ORIGINAL ARTICLE

Nutrition Education Intervention on maternal knowledge, and perception toward infant and young child feeding in Abakaliki Metropolis, Nigeria

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ABSTRACT

Background: The poor infant and young child feeding (IYCF) practices in developing countries require appropriate interventions targeted towards its improvement. **Aims:** To assess the impact of child feeding intervention on the maternal IYCF knowledge, perception and intention in Abakaliki Metropolis, Nigeria. **Subjects and Methods:** This quasi-experimental study adopted a mixed method approach and purposive sampling technique to recruited 100 eligible breastfeeding mother and child (6 – 12 months) pairs. The respondents were subjected to a one-day intervention which comprised 7 – hours detailed nutrition education on IYCF and hands-on-practical demonstration of indigenous complementary foods formulation/processing. Paired *t*-test was used to investigate the significant differences in the IYCF knowledge and perception before and after the intervention while focus group discussions identified their intended child feeding practices after the intervention. **Results:** Results reported a mild increase in the mean knowledge (13.71 + 3.67 to 15.79 + 3.97) and perception (16.86 + 4.36 to 17.21+ 2.96) score after the intervention. Qualitative data revealed mothers' intention to stop; forceful feeding, offering processed drinks and early switching of breast. Furthermore, the respondents affirmed that they were furnished with the right knowledge/skills for enrichment and formulation of new/existing varieties of local complementary foods. **Conclusion:** The intervention increased maternal IYCF knowledge, perception and promoted good IYCF intentions. Increased nutrition education of the mothers should be encouraged as it facilitates the improvement in maternal IYCF knowledge, perception and feeding behaviors.

Keywords: Infant and young child feeding, knowledge, perception, intention, nutrition interventions.

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1 Introduction

Poor dietary intake is a major cause of child under-nutrition[1]. The window of 6–23 months of age is a time of accelerated growth and the period of highest risk for growth faltering among children in low- and middle-income countries (LMICs) [2]. Nutrient requirements are high in this age group and can no longer be met through breast milk alone. However, at that age children are not yet developmentally ready to fully transition to the family diet without modifications in texture and forms [2]. Complementary feeding refers to the timely introduction and provision of developmentally appropriate, nutrient-dense foods in addition to breast milk [3].

Complementary feeding remains a significant contributor to the prevention of under-5 morbidity and mortality, as up to one-fifth of global under-5 deaths can be averted if 90 % of the world children received optimal child feeding practices [3]. Infant and young child feeding practices remains considerably

low in Nigeria, findings from the Nigeria Demographic Health Survey revealed that 29% of infants were exclusively breastfed [4]. Furthermore, some of the breastfed children met the minimum meal frequency (43.9 %), minimum dietary diversity (21.8%) and minimum acceptable diet (10.8 %) criteria [4].

Although complementary feeding is a universal practice, variations exist across people of different cultures, socioeconomic classes [5]. A typical developing nation is characterized by poor feeding practices and poor dietary quality of home-made complementary foods [6-8]. Nigerian traditional complementary foods are mainly porridges based on starchy roots, tubers and cereals [9, 10]. These foods have been shown to be viscous, low in energy and nutrients and therefore do not satisfy the energy and nutrient needs of infants [9, 10].

Educational interventions are widely acknowledged as effective in promoting public health strategy [11-13]. They have been used to improve or encourage the adoption of healthy lifestyles, practices, and behaviors in individuals and the community [13]. Educational interventions, which are expected to be effective in promoting health behaviors seek to address not only intrapersonal factors such as knowledge, attitudes and beliefs of individuals but must also take cognizance of interpersonal and environmental factors. The theory of planned behavior posits that adoption of new practices/behaviors is built on an intention to perform that behavior, and this intention is largely influenced by attitudes, perceptions and knowledge on the issue [14]. A number of empirical studies have shown that attitudes, normative influences, and perceived behavioral controls influence breastfeeding and complementary feeding practices of caregivers [15-18].

