

**Bell Nellie Valerie Tayo**  
**Ikhurionan Paul Ehidiamen**  
**Akhigbe Irene Eseoh**  
**Mustapha Ayeshatu Majagbae**  
**Ofovwe Gabriel Egberue**

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## Knowledge, Attitude and Practices of Breastfeeding among mothers of children six months to three years seen at a tertiary children hospital in Freetown

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Ofovwe, Gabriel Egberue (✉)  
 Bell, Nellie Valerie Tayo  
 Ikhurionan, Paul Ehidiamen  
 Akhigbe, Irene Eseoh  
 Mustapha, Ayeshatu Majagbae  
 Ola During Children Hospital,  
 Freetown, Sierra Leone.  
 Email: ofovwegabriel@yahoo.com,

**Abstract:** *Introduction* Severe acute malnutrition accounts for a significant proportion of admission into the tertiary children's hospital in Freetown. However, adequate breastfeeding is supposed to protect against severe malnutrition. Against this background, the knowledge, attitude and practice of mothers of children admitted into the hospital, were assessed to determine the current state of breastfeeding in Sierra Leone.

*Methods:* A structured questionnaire specifically designed and pretested was used to gather information on the knowledge, attitude and practice of breastfeeding of mothers with children aged 3 years and below admitted into ODCH between January and April 2021.

*Result:* Of the 206 mothers studied, 168 (81.6%) were aged 18 to 35 years, 145 (70.4%) married. Thirty-five (17%) respondents had inadequate knowledge, while

61 (29.6%) had poor attitude and 115 (55.8%) poor practice. Factors associated with poor breastfeeding practice include age below 18 years, unmarried mothers and delivery by Caesarian section. Exclusive breastfeeding for 6 months was associated with being married (-0.002). Initiation of breast feeding within 1 hour was associated with being married (-0.001) and vaginal delivery (-0.005) while prelacteal feeding was associated with preterm delivery (-0.020).

*Conclusion:* Despite a high prevalence of adequate knowledge among mothers of children presenting in the facility, the practice of breast feeding remain poor. There is need to provide support to mothers to appropriately carry out good breast feeding practices especially for younger and unmarried mothers and those who deliver via caesarean section.

**Keywords:** Breastfeeding, Knowledge, Attitude, Practice, Freetown

### Introduction

It is estimated that each year, more than nine million children die before the age of five, mostly from preventable causes.<sup>1</sup> About forty-one percent (41%) of these deaths occur in sub-Saharan Africa alone.<sup>2</sup> Under nutrition has been identified as a common underlying cause of deaths in children presenting with infectious diseases in many African studies.<sup>2,3</sup> Exclusive breastfeeding for the first six months of life and critically in the first hour are essential to mitigating this impact.<sup>4</sup> According to the report by Bryce *et al.*,<sup>5</sup> "Infants aged 0-5 months who are not breastfed have a seven fold increased risk of death from diarrhoea and pneumonia compared with infants who are exclusively breastfed". "At the same age, non-exclusive rather than exclusive breastfeeding results in a twofold increased risk of dying from diarrhoea and pneumonia".<sup>6</sup> Studies suggest that a significant propor-

tion of infants who die each year could have been saved if they had been breast-fed.<sup>6,7</sup> Furthermore, the World Health Organisation (WHO) and UNICEF recommend that breastfeeding is crucial to realizing the global commitment to eliminate childhood malnutrition. In a joint statement for the 2021 world breastfeeding week, they reiterated that "Initiation of breastfeeding within the first hour of birth, followed by exclusive breastfeeding for six months and continued breastfeeding for up to two years or beyond, offers protection against all forms of child malnutrition, including wasting and obesity".<sup>8</sup>

In spite of the benefits of breast-feeding, and all the interventions and provisions initiated to promote, support and protect breastfeeding, the rate of breast feeding in many countries is still generally low.<sup>6</sup> Common factors affecting breastfeeding practices include the aggressive marketing of breast milk substitutes, practices at health

facility levels that have the potential to undermine breastfeeding, cultural feeding practices, economics of feeding, convenience, socio economic and demographic factors, and availability as well as employment concerns. Mothers' good knowledge and positive attitude have been shown to play key roles in the process of breastfeeding.<sup>9</sup> A previous study reported that mothers with higher knowledge of EBF were 5.9 times more likely to practice EBF than their counterparts and higher scores of breastfeeding knowledge (OR 1.09; 95% CI 1.04–1.14), attitude (OR 1.04; 95% CI 1.00, 1.09), and practice control (OR 1.11; 95% CI 1.02, 1.20) were associated with a higher prevalence of exclusive breastfeeding.<sup>10</sup>

