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Breastfeeding Practices Among Infants and Young Children in Bushenyi, Uganda: Influence of Maternal Knowledge and Occupation

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Abstract: Breastfeeding has proven to be a reference standard for infants' and young children nutrition worldwide. Improvement of breastfeeding rates is important if lives of under-five age children are to be saved yearly. In Uganda, malnutrition remains a serious health problem contributing significantly to both infant and child mortality and this has been attributed to low levels of breast feeding practices. The objective of this study was to assess the influence of knowledge and occupation of mothers on breastfeeding practices of infants and young children in Bushenyi, Uganda. A heath facility-based cross-sectional study was conducted among lactating mothers who attended Kyabugimbi health center IV, Ishaka Adventist Hospital and Kampala International University-Teaching Hospital (KIU-TH). Data was collected using a self-administered structured questionnaire from 346 participants. Majority (87.6%) of the participants had knowledge of the right time to initiate breast milk, majority (87.3%) and (93.9%) had good knowledge of exclusive breastfeeding and complementary feeding duration respectively. Majority (87.6%) of the mothers initiated breast milk within 1 hour of child birth. Only 31.9% of children above 6 months were exclusively breastfed. Majority (81.9%) of the mothers practiced complementary breastfeeding for at least 2 years. House wives have 42% [OR: 1.42, 95% (1.31-3.88) x^2=0.79] higher odds to practice breastfeeding while mothers whose occupation is studentship have 2 times [OR: 2.04, 95% (1.31-3.88) x^2=1.767] higher odds to practice breastfeeding optimally. Young children in Bushenyi district are at risk of malnutrition and childhood diseases as breastfeeding practices especially exclusive breastfeeding do not meet the national and WHO target and recommendation given that only three in ten children were exclusively breastfed. A combination of rural health outreaches and health education could be a possible option for the improvement of breastfeeding practices in the region.

Keywords: Breastfeeding, Bushenyi, Infant, Kyabugimbi, Optimal Breastfeeding, Outreaches

1. Introduction

Proper and adequate feeding practices of infants and young children from birth to 24 months of their lives is of great importance and benefits as it accounts for their changing nutritional requirements. Globally, breastfeeding has proven to be a reference standard for infants' and young children nutrition [32]. Worldwide improvement of breastfeeding rates therefore could save the lives of under-five age children yearly with 87% being those under 6 months of age [32]. The global strategy as recommended by WHO entails that

breastfeeding is initiated within the first hour of birth, and continued exclusively without the introduction of other food substances or water for six months, and at six months when breast milk is no more sufficient to provide the basic and needed nutrients, appropriate complementary foods is introduced with continued breastfeeding up to two years or beyond [30]. As the cases of childhood diseases and malnutrition continue to affect children, breast milk remains a natural antidote to reducing these risks among the infants and children [6]. Adherence of mothers and their support mates to the recommended strategy of early breastfeeding initiation (BI), exclusive breastfeeding (EBF) and timely complementary feeding (CF) is therefore important to prevent infectious diseases, malnutrition and infant morbidity and mortality [13]. Timely initiation of breast feeding may prevent about 20% of neonatal deaths [19, 7] while exclusively breastfed children on the other will be less vulnerable to pneumonia and diarrheal diseases [5]. To the mothers, prevention of breast and ovarian cancers [26], uterine contractions after childbirths [1] and postpartum contractive protection are among the benefits they stand to gain when they breastfeed their infants and children [23, 31]. However, evidence from previous studies revealed that despite the benefits of optimal breastfeeding, the rates of breastfeeding practices around the world is still suboptimal which may affect the attainment of the UN Sustainable Development Goals (SDGs), 2 and 3 which aimed at improved nutrition, and maternal and child health respectively. For instance, it was reported that 4% of infants in low and middle-income countries are never breastfed compared to those in high-income countries where more than 21% never received breast milk [30]. Many factors like socio-economic status, place of delivery, education levels, health providers', culture, practices and market pressures to use breast milk substitutes and poorly implemented and monitored strategies of regulating the marketing of breast-milk substitutes have been reported for the low optimal infant and young children feeding practices around the world [13, 20, 15]. Uganda as a low income country adopted the WHO and United Nations Children's Fund (UNICEF) recommendations for feeding infants and young children in order to achieve the maternal and child health goals and development. Specifically, the Ugandan Government in 2015 recognizing the importance and benefits of early child nutrition set the target for exclusive breastfeeding at 80%. To achieve these targets, the government initiated supportive policies at national and local levels. Despite these commendable policies, malnutrition remains a serious health problem contributing significantly to both infant and child mortality (137 deaths per 1000 live births) and morbidity and this has been attributed to low levels of breast feeding practices [28, 29]. The Uganda Demographic Health Survey (UDHS) report shows that only 63% of infants less than six months are exclusively breast fed and complementary foods are untimely introduced for all children with only 6% of children aged 6–23 months being appropriately fed [27]. This statistics therefore reveals that the EBF targets still seem too far from being achieved especially in rural areas. Consequently, infant malnutrition and mortality rates remain very high; a situation that can be backtracked to early infant feeding practices [28]. Considering the rising statistics of suboptimal breastfeeding practices in Uganda particularly in the rural areas, our previous study assessed the EBF status of breastfeeding mothers in rural Bushenyi district and the findings revealed that only 34.3% of infants less than 6 months were exclusively breastfed and 62.7% of the mothers initiated breastfeeding within one hour of birth [24]. Compared to the national target of 80%, this rate was very low hence exposing the gap for further investigation into possible reasons for the low breastfeeding practice rates in the area. Presently, there is very little information on the current status of breastfeeding practices among mothers of infants and young children in Bushenyi district. The aim of this study therefore was to assess the influence of knowledge and occupation on the breastfeeding practices among mothers of infants and young children in Bushenyi, Uganda.

