A Qualitative Study on Factors Affecting Exclusive Breastfeeding Practice Among Nursing Mothers in South-East Nigeria

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Abstract

Despite the benefits and efforts to promote exclusive breastfeeding (EBF), the practice is sub-optimal in many low-to-middle income countries including Nigeria. The practice of EBF is reported to be influenced by different socio-cultural factors, habits, standards, and behaviors. Hence, identifying these factors that affect EBF practice could facilitate development of interventions to tackle them.

This study aimed to identify the recurring barriers to EBF practice by nursing mothers in South-Eastern Nigeria.The study followed a qualitative approach, employing a phenomenological study design. South-Eastern part of Nigeria was conveniently selected for this study and carried out in the five states of the South-Eastern part of Nigeria. In each of the states, one rural and one urban health facility was selected conveniently and data was collected from nursing mothers who did not practice EBF assessing care in the Postnatal and Pediatric wards in the selected health facilities. The study participants include all the nursing mothers who did not practice EBF assessing care in the selected health institutions at the time of the study. A face-to-face interview was conducted on nursing mothers using an in-depth interview guide. Data were analyzed thematically. A total of four themes and seven sub-themes were identified as recurring barriers to EBF practice by the nursing mothers. The four themes were maternal-infant factors; support structures related factors; economic factors and traditional and sociocultural beliefs. Our findings revealed that maternal-infant factors and economic factors were the major and least barrier to the practice of EBF respectively. This study identified the recurring barriers to EBF practice by nursing mothers in South-Eastern Nigeria. Maternal-infant factors were the most common barrier to EBF practice. Interventions that focus on addressing these maternal-infant factors are therefore of great importance. Addressing these challenges will promote EBF practice with its intended benefits and ultimately improve maternal-child health outcomes.

Keywords: Barriers, breastfeeding, EBF, nursing mothers, qualitative studies, South-East Nigeria.

Introduction

Breastfeeding is one of the best values among investments in child survival, nutrition, and development, and evidence of its wide-ranging benefits is compelling (UNICEF, 2013). Even though it is a natural act, breastfeeding is also a learned behavior. Virtually all mothers can breastfeed provided they have accurate information, and support within their families and communities and from the healthcare system (WHO & UNICEF, 2003). Breastfeeding is arguably the single most effective preventive intervention for reducing mortality in children less than five years (Koyanagi et al., 2009; Kuhn et al., 2007). Breastfeeding is reported to be influenced by different socio-cultural factors, habits, standards, and behaviors (Diji et al., 2017; Kong & Lee, 2004; Ma et al., 2009; Wambach et al., 2016). Literature shows that cultural traits related to breastfeeding may be harmful, or beneficial to optimal breastfeeding practices (Mgongo et al., 2019). The harmful cultural traits reported to affect optimal breastfeeding practices include: giving prelacteal feeds, discarding colostrum, and avoiding breastfeeding after quarreling as a result of 'fear of bad blood entering the milk which may later affect the child.' These beliefs and practices are reported to lead to early cessation of EBF and breastfeeding in general (Hizel et al., 2006; Shirima et al., 2001; Wanjohi et al., 2017). In other settings, lack of support from family members or healthcare professionals, peer pressure, mothers' body image, the role of women in the reproduction process, and pressure to use artificial feeding has led to early cessation of EBF and breastfeeding (Daglas & Antoniou, 2012; Diji et al., 2017; Kimani-Murage et al., 2015).

Exclusive breastfeeding during the first 6 months of life provides sufficient nutrients for the infant to support good health, growth, and development. EBF and continued breastfeeding up to 11 months can singularly prevent 13% of all annual deaths occurring in infants worldwide (Jones et al., 2003; World Health Organization, 2017). The promotion of EBF is a vital public health strategy to prevent morbidity and mortality in infants. EBF rates have remained stagnant globally since 1990 with only 36% of children aged less than 6 months exclusively breastfed in 2012 and with only a slight increment in the year 2016 (i.e. 40%) in the same age bracket (Victora et al., 2016). World Health Organization (WHO) reported that only 39% of all infants under six months in developing countries were exclusively breastfed for the first six months of life; 6% of infants were never breastfed (WHO, 2007). In Nigeria, the Federal Ministry of Health (FMOH) in her document "Saving Newborn lives Maternal and Child Health" reported that Nigeria has one of the lowest EBF rates in the African continent (Federal Ministry of Health, 2011). The recent data indicated that the percentage of infants exclusively breastfed to the age of six months fluctuates from 17% in 2003 to 13.1% in 2008 and returned to 17% in 2013, while the proportion of children less than six months who received complementary foods increased from 18% to 35% in 2008 and declined to 23% in 2013 (Nigerian Demographic & Health Survey [NDHS]) (Alade, 2013). This could be a result of the increase in the promotion of complementary

foods and inadequate/inconsistencies in the promotion of EBF.

To ensure that nursing mothers breastfeed their children exclusively, they should also have access to skilled practical help from, for example, trained health workers, lay and peer counselors, and certified lactation consultants, who can help to build mothers' confidence, improve feeding technique, and prevent or resolve breastfeeding problems (WHO & UNICEF, 2003). Women in paid employment can be helped to continue breastfeeding by being provided with minimum enabling conditions such as paid maternity leave, part-time work arrangements, on-site crèches, facilities for expressing and storing breast milk, and breastfeeding breaks. Mothers should also be able to continue breastfeeding and caring for their children after they return to paid employment. This can be accomplished by implementing maternity protection legislation and related measures consistent with International Labour Organization (ILO) Maternity Protection Convention, 2000 No. 183 and Maternity Protection Recommendation, 2000 No. 191 which states that maternity leaves, day-care facilities, and paid breastfeeding breaks should be available for all women employed outside the home (WHO & UNICEF, 2003).

Various studies have reported factors associated with EBF practice with the majority focusing on the quantitative aspect. No study so far has performed a qualitative study of these factors to report the barriers that influence EBF practice in South-Eastern Nigeria from the perspective of the nursing mothers. Such information could be used to develop communication strategies that will be employed during individual and group patient education (for example ante-natal or post-natal) in the hospitals to improve nursing mothers' understanding, acceptance, and practice of EBF. Therefore, this study aimed to identify the recurring barriers to EBF practice by nursing mothers in South-Eastern Nigeria. Findings from this qualitative study will be used in the design of an educational intervention towards improving EBF practice among nursing mothers and also inform policymakers implementation strategies to support and increase EBF practices among Nigerian nursing mothers.

Methods

Study design

The study was a cross-sectional study of nursing mothers who did not practice EBF assessing care in the selected health facilities at the time of the study. Convenience sampling technique was employed in selecting the geopolitical zone in Nigeria and the hospitals used in the various states. The study followed a qualitative approach, employing a phenomenology study design. Phenomenology study design entailed that important information was elicited to gain insight on mothers' experiences and understanding of the phenomenon, EBF. Qualitative research questions such as: 'what' was happening and, 'why' was it happening, and 'how' it happened as experienced by the nursing mothers was answered from the information collected by employing this study design (Alade, 2013; Malterud, 2001).