In Sierra Leone, nearly half a million children under-five are stunted while 30,000 are suffering from malnutrition and at immediate risk of death due to inadequate dietary intake and high disease burden affecting young children.<sup>11</sup> Severe acute malnutrition account for a significant proportion of admission into the tertiary children hospital in Freetown. Sub-optimal breastfeeding practices might be the underlying factor for nutritional deficit in these children. Understanding the knowledge, attitude and practice of breastfeeding and determinants of practice may be a necessary step to help improve nutritional profile of under-five children and reduce childhood morbidity and mortality in Sierra Leone. This study sought to describe the knowledge, attitude and practices of breastfeeding among mothers of children seen at the tertiary children hospital. It is hoped therefore that findings from this hospital-based study will be useful for targeted population strategic interventions, aimed at improving child health in Sierra Leone.

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## Materials and Methods

### *Study design*

A single-centre cross-sectional study was carried out in the Emergency room and in-patient wards of a tertiary Children Hospital, Freetown. The hospital is located in the densely populated eastern part of Freetown, Sierra Leone. The Hospital is established as the only tertiary referral paediatric hospital in Sierra Leone and is part of the University of Sierra Leone Teaching Hospital Complex, comprising six hospitals. It has an in-patient capacity of 197 and an average admission 40 children per day and about fifty are seen on out-patient bases.

### *Participants*

The study participants were mothers of children aged 6 months to 3 years, who were admitted for various conditions. A convenience sampling technique was used to select the study participants. Information regarding demographics, knowledge, attitude, and practices of breastfeeding were collected from the study participants using a pre-designed and pretested proforma. The respondents were required to complete the proforma in the

presence of one of the researchers. The entire questionnaire took approximately 15 minutes to complete.

### *Statistical analysis*

The collected data were organised, tabulated, and statistically analysed using the International Business Machines Corporation (IBM) Statistical Package for the Social Sciences (SPSS) version 21.0 (SPSS for Window Inc; Chicago, LL, USA) Statistical Software. Level of knowledge was dichotomised into adequate and inadequate; attitude into good and poor; and practices into good and poor based on the Food and Agricultural Organization (FAO) guidelines thresholds suggestive of nutrition intervention.<sup>12</sup> Gaps in knowledge, attitude and practices are determined by comparing the percentage of people who gave a desired response to those who did not. A score of 70% or more was considered good score while lower scores were rated poor. Each correct answer was awarded a score of one; while a wrong answer was awarded a score of zero. The total score was calculated by summing up all the awarded scores, and these were converted to percentages. The independent variables included age, marital status, occupation, educational level, number of children, mode of delivery and gestational age at delivery. Differences between frequencies were tested using the Chi square test. A p value of less than 0.05 was accepted as the level of statistical significance.

### *Ethics and consent*

Informed consent to participate in the study was obtained from all participants after explanation of the study objectives and relevance, risks, and benefits. Permission was obtained from the hospital's authority. Participation in the study was entirely voluntary and participants were advised that they could withdraw from the study at any point.

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## Results

### *Sociodemographic characteristics*

A total of 206 mothers of children aged 6 months to 3 years who were seen at the emergency department were recruited for the study. The main characteristics of the sample are described in Table 1. In particular, 168 (81.6%) of the respondents were of reproductive age (18–35 years), 145 (70.4%) were married and about a third of them 64 (31.1%) had no formal education. Most of the participants (64%) had more than one child; almost all had given birth at full term (95.1%) and by vaginal delivery (85.0%).

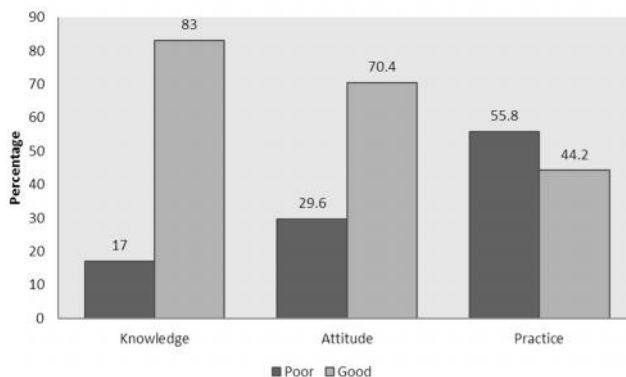
**Table 1:** Characteristics of study participants