2. Methodology

2.1. Study Design and Geographical Scope

A cross-sectional study was conducted among lactating who attended Kyabugimbi health center IV, Ishaka Adventist Hospital and Kampala International University-Teaching Hospital (KIU-TH) located in Bushenyi district, Western Uganda. These health facilities were purposively sampled for the study because they offer the needed health services in the region making them well attended by clients and patients from the district and beyond. Kyabugimbi health center IV is a rural health center owned by the government and offers preventive, promotive, outpatient, curative, maternity, In-patient health services, emergency surgery, blood transfusion and laboratory services to a population of about 500 people [16]. Ishaka Adventist Hospital (IAH) is located in Ishaka town, Bushenyi district. The hospital has a capacity of 120 beds and mainly serves the poor from the rural districts of Bushenyi, Mitooma, Sheema, Kasese, Rubirizi and Ntungamo [12, 16]. KIU-TH is a private not-for-profit (PNFP) hospital established in 2004 and officially started in 2007 with over 300 bed capacity. The hospital is located in Ishaka town, Bushenyi district and serves a population of about 1.5 million people [16].

2.2. Sample Size Determination

The sample size was determined using the Kish Leslie (1965) formula ($n=Z^2pq/e^2$) [14]. The proportion of the characteristics in the sample (P) was taken as 34.3% [25], sampling margin of error (e) is 5% and the standard normal deviation (Z) at 1.96 (which corresponds to 95% confidence level). The estimated sample size used in the study was 346.

2.3. Sampling Techniques

The three health facilities were purposively sampled being the largest centres for child health check-ups in

areas while the lactating mothers (respondents) were sampled randomly. The research team and health staff of the maternal and child clinics in each of the sampled health facility briefed the mothers about the objective and benefits of the study. Mothers who consented to participate were then sampled based on the inclusion criteria of mothers of children 1-24 months old. All participants who met the inclusion criteria were given equal chance to participate in the study by asking each of them to pick from an opaque bag a piece of paper. A Mothers who picked an even number (2, 4, 6, 8 or 10) was enrolled for the study while a mother who picked an odd number (1, 3, 5, 7 or 9) was excluded from the study.

2.4. Data Collection and Quality Control

Data were collected using a self-administered structured questionnaire. The questionnaire contained both dichotomous questions and multiple response questions. Quality control was achieved through pretesting of the questionnaire and members of the research team ensured that they carefully and correctly interpreted the questions on the questionnaire to the local *Runyankole* language for those who could not speak or understand English and the answers to respective questions were entered accordingly.

