 24 yr Gr1.

I am a working woman, I leave my home in the morning and come back late. So I had to introduce my baby to other foods immediately it makes 3months. R6 32 Gr 1

They further attributed this to poverty, high work burden, and patriarchal nature of homes.

"I have to fend for my children, and again this man can be demanding so many other things that you have to fulfill, and you cannot refuse. You are in his home, he decides," lamented LWR 10 31yr Gr3

Subtheme 5: misconceptions about breastfeeding

Some other difficulties faced by mothers to EBF included misperceptions among mothers,.

"Baby does not grow well when breast fed only on milk", BBR 4 22yr GR1

"Beginning baby on breast milk can cause sores on mother's breast",

Lack of support

Below are some of their expressions, lack of support, doing strenuous activities like digging, being a schooling going mother, stress.

Theme 4: Breastfeeding Practices by the mothers

Based on the meaning they attached to exclusive breastfeeding, some mother stated that they either gave porridge, glucose solution, salt solution or plain water prior to or concurrently with breastmilk within the first six months. They also urged that 6 months, was late to begin the child on complementary feeds.

"Not early, because when I give my baby food at 3 months it eats normally" LWR6 32 yrGr1

Another one said,

"They are less that is why I give the baby water to supplement breast milk," LWR5 24yr GR2

About 75% of the mothers reported exclusively breastfeeding their babies for 2-3 months. Others said that even some of those claiming to have exclusively breastfed for six months may not actually have done so.

"Mothers prefer going for 6 months so long as they have what to eat well, they breastfeed their babies for 6 months," said BBR7.

"They say that you give after 6 months, but musawo (medical worker), with me I give my baby other foods as early as 3 months". LWR6 32 Gr1

Feeds given before six months after birth mostly included some glucose and some plain warm water and thereafter porridge and cow's milk and mashed potatoes

"…….cow's milk and mashed Irish potatoes," BGR1, 35yr Gr 1.

"I started with warm water after putting some sugar". BGR10, 43yr Gr4

"I just started with drinking water" BBR4 22yr R1

"For me, I start with other milk". LWR11 Gr3

"…I breastfed up-to 4 months then I started giving other fluids". BGR 12, 22yr, GR2.

Discussion

This study covers an important part in reproductive and childhood health. Exclusive breastfeeding once meeting the AFASS (Acceptability, Feasibility, Affordability, Sustainability and Safety) criterion is not only beneficial to the child but is also a safe natural method of contraception.

Breastfeeding practices

The prevalence of exclusive breastfeeding (EBF) in this study was 63.3%. This is in agreement with the prevalence of 67% reported by Ratib et al. [28] using It utilized a two-stage cluster sampling method to select a household sample nation-wide from the Uganda demographics and health surveys(UDHS) 2016, and studies elsewhere such as Ghana that reported 66.7% [29].

However, this is higher than the 46% reported by Bbale [19] using data extracted from the 2004 UDHS, 42.8% reported by Nabunya et al. in Kampala district [17], Ethiopia by Tadesse et al. 50.6% [30], 10.5% among primiparous mothers in Kenya [18], 24.1% [31] in Tanzania, 24.47% in Somalia [32], 36% in a study by Senbanjo et al. in Nigeria [33], 36% in Zimbabwe [34] and in Asia,25% by Radwan [35], 50.8% in Sri Lanka [36], 16.9% in Abu Dhabi [37] and 35.9% in Bangladesh [38] and 38.5% [39] reported by Muktar in India.

Significantly the rate of 63.3% in this study is lower than that reported in a prospective study using Dodowa Health and Demographic Surveillance System in Ghana at 71% [22].

The higher than the 50% prevalence rate target set by UNICEF may be because mothers and generally fathers support breastfeeding in this region [40]. Moreover the higher rates of EBF may be due to the fact that most mothers may not be able to afford formula milk and breastfeeding is more acceptable.

Furthermore, most mothers had heard about the term EBF although they could not clearly elaborate the duration as was echoed during the in-depth interviews. This was also reported in an earlier study in eastern Uganda, in neighboring Mbale district [40]. Similarly, a study in Ghana [41] reported that 97.1% of the mothers had ever heard about EBF and the major source of information was the health workers.