Variable	Frequency	Percentage
<i>Age</i>		
< 18 years	20	9.7
18-35 years	168	81.6
> 35 years	18	8.7
<i>Marital status</i>		
Married	145	70.4
Unmarried	61	29.6
<i>Educational Level</i>		
No formal education	64	31.1
Primary	44	21.4
Secondary	83	40.3
Tertiary	15	7.3
<i>Occupational status</i>		
Student/unemployed	97	47.1
Employed	109	52.9
<i>Occupation</i>		
Petty Trader	92	44.7
Skilled worker	11	5.3
Professional	6	2.9
<i>Number of children</i>		
1 child	73	35.4
2-4 children	119	57.8
≥ 5 children	14	6.8
<i>Mode of delivery</i>		
Caesarean section	31	15.0
Normal vaginal delivery	175	85.0
<i>Gestational age at delivery</i>		
Preterm	10	4.9
Term	196	95.1

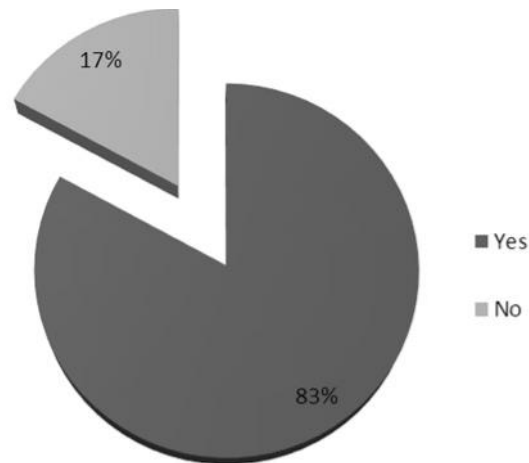
*Prevalence*

Thirty-five (17%) of the respondents had inadequate knowledge, 61/206 (29.6%) had poor attitude and 115/206 (55.8%) had poor practice. Despite a high proportion of mothers with adequate knowledge, the prevalence of poor practice was more than good practices. Also, the prevalence of poor practices was higher than good practices in the study participants. This is shown in Figure 1. One hundred and seventy-one participants (83%) practiced colostrum feeding (Figure 2), 187 mothers (90.8%) avoided prelacteal feeding (figure 3) and 132 (64.0%) had initiated breastfeeding within one hour of delivery (Figure 4). Only 136 participants (66.0%) had exclusively breastfed their babies for the first 6 months of life (Figure 5).

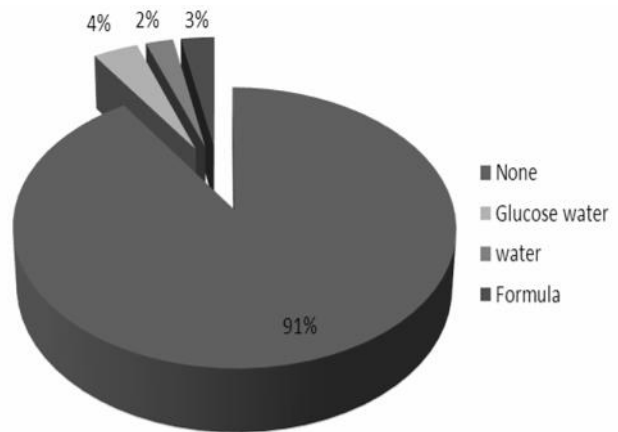
**Fig 1:** Prevalence of good and poor knowledge, attitude and practice of breastfeeding among study participants



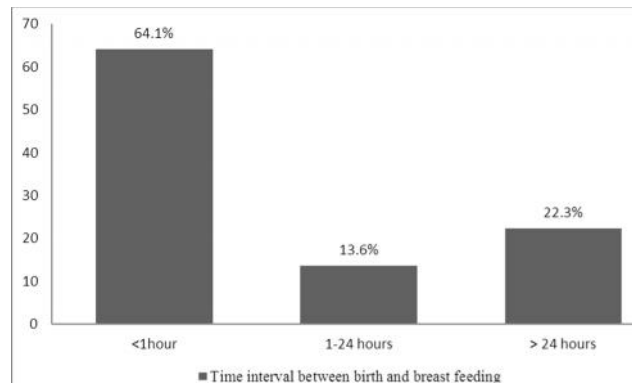
**Fig 2:** Prevalence of colostrum feeding among study participants