Study area

The study was carried out in the selected rural and urban health facilities in the five states of the South-Eastern part of Nigeria. South-Eastern Nigeria is located within latitudes 4° 47' 35" N and 7° 7' 44" N, and longitudes 7° 54' 26" E and 8° 27' 10" E and is made up of five States namely; Abia, Anambra, Ebonyi, Enugu and Imo (Anejionu & Nwilo, 2013). In each of the states, one rural and one urban health facility was selected conveniently and data was collected from nursing mothers who did not practice EBF assessing care in the Postnatal and Pediatric wards in the selected health facilities. The health facilities selected were Federal Medical Center (FMC) Umuahia and Amachara General Hospital in Abia State; Chukwuemeka Odumegwu Ojukwu University Teaching Hospital (COOUTH) Awka and Ofuobi Health Center Ebenebe in Anambra State; Alex Ekwueme Federal University Teaching Hospital Abakaliki (FETHA) and Mile 4 Hospital, Isieke in Ebonyi State; Enugu State Teaching Hospital (ESUTH) Parklane, and Agbadala Health Centre Oji River in Enugu State; and Federal Medical Center (FMC) Owerri and Umuguma Health Center (UHC) in Imo State representing the urban and rural health facilities respectively in each state. This study focused on an in-depth understanding of EBF as a phenomenon, and hence targeted mothers who did not practice EBF.

Sample size calculation

This was a total population study of all the nursing mothers who did not practice EBF assessing care in the selected health institutions at the time of the study and who gave their consent to participate. These nursing mothers were selected from the total women who were assessing care in the various health institutions after an intitial survey was performed to identify nursing mothers who did not practice EBF.

Inclusion criteria

Nursing mothers who did not practice EBF with children zero to twelve months assessing care in the postnatal and pediatric wards of the selected health facilities during the time of the study were included.

Exclusion criteria

Nursing mothers with children zero to twelve months who practiced EBF and/or not willing to participate in the study were excluded.

Data collection

The data collection item included infants' and mothers' information. A validated in-depth interview guide which has 11 questions was used (Appendix 1). The questions were selected based on the phenomenology study design which entailed that important information was elicited to gain insight on mothers' experiences and understanding of the phenomenon, EBF. Qualitative research questions such as: 'what' was happening and, 'why' was it happening, and 'how' it happened as experienced by the nursing mothers was answered from the information collected by employing this study design (Malterud, 2001; Pope & Mays, 1995). A face-to-face interview was conducted with selected nursing mothers. The selected mothers are those who satisfied the inclusion

criteria. The interview sessions were audio-taped and note taken by the research assistant and each interview lasted for 7-10 minutes for three months the study was conducted.

Data analysis plan

All interviews were transcribed verbatim in English where the Igbo language was used for those who could not understand the English language in a back forward translation by the language transcriber. Thematic analysis was used to check for emerging themes from the respondents' accounts of breastfeeding experiences. Using thematic analysis, all the transcripts were thoroughly read line by line to identify meanings and accounts, and these were compared with one another to identify commonalities among them (Green et al., 2004).

Ethical Consideration

Permission to conduct the study was obtained from the Nnamdi Azikiwe University Teaching Hospital (NAUTH) Ethical Committee (NAUTH/CS/66/VOL.13/VER.2/42/2020/034) on 6 August, 2020. Oral consent was obtained from every participant that took part in the study after explaining to them the objectives of the study. Participants were assured of their confidentiality and that collected information was purely for research purposes.

Results

Study Participants and Barriers to the practice of EBF (EBF)

A total number of 496 nursing mothers participated in the study (80 in Abia, 82 in Anambra, 101 in Ebonyi, 113 in Enugu, 120 in Imo). The thematic data analysis identified four themes and seven sub-themes (Table 1) as barriers to EBF practice by the nursing mothers.

Table 1. Major themes and sub-themes of barriers to EBF practice

Themes	Sub - Themes	Codes
1.Maternal-infant factors	1.1 Maternal factors	1.1.1. Mother's formal (employment) and informal work schedules
		1.1.2 Perceived breast milk insufficiency

		1.1.3 Delayed milk let-down
		1.1.4 Poor understanding/lack of knowledge/awareness of EBF benefits
		1.1.5 Schooling or resuming school or work
		1.1.6 Type of delivery (cesarean section)
		1.1.7 Sick mother
		1.1.8 For easy conception
	1.2 Infant factors	1.2.1 Multiple births
		1.2.2 Unsatisfied baby
		1.2.3 Infant's difficulty in latching or positioning and refusal to breastfeed
		1.2.4 To prepare a child for weaning
		1.2.4 Stature/size of baby
		1.2.5 Sick baby
		1.2.6 Baby teething
	1.3 Breast-related factors	1.3.1 Some breast conditions (cracked, painful or sore nipples)
2. Support structures related factors	2.1 Family and friends influence	2.1.1 Influence of husbands, mother/mother-in-law/grandmother, other family members, and friends
	2.2 Influence of health systems	2.2.1 Influence of HCWs such as inaccurate/conflicting advice or messages shared by HCWs and inadequate breastfeeding education, counseling, and support by HCW
3. Economic factors	Financial constraints	3.1.1 Lack of resources to ensure adequate maternal nutrition

4. Traditional and sociocultural beliefs	4.1 Cultural practices
	4.1.1 To avoid contaminated milk (such as from pregnancy, mourning, sexual relationship with a spouse)
	4.1.2 Practice of giving water

Maternal-Infant Factors

Findings revealed that maternal factors such as mother's formal (employment) and informal work schedules; perceived breast milk insufficiency; and poor understanding/lack of knowledge/awareness of EBF benefits were the barriers to EBF practice by the nursing mothers (Table 1). Likewise, infant factors such as multiple births; unsatisfied babies, and infant's difficulty in latching or positioning were reasons why the mothers did not breastfeed their children exclusively (Table 1).

Mother's formal (employment) and informal work schedules

This study identified maternal employment and heavy workloads or schedules as barriers to the practice of EBF by nursing mothers. Mothers reported that their tight work schedules interfered with the practice of EBF as they revealed they cannot carry the children along when performing some work or errands. Most of these mothers work away from home and they stay away for at least 8 hours daily except on Sundays leaving their children in the care of caregivers who feed them other foods until their return. Typical statements from participants were as follows:

"I can only breastfeed her at night when I come back from work, and give other food to her during the day."

Perceived breast milk insufficiency

Mothers were concerned about the sufficiency of their breast-milk and reported that insufficient breast milk was a major hindrance towards attaining optimum EBF. This puts mothers in a state of despair. Participants lamented:

"My breast milk was not coming out well, so I gave him water and also formula milk."

Delayed milk let-down

Admittedly, mothers stated that they could not afford to keep their babies hungry by waiting for the milk to start coming out immediately after delivery, so they had to give water and infant formula while waiting for milk let-down. This was common in primiparous and women who gave birth through cesarean section. Participants expressing their frustration stated:

"I usually give formula milk and water for the first few days after delivery because my milk does not come out immediately."

Poor understanding/ lack of knowledge/ awareness of EBF benefits

Nursing mothers demonstrated poor awareness and understanding of EBF and this affected their practice. These mothers lacked the knowledge of the benefits associated with EBF practice so they felt EBF was not important. Some of them (mothers) argued that there were no added benefits an exclusively breastfed child has over one who is not breastfed exclusively. They insisted that the purported benefits of EBF are just mere claims. Some primiparous mothers revealed that they did not practice EBF because they did not understand what EBF was all about. In their ignorance, mothers stated that EBF is not good as water is a necessity for all human lives. Participants stated:

"I don't understand anything about EBF, and I don't think it is important at all."