2.5. Statistical Analysis

Responses of participants in the questionnaires were analysed using SPSS (version 20.0) and WINPEPI computer programs to compile totals and percentages. Relationships between variables were evaluated using Chi-square tests. The critical value for significance was set at $P < 0.05$ for all analyses. Descriptive statistics, such as frequency, cross-tabulation, and percentage were used where necessary. Multiple logistic regression was used to explain how the independent variables affect the dependent variable and odds ratios of 95% confidence intervals was calculated. The results were presented in tables. A score of 1 was given to every correct (Good) response for knowledge of breastfeeding and every correct (Good) practice of breastfeeding while 0 was scored for every incorrect (Poor) response and the total scores for each respondent were converted into percentages.

3. Results

3.1. Socio-Demographic Characteristics of the Participants

Three hundred and forty six (346) mothers (respondents) participated in this study. Majority 296 (85.5%) of the respondents were married and 262 (75.7%) of them were Banyankole by tribe. Most 170 (49.1%) of the respondents reported to be Protestants and 122 (35.3%) of them were in the age bracket 25-29 years. Most 115 (33.2%) of the respondents had secondary education as their highest level of attainment and 105 (30.3%) had only a child at the time of this study (Table1).

Table 1. *Socio-Demographic Characteristics of the Respondents in the study.*

Variable	Frequency	Valid percentage	Cumulative percentage
Mothers age (years)			
15-19	22	6.4	15.9
20-24	104	30.1	46.0
25-29	122	35.3	81.2
30-34	65	18.8	100.0
>35	33	9.5	9.5
Marital status			
Single	24	6.9	96.2
Married	296	85.5	89.3
Divorced	13	3.8	3.8
Widow	13	3.8	100.0
Level of Education			
No formal	28	8.1	8.1
Primary	113	32.7	40.8
Secondary	115	33.2	74.0
Tertiary	90	26.0	100.0
Tribe			
Muganda	34	9.8	9.8
Mukiga	22	6.4	16.2
Munyankole	262	75.7	91.9
Mutooro	19	5.5	97.4
Others	9	2.6	100.0
Religion			
Catholic	117	33.8	33.8
Jehovah witness	5	1.4	35.3
Muslim	39	11.3	46.5
Others	15	4.3	50.9
Protestant	170	49.1	100.0
Parity			
1	105	30.3	53.5
2	95	27.5	80.9
3	66	19.1	100.0
>3	80	23.1	23.1

3.2. Index Child Characteristics

Ninety-four (94) which constitute 27.2% of the children in this study were between 1-2 months, and most 188 (54.3%) of the children were females. Most 107 (30.9%) of the children had birth weight between 2.4-3.0 kg and more than half 180 (52.0%) of the children were reported to be healthy at the time of data collection (Table 2).

Table 2. *Index Child Characteristics of mothers who participated in the study.*

Variable	Frequency	Valid percentage	Cumulative percentage
Age of Child (in months)			
<1	33	9.5	9.5
1-2	94	27.2	36.7
3-4	74	21.4	58.1
5-6	51	14.7	72.8
7-11	45	13.0	85.8
12-24	49	14.2	100
Sex of Child			
Female	188	54.3	54.3
Male	158	45.7	100.0
Child's weight at birth (kg)			
1-1.5	3	0.9	26.9
1.6-1.9	6	1.7	28.6
2-2.4	16	4.6	33.2
2.5-3.0	107	30.9	64.2
3.1-3.4	102	29.5	93.6

Variable	Frequency	Valid percentage	Cumulative percentage
>3.5	90	26.0	26.0
Can't remember	22	6.4	100.0
Child's health			
Unhealthy	166	48.0	48.0
Health	180	52.0	100.0

3.3. Knowledge of Breastfeeding Practices of Respondents

The knowledge of breastfeeding practices of respondents in this study was assessed using a two-option question format on BI, EBF and complementary breastfeeding duration (CBD). Majority 303 (87.6%) of the respondents in this study reported that the right time to initiate breast milk is within 1 hour after the birth of a child and 218 (63.0%) stated that early breast milk initiation is beneficial to boosting child's immunity while 128 (37.0%) of the respondents had forgotten. Majority 302 (87.3%) and 325 (93.9%) of the respondents had good knowledge of EBF and CBD respectively. The overall knowledge score of the respondents regarding BI, EBF and CBD showed that 262 (75.7%) had good knowledge while 84 (24.3%) had poor knowledge (table 3).