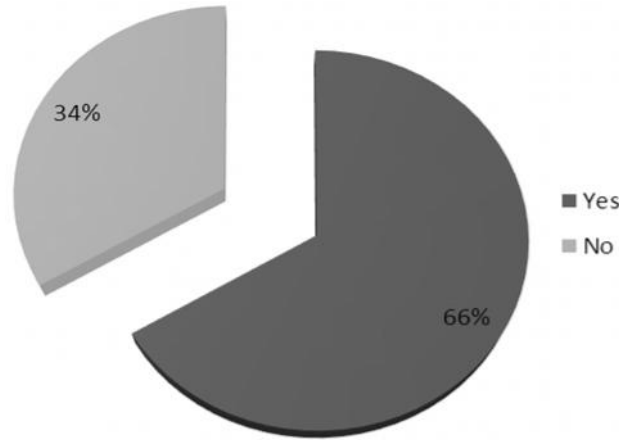
**Fig 3:** Prevalence of prelacteal feeding among study participants



**Fig 4:** Duration of initiation of breast feeding among mothers



**Fig 5:** Exclusive breastfeeding rate among study participants Bivariate statistics



**Knowledge**

None of the factors (Age, marital status, working status, formal education status, number of children, gestational age at delivery and mode of delivery) was associated with inadequate knowledge (Table 2).

**Table 2:** Factors associated with inadequate knowledge of breast feeding

Variables	Inade-quate	Ade-quate	<sup>2</sup>	P
<i>Age</i>				
< 18 years	6	14	2.757	0.216
18-35 years	27	141		
> 35 years	2	16		
<i>Marital status</i>				
Married	20	125	3.549	0.060
Unmarried	15	46		
<i>Education status</i>				
No formal education	11	53	0.003	0.960
Educated	24	118		
<i>Occupational status</i>				
Student/Unemployed	13	84	1.674	0.196
Working	22	87		
<i>Parity</i>				
1 child	15	58	1.015	0.314
2 or more children	20	113		
<i>Mode of Delivery</i>				
CS	6	25	0.145	0.704
Vaginal delivery	29	146		
<i>Gestational age</i>				
Preterm delivery	2	8	0.068	0.795
Term delivery	33	163		

**Attitude**

Similarly, none of the maternal factors (Age, marital status, working status, formal education status, number of children, gestational age at delivery and mode of delivery) was associated with poor attitude (Table 3).

**Table 3:** Factors associated with poor attitude to breast feeding

Variables	Poor	Good	<sup>2</sup>	p
<i>Age</i>				
< 18 years	7	13	0.309	0.579
18-35 years	54	132		
> 35 years				
<i>Marital status</i>				
Married	45	100	0.476	0.490
Unmarried	16	45		
<i>Education status</i>				
No formal education	18	46	0.098	0.754
Educated	43	99		
<i>Occupational status</i>				
Student/Unemployed	34	63	2.603	0.107
Working	27	82		
<i>Parity</i>				
1 child	25	48	1.165	0.280
2 or more children	36	97		
<i>Mode of Delivery</i>				
CS	10	21	0.123	0.726
Vaginal delivery	51	124		
<i>Gestational age</i>				
Preterm delivery	4	6	0.544	0.461
Term delivery	57	139		

**Practice**

Factors associated with poor practices included maternal age (<sup>2</sup> -5.991; -0,014); marital status (<sup>2</sup> - 7.559; - 0.006) and mode of delivery (<sup>2</sup> -9.16, -0.003). Older mothers and married women had better practices than younger mothers and unmarried women respectively. Similarly, women who had vaginal delivery had better practices than those who delivered by caesarean section.

**Table 4:** Factors associated with poor practice of breast feeding

Variables	Poor	Good	<sup>2</sup>	P
<i>Age</i>				
< 18 years	14	6	5.991	0.014*
18-35 years	96	72		
>35 years	5	13		
<i>Marital status</i>				
Married	72	73	7.559	0.006*
Unmarried	43	18		
<i>Education status</i>				
No formal education	34	30	0.275	0.600
Educated	81	61		
<i>Occupational status</i>				
Student/Unemployed	57	40	0.642	0.423
Working	58	51		
<i>Parity</i>				
1 child	45	28	1.552	0.213
2 or more children	70	63		
<i>Mode of Delivery</i>				
CS	25	6	9.116	0.003*
Vaginal delivery	90	85		
<i>Gestational age</i>				
Preterm delivery	7	3	0.856	0.355
Term delivery	108	88		

*Factors associated with specific practices*

Factors that were associated with specific practices were included marital status, gestational age and mode of delivery. Married mothers were more likely to initiate breast feeding within one hour ( -0.001), practice colostrum feeding ( -0.007) and exclusive breast feeding for six months ( -0.002). Preterm gestation was associated with higher likelihood of prelacteal feeding ( -0.002) while vaginal delivery was associated with higher likelihood of initiating breast feeding within one hour of delivery ( -0.005).