"I do not see anything special with it; for the two of my other children, I didn't do it and they are coming first in their class."

"There is no difference between a child who is exclusively breastfed and the one who is not, all of them will get sick eventually."

"EBF is not necessary, I did not do it and my baby has not fallen sick."

"….this is my first child, I did not practice EBF because I did not understand it."

"EBF is not good because water is very necessary and not breast milk all the time."

Schooling or resuming school or work

Mothers' schooling, resuming school, or work was stated as barriers to the practice of EBF. These mothers complained that breastfeeding was time-consuming and they faced difficulties integrating it into their work/school schedule. Therefore, they chose bottle-feeding because it gave them more freedom to carry out their daily activities. Participants stated:

"I am still a student. I can not carry my baby to school."

Type of delivery (cesarean section)

Mothers who birthed through cesarean section (CS) revealed that this type of delivery was a barrier to the practice of EBF. These mothers lamented they could neither initiate breastfeeding immediately after delivery nor sustain EBF practice because of the physical (severe pain) and/or emotional (depression) challenges they experience after giving birth. Participants stated:

"I was going through so much pain after the CS so breastfeeding my child exclusively was not just possible for me. The baby was given formula milk."

Sick mother

Mothers admitted that they introduced other foods to their children because they were sick and unable to breastfeed their infants exclusively. Participants stated:

"I was too sick after delivery, was having fever, and too weak to even breastfeed."

For easy conception

Mothers admitted that they chose not to practice EBF because they wanted to get pregnant easily as they associated EBF with

contraception. This was common in older mothers and mothers who had delays in getting pregnant. These mothers stated they needed to give birth to as many children as possible before menopause.

"…….my husband and I decided that I will not exclusively breastfeed any of our children so I can conceive easily and have many children."

Multiple births

Mothers who had more than one baby in one pregnancy revealed that they cannot cope with the demands of EBF for the children so they introduced other foods. Mothers' explained that they find it difficult to breastfeed one child exclusively let alone breastfeeding more than one. Buttressing this point, participants stated:

"I can't give the twins only breast milk, it won't be enough for them."

"It is not easy to breastfeed one talk more of two."

"It is not easy to breastfeed them ooo. I cannot cope."

Unsatisfied baby

Mothers complained that they introduced other foods because they perceived that their children were unsatisfied as they suck breast for a longer time and cry persistently even immediately after being breastfed especially as they get older. These mothers interpreted the cry to mean the baby is unsatisfied and still hungry and this led them to introduce water and/or other foods. Mothers revealed that unsatisfied babies refuse to sleep as they suck breast for a long time but on the introduction of water and/or other foods to their children, they get satisfied hence sleep better . Participants stated:

"……my baby is always sucking, he does not sleep at night but sucks throughout the night, but the day I decided to give him water he slept very well and did not cry as before."

"My baby cries too much so I had to give her water and other family food so I can rest and she will stop disturbing me."

Infant's difficulty in latching or positioning and refusal to breastfeed

Infants' difficulty in latching or being positioned well for breastfeeding discouraged some mothers from practising EBF. In some cases, the child simply refuses to breastfeed or latch onto the breast, forcing the mother to introduce other foods. Participants stated:

"I don't know o, my baby refused my breast milk. She prefers sucking from feeding bottle."

To prepare a child for weaning

The majority of the mothers admitted that they introduced other foods earlier than the recommended 6 months by WHO because they want to prepare the child for weaning to avoid feeding difficulties associated with weaning. Mothers expressed fears of children refusing other foods when the child is to be

weaned and some explained that children who are exclusively breastfed usually face feeding challenges in the future as most of the children become picky eaters. They associated EBF with feeding difficulties such as picky eating in children which progresses to adult life. This fear made them practice mixed feeding and discouraged EBF practice.

"If I don't start on time to give him pap, he would not want to take it later on as he will want only breast milk all the time."

"My first child refused to take other food apart from breast milk after breastfeeding her exclusively for six months even up till now, she is still not eating well but I did not do it for the younger ones and they are eating well."

Stature/size of baby

Mothers stated that they gave their children both breast milk and other foods because their children were underweight and they hoped the combination will increase the weight of the child.

"My baby is too lean, so I had to add complan milk so that she will be big."

Sick baby

Mothers reported that they stopped EBF practice because their children got sick and were unable to suck. Mothers complained that once their children get sick, they refuse breast milk so they had to introduce other foods. Participants stated:

"My baby was sick and refused to suck, so I had to give him soy milk."

Breast conditions

Mothers reported that breast conditions like swollen breasts, sore, cracked, or painful nipples were barriers to babies being breastfed exclusively. Mothers reported that nipple pain, especially during the first 2 weeks of breastfeeding, was among the factors that forced them to introduce alternative foods earlier than anticipated. Some mothers stated that they did not attempt EBF because they have big breasts; big breasts do not produce sufficient milk. Participants stated:

"My nipples pain me badly any time I give him breast milk; I had to introduce formula milk."

"I have big breasts and they do not produce enough milk."

Influence of Support Structures

Support structures such as are family members, friends, and healthcare systems were identified to have a significant influence on EBF practice. Mothers emphasized that lack of support from these support structures made them not to breastfeed their children exclusively.

Influence of family members and friends

Lack of support from members of the family such as husbands, mothers, mothers-in-law, grandmothers, other family members, older mothers, and friends was some of the barriers mothers reported that made them not to breastfeed their children exclusively. Mothers complained that even when they desire to practice EBF, family members gave

their children other foods without their consent. Some mothers stated that their EBF practice was interrupted by the visit of their mothers or mother inlaw. Participants stated:

"My mother told me she did not give me only breast milk for 6 months, so I decided not to do it too."

"If I leave my baby at home with my mother-in-law, she will give her water."

"I was giving my baby only breast milk until my mother visited and insisted on giving him water."

"My fellow nursing mothers who were my friends always made me feel like I was suffering my self practising EBF, so it discouraged me from continuing."

Influence of HCWs

Health systems influence including advice or messages shared by HCWs, inadequate support, and poor EBF education by HCWs were barriers to EBF practices by nursing mothers. Mothers stated they did not get the nudge from the HCWs to practice EBF so they felt EBF was not important. Some mothers revealed that misinformation from HCWs made them stop EBF before the WHO recommendation of 6 months. Participants stated:

"…and the doctor advised me to give my baby formula milk until my milk starts flowing…"

"When the nurse asked me if I was practising EBF and I said no but she said ok so I felt there was no problem."

"My doctor told me that EBF is for mothers who cannot hygienically take care of their baby."

"I was told by a nurse that EBF only prevents the baby from having infections so if I can be clean with what I give my baby then there is no need for EBF."

"….and during ante-natal, we were told that we can start introducing other baby foods like pap..."

"A midwife advised me to give my baby water and glucose immediately after delivery."

A mother who is a nurse admitted that she did not practice EBF because EBF benefits are just theory and not practical. A participant stated:

"I am a nurse, even though we advise mothers to practice EBF as it is good for the baby's health but that's a theory not practical……."

Economic factors

Mothers revealed that financial constraints also contributed to their non-practice of EBF as some of the mothers admitted they could not afford adequate nutrition and so cannot practice EBF.