3.4. Occupation of Respondents in This Study

Of the three hundred and forty-six (346) mothers who participated in this study, most 111 (32.1%) were peasant farmers, 90 (26.0%) were into business (trading) and 42 (12.1%) were house wives. Most 21 (6.1%) were students, 19 (5.5%) were teachers, while 23 (6.6%) of the respondents were in other forms of occupation (Table 4).

3.5. Breastfeeding Practices of Respondents in the Study

The breastfeeding practices of respondents in this study was assessed using a two-option question format on BI, EBF and CBD. Majority 303 (87.6%) of the respondents reported that they initiated breast milk with the index child within 1 hour of the child birth. Of the 252 children who were less than 6 months, majority 180 (71.4%) of them were still been breastfed exclusively while 72 (28.6%) were not breastfed exclusively at the time of this survey. Most 64 (68.1%) of children above 6 months were not exclusively breastfed with only 30 (31.9%) exclusively breastfed. Majority 77 (81.9%) of the respondents reported to have done complementary breastfeeding for at least 2 years. The overall breastfeeding practice score of BI, EBF and CBD of the respondents was good 203 (58.7%) while less than half 143 (41.3%) was poor (Table 5).

Table 3. *Respondents' Knowledge of Breastfeeding Practices*

Variable	Frequency	Valid percentage	Cumulative percentage
Knowledge of Breastfeeding Practices			
Right time to initiate breastfeeding			
After 1 hour	43	12.4	12.4
Within 1 hour	303	87.6	100.0
Benefit of initiation within one hour after a child's birth			
Boost child's immunity	218	63.0	63.0
I Don't know	128	37.0	100.0
Exclusive Breastfeeding is:			
Breastfeeding for at least 4 months without other foods	44	12.7	12.7
Breastfeeding for 6months without other foods	302	87.3	100.0
Complementary breast feeding duration:			
< 24 months	21	6.1	6.1
Till 24 months	325	93.9	100.0
Overall Knowledge of Breastfeeding Practices			
Poor	84	24.3	24.3
Good	262	75.7	100.0

Table 4. *Occupation of Respondents in this study.*

Variable	Frequency	Valid percentage	Cumulative percentage
Business	90	26.0	26.0
Civil servant	10	2.9	28.9
Health worker	30	8.7	37.6
House wife	42	12.1	49.7
Peasant	111	32.1	81.8
Student	21	6.1	87.9
Teacher	19	5.5	93.4
Others	23	6.6	100

Table 5. *Breastfeeding Practices among Respondents in the Study.*

Variable	Frequency	Percentage
Initiation of Breastfeeding (n=346)		
After 1 hour	43	12.4
Within 1 hour	303	87.6
Exclusive Breastfeeding Practice		
Children less than 6 months (n=252)		
Stopped EBF	72	28.6
Still doing EBF	180	71.4
Children above 6 months (n=94)		
Did EBF	30	31.9
Did not do EBF	64	68.1
Complementary breastfeeding Practices (n=94)		
Breast fed less than 2 years	17	18.1
Breast fed for at least 2 years	77	81.9
Overall breastfeeding Practices		
Good	203	58.7
Poor	143	41.3

3.6. Bivariate and Multivariate Analysis of Knowledge and Occupation of Respondents

In the bivariate analysis, breastfeeding knowledge, mothers whose occupation were businesses and civil service were significantly ($p<0.05$) associated with breastfeeding practices. In the multivariate analysis, mothers with poor breastfeeding knowledge were two times more likely not to practice breastfeeding optimally [OR: 2.24, 95%CI (1.31-3.88)]. Similarly, compared to mothers whose occupation were business, civil servants had 86% [OR: 0.14, 95% (1.31-3.88), x^2=9.202], health workers, 44%, [OR: 0.56, 95% (1.31-3.88), x^2=1.59], peasant, 30% [OR: 0.70, 95% (1.31-3.88), x^2=2.292] and teachers, 54% [OR: 0.46, 95% (1.31-3.88) x^2=0.16] had less odds to practice optimal breastfeeding respectively. However, house wives had 42% [OR: 1.42, 95% (1.31-3.88) x^2=0.79] higher odds to practice breastfeeding and mothers whose occupation was studentship had 2 times [OR: 2.04, 95% (1.31-3.88) x^2=1.767] higher odds to practice optimal breastfeeding (Table 6).