**Table 5:** Factors associated with specific practices of breast feeding

Practices	Associated factors	<sup>2</sup>	p
Initiation of breast feeding within 1 hour	Marital status	10.296	0.001
	Mode of delivery	7.772	0.005
Prelacteal feeding	Gestational age	5.419	0.002
Colostrum feeding	Marital status	7.272	0.007
6 months exclusive breastfeeding	Marital status	9.571	0.002

*Source of breastfeeding information*

Most of the respondent had multiple sources of information. Nurses and midwives (81.1%), family members (55.3%) and doctors (42.7%), were the most common sources of information. Other sources included friends (25.7%), Breastfeeding classes (19.9%), Breastfeeding campaigns (17.5%) and TV programme (17.5%). The internet was only used by 1.0% of respondents to get information on breastfeeding.

**Discussion**

The findings of this study show that despite adequate knowledge in over 80% of study participants, three in ten mothers had poor attitude and more than half of them had poor practice of breast feeding. Two-third of the participants had exclusively breast fed their babies. Most mothers practices colostrum feeding and less than one in ten mothers gave prelacteal feeds. Factors associated with poor breastfeeding practice include age below 18 years, unmarried mothers and delivery by Caesarian section.

In our study, more than four in five participants had appropriate knowledge. The prevalence of adequate knowledge in the present study is higher than what was reported in in Abu Dhabi, United Arab Emirate (51.2%);<sup>(13)</sup> Somaliland, Ethiopia (42.9%),<sup>(14)</sup> and Kersa district, Etiopia (27.5%).<sup>(15)</sup> The high percentage of participants with adequate knowledge may be related to the fact that most participants had received information on breast feeding from health workers. Previous studies have shown that mothers who received counselling from health workers had better knowledge of breast feeding

compared to other sources of information.<sup>16</sup>

The proportion of mothers with good attitude towards breast feeding in the present study (70.4%) is lower than 89.5% reported in Ethiopia<sup>1</sup> and 88.8% among Saudi mothers.<sup>17</sup> It is however higher than the observation of Abdulreesh et al<sup>18</sup> in Saudi Arabia which showed that majority of mother (55.8%) had negative attitude towards breastfeeding. Almost half of our study participants (53.9%) didn't believed that breast milk could be expressed, and stored for later use. Similar proportions (48.1%) also believed that breastfeeding should be stopped with maternal illness. A good attitude towards breast feeding is a key factor to initiate and maintain breastfeeding.<sup>17</sup>

Poor breast-feeding practice was observed in more than half (55.8%) of the study participants. Despite high proportion of mothers having adequate knowledge; this did not translate into good practice. Similar observation was made by previous studies.<sup>16,19,20</sup> This observation suggests that there may be other factors apart from knowledge that influence peoples practice of breastfeeding. Cultural beliefs, social stressors, work-related interruptions and misconceptions about exclusive breast feeding have been previously shown to significantly impact on breastfeeding practices. Nsiah-Asamoah and colleagues reported that common misconception among Ghanaian mothers included the perceptions that grandmothers did not practice exclusive breast feeding but their children grew well and that breast milk was watery in nature and does not satisfy infants.<sup>21</sup> These beliefs are also commonly reported among mothers in Sierra Leone.

Concerning specific breast feeding practice, our findings showed that about two-third of participants had exclusively breastfed their babies for the first six months of life. The prevalence of exclusive breast feeding in our study is lower than the WHO recommendation of 90% for African populations. Our observation is however, comparable with reported prevalence from Nigeria (55.6%)<sup>22</sup> and South India (72%).<sup>16</sup> Some other countries have however reported lower prevalence including Italy (33.3%)<sup>23</sup>, Pakistan (32%)<sup>19</sup> and South Jordan (20.9%)<sup>24</sup>. Possible reasons for the low prevalence of exclusive breastfeeding include misconceptions regarding the inadequacy of breastmilk to meet the nutritional needs of the child and poor understanding of healthcare professional's advice.

