Oseni-Ogundipe *et. al.,* Babcock Univ. Med. J.2026 9(S1):184-195
https://doi.org/10.38029/babcockuniv.med.j..v9i4S1.1298
eISSN: 2756-4657

RESEARCH ARTICLE OPEN ACCESS

Problems associated with the introduction of complementary foods to breastfed infants in Ibadan North Local Government Area, Ibadan

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Submitted: 3rd December 2025
Accepted: 30th May 2026
Published: 31st October 2026
ID: Orcid ID

Abstract
Objective: This study examined the challenges encountered during the introduction of complementary foods, whether these challenges are unique to exclusively breastfed infants, and the coping strategies employed by mothers.
Methods: A multi-stage sampling technique was used to select 200 mothers attending selected primary health centers in Ibadan North Local Government. A pretested semi-structured interviewer-administered questionnaire was distributed to the mothers, and three focus group discussion sessions were conducted with 21 mothers to enhance, as well as clarify the quantitative results generated. Quantitative data was analysed using descriptive statistics and Chi-square test at p=0.05, while qualitative data was analysed thematically.
Results: Findings from this study revealed that one of the major challenges mothers experience during introduction of complementary foods is food refusal, as seen in 27.5% of respondents. Though infants who were exclusively breastfed refused foods for longer periods, there was no statistically significant difference in food refusal between exclusively breastfed and non-exclusively breastfed infants (X^2 = 6.893; P =0.075). Other challenges are time constraints and maintaining good hygiene. Mothers employed positive coping strategies like singing to engage the child's attention and negative coping strategies like force-feeding to ensure the child eats.
Conclusion: Food refusal was reported in both exclusively and non-exclusively breastfed infants. However, exclusively breastfed infants refused food for longer periods.

Keywords: Breastfed infants, Coping strategies, Food refusal, Introduction of complementary foods, Problems.

Plain English summary

The complementary feeding period represents a critical phase. Several studies have identified various factors that limit optimal breastfeeding practices: inadequate support from health facilities, socio-cultural influences, family income, and maternal stress, but there is limited information on problems associated with the introduction of complementary foods to exclusively and non-exclusively breastfed infants. This study examined the challenges encountered during the introduction of complementary foods, whether these challenges are unique to exclusively breastfed infants, and the coping strategies employed by mothers.
One of the major challenges mothers experience when introducing complementary foods is food refusal, reported by 27.5% of respondents. Though infants who were exclusively breastfed refused foods for longer

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periods, there was no statistically significant difference in food refusal between exclusively breastfed and non-exclusively breastfed infants (X^2 = 6.893; P =0.075). Mothers employed positive and negative coping strategies, such as singing and force-feeding, respectively. In conclusion, food refusal was reported in both exclusively and non-exclusively breastfed infants. However, exclusively breastfed infants refused food for longer periods.
Raising awareness of the hurdles caregivers may face during the introduction of complementary foods and educating mothers on the gentle reintroduction of complementary foods and the risk of force-feeding is important.

Background

The World Health Organisation (WHO) and UNICEF recommend that infants be exclusively breastfed for the first six months, followed by breastfeeding along with complementary foods, for up to two years of age or beyond (1). The incidence of malnutrition in the first two years of life has been directly linked with inadequate breastfeeding and complementary feeding practices (2). Complementary feeding is defined as the process that occurs when breastmilk alone is no longer sufficient to meet infants 'nutritional requirements and thus, along with breastmilk, other foods and liquids are required. The period is from six months of age to two years, and it is the most critical growth period for the child (3).
The complementary feeding period plays a pivotal role in shaping lifelong flavour preferences and dietary habits, which can impact long-term health outcomes (4).
In Nigeria, several studies have identified various factors limiting optimal breastfeeding practices, factors like misconceptions about breast milk adequacy, inadequate support from health facilities (5), socio-cultural influences, family income, and maternal stress (6, 7), but there is limited information on problems associated with the introduction of complementary foods to exclusively and non-exclusively breastfed infants. Acknowledging the dearth of information on problems associated with the introduction of complementary foods, this study was therefore designed to identify the current knowledge and problems associated with the introduction and practice of introducing complementary foods, determine if problems were specific to exclusively breastfed infants, and to understand the coping strategies mothers employ.