Hence, the promotion of appropriate feeding practices through nutrition education of mothers is fundamentally important in reducing child malnutrition and mortality [19], and also for achieving Sustainable Development Goals 1 and 2 [4]. Caregiver education or counselling about appropriate complementary feeding practices such as offering a diversity of nutrient-dense food, safe and developmentally appropriate food preparation, age-appropriate frequency of feeding, continued breastfeeding is an effective strategy for improving child intake and reducing growth faltering in settings where households have fairly sufficient resources to put the recommendations into practice Studies on nutrition education interventions on infant and young child feeding have shown to increase knowledge of caregivers, improved the diversity and frequency of complementary feeding and support optimal growth in young children [20-23]. Therefore, the aim of this study to assess the impact of nutrition education intervention on maternal IYCF related behaviors.

2 Subjects and Methods

2.1 Study design

The study design for this research was a quasi-experimental (pre-test and post-test) survey design. Here, the study participants were not assigned randomly to conditions, but a within-subjects experiments in which participants were first assessed under the control conditions (baseline) and later under treatment condition (after the intervention).

2.2 Study location

The study was carried out at the Institute of Child Health of the Alex-Ekwueme Federal University Teaching Hospital Abakaliki (AE-FUTHA), Ebonyi State.

Ebonyi state is an inland south-eastern of Nigeria populated primarily by Igbos with its capital (Abakaliki) as the largest and most developed city [24].

The Federal Teaching Hospital is located at two strategic sites in Abakaliki Local Government Area in Ebonyi State; AEFUTHA 1 - Chidume Street, Behind State Prison Headquarters, Abakaliki and AEFUTHA 2 - A343, Ntezi Abba, Abakaliki.

The hospital was established in the 1930's under the British colonial administration. The hospital provides special services and clinics in the following area: breastfeeding and lactation management, antennal and post-natal care, population birth and death) dietetics and intensive care [25].

2.3 Study population

The population for this study consists of breastfeeding mothers and their children (6-12 months) accessing welfare services at the Institute of Child Health Clinic, Alex Ekwueme Federal University Teaching Hospital Abakaliki.

2.4 Sampling and samplings techniques

A sample size of 100 breastfeeding mothers and their children were recruited using the purposive sampling technique. This helped to identify and recruit mothers who demonstrated willingness to stay beyond the usual duration required for accessing child welfare services and participate in the study

2.4.1 Inclusion/exclusion criteria

Breastfeeding mothers of apparently healthy children aged 6-12 months, who voluntarily consented to participate in the study were recruited. Those who did not meet these criteria were excluded were excluded from participating in this study.

2.5 Ethical considerations

Ethical approval for this study was obtained from the Research and Ethics committee of Alex Ekueme University Teaching Hospital Abakaliki (AE-FUTHA/REC/VOL 3/2020/107). Written informed consent was obtained from the mothers. The respondents were assured of the confidentiality and non-maleficence nature of the research. Only those who willfully consented to partake in this study were recruited.

A good quantity of the raw food stuffs was given as incentives to the study participants after the survey to in-order to compensate for time taken and also encourage their adoption of the varied and nutrient-dense local complementary food options.

2.6 Data collection

2.6.1 Study instruments

The data for this study were collected using a guided semi-structured questionnaire and interviewer technique method.

2.6.2 Questionnaires

The questionnaire was subjected to content validation by a team of experts from the Institute of Child Health Clinic and Dietetics Department of the hospital before being distributed to the respondents for data collection. This process of questionnaire development, pilot testing, reliability and validity checks were adapted from Tsang and colleagues [26] guidelines. Key elements of the intervention which align with IYCF best practices were incorporated in the questionnaire development. An inter-rater reliability check using Kappa's test was done, and the outcome of two independent raters indicated a good agreement level (>0.80).

2.6.3 Data collection procedure

This intervention study was carried out in three phases/stages namely; pre-intervention, intervention and post-intervention stage.