Table 6. *Bivariate and Multivariate Analysis of overall breastfeeding Knowledge and Occupation against Breastfeeding Practices.*

Variable	Overall Breastfeeding Practices			O R	95%CI	P -value
Overall breastfeeding knowledge	Good	Poor	Total			
Good	142 (54.2)	120 (45.8)	262 (100.0)	1	1.31- 3.88	0.003
Poor	61 (72.6)	23 (27.4)	84 (100.0)	2.24		
Total	203 (58.7)	143 (41.3)	346 (100)			
	58.7%	41.3%	100.0%			
Occupation	Good	Poor	Total	O R	Chi-sq.	
Business	55 (61.1)	35 (38.9)	90 (100.0)	1	17.651	0.014
Civil servant	10 (100)	0 (0.0)	10 (100.0)	0.14	9.205	0.017
Health worker	14 (46.7)	16 (53.3)	30 (100.0)	0.56	1.905	0.723
House wife	29 (69.0)	13 (31.0)	42 (100.0)	1.42	0.79	0.962
Peasant	58 (52.3)	53 (47.7)	111 (100.0)	0.70	1.59	0.803
Student	16 (76.2)	5 (23.8)	21 (100)	2.04	1.767	0.759
Teacher	8 (42.1)	11 (57.9)	19 (100)	0.46	2.295	0.622
Others	13 (56.5)	10 (43.5)	23 (100.0)	0.83	0.16	0.062
Total	203 (58.7)	143 (41.3)	346 (100)			

4. Discussion

This study sought to assess the influence of maternal knowledge and occupation on breastfeeding practices of infants and young children in Bushenyi district, Uganda. The importance of appropriate breastfeeding practice as a major component of infants and children nutrition is a widely acceptable practice. Previous studies showed that infant feeding especially breastfeeding is influenced by different factors including attitudes, perceptions, social and demographic factors. However, very few of these studies conducted in Uganda explored how the level of knowledge and various occupation of mothers influence breastfeeding practices of infants in rural setting like Bushenyi.

4.1. Knowledge of Breastfeeding Practices

4.1.1. Breastfeeding Initiation

In this study, majority (87.6%) of the mothers were knowledgeable about early or timely (within 1 hour after the birth of a child) breast milk initiation [34], however, only 63% of them knew that early breast milk initiation is beneficial to boosting child's immunity. The findings of this study showed that mothers were more knowledgeable about timely milk initiation when compared to mothers in the study conducted in India by Divya et al., (2015) [8].

4.1.2. Exclusive Breastfeeding

In the present study, majority (87.3%) of the respondents had good knowledge of EBF. This study findings agrees with the 88.6% maternal EBF knowledge reported in Nigeria [17]. However, the present study findings shows the respondents were more knowledgeable in EBF when compared to 40% [11] and 35.7% [2] reported in studies in Ethiopia and Mauritius respectively.

4.1.3. Complementary Breastfeeding

Findings of this study revealed that 93.9% of the mothers knew that duration for complementary breastfeeding should

last for 24 months. The current study findings shows a marked contrast when compared with 36% reported in Ethiopia [11]. Generally, the good knowledge score of breastfeeding practices (75.7%) among mothers in this study agrees with 76.7% reported in Nigeria [21]. This study suggests that the good knowledge of breastfeeding practices could be a reflection of the fact that most of the mother in this study were literate considering their education attainment (secondary and post-secondary levels), hence the existence of the knowledge gap was reduced. Also, because most public health facilities in the district embark on health outreaches to the rural communities, this may have served as the major source of information regarding the benefits and methods of breastfeeding practices.