Lack of resources to ensure adequate maternal nutrition

Economic challenges in the family resulting in poor maternal nutrition was a significant barrier to EBF practice by nursing mothers as it was clearly stated by the participants that infants are a product of what the mothers eat. Participants pointed out that proper nutrition

during breastfeeding is crucial to practising EBF for the full six (6) months which was a challenge for some mothers, as most of them shared that they were not able to maintain proper diets. Participants stated:

"I am not feeding properly, so I cannot give her only breast milk."

"…and feeding three square meals was a problem for me so I cannot practise EBF."

Traditional and socio-cultural influences

Some traditional and sociocultural beliefs such as the practice of giving water and contamination of breast milk during mourning and sexual relationship with the spouse were reported as barriers to the practice of EBF by the nursing mothers.

To avoid contaminated milk

Some mothers reported that it is their tradition to stop breastfeeding their child before the recommended 6 months by WHO if the death of a relative occurs during breastfeeding. It is believed that breast milk is usually contaminated during mourning, thus unfit for children's consumption as it is believed to result in severe illness and possible death of the child if given. In agreement, a participant stated:

"I stopped EBF at 3 months because my mother died and I cannot breastfeeding during mourning."

Some mothers also revealed that sexual relations with the spouse during breastfeeding can also contaminate breast milk, hence they discontinue EBF before 6 months to resume sexual relations with their spouse.

"I stopped EBF at 3 months so that my baby will not suck blood deposited by my husband during sex."

The practice of giving water

Mothers stated that giving water before or after food is a natural practice as water is necessary for restoring normal body function. These mothers emphasized that it is unimaginable for anyone to eat without taking water even babies.

"My mother gave me water so I must give my child water."

"I know how I feel if I am thirsty or to eat without taking water, to talk of not giving my baby water is impossible."

"I cannot imagine not giving my child water after food. What if she chokes, coughs, or has hiccups?"

Barriers amongst the states

Maternal-infant factors were the most common theme identified in this study with mothers' work schedules being the most common maternal-infant factor in 4 out of the 5 states. In Abia state, mothers' work schedule was identified as the major barrier to the practice of EBF, followed by unsatisfied baby and poor understanding/lack of knowledge/awareness of EBF benefits (Table 2). The practice of giving water was identified as the major barrier to the practice of EBF, followed by unsatisfied baby and maternal perceived insufficient milk in

Anambra state (Table 2). In Ebonyi state, mothers' work schedule was identified as the major barrier to the practice of EBF, followed by poor understanding/lack of knowledge/awareness of EBF benefits; and lack of resources to ensure adequate maternal nutrition (Table 2). Mothers' work schedule was identified as the major barrier to the practice of EBF, followed by preparing a child for weaning and the influence of health systems (Table 2) in Enugu state. In Imo state, mothers' work schedule was identified as the major barrier to the practice of EBF, followed by preparing a child for weaning and cesarean section route of delivery (Table 2).

Table 2: Common themes (codes) in the states

States	1st common theme (*codes*)	2nd common theme (*codes*)	3rd common theme (*codes*)
Abia	Maternal-infant factors (*mother's formal (employment) and informal work schedules*).	Maternal-infant factors (*unsatisfied baby)*.	Maternal-infant factors (*poor understanding/lack of knowledge/awareness of EBF benefits*).
Anambra	Traditional and sociocultural beliefs(*the practice of giving water*).	Maternal-infant factors (*unsatisfied baby)*.	Maternal-infant factors (*perceived breast milk insufficiency*).
Ebonyi	Maternal-infant factors (*mother's formal (employment) and informal work schedules*).	Maternal-infant factors (*poor understanding/lack of knowledge/awareness of EBF benefits*).	Economic factors (*lack of resources to ensure maternal adequate nutrition*).
Enugu	Maternal-infant factors (*mother's formal (employment) and informal work schedules*).	Maternal-infant factors (*to prepare a child for weaning*).	Influence of support structures (*influence of health systems*).
Imo	Maternal-infant factors (*mother's formal (employment) and informal work schedules*).	Maternal-infant factors (*to prepare a child for weaning*).	Maternal-infant factors (the *type of delivery (cesarean section*)).

Barriers amongst the study sites (rural and urban)

Maternal-infant factors and the influence of support structures were the leading barriers to EBF in both urban and rural communities. However, these factors were followed by economic factors and the influence of traditional and sociocultural beliefs for the

urban and rural communities respectively (Table 3).

Table 3: Major themes and sub-themes of barriers to EBF practice in the study sites

Themes	Sub - Themes	Codes	Study Sites /setting
1.Maternal-infant factors	1.1 Maternal factors	1.1.1. Mother's formal (employment) and informal work schedules	Urban, Imo
			Urban, Anambra
			Urban, Enugu
			Urban, Ebonyi
			Rural, Abia
			Urban, Abia
		1.1.2 Perceived breast milk insufficiency	Rural, Imo
			Urban, Anambra
			Rural, Enugu
			Rural, Ebonyi
			Rural, Abia
			Urban, Abia
		1.1.3 Delayed milk let-down	Urban, Imo
			Urban, Anambra
			Rural, Ebonyi
			Rural, Abia
			Urban, Abia

	1.1.4 Poor understanding/lack of knowledge/awareness of EBF benefits	Urban, Imo Rural, Imo Rural, Enugu Urban, Ebonyi
	1.1.5 Schooling or resuming school or work	Rural, Imo Urban, Enugu Urban, Ebonyi Rural, Abia Urban, Abia
	1.1.6 Type of delivery (cesarean section)	Urban, Imo Rural, Ebonyi Rural, Abia Urban, Abia
	1.1.7 Sick mother	Urban, Imo Urban, Enugu Rural, Ebonyi Rural, Abia Urban, Abia
	1.1.8 For easy conception	Rural, Abia Urban, Abia
1.2 Infant factors	1.2.1 Multiple births	Urban, Imo Urban, Anambra Urban, Enugu

		Urban, Ebonyi
		Rural, Abia
		Urban, Abia
	1.2.2 Unsatisfied baby	Rural, Imo
		Urban, Anambra
		Urban, Enugu
		Rural, Ebonyi
		Rural, Abia
		Urban, Abia
	1.2.3 Infant's difficulty in latching or positioning and refusal to breastfeed	Rural, Imo
		Urban, Ebonyi
	1.2.4 To avoid feeding difficulties during weaning	Rural, Imo
		Urban, Anambra
		Rural, Enugu
		Rural, Ebonyi
		Rural, Abia
		Urban, Abia
	1.2.4 Stature/size of baby	Urban, Imo
		Urban, Ebonyi
	1.2.5 Sick baby	Urban, Imo
		Rural, Ebonyi
	1.2.6 Baby teething	Urban, Enugu

	1.3 Breast-related factors	1.3.1 Breast conditions	Urban, Imo Urban, Enugu Urban, Ebonyi
2. Support structures related factors	2.1 Family and friends influence	2.1.1 Influence family members and friends	Urban, Enugu Rural, Imo Urban, Anambra Rural, Ebonyi Rural, Abia Urban, Abia
	2.2 Influence of health systems	2.2.1 Influence of HCWs	Urban, Anambra Urban, Enugu Rural, Abia Urban, Abia Urban, Imo Urban, Ebonyi
3. Economic factors	Financial constraints	3.1.1 Lack of resources to ensure maternal adequate nutrition	Urban, Anambra Rural, Ebonyi Urban, Ebonyi Rural, Abia Urban, Abia
4. Traditional and sociocultural beliefs	4.1 Cultural practices	4.1.1 To mourn a relative	Rural, Abia Urban, Abia
		4.1.2 Practice of giving water	Rural, Imo