Materials and Methods

This study was descriptive cross-sectional in design. The study was carried out in Ibadan, Oyo State. Oyo State is an inland border state in South Western Nigeria. It was founded in 1976 (8). It has an area of 28,454 square kilometres, a total population of 5,591,589 persons as at the 2006 census and a population density of 196.5 persons per square kilometre (9).
Ibadan is the capital city of Oyo State; it is the most populous city in the state and the third most populous city in Nigeria after Lagos and Kano. It is the country's largest city by geographical area. According to the Oyo State Bureau of Statistics, it covers an area of 3080 square kilometres and has a population of about 4,144,130 persons (10). Ibadan has 11 local government areas.
There are primary, secondary, and tertiary health centres in the Ibadan North Local Government Area. This study was conducted among mothers of breastfed infants attending selected primary health care centres in IBNLG. Mothers of breastfed infants (6-12months) attending the selected primary health centres were included in the study, while mothers of infants who were not breastfed at all or breastfeeding mothers with children older than 12 months were excluded from the study.
The sample size was determined using the Yamane formula (11). The estimated number, that is, the average number of breastfeeding mothers with infants 6-12 months attending each of the primary health centres monthly, gotten from the records unit of the primary health centres, was 310 in total. A sample size of 174 respondents was calculated, allowing for a 10% non-response rate. The total sample size of 192 was determined; this was rounded up to a sample size of 200. About ten per cent of the total respondents were recruited for the qualitative aspect of the study, three focus groups consisting of seven mothers in each group were formed in the local government, making a total of twenty-one mothers in all.
A multistage sampling method was used to recruit the study participants. Purposive selection of IBNLG out of the five LGs that make up Ibadan municipality, because it is the largest LG in Ibadan and Oyo State at large. The listing of the primary health centres in IBNLG and balloting to choose 6 out of 11 functional primary health centres (approximately 50%) in IBNLG. The functionality of the primary health centres was determined by the provision of key primary health care (PHC) services: maternal and child health, immunisation, antenatal care, health education, among others.

The primary health centres selected for the study were Idi-Ogungun Health Centre, Bashorun Health Centre, Oke-Itunnu Health Centre, Sango Health Centre, University Health Service (Jaja), and Bodija Health Centre.

All consenting mothers of infants (6-12 months) who attended the health centres for immunisation within the study period were recruited for the study. The proportionate number allocated to each centre was rounded up to 50, 35, 15, 40, 45 and 15, respectively. A representative sample that eventually summed up to the minimum sample size of 200. Two research instruments, consisting of a questionnaire and a focus group discussion guide, were used for this study

Pre-testing of the questionnaire was done among 20 respondents (approximately 10% of the total sample size) at Obasa Primary Health Centre in IBNLG. This was done to identify any flaws or ambiguities in the questionnaire, including wording or questions. It also aimed to find out the average time it would take to interview a mother-child pair. At the end, the instrument was analysed, and changes were made in areas where misinterpretation was observed. The data from this pretest were excluded from the results analysis.

Data were collected using a pre-tested semi-structured, interviewer-administered questionnaire. The questionnaire was divided into six parts; the first was used to obtain information on the respondents' socio-demographic and socio-economic characteristics, the second was used to obtain information on descriptive characteristics of the respondents, the third part was used to obtain information on the complementary feeding knowledge of mothers, the fourth part was used to identify the challenges faced during introduction of complementary foods and coping strategies mothers employ, the fifth part was used to examine mothers practices of introducing complementary foods and the sixth part contained questions used to identify mothers who actually exclusively breastfed their infants.

The mother's complementary feeding knowledge was assessed on timely introduction of complementary foods, correct consistency of the food, correct frequency of feeding, recommended dietary diversity and consumption of vitamin A-rich fruits and vegetables. A mother was scored '1' for every question answered correctly and '0' for a question wrongly answered. There were 8 questions in all. The knowledge score was on an 8-point scale. The knowledge score was categorised into poor (0-5) and good (6-8). The team validated the questions with inputs from experts and a pre-test in a similar population before the data collection. A mother was scored '1' for every question answered correctly and '0' for every question answered wrongly. The practice score was on a 7-point scale. The practice score was categorised into poor (0-4) and good (5-7). Four questions, which included the use of pre-lacteals, if the child was fed any liquid, formula or milk or any solid food before he or she clocked 6 months of age, were used to identify mothers who actually exclusively breastfed their infants. A mother was scored '1' for a correctly answered question and '0' for a wrongly answered question; 4 points (100%) was used as the cut-off point.