However, even though knowledge on breastfeeding was high, the practice of EBF was low. This means that knowledge does not necessarily translate into practice as has been reported in other studies elsewhere such as in Nigeria where at a knowledge level of 91.2%, only 37.3% exclusively breastfeed [42], Tanzania by Mgongo et al. [43]. Therefore, intervention which would help to convert high knowledge of EBF into high practices cannot be underestimated. The use of media specifically TV advertisement as a communication tool has been proven a very successful tool in changing attitude towards infant feeding practices since most people are visual learners [44] and other behavioral change but note must be taken to integrate it with other communication channels [45].

Several feeds are preferred as either prelacteal feeds or otherwise. Mothers revealed using different feeds such as plain warm water, water with salt, other milk such as cow's milk and smashed potatoes. In Zimbabwe, a study reported feeding babies below 6 months on plain water [34] while in Nigeria infant formula feeds were used [33]. Mothers in our study did not report formula feeds because they were largely rural and less exposed to these substitutes or may have been unable to afford them. But one mother mentioned about use of other milk which may either be cow's or formula milk. In this study,no mother revealed expressing and discarding milk like had been mentioned in a study in Somalia [32]. Furthermore, unlike in India where religion influenced prelacteal feeds such as use of KHAQ-E-QARBALA (sacred soil from Karbala in Iran), in our study there was no religious influence. However like in this study, the mothers in India also used sugar and water [39].

Factors affecting exclusive breastfeeding

According to multivariate analysis, three factors had statistical significance with EBF: religion, education and employment status of the mother.

In this study there were therefore increased odds of EBF as mother's education level improved. Education was statistically significant as a factor that influenced EBF (P=0.002, AOR=2.4, 95%CI, 1.39-4.13).

This is in contrast to a studies in Ethiopia [30] and Ghana [29] where education had no influence and in a study in Uganda by Bbale that reported negative correlation between EBF and both mother's and father's education status [19].

In this study, employment status was of statistical significance in regard to EBF (P=0.002, AOR=5.2, 95%CI, 1.79-15.18).Mothers in the informal sector had more odds of EBF compared to those in the formal sector or the unemployed/stay-home mothers. This could be because the employed in the formal sector can afford the formula feeds compared to those in the informal/stay-home mothers as reported by Bbale [19].

This finding agrees with findings in other studies such as in Sri Lanka [36] and Abu Dhabi [37].This finding is in contrast to one reported by Nabunya et al. [17] and Mgongo et al. [43] who reported that women in the informal sector are required to go back to work immediately.

But during the in-depth interviews, mothers expressed the challenge of having to perform home chores and fend for the family in addition to fulfilling marriage obligations as a limitation to exclusive breastfeeding just like it was reported in a study in Tanzania [43].However in consonant with a study in United States of America(USA),paid employment is a barrier to EBF [46].

To affirm to these findings, Nabunya et al. [17] showed that women who were in more privileged positions at work and thus were at liberty to adjust their time schedules and have extended breaks were more likely to breastfeed than their juniors. Similarly qualitative studies in USA [46] and India [20] found that lack of flexible work schedules, insufficient break times, and demanding work schedules were the major barriers to exclusive breastfeeding among women working in low cadre positions.

The issue of lack of or insufficient maternity leave has been raised in different studies [17,20,29,36,37,47] and affects women's ability to EBF. In a study in Ghana, it was reported that self employed mothers were more likely to breastfeed compared to the formally employed mothers [29,41].Informally employed mothers and the self-employed formal mothers have freedom to adjust their schedule to match their child's demand compared to the formally employed one.

One of the barriers of EBF in this study was the cultural factor and this embodies the immediate family and the community in which the woman lives. The influence of culture in a largely patriarchal society normally involves beliefs and attitudes expressed by the spouse and his family such as the paternal mother-in law and father-in law. In line with these findings, Nankumbi and Muliira observed that challenges in relation to appropriate infant feeding practices and influence of culture custodians on mothers, and patterns and burden of other responsibilities the mothers have in the

household [48]. Furthermore, studies in Ghana [29,41,49], Malawi [41,50] and Sri Lanka [36] reported,these are key stakeholders, yet information on EBF is passed onto to the mother in isolation. No wonder, a study in Abu Dhabi revealed that mothers who stayed with relatives are less likely to exclusively breastfeed [37] and grandmothers preferred breastfeeding patterns akin to their generations [49].