4.2. Breastfeeding Practices of Respondents

4.2.1. Initiation of Breastfeeding

Early breast milk initiation within 1 hour of a child's birth is very beneficial to both mother and newborn. Initiation helps strengthen the bonding of mother and infant, sustain lactation period as well as prevent death among newborns [9]. In this study, majority (87.6%) of the mothers initiated breast milk within 1 hour of the child birth. This findings agrees with 83.7% reported in Egypt [18] and 87% reported in Bahir Dar city, North Western Ethiopia [22]. Findings of this current study shows a great improvement in early and timely initiation practice within one hour of birth when compared to our previous findings of 62.7% initiation of breastfeeding among mothers in the region [24]. Similarly, the present study findings showed a higher BI rate among the respondents when compared to BI rates of 44.5% and 59.8% within one hour of birth reported in Nigeria [3] and Abu Dhabi [25] respectively.

4.2.2. Exclusive Breastfeeding

In the present study, only 31.9% of children above 6 months were exclusively breastfed. This study finding is low when compared to the national target of EBF coverage of 80% and the WHO recommended EBF coverage of 90% [35]. This study findings also showed a marked decline in EBF rate when compared to previous findings of 84.2% EBF practice reported in Ethiopia [33], 36.8% in Riyadh [4] and 34.3% in Bushenyi, Uganda [24]. However, the EBF rate reported in this study was higher when compared to 17.9% EBF rate among children in the first 6month reported in Mauritius [2]. It is worrisome that despite the good knowledge on breastfeeding practices shown by the mothers in this study the EBF rate was low. The possible reasons for this decline could be attributed to the fact that the major form of occupation among the households in this region is peasant farming and livestock keeping and rearing hence, mothers could have introduced complementary foods like locally prepared cereal porridge/drinks (*bushera*), mashed banana (*matooke*) and/or cow's milk (*amate*), to infants during the first 6 months.

4.2.3. Complementary Breastfeeding

In the current study, 81.9% of the mothers practiced complementary breastfeeding for at least 2 years. The prevalence of CBD among mothers in this study was better practiced when compared with mothers reported in previous in Uganda [10] and Mauritius [2].

4.3. Influence of Maternal Knowledge and Occupation on Breastfeeding Practices

Breastfeeding knowledge and mothers whose occupation are businesses and civil services were significantly ($p<0.05$) associated with breastfeeding practices. This findings correlated with previous study which reported that mothers who are into business activities and housewives were positively associated with breastfeeding practices [22]. In the multivariate analysis, mothers with poor breastfeeding knowledge were two times more likely not to practice optimal breastfeeding. Similarly, Housewives on the other hand had 42% higher odds to optimally practice breastfeeding while students were 2 times more likely to practice the recommended breastfeeding. The possible explanation to this findings could be that housewives who have their own little or retail business outlets close to their homes frequently have access to their children hence, they can properly practice breastfeeding. The mother whose occupation is studentship on the other hand are more knowledgeable about breastfeeding and its benefits as such they tend to practice the recommended breastfeeding.

4.4. Strength and Limitations

The hospitals and health centre used in this study offer the needed health services in the region making them well attended by clients and patients from the district only. Involving participants from these health facilities therefore provide a picture of breastfeeding practice in the district. However, since our data were predominantly collected within the division or municipality of Bushenyi district, it may not be generalized to mothers across other districts in the region and beyond.

5. Conclusion

Young children in Bushenyi district are at risk of malnutrition and childhood diseases as breastfeeding practices especially EBF do not meet the national and WHO target and recommendation given that only three in ten children were exclusively breastfed. A combination of rural health outreaches and health education could be a possible option to improving breastfeeding practices in the region.

Authors' Contributions

SAM contributed to the design of the study and drafted the manuscript. SAM, SDT, GM and KS coordinated the collection of data. ANM, ASF, NL SDT and AR collected the data. SAM, KS, GM, ASF, SDT, KS and AR performed the statistical analysis and interpretation. All authors edited the final draft of the manuscript and approved for publication.

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Availability of Data and Materials

The datasets of the current study can be accessed through the corresponding author on request.

Competing Interests

All the authors declare that they have no conflict of interest regarding this manuscript.

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