Focus group discussion (FGD) sessions were held for twenty-one mothers, with seven mothers in a group, in three out of the six PHCs. These PHCs were randomly selected from the 6 positively balloted PHC's. The PHCs where FGD sessions were held were Sango, Bashorun and Idi-Ogungun PHC's.

The FGD sessions were conducted with mothers who had breastfed infants aged 6-12 months. A purposive convenience sampling approach was used to recruit 7 mothers in each of the three randomly selected (out of the six) PHCs. The sessions were held on days different from the days of administering questionnaires. The researchers enlightened the mothers on the purpose of the study and had sought informed consent from mothers who were willing to participate in the FGD sessions. The FGD sessions and the administration of questionnaires were all conducted on days of the Child Welfare Clinic (immunisation clinic). The FGD sessions were audio recorded, and a note taker was present. FGD guide incorporated issues such as knowledge about colostrum, breastfeeding and EBF, use of pre-lacteals, time of introduction of complementary foods and common reasons for introduction. It also included the age at which the child was first fed with some common complementary foods, knowledge regarding timely, adequate, proper and safe complementary foods, type of breastfeeding and challenges faced, coping strategies, positive experience with breastfeeding and complementary feeding, foods accepted or rejected by the child, individuals that encouraged or discouraged exclusive breastfeeding, complementary feeding and the role of significant others. FGDs were conducted in the local Yoruba language, and each lasted for 40 to 50 minutes. Each session began with a brief introduction and description of the study's purpose. All participants were assured about confidentiality and were asked to respect each other's opinions. Participants were informed that there were no right or wrong answers and were

encouraged to share their views regarding the challenges faced during the introduction of complementary foods.

The quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) version 21. Descriptive statistics such as frequency, percentage and mean were used to summarise the data; inferential statistics were summarised as chi-square values, level of significance was set at 5%. The findings are presented as discussions, tables and charts. The qualitative data was recorded on an audiotape. The researchers moderated all the sessions, while the research assistants acted as the note takers. The FGD was transcribed verbatim. Subsequently, the audio tape and the field notes were used to verify the transcribed texts, ensuring that they were correctly transcribed to preserve the meaning of the participants' words. Informed consent was obtained from the respondents.

Results

Table 1 shows the socio-demographic and socio-economic characteristics of the respondents. A total of 200 mother-child pairs participated in the study. Most of the infants were in the age group 6-9 months (74.5%), and the mean age of the infants was 9 ± 2.0 months.

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency	Percentage
The educational level of the father		
No formal education	3	1.5
Primary	2	1.0
Secondary	67	33.5
Tertiary	128	64.0
Total	200	100
The educational level of the mother		
No formal education	1	0.5
Primary	3	1.5
Secondary	92	46.0
Tertiary	104	52.0
Total	200	100
Occupation of father		
Unemployed	1	0.5
Self-employed	118	59.0
Employed	81	40.5
Total	200	100
Occupation of the mother		
Unemployed	18	9.0
Self-employed	144	72.0
Employed	38	19.0
Total	200	100
The average monthly income of the father		
<20000	15	10.4
20000-40000	60	41.7
41000-60000	30	20.8
>60000	39	27.1
Total	144	100
Average monthly income of the mother		
<20000	63	36.2
20000-40000	83	47.7
41000-60000	20	11.5
>60000	8	4.6
Total	174	100

Table 2 shows the components of complementary feeding practices of mothers. 38.5% of the mothers exclusively breastfed their infants, and a little below half of the mothers (45.5%) had good practice of introducing complementary foods.

Table 2: Components of complementary feeding practices of mothers

Components	Frequency(n)	Percentage (%)
Exclusive breastfeeding		
Yes	77	38.5
No	123	61.5
Complementary feeding knowledge		
Good	112	56.0
Poor	88	44.0
Timely introduction of complementary foods		
Recommended	152	76.4
Early	36	18.1
Late	11	5.5
Mothers' practice of introducing complementary foods		
Good	91	45.5
Poor	109	54.5
Currently breastfeeding		
Yes	187	93.5
No	13	6.5

Challenges of introducing complementary foods

The challenges that mothers experienced in introducing complementary foods are shown in Table 3. During the introduction to complementary foods, 30.7% of the infants displayed various responses. The responses include infants vehemently refusing foods (27.1%), 2.5% cried, and only 1% vomited the foods.