In this study mothers reported that EBF would cause sores and wondered whether exclusively breastfed children would grow well. In a study in Lebanon, mothers believed that they had bad milk that would transfer abdominal cramps to their children [51]. Whether mothers in this study also women believed that their breastmilk caused sores and or could not enable proper growth and development of the child was due to 'bad' milk was not clear. But they expressed misconceptions that are worrying. However, important to note is that no mother described colostrums as being bad for the baby as has been done before or breastmilk being inflicted by evil spirits such as 'batash' (evil spirit of wind) [52].

The involvement of such stakeholders would help ameliorate the influence of cultural practices and beliefs, and misconceptions that hinder EBF such as EBF being the cause of breast sores, as reported in this study.

Like in studies in Nigeria among medicals students [53], and in Kenya [21], the issue of limiting breastfeeding for fear of breast falling flat was raised. Yet, research shows that the degree of breast ptosis is directly proportional to number of pregnancies rather than breastfeeding or its duration [54]. This calls for targeted health education during antenatal and postnatal care in order to demystify such misconceptions.

Moreover, in our study the misconception that breastmilk was not enough was raised. This is similar to findings in Uganda among rural communities [48], Ghana [29,41,49], where it was raised as a major reason for mixed feeding and in Sri Lanka [36] and Abu Dhabi [37] it accounted for most breastfeeding terminations.

Another barrier highlighted in this research is that EBF was time consuming. Some mothers were skeptics about how that would be achieved with the usual maternal family demands such as fending for the other children, cooking and other chores. This finding was also reported by a study in Mbale district in eastern Uganda [40].No wonder they expressed need of support if one is to achieve it.

Low breast milk production can be linked to medical and non-medical conditions [55]. Mothers in this study expressed reservations about one breastfeeding if they were not well or had not fed well themselves. Non-medical conditions such as less sucking time, and delaying feeds [56], in addition to physical conditions that include breast abnormalitiessuch as sore nipples [57] that contribute to low breast milk production among mothers have been reported.

Furthermore, as elaborated in the concept habitus and dispositions, giving a meaning beyond satisfying a baby would help the mother and other stakeholders attach more meaning to EBF and thus support it more.

Maternal age had an influence on EBF patterns though without statistical significance. Mothers between 20-24 years (young mothers) had the greatest odds of breastfeeding at 2 compared to teenagers at 1 and odds decreased below 1 for mothers above 35years.Significant to note to, is that the young mothers constituted the greatest percentage of the respondents at 38%. The teenagers are more likely to be less educated and probably have less social support: this could hinder enough milk production and thus deter exclusive breastfeeding. Furthermore, as it has been reported in studies in Uganda, adolescent/teenage pregnancy is condemned and quite often viewed as shameful to the family and the girl herself [58]. But also during the qualitative study, others reported that they had to leave their children home and go to school. In line with this finding, a study in Brazil reported that adolescents were less likely to exclusively breastfeed compared to older mothers [59]. Furthermore, this finding was in agreement with a study in Ghana that reported that age positively influenced EBF with the age group of 20-24yrs showing the greatest effect yet in contrast to the same study, age was statistically significant [60]. Moreover, being an older mother is likely to be associated with more experience, added belief and conviction, and commitment to motherhood hence an increased likelihood to EBF since breastfeeding is a learned skill [61].

Studies elsewhere have found no statistical significance between mother's age and EBF just like in our study. These include studies in Ghana [29,41], Somalia [32] and Dhaka, Bangladesh [62].

In our study, 99.5% had had at least one antenatal care contact and 78.6% had had more than 4 contacts. This factor was not significant as far as influence on EBF was concerned. This was in agreement with that reported in Dhaka slums [62] and in Zimbabwe [34] but in contrast to findings in Somalia [32], Ethiopia [30], and Nigeria [63] that reported increased odds for EBF for mothers that had attended ANC and this variable was statistically significant. One of the topics normally covered under antenatal health education services is breastfeeding and that is likely to positively influence exclusive breastfeeding.