	Urban, Anambra
	Rural, Ebonyi
	Rural, Abia
	Urban, Abia

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Discussion

This study revealed that maternal-infant factors were the major barrier to the practice of EBF in South-Eastern Nigeria, with the mothers' formal (employment) and informal work schedules and multiple births being the major maternal-infant factor. Mothers who were engaged in formal employment especially in the private sectors were faced mainly with inadequate maternity leave duration and lack of maternity policies as well as facilities that support breastfeeding at the workplace. All these discouraged them from breastfeeding their children exclusively. This is similar to the findings of other studies (Coetzee et al., 2017; Green et al., 2004; Matare et al., 2019; Nduna, 2011; Okafor et al., 2018; Otoo et al., 2009; Tampah-Naah et al., 2019; Wainaina et al., 2018). A study in Ghana for example reported that tight schedules set at their work places interfered with their ability to practice EBF (Tampah-Naah et al., 2019). In Cameroon, working mothers reported that the amount of time they were granted as maternity leave was usually not long enough to allow them to breastfeed exclusively for six months (Ngongalah et al., 2018). Also, a study in Tanzania observed that over half of mothers reported that heavy informal work workloads, including, farming, and gardening limited their ability to breast-feed optimally (Matare et al., 2019). Hence, the need for policies that support breastfeeding for working mothers, and monitoring the implementation of such policies to ensure its intended effect of improving EBF practice among working mothers especially for those in the private sector. This is in consistent with a study that argued that even with the availability of policies if the implementation is poor, EBF will not be generally supported and may not be successful (Mirkovic et al., 2016). Most of these mothers relied on their close relatives or nannies to attend to their babies when they were away at work. This is consistent with previous finding in Cameroon where working mothers complained that EBF was time-consuming and thus faced difficulties integrating it into their work schedules hence, introduced bottle-feeding to enable them get assistance from other members of the household in feeding their babies (Ngongalah et al., 2018). Mothers who gave birth to more than a child at a time (twin, triplet, etc) could not cope with the demands of breastfeeding their children exclusively and as such introduced other foods before the WHO recommendation of 6 months. However, such

mothers were encouraged to exclusively breastfeed their children as long as they could bearing in mind that EBF is a vital public health strategy to prevent morbidity and mortality in infants.

As established by our study, other studies found that maternal perceived breast milk insufficiency was another factor that affect the practice of EBF (Coetzee et al., 2017; Cosminsky et al., 1993; Fjeld et al., 2008; Green et al., 2004; Kamudoni et al., 2010; Matare et al., 2019; Mirkovic et al., 2016; Nankunda et al., 2006; Nduna, 2011; Otoo et al., 2009; Tampah-Naah et al., 2019). Mothers introduced other foods because they perceived that their breast milk was not enough for their infants as they cannot allow their children to go hungry, lose weight, or fail to gain weight. This may be due to inadequate support from HCWs and/or maternal ignorance of breastfeeding skills and thus underscores the importance of breastfeeding counselling and support by HCWs to equip breastfeeding mothers with the knowledge and adequate skills for proper positioning and attachment to ensure efficient breastfeeding. This counselling by the healthcare workers needs to be enhanced right from antenatal days to help mothers prepare their breasts (nipples) adequately to prevent nipple cracks which constitute another hindrance to EBF.

The influence of support structures for a breastfeeding mother cannot be over-emphasized as the findings of this study corroborates a theoretical argument in Finland that mothers' willingness to breastfeed exclusively for the recommended 6 months will largely be influenced by those groups who the mother inter-relates and interacts with (Härkönen, 2007). In this study, the support breastfeeding mothers receive from family members, friends, and HCWs were critical to the continued practice of EBF. Study findings further suggest that it helped mothers to be physically and emotionally sound and to exude positive physiological changes in their body that would allow for the production of more breast milk.

An uncommon but interesting finding from this study was that some mothers chose never to breastfeed their infants exclusively because they wanted to conceive immediately. These mothers associated EBF with contraception and did not want any delays in conception so they, introduced other baby food immediately after birth thus never breastfed their children exclusively. This barrier was common in older women who thought they had few reproductive years before they go into menopause. Unfortunately, findings from this study revealed the reception of differing and conflicting advice by mothers regarding EBF practices, consistent with the findings of similar studies (Härkönen, 2007; Horwood et al., 2019; Mgongo et al., 2018; Nduna, 2011; Østergaard & Bula, 2010; Tampah-Naah et al., 2019). Also, an HCW reiterated that EBF was theoretical and as such does not practice it. Healthcare workers should be updated regularly on current evidence-based infant feeding practices to ensure they provide accurate information and necessary support to the mothers. All health systems should have a standardized counselling guide developed using information synthesized from this study and other high-quality

studies. This guide should be used in routine counselling of all women of childbearing age accessing care in the health facility during the ante-natal clinic and/or post-natal clinics, to provide first-hand information with the intent of improving EBF practice.

This study identified mother's formal (employment) and informal work schedules as the most common barrier in EBF practice in all the states except for Anambra state where the practice of giving water was the most common barrier to EBF practice. The practice of giving water to babies is not peculiar to this study as other studies also reported the same (Coetzee et al., 2017; Cosminsky et al., 1993; Fjeld et al., 2008; Jama et al., 2017; Kakute et al., 2005; Mirkovic et al., 2016; Orne-Gliemann et al., 2006; Santo et al., 2007) and the baby being thirsty was the most common reason why mothers gave their babies water (Cosminsky et al., 1993; Kakute et al., 2005).

Findings from this study also revealed that perceived unsatisfied babies and the influence of family members and friends were the most common barriers in both rural and urban study sites. Mothers in both sites interpreted their baby constant cry especially immediately after breastfeeding as breast milk alone being unable to satisfy their children, hence the introduction of water and other baby foods to ensure their children are satisfied. Probably not knowledgeable of EBF, the nursing mothers believe that breast milk alone cannot satisfy their children. Influence of family and friends seems to play an important role in the early infant feeding choices of women especially with regards to EBF as observed in other studies (Coetzee et al., 2017; de Paoli et al., 2001; Green et al., 2004; Härkönen, 2007; Horwood et al., 2019; Lang'At et al., 2018; Matare et al., 2019; Mgongo et al., 2018; NDUNA, 2011; Okafor et al., 2018; Østergaard & Bula, 2010; Otoo et al., 2009; Tampah-Naah et al., 2019; Tsegaye et al., 2019; Wainaina et al., 2018). Mothers are mostly influenced by their babies' grandmothers, husbands, and friends. Support from family members could be improved by ensuring that these family members attend ante-natal and/or post-natal clinics so they can develop a positive attitude towards EBF and thus encourage nursing mothers to breastfeed their infants exclusively.

This study was carried out only in South-East Nigeria thus data may not represent the opinion of all nursing mothers in Nigeria. Regardless of the limitation, the findings of this qualitative study are the strengths of the review. The study has contributed to the ever-expanding literature on EBF with an emphasis on the barriers to EBF from the perspective of nursing mothers. In Nigeria, studies on EBF are majorly quantitative with a few qualitative studies having no in-depth knowledge on factors the nursing mothers' who are the key informants see as barriers to the practice of EBF. Few qualitative studies have been done on the factors that discourage nursing mothers from breastfeeding their children exclusively in Nigeria but none has been done in all the states of South-Eastern Nigeria. This also included all the five states of South-Eastern Nigeria where all the tribes may be included to generalize the results obtained. The results remain valid and chances are studies in other regions in

Nigeria will not yield findings entirely different from the results obtained.