The use of colostrum and avoidance of pre-lacteal foods are cornerstones in achieving exclusive breast feeding. In the present study, colostrum feeding was practiced by most of mothers while less than one in 10 mothers reported giving prelacteal feeds. The prevalence of colostrum feeding in our study is similar to prevalence reported in studies among Ethiopian mothers,<sup>1,13,23,24</sup> Saudi Arabia<sup>27</sup> and in United Arab Emirates.<sup>12</sup> Also, the proportion of mothers who practiced prelacteal feeding in the current study (9%) is comparable with findings in Ethiopia<sup>23</sup> (11.6%) and South India<sup>28</sup> (10.5%). Studies from Nigeria<sup>29</sup> (85.2%), Egypt<sup>30</sup> (57.8%) and Pakistan<sup>31</sup>

(64.7%) have however reported higher prevalence of prelacteal feeding among mothers. Reasons for prelacteal feeding identified by previous researchers include cleansing and preparing the baby's gastrointestinal tract for digestion, quenching thirst, flushing the bladder, affording mother enough time to rest, insufficient breast-milk, unclean colostrum, prevention of dehydration and hypoglycaemia.<sup>29</sup>

Two-third (64.1%) of mothers in our study initiated breast feeding within 1 hour of delivery. This is comparable with 59.9% reported in South-Western Ethiopia,<sup>1</sup> 72.6% in United Arab Emirate<sup>12</sup> and 72.4% in South Jordan.<sup>24</sup> Higher prevalence (83.7%) have been reported in Egypt.<sup>32</sup> The proportion of mothers who initiated breast feeding within one hour in the present study was however, higher than 56.5% reported in South-west, Nigeria;<sup>22</sup> 41% in Lahore, Pakistan<sup>19</sup> and 36% in India.<sup>7</sup> Most of the children of mothers in the current study were delivered via SVD. This may partly be responsible for the relatively high prevalence of early initiation of breast feeding among mothers. Similarly, most of the study participant knew that breast milk should be the child first feed and that a baby should be put to breast within one hour.

In the present study, older mothers and those who were married had better breast feeding practices compared to younger and unmarried mothers. The maturity and confidence gained with age might have been responsible for better practices among older and married women. Similarly, the impact of marriage and supporting fathers on the ability of mothers to practice appropriate breastfeeding has been highlighted by previous studies.<sup>(33,34)</sup> It is also likely that and the pressure to return to schools might have been responsible for early discontinuation of exclusive breast feeding and the introduction of complementary feeding among younger mother. The poor breastfeeding practices among younger mothers observed in our study thus highlights the negative impact of adolescent pregnancy on the infant nutrition and well-being.

The mode of delivery was significantly associated with breast feeding practice in our study population. Delivery

via vaginal delivery was associated with better practices than caesarean delivery. Similar observation was made in previous studies.<sup>19,25</sup> It is likely, that delayed ambulation and pain associated with caesarean delivery may have negatively imparted on the breastfeeding practices of mothers who had caesarean deliveries. Similarly, mothers who delivered by vaginal delivery are likely to participate more actively in the care of the baby before discharge. Studies have shown that practicing exclusive breast feeding in the hospital before discharge is associated with its continuation following discharge.<sup>23</sup> The lack of influence of knowledge and attitude on breast feeding practices in our study has implications for achieving the WHO breastfeeding goals in Sierra Leone. The findings of this study emphasizes the need to provide support to mothers to appropriately carry out good breast feeding practices especially for younger and unmarried mothers and those who deliver via caesarean section. Health workers and midwives supervising deliveries are central to helping mothers initiate and perform appropriate breastfeeding practices in the hospitals and after discharge.

### Limitation

One limitation of our study is that the index child was up to 36 months and thus recall bias might have affected our results. Similarly, the used of a hospital based sample may have included participants with better health seeking behavior and thus better knowledge and attitude. This may not reflect the true situation in the community.

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### Conclusion

Majority of the mothers had the knowledge of breastfeeding. But there was a noticeable deficit in the implementation of knowledge in their breastfeeding practice. The percentage of exclusive breastfeeding practice was remarkably low. Young and unmarried mothers have poorer practice of breast feeding. Steps should be taken to support mothers of all backgrounds, marital status and educational status to practice appropriate and adequate breastfeeding.

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