Table 3: Challenges of introducing complementary foods to breastfed infants

Variables	Frequency (n)	Percentage (%)
How did your child react when introduced to complementary foods		
Crying	5	2.5
Vomiting	2	1.0
Refusal	55	27.1
No reaction	138	69.3
Total	200	100
If the child reacted, how long did it last		
1 week	31	49.2
4 weeks	17	27.0
6 weeks	1	1.6
>6 weeks	14	22.2
Total	63	100
Does your child gag, spit or vomit a certain type of food		
Yes	36	18
No	164	82
Total	200	100
A child fed with only breast milk for 6 months presents more challenges during the introduction of complementary foods		
Agree	126	63
Disagree	41	20.5
Neutral	33	16.5
Total	200	100
A child fed with breast milk in addition to water, water-based drinks, etc before six months presents more challenges during the introduction of complementary foods		
Agree	49	24.1
Disagree	90	45.2
Neutral	61	30.7
Total	200	100

Comparison of difficulties experienced in introducing complementary foods to exclusively breastfed and non-exclusively breastfed infants

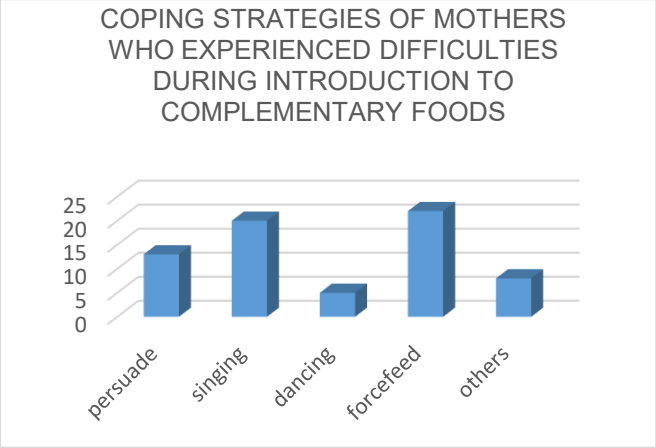
Table 4 compares the difficulties experienced in introducing complementary foods among exclusively breastfed and non-exclusively breastfed infants. The same percentage (13.6%) refused foods in both groups, although 17.5% of the exclusively breastfed infants refused foods for more than six weeks.

Table 4: Comparison of difficulties experienced in introducing complementary foods to exclusively breastfed and non-exclusively breastfed infants

Variables	Exclusive Breastfeeding		Pearson's X^2	P value
	Exclusively breastfed (%)	Non exclusively breastfed (%)		
Infants Expression				
Crying	1.5	1.0	6.379[a]	0.095
Vomiting	0.0	1.0		
Refusal	13.6	13.6		
No reaction	23.6	45.7		
Duration				
One week	20.6	28.6	6.893[a]	0.075
Four weeks	11.1	15.9		
Six weeks	1.6	0.0		
>six weeks	17.5	4.8		

Coping strategies of mothers

Figure 1 shows the coping strategies of mothers who experienced difficulties during the introduction of complementary foods. Force feeding (31.5%) and singing (29.9%) were reported as major strategies.



Association between selected variables and the timely introduction of complementary foods

In Table 5, the age of the mother and child feeding showed a statistically significant association with the timely introduction of complementary foods at 6 months. It was also observed that the timely introduction of complementary foods increases with the increasing level of education of the mother, while it decreases with the age of the child.