Hospital management with the support of the Ministry of Health and Child Welfare needs to deliberately invest in the training and retraining of all HCWs on infant and young child feeding with emphasis on EBF counseling and support skills using a standardized counseling guide to ensure a systematic, reproducible, consistent, accurate, and updated provision of breastfeeding counseling and messages at all contact points within health facilities. Worthy of note is that these breastfeeding counseling and messages should deliberately demystify and clear misconceptions around breastfeeding and pregnancy and practice of giving babies water and other traditional/cultural practices as a priority. Also, nursing mothers (especially the employed) be encouraged to express their breast milk under good hygienic and adequate storage conditions, so that the caregivers can still feed their babies with breast milk even in their absence.

Campaigns and community outreach programs on infant and young child feeding with emphasis on EBF should deliberately involve support structures like husbands, grandmothers, and important others so they can serve as motivators to the practice of EBF rather than barriers to EBF practice. To support working mothers to practice EBF, policies that support breastfeeding for working mothers should be implemented and implementation of such policies should be monitored to ensure its intended effect of improving EBF practice among working mothers is achieved.

This paragraph is not sound at all. You may need to simplify it. I guess you wanted to present the study limitation. Just be simple and go straight to the points.

Future research may need to scale up this study to other parts of the country to gain a national-level understanding of the barriers to EBF practices in Nigeria because the transferability of the findings from this study may be limited by contextual variations.

Conclusion

Maternal-infant factors were identified as the most recurring barrier to EBF practice by nursing mothers in South-Eastern Nigeria. Interventions focusing on these identified maternal-infant factors will help to address these challenges and promote EBF practice with its intended benefits and ultimately improve maternal and child health outcomes.

Abbreviations

EBF: EBF; HIV: Human immunodeficiency syndrome; UNICEF: United Nations Children's Fund; WHO: World Health Organization; HCW: Health Care Workers; AIDS: Acquired Immunodeficiency Syndrome; BFHI: Baby-friendly Hospital Initiative; BM: Breast milk.

Declarations

Ethics approval and consent to participate

Permission to conduct the study was obtained from the Nnamdi Azikiwe University Teaching Hospital (NAUTH) Ethical Committee (NAUTH/CS/66/VOL.13/VER.2/42/2020/034). Informed signed consent and verbal

consent (use one) were obtained from every participant before participation in the study. Participants were assured that collected data will be strictly confidential, will not be disclosed for any reason, and will be used only for research purposes.

Consent for publication

Not applicable.

Availability of data and material

All data generated or analyzed during this study are contained within the manuscript.

Competing interests

The authors report no conflicts of interest in this work.

Funding

This research study was funded by the authors involved without any external assistance.

Authors' contributions

All authors contributed to data analysis, drafting or revising the article, gave final approval of the version to be published, and agree to be accountable for all aspects of the work.

Acknowledgments

The authors are appreciative of all colleagues especially Dr (Mrs) Maureen Anetoh, Pharmacist Adaobi Mosanya and Pharmacist Ifeoma Nduka who provided constructive feedback and ultimately to God Almighty for His mercies and grace.

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References

Alade, O. (2013). Exclusive breastfeeding and related antecedent factors among lactating mothers in a rural community in Southwest Nigeria. *International Journal of Nursing and Midwifery*, *5*(7), 132–138

Anejionu, O. C. D., & Nwilo, P. C. (2013). Long Term Assessment And Mapping Of Erosion Hotspots In South East Nigeria Long Term Assessment And Mapping Of Erosion Hotspots In South East Nigeria. May, 6–10.

Coetzee, B., Tomlinson, M., Osawe, S., Amibiku, A., Kagee, A., Rosenthal, K. L., Abimiku, A., Gray, C. M., Cameron, D. W., Ball, T. B., Jaspan, H., Burgener, A., Blackburn, J., Kagee, A., Tomlinson, M., Singer, J., Kiravu, A., Osawe, S., & Datong, P. (2017). Barriers to and Facilitators of Adherence to Exclusive Breastfeeding Practices Among HIV Infected and Non-Infected Women in Jos, Nigeria. *Maternal and Child Health Journal*,

21(4), 953–960. https://doi.org/10.1007/s10995-016-2253-0

Cosminsky, S., Mhloyi, M., & Ewbank, D. (1993). Child feeding practices in a rural area of Zimbabwe. *Social Science and Medicine*, *36*(7), 937–947. https://doi.org/10.1016/0277-9536(93)90085-I

Daglas, M., & Antoniou, E. (2012). Health Science Journal. Cultural Views And Practices Related To Breastfeeding. 6(2), 353–361. http://www.hsj.gr/medicine/cultural-views-and-practices-related-to-breastfeeding.pdf

de Paoli, M., Manongi, R., Helsing, E., & Klepp, K. I. (2001). Exclusive Breastfeeding in the Era of AIDS. *Journal of Human Lactation*, *17*(4), 313–320. https://doi.org/10.1177/089033440101700405

Diji, A. K. A., Bam, V., Asante, E., Lomotey, A. Y., Yeboah, S., & Owusu, H. A. (2017). Challenges and predictors of exclusive breastfeeding among mothers attending the child welfare clinic at a regional hospital in Ghana: A descriptive cross-sectional study. *International Breastfeeding Journal*, *12*(1), 1–7. https://doi.org/10.1186/s13006-017-0104-2

Federal Ministry of Health. (2011). Situation analysis and action plan for newborn health in the context of the Integrated Maternal, Newborn and Child Health Strategy Saving Newborn Lives in Nigeria Saving Nigeria's Newborns: Key Findings and Recommendations. http://www.healthynewbornnetwork.org/hnn-content/uploads/Situation-Analysis-Exec.-Summ..pdf

Fjeld, E., Siziya, S., Katepa-Bwalya, M., Kankasa, C., Moland, K., Tylleskär, T., Van de Perre, P., Ekström, E. C., Meda, N., Tumwine, J. K., Debra, J., Engebretsen, I. M. S., Fadnes, L. T., Fylkesnes, K., Klungsøyr, J., Nordrehaug-Åstrøm, A., Olsen, Ø. E., Robberstad, B., Sommerfelt, H., … Zembe, W. (2008). "No sister, the breast alone is not enough for my baby" a qualitative assessment of potentials and barriers in the promotion of exclusive breastfeeding in southern Zambia. *International Breastfeeding Journal*, *3*, 1–12. https://doi.org/10.1186/1746-4358-3-26

Green, J., And, & Thorogood, N. (2004). Qualitative Methodology and Health Research. *Qualitative Methods for Health Research*, 3–26. https://doi.org/10.5860/choice.47-0901

Härkönen, U. (2007). The Bronfenbrenner ecological systems theory of human development. Scientific Articles of V International Conference Person.Color.Nature.Music, 1–19.

Hizel, S., Ceyhun, G., Tanzer, F., &

Sanli, C. (2006). Traditional beliefs as forgotten influencing factors on breast-feeding performance in Turkey. *Saudi Medical Journal*, *27*(4), 511–518.