The findings in this study showed that mothers who were catholics and protestants were more likely to exclusively breastfeed from other religions (Muslims, SDAs, Pentecostals, traditionalists) (P=0.003, AOR=0.4, 95%CI:0.2-0.72) and was statistically significant. In contrast to our findings, two studies in Ghana [29,60], in Zimbabwe [34] showed no statistical significance.

In a study in Nigeria [64], Islam religion teaching seemed to support prelacteal feeding especially the use of honey, water and tamaru seed to perform a ritual before the child starts taking breastmilk. This ritual called 'Tahneek' is practiced following that of Prophet Mohammed. The Hadith have indicated that Prophet Muhammad softened dates in his mouth and rubbed them over the soft palates of newborns. However this said, the Quran has a rich vein of information in support of breastfeeding[65].In this study, although prelacteal feeds were reported, it was not based on any religious teachings. The most common prelacteal feeds were plain warm water and glucose like it was reported in Zimbabwe[34].

Mothers decried of the need to be supported to EBF. During the qualitative study we found that one of the obstacles to EBF was the maternal responsibilities such as need to fend for other family members and the home chores. This may explain why in Nigeria [63], the rich and middle income women were more likely to exclusively breastfeed because they can probably easily buy breast pumps, can afford refrigerators where to keep the milk and are also likely to have hydroelectric power to keep the fridges on Furthermore, studies in different areas have reported male partner support as a significant factor that enhances EBF [32,66].The male support may be in terms of psychosocial support, provision of drinks and eats that women consider sufficient for breastmilk production, and help with some chores.

In a study in Dhaka, Bangladesh, mothers that had delivered by vaginal route (VD) were more likely to EBF than those that had had caesarean delivery (CD) with statistical significance [62].This was in contrast to our study findings. This can be explained by large differences between two groups in our study population with only 3.9 mothers having delivered by CD compared to 25% in Bangladesh study. However in line with our findings, studies in Ghana [60] and Zimbabwe [34] found it insignificant. Mothers that undergo CD are likely to initiate breastfeeding later than the recommended time of within 1hr and those that initiate breastfeeding late are less likely to EBF.

Although the place of delivery increased the odds of EBF in our study, like in the study in Somalia [32] and Zimbabwe [34] it was not statistically significant However this is important in that health facility is associated with early initiation of breastfeeding and in addition to encouragement from health workers and at times fear by the family members and mothers of being spotted by health workers giving prelacteal feeds, it may increase EBF proportions.

Different patrilineal and patrilocal societies [67] show gender preferences and it has been postulated that this may improve survival of one gender over the other and even breastfeeding duration [68,69].In our study, the gender/sex did not influence EBF. This finding was similar to findings in Nigeria [63]. This was in contrast to findings in Somalia where females where 52% less likely to EBF than their male counterparts [32] and in India [70] where it was reported that males exclusively breastfed compared to the females. This may be because gender preference as an influence on breastfeeding is not as strong as it is, in other parts of the World.

Conclusion

The prevalence of exclusive breastfeeding was 63.3% in the Manafwa district. It is higher than the global UNICEF target of 50% by 2025.Therefore efforts that strengthen EBF through consolidation Infant and Young Child feeding practice should be emphasized as we look towards achieving the ideal 100% EBF. It is important that focus towards the 2030 target of 70% is kept. This is critical in order to achieve SDGs 3.

Uganda government needs to further legislate on policies that will look to provide a longer paid-for maternity leave in addition to providing a breastfeeding friendly work environment such as breastfeeding corners and breastfeeding breaks. Efforts to demystify myths and cultural barriers in addition to male involvement and further emphasis on EBF through antenatal and postnatal care should be strengthened.

Strengths of the study

The items of the questionnaire of this study have been previously validated improving the credibility of our findings. Furthermore, the questionnaire included both open and closed ended items providing a better understanding of the factors associated to the practice of exclusive breastfeeding of the mothers. The study was both health centre-based and community outreaches based and enabled us to capture those mothers that find it difficult to come to health facilities.

Limitations of the study

It is a cross-sectional study and this makes it difficult to establish causality. Our data collection method is also prone to recall and social desirability bias.

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