Table 5: Association between selected variables and timely introduction of complementary foods at 6 months

Variables	Timely introduction of complementary foods at 6 months		Pearson's X^2	P value
	Met (%)	Not met (%)		
Age of child (months)				
6-9	55.5	19.0	0.724[a]	0.395
10-12	20.5	5.0		

Sex				
Male	38.0	13.0	0.253[a]	0.615
Female	38.0	11.0		
Age of Mother (years)				
18-24	15.0	4.5	7.619[a]	0.055
25-31	38.5	9.5		
32-38	21.0	7.5		
>39	1.5	2.5		
The educational level of the mother	0.0	0.5	3.359[a]	0.340
No formal education	1.0	0.5		
Primary	35.0	11.0		
Secondary	40.0	12.0		
Tertiary				
Child-feeding (Independent)	8.5	5.5	4.434[a]	0.035
Yes	67.8	18.1		
No				
First child				
Yes	34.0	10.0	0.140[a]	0.709
No	42.0	14.0		
Attendance of Antenatal Clinic				
Did not attend	1.0	0.5	2.077[a]	0.354
Less than four times	3.0	0.0		
Four times and above	72.0	23.5		

Logistic regression of factors associated with the timely introduction of complementary foods at 6 months

As shown in Table 6, the significant predictors of the timely introduction of complementary foods at 6 months were the mother's age, exclusivity, and knowledge of complementary feeding.

The table shows that mothers aged 39 years and above were 7.6 times less likely to introduce complementary foods at the right time compared to mothers aged 18-24 years (OR=0.130, 95% CI=0.017-0.982), and this difference was statistically significant.

Mothers whose average income was above 60,000 naira were 1.98 times less likely to introduce complementary foods at the right time compared to mothers whose income was less than 60,000 naira, although this was not statistically significant (OR=0.503, 95%CI=0.083-3.065).

Table 6: Multivariate analysis on factors associated with timely introduction of complementary foods at 6 months

Variables	Odd ratio	Lower	Upper	P
Age				
18-24	1(ref)			
25-31	1.928	0.617	6.023	0.259
32-38	0.940	0.260	3.398	0.925
39 and above	0.130	0.017	0.982	**0.048***
Mother's occupation				
Unemployed	1(ref)			
Self employed	0.927	0.074	11.608	0.953
Employed	0.632	0.047	8.478	0.729
Mother Income				
Less than 20000	1(ref)			
20000-40000	0.911	0.370	2.243	0.840
41000-60000	1.117	0.273	4.577	0.878
>60000	0.503	0.083	3.065	0.457
First child				

No	1(ref)			
Yes	1.060	0.383	2.929	0.911
Exclusive Breastfeeding				
No	1(ref)			
yes	2.883	1.159	7.174	0.023*
Complementary feeding knowledge				
Poor knowledge	1(ref)			
Good Knowledge	2.93	1.482	5.798	0.002*

Findings of Focus Group Discussions

Focus group discussion was adopted in the qualitative phase to enhance, as well as clarify, the quantitative results generated (12). This decision was influenced by the nature of the research objectives and the position that mixed methods provide researchers with the opportunity to understand social reality from different research paradigms (13). The majority of the respondents who participated in the FGD were Yorubas, although a few who were not Yorubas understood and could speak the Yoruba language.

Knowledge regarding adequate, timely, proper and safe complementary feeding

All of the mothers are aware of the right time to introduce complementary foods. Some mothers mentioned proper hygiene, introducing complementary foods gradually, first introducing a semi-solid food, etc.

"If I want to feed my child, I will fry the oka-baba, grind, soak and then cook. I will ensure that the pap is not too thick, and I will wash my hands before feeding her. At 6 months, complementary foods should be introduced gradually (P2)".

"At 6 months, I made tom brown for him (fish, crayfish and soybean, all ground) to add to his pap; he has separate utensils (P7)".

Age at which the child was first fed complementary food and the food fed

Most of the infants were introduced to complementary foods at 6 months, 4 were introduced at 5 months, and 1 was introduced at 3 months. The mothers who introduced complementary foods early gave reasons like work, breast milk not sufficient, and a large appetite.

"It was because of work I introduced him to complementary foods at 3 months (P7)".

"I had to introduce her to complementary foods at 5 months because breast milk was no longer sufficient for her (P6)".

"She was ill at that time and was placed on antibiotics, but she cries so much even at night. After breastfeeding, she still cries, so I was told that she needs to eat well because of the antibiotics. So, I started giving her pap. The first night I gave her, she accepted and slept well, but she clocked 7 months before I introduced her to family foods (P3)".