Horwood, C., Jama, N. A., Haskins, L., Coutsoudis, A., & Spies, L. (2019). A qualitative study exploring infant feeding decision-making between birth and 6 months among HIV-positive mothers. *Maternal and Child Nutrition*, *15*(2). https://doi.org/10.1111/mcn.12726

Jama, N. A., Wilford, A., Masango, Z., Haskins, L., Coutsoudis, A., Spies, L., & Horwood, C. (2017). Enablers and barriers to success among mothers planning to exclusively breastfeed for six months: A qualitative prospective cohort study in KwaZulu-Natal, South Africa. *International Breastfeeding Journal*, *12*(1), 1–13. https://doi.org/10.1186/s13006-017-0135-8

Jones, G., Steketee, R. W., Black, R. E., Bhutta, Z. A., Morris, S. S., Child, B., & Group, S. S. (2003). The Lancet Child Survival II How many child deaths can we prevent this year? Child survival II. *The Lancet*, *362*(July 5), 65–71.

Kakute, P. N., Ngum, J., Mitchell, P., Kroll, K. A., Forgwei, G. W., Keming Ngwang, L., & Meyer, D. J. (2005). Cultural barriers to exclusive breastfeeding by mothers in a rural area of Cameroon, Africa. *Journal of Midwifery and Women's Health*, *50*(4), 324–328. https://doi.org/10.1016/j.jmwh.2005.01.005

Kamudoni, P., Maleta, K., Shi, Z., De Paoli, M., & Holmboe-Ottesen, G. (2010). Breastfeeding perceptions in communities in Mangochi district in Malawi. *Acta Paediatrica, International Journal of Paediatrics*, *99*(3), 367–372. https://doi.org/10.1111/j.1651-2227.2009.01603.x

Kimani-Murage, E. W., Wekesah, F., Wanjohi, M., Kyobutungi, C., Ezeh, A. C., Musoke, R. N., Norris, S. A., Madise, N. J., & Griffiths, P. (2015). Factors affecting actualisation of the WHO breastfeeding recommendations in urban poor settings in Kenya. *Maternal and Child Nutrition*, *11*(3), 314–332. https://doi.org/10.1111/mcn.12161

Kong, S. K. F., & Lee, D. T. F. (2004). Issues And Innovations In Nursing Practice Factors influencing decision to breastfeed. *Journal of Advanced Nursing*, *46*(4), 369–379. http://ezproxy.stir.ac.uk/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=hch&AN=12953981&site=ehost-live

Koyanagi, A., Humphrey, J. H., Moulton, L. H., Ntozini, R., Mutasa, K., Iliff, P., Black, R. E., Chidawanyika, H., Hargrove, J., Mahomva, A. I., Majo, F., Malaba, L. C., Mbizvo, M. T., Mzengeza, F.,

Nathoo, K. J., Ndhlovu, M., Piwoz, E., Propper, L., Rambanepasi, P., … Zvandasara, P. (2009). Effect of early exclusive breastfeeding on morbidity among infants born to HIV-negative mothers in Zimbabwe. *American Journal of Clinical Nutrition*, *89*(5), 1375–1382. https://doi.org/10.3945/ajcn.2008.26810

Kuhn, L., Sinkala, M., Kankasa, C., Semrau, K., Kasonde, P., Scott, N., Mwiya, M., Vwalika, C., Walter, J., Tsai, W. Y., Aldrovandi, G. M., & Thea, D. M. (2007). High uptake of exclusive breastfeeding and reduced early post-natal HIV transmission. *PLoS ONE*, *2*(12), 1–9. https://doi.org/10.1371/journal.pone.0001363

Lang'At, P. C., Ogada, I., Steenbeek, A., Macdonald, N. E., Ochola, S., Bor, W., & Odinga, G. (2018). Infant feeding practices among HIV-exposed infants less than 6 months of age in Bomet County, Kenya: An in-depth qualitative study of feeding choices. *Archives of Disease in Childhood*, *103*(5), 470–473. https://doi.org/10.1136/archdischild-2017-314521

Ma, F., De, U. P., De, S., & Familia, L. A. (2009). Cultural practices about breastfeeding among families enrolled in a Family Health Program Cultural practices about breastfeeding among families enrolled in a Family Health Program Práticas Culturais Sobre Aleitamento Materno Entre Famílias Cadastradas Em . *Rev Esc Enferm USP*, *43*(4), 890–896. www.ee.usp.br/reeusp/

Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines Kirsti. *The Lancet: Qualitative Research Series*, *358*(9280), 458–488. https://doi.org/10.1016/S0140-6736(01)05627-6

Matare, C. R., Craig, H. C., Martin, S. L., Kayanda, R. A., Chapleau, G. M., Kerr, R. B., Dearden, K. A., Nnally, L. P., & Dickin, K. L. (2019). Barriers and Opportunities for Improved Exclusive Breast-Feeding Practices in Tanzania: Household Trials With Mothers and Fathers. *Food and Nutrition Bulletin*, *40*(3), 308–325. https://doi.org/10.1177/0379572119841961

Mgongo, M., Hussein, T. H., Stray-pedersen, B., Vangen, S., Msuya, S. E., & Wandel, M. (2018). *" We give water or porridge , but we don ' t really know what the child wants : " a qualitative study on women ' s perceptions and practises regarding exclusive breastfeeding in Kilimanjaro region , Tanzania*. 1–9.

Mgongo, M., Hussein, T. H., Stray-Pedersen, B., Vangen, S., Msuya, S. E., & Wandel, M. (2019). Facilitators and Barriers to Breastfeeding and Exclusive Breastfeeding in Kilimanjaro Region, Tanzania: A Qualitative Study. *International Journal of Pediatrics*,

2019, 1–7. https://doi.org/10.1155/2019/8651010

Mirkovic, K. R., Perrine, C. G., & Scanlon, K. S. (2016). Paid Maternity Leave and Breastfeeding Outcomes. *Birth*, *43*(3), 233–239. https://doi.org/10.1111/birt.12230

Nankunda, J., Tumwine, J. K., Soltvedt, Å., Semiyaga, N., Ndeezi, G., & Tylleskär, T. (2006). Community based peer counsellors for support of exclusive breastfeeding: Experiences from rural Uganda. *International Breastfeeding Journal*, *1*, 1–9. https://doi.org/10.1186/1746-4358-1-19

NDUNA, T. (2011). Factors Associated With Exclusive Breastfeeding in the United States. *Pediatrics*, *128*(6), peds.2011-0841d-peds.2011-0841d. https://doi.org/10.1542/peds.2011-0841d

Ngongalah, L., Rawlings, N. N., Emerson, W., Titilope, O., & Sharon, M. (2018). Infant Feeding Perceptions and Barriers to Exclusive Breastfeeding in Urban and Rural Cameroon. *International Journal of Child Health and Nutrition*, *7*(4), 201–209. https://doi.org/10.6000/1929-4247.2018.07.04.10

Okafor, A. E., Agwu, P. C., Okoye, U. O., Uche, O. A., & Oyeoku, E. K. (2018). Factors Associated with Exclusive Breastfeeding Practice among Nursing Mothers in rural areas of Enugu State and its Implications for Social Work Practice in Nigeria. *Social Work in Public Health*, *33*(2), 140–148. https://doi.org/10.1080/19371918.2017.1415182