Challenges encountered during the introduction to complementary foods

Challenges reported were food refusal, time constraint (time to prepare a separate food for the child, time to feed), difficulty in accepting new foods, and keeping the environment clean. Some (4) mothers reported initial refusal for one week, though some infants refused for months. It is interesting to note that some infants completely refused some foods but gladly accepted others:

"Initially, I had to force-feed her when I introduced her to complementary foods. After some months, she started accepting the foods when she was hungry, so I stopped force-feeding (P3)".

"She refused totally when she was 6-8 months, only breast milk. I was completely frustrated (P4)".

"At 6 months, I fed her Golden Morn; she refused it, I fed her pap, she refused it, but when I prepared amala, ewedu plus fish, she gladly accepted it, so since then, I have been feeding her amala, noodles plus egg (P6)".

"The only challenge is that when I introduce a new food, he is always reluctant to accept the food, but with time, he gets accustomed to it (P15)".

Exclusive breastfeeding and challenges during the introduction to complementary foods

Some participants reported that exclusive breastfeeding makes the child too fond of breast milk, and this fondness results in refusal and sometimes complete refusal of foods during the introduction of complementary foods. Although some mothers who also reportedly exclusively breastfed their infants did not experience the challenge of food refusal:

"He refused pap at 6 months, so I stopped giving him and then introduced him to Golden Morn at seven months (P15)".

"She refused completely, so I had to force-feed her, and luckily she doesn't vomit after force-feeding (P10)".

"OH yes, she didn't accept foods even with force feeding; she was already 9 months before she started accepting foods (P3)".
Mothers had to devise means to cope with challenges that erupt during the introduction of complementary foods. Coping strategies like the use of toys, singing, force-feeding and eating together were reported by mothers:
"She doesn't accept food, so they help me to force feed her because I don't know how to force feed a child. Eating together also helped (P4)".
"It's by force o, I force feed her, and she doesn't vomit (P10)".
"I force-fed him since it was only breast milk he wanted (P12)".

Role of Significant Others
While some mothers had clear intentions to wait until six months before introducing complementary foods, others gave it very little thought or planning. For those mothers, decisions were easily influenced, particularly by health workers, neighbours, friends and family. The majority of the mothers mentioned that health workers always encourage them to exclusively breastfeed their infants for 6 months.
"When my daughter clocked 3 months, my neighbour said I should introduce her to complementary foods, but I did not answer, so she carried my daughter and force-fed her (P4)".
"My mother-in-law said breast milk is not sufficient for my son. I ignored her, but she force-feeds him when I leave for work (P5)".
"My mother-in-law, mum and some of my neighbours encouraged me to exclusively breastfeed my daughter (P20)".

Discussion
This study identified the problems associated with the introduction of complementary foods to breastfed infants and the coping strategies of mothers. More than half of the respondents had good complementary feeding knowledge, which corroborates the findings of a study carried out in Osun State (14). About two-thirds of the respondents introduced complementary feeding at 6 months, which is in line with a study carried out in Ogun State (15) as opposed to a study carried out in Tanzania, where the majority of the infants were introduced to complementary foods before 6 months (16). The expected age at which the introduction of nutritionally adequate and safe complementary foods should occur is at 6months (1). This positive observation is credited in part to the prior interactions with healthcare professionals at the primary healthcare level who are in a good position to advise mothers on child feeding and offer health information during prenatal and postnatal visits (17).
Challenges encountered during the introduction to complementary foods were food refusal, time constraint, difficulty in accepting new foods and maintaining proper hygiene. Our findings are aligned with those of (18), wherein shutting of lips (mouth shut movement), turning heads, crying and spitting of foods were difficulties children present during the introduction of complementary foods. The cascading effect of feeding difficulties affecting growth and nutrition is often seen to influence an infant's developmental outcomes later in life. Unresolved feeding difficulties may consequently exacerbate impaired development in at-risk populations, resulting in stunted growth and malnutrition, or, in severe cases, lead to death (19).
We found out that more than half of the respondents reported that a child fed with only breast milk for 6 months presents more challenges during the introduction of complementary food compared to a child fed with breast milk in addition to other foods, the discrepancy maybe due to flavour exposure and infants' familiarity with breast milk, texture sensitivity and feeding routine differences. Our findings further suggested that there is not much difference in the challenges faced by the two groups, just that exclusively breastfed infants refuse foods for longer periods compared to non-exclusively breastfed infants.
Mothers devised a means to cope when infants present challenges during the introduction of complementary foods. Most mothers resorted to singing and force-feeding, while others had to fall back on persuading, dancing, the use of toys and eating together. Emphasis was placed on force feeding; it was the predominant strategy as mothers who could not force feed were assisted by older mothers, mothers-in-law, and neighbours. Our findings are in line with a study conducted in San Francisco (20), where parents used coercive feeding practices to ensure infants eat when they were not showing interest in food. Some felt that their infants had to eat a certain amount of food in a day or consume a certain variety of foods for the parent to feel that the infant had eaten well. Although few parents noted that other family members did not agree with the coercive feeding practices, and could acknowledge that these family members may have a valid point. Nonetheless, they continued to employ the pressuring practices due to anxieties about their child not being well fed (20). Research has shown that the use of negative feeding strategies such as force feeding has the potential to negatively impact child growth,