Orne-Gliemann, J., Mukotekwa, T., Miller, A., Perez, F., Glenshaw, M., Nesara, P., & Dabis, F. (2006). Community-based assessment of infant feeding practices within a programme for prevention of mother-to-child HIV transmission in rural Zimbabwe. *Public Health Nutrition*, *9*(5), 563–569. https://doi.org/10.1079/phn2005881

Østergaard, L. R., & Bula, A. (2010). "They call our children “Nevirapine babies?” ": A qualitative study about exclusive breastfeeding among HIV positive mothers in Malawi. *African Journal of Reproductive Health*, *14*(3), 213–222. https://doi.org/10.2307/41329743

Otoo, G. E., Lartey, A. A., & Pérez-Escamilla, R. (2009). Perceived incentives and barriers to exclusive breastfeeding among periurban ghanaian women. *Journal of Human Lactation*, *25*(1), 34–41. https://doi.org/10.1177/0890334408325072

Pope, C., & Mays, N. (1995). Qualitative Research: Reaching The parts other methods cannot reach: An introduction to qualitative methods in health and health services research. *Bmj*, *311*(6996), 42. https://doi.org/10.1136/bmj.311.6996.42

Santo, L. C. D. E., De Oliveira, L. D.,

& Giugliani, E. R. J. (2007). Factors associated with low incidence of exclusive breastfeeding for the first 6 months. *Birth*, *34*(3), 212–219. https://doi.org/10.1111/j.1523-536X.2007.00173.x

Shirima, R., Greiner, T., Kylberg, E., & Gebre-Medhin, M. (2001). Exclusive breast-feeding is rarely practised in rural and urban Morogoro, Tanzania. *Public Health Nutrition*, *4*(2), 147–154. https://doi.org/10.1079/phn200057

Tampah-Naah, A. M., Kumi-Kyereme, A., & Amo-Adjei, J. (2019). Maternal challenges of exclusive breastfeeding and complementary feeding in Ghana. *PLoS ONE*, *14*(5), 1–16. https://doi.org/10.1371/journal.pone.0215285

Tsegaye, M., Ajema, D., Shiferaw, S., & Yirgu, R. (2019). Level of exclusive breastfeeding practice in remote and pastoralist community, Aysaita woreda, Afar, Ethiopia. *International Breastfeeding Journal*, *14*(1), 1–15. https://doi.org/10.1186/s13006-019-0200-6

UNICEF. (2013). *Breastfeeding On The Worldwide Agenda. Executive Summary*. 2, 9. http://www.unicef.org/eapro/breastfeeding-worldwide-Executive-Summary.pdf

Victora, C. G., Bahl, R., Barros, A. J. D., França, G. V. A., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., Walker, N., Rollins, N. C., Allen, K., Dharmage, S., Lodge, C., Peres, K. G., Bhandari, N., Chowdhury, R., Sinha, B., Taneja, S., Giugliani, E., … Richter, L. (2016). Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *The Lancet*, *387*(10017), 475–490. https://doi.org/10.1016/S0140-6736(15)01024-7

Wainaina, C. W., Wanjohi, M., Wekesah, F., Woolhead, G., & Kimani-Murage, E. (2018). Exploring the Experiences of Middle Income Mothers in Practicing Exclusive Breastfeeding in Nairobi, Kenya. *Maternal and Child Health Journal*, *22*(4), 608–616. https://doi.org/10.1007/s10995-018-2430-4

Wambach, K., Domian, E. W., Page-Goertz, S., Wurtz, H., & Hoffman, K. (2016). Exclusive Breastfeeding Experiences among Mexican American Women. *Journal of Human Lactation*, *32*(1), 103–111. https://doi.org/10.1177/0890334415599400

Wanjohi, M., Griffiths, P., Wekesah, F., Muriuki, P., Muhia, N., Musoke, R. N., Fouts, H. N., Madise, N. J., & Kimani-Murage, E. W. (2017). Sociocultural factors influencing breastfeeding practices in two slums in Nairobi, Kenya. *International Breastfeeding Journal*, *12*(1), 1–8. https://doi.org/10.1186/s13006-016-0092-7

Who. (2007). Indicators for assessing

infant and young child feeding practices. *World Health Organization*, *2007*(November), 1–19. https://doi.org/ISBN 978 92 4 159975 7

WHO & UNICEF. (2003). Global strategy for infant and young child feeding. In *Fifthy-fourth world health assembly* (Issue 1).

World Health Organization. (2017). *The International Code of Marketing of Breast-Milk Substitutes frequently asked questions*. 1–11. https://apps.who.int/iris/bitstream/handle/10665/254911/WHO-NMH-NHD-17.1-eng.pdf?sequence=1%0Ahttp://www.who.int/nutrition/publications/infantfeeding/Frequently_ask_question_Internationalcode.pdf

Appendix I

DATA COLLECTION ITEM FOR THE STUDY:

A QUALITATIVE STUDY ON FACTORS AFFECTING EBF PRACTICE AMONG NURSING MOTHERS IN SOUTH-EAST NIGERIA.

This research study aims to understand the barriers to the practice of EBF from the perspective of nursing mothers in South-East Nigeria.

Infant's information

Gender: Age: Position of birth: Any birth defect/syndrome

Mother's information

Age: Marital status: Number of children: Educational status:

Ethnic group: Religion:

(IN-DEPTH INTERVIEW GUIDE)

1. What is your belief about EBF?
2. How soon after delivery did you first breastfeed?
3. Did your baby receive any liquid before he or she is first put to breast milk?
4. If yes. What liquid was given?
5. What was the reason(s) for giving this liquid?
6. Has the baby received any liquid apart from breast milk since breastfeeding started?
7. If yes. What liquid was given?
8. Why did you give the liquid?
9. Are you still breastfeeding the baby?
10. How long do you intend to breastfeed your child?
11. Why did you stop?

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NAUTH/CS/66/VOL.13/VER. 3/42/2020/034
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ATTENTION: NOTICE OF FULL NAUTH HEALTH RESEARCH ETHICS COMMITTEE APPROVAL

RE: A QUALITATIVE STUDY ON FACTORS AFFECTING EXCLUSIVE BREASTFEEDING PRACTICE AMONG NURSING MOTHERS IN SOUTH-EAST, NIGERIA

Date of receipt of valid application:	**27th May, 2020**
Date of receipt of final corrections:	**25th June, 2020**
Date of Full Approval:	**3rd August, 2020**

This is to inform you that the research described in the submitted protocol, the consent form and other participant's information materials have been reviewed and full approval granted by NAUTHHREC.

The approval is for one year starting from 22nd July 2020 to 23rd July, 2021. If there is delay in starting the research, please inform the Secretariat so that the date of the approval will be adjusted accordingly.

In multiyear research, you are required to submit your annual report to Secretariat early in order to renew your approval and avoid disruption of the research.

You are required to comply with all institutional guidelines, rules and regulations and also ensuring that adverse events are reported promptly to the Secretariat.

You are not permitted to make changes in the research without prior notification and approval of the NAUTHHREC.

We reserve the right to conduct compliance visit to your research site without previous notification.

Please note that this approval is subject to revocation if you fail to adhere to these guidelines.

Dr. Chisolum Okafor
Chairman, NAUTHHREC

Mrs. E.N. Nwankwo
Sec., NAUTHHREC