particularly in communities where growth faltering is a major child nutrition problem (21).
This aligns strongly with findings from a local study conducted in Ibadan (22), which demonstrated that pressuring feeding practices are significantly associated with underweight status among children, suggesting that such practices may be reactive responses to poor child growth rather than effective feeding strategies. This cyclical relationship, where poor intake leads to force-feeding, which in turn may worsen feeding behaviour and appetite regulation, definitely has implications for child nutrition outcomes. From a cultural perspective, the persistence of force-feeding can be understood within the broader socio-cultural context of child care in Nigeria, where feeding is often viewed as a measure of good motherhood, and the compelling intervention of community influences, including advice from grandmothers and older relatives. Additionally, time constraints among working mothers and reliance on caregivers may further limit the use of responsive feeding techniques.
Targeting styles of feeding within communities through education and support for responsive feeding practices may promote more reactive and developmentally appropriate feeding interactions, as well as the development of healthy appetites and eating behaviours (23).

Conclusion

Food refusal is not specific to exclusively breastfed infants, as mothers who did not exclusively breastfeed also reported food refusal, just that exclusively breastfed infants refused food for longer periods compared to non-exclusively breastfed infants. Mothers resorted to coercive feeding, such as force feeding, to ensure their infants eat. Raising awareness of the hurdles caregivers may face during the introduction of complementary foods and educating mothers on the gentle reintroduction of complementary foods. Also, the dangers of force feeding should be incorporated into the nutrition intervention in this study population. Community-based behaviour change communication should also address misconceptions around child feeding, particularly the belief that force-feeding ensures adequate nutrition. Instead, promoting responsive feeding as a culturally acceptable and effective alternative is essential. Furthermore, integrating counselling on feeding styles into routine antenatal, postnatal, and child welfare clinics could provide a sustainable platform for improving practices.

List of Abbreviations

EBF: Exclusive breastfeeding
FGD: Focus group discussion
LGA: Local government area
PHC: Primary Health Centre
UNICEF: United Nations Children's Fund
WHO: World Health Organisation

Declarations

Ethical approval and consent to participate

The Ethical approval for this study was obtained from the Institutional Review Board of the UI/UCH Ethics Committee. The ethical approval reference number is UI/EC/17/0282. Entry into the health centres was achieved by presenting a letter obtained from the Department of Human Nutrition UI, introducing the researchers and the purpose of the research. Permission to carry out the study was sought from the Primary Health Centre Co-ordinator of Ibadan North Local Government Area. A permission letter to be presented at each primary health centre was issued to the researchers. The research purpose, methods and benefits were explained to the matrons in charge of each health facility. Verbal consent was obtained to go on with the study after agreement on how to conduct the study in the health centres was decided by both parties (matron and researchers). Verbal informed consent was obtained from the participants. Participation in this study was voluntary, and participants were free to withdraw at any stage in the course of the study with no consequences following their actions. Participants were assured of the strict confidentiality of all the information provided. In order to maintain confidentiality, anonymity was given to all participants by assigning codes to identify questionnaires instead of participants' names.

Consent for publication

All authors gave consent for the publication of the work

Availability of data and materials

The data and materials associated with this research will be made available by the corresponding author upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding
Nil

Author contributions
O-ORI, ETE and SFO worked on the conceptualisation, study design, data collection, analysis, manuscript writing and revision of the manuscript for intellectual content.

Acknowledgement
The authors wish to thank all mothers who participated in this study.

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