Pre-intervention stage

Questionnaires were administered to the study participants in order to obtain baseline information on their socio-economic characteristics, level of knowledge and perception of infant/young child feeding.

Intervention stage

The intervention stage is comprised of two stages; basic nutrition/health education stage and hands-on-practical steps on formulation of varieties of indigenous complementary foods.

The nutrition/health education stage consist of a 3-hour talk on the constituents of an adequate diet, food safety, personal hygiene and recommended guidelines for optimal child feeding practices.

In the cooking demonstration phase, the participants were divided into four groups with each group consisting of 25 members. Each group comprised an instructor that led the cooking demonstration session and two assistants that supported the process through preliminary food preparation activities and participant support.

This was followed by hands-on practice of the different methods of formulating varieties of complementary foods/snacks from locally available foodstuffs. The study participants were divided into four groups and the training sessions held simultaneously. These include recipes from maize powder (soy/maize mix), rice flour and mashed sweet potato dishes. Practical demonstrations on preparation of the nutritious snacks and drinks such as sweet potato fiossis, cassava buns, sweet potato juice and tiger nut milk were conducted. This lasted for about four hours.

Post-intervention stage

The post-intervention stage was conducted on the same day as the intervention. After the intervention, a post-assessment of mother's knowledge and perception of infant and young child feeding was elicited using a guided structured questionnaire.

2.7 Data analysis

2.7.1 Wealth index tertile classification

Wealth index analysis was done in order to measure the wealth of the respondents' households. The wealth index was constructed using principal component analysis to determine the weights for the index based on information collected about their living conditions and possession of key household assets and facilities adapted from the Demographic and Health Survey questionnaires. These comprise productive assets (e.g., farmlands, shops livestock), non-productive assets (radio, refrigerator, TV, mobile phone, chair, bed etc.), household amenities (water supply, toilet, walls/house, roof, electricity, cooking fuel) and others. This was then categorized into three equal parts (tertiles).

2.7.2 Scale of knowledge classification on child feeding

Each of the correctly answered knowledge questions was scored 2. A composite score was calculated for each participant. A perfect score is 20 which represents 100 %. The scores were divided into 3 as follows: 0 – 6 is poor knowledge; 7 – 13 is fair/average knowledge and 14 – 20 is good knowledge. Knowledge questions were adapted from the recent WHO/UNICEF child feeding indicators which examined IYCF practices on breastfeeding initiation and

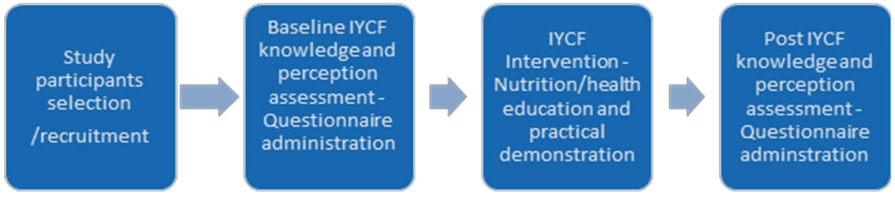

Figure 1. Data collection process

duration, exclusive breastfeeding, complementary feeding introduction, dietary diversity etc. [27].

2.7.3 Scale of perception classification on child feeding

Each of the correctly answered perception questions was scored 2. A composite score was calculated for each participant. A perfect score is 22 which represents 100%. The scores were divided into 3 as follows: 0 – 8 is poor knowledge; 9 – 16 is fair/average knowledge and 17 – 22 is good knowledge. Questions which addressed key aspects of family support, adequacy, texture and consistency, hygiene etc. were generated and adapted from previous studies on IYCF perception of mothers [28-30].

2.8 Statistical analysis

All statistical analysis was done using IBM SPSS version 25. Descriptive statistics (mean, frequency and percentage) were computed for the categorized and continuous variables such as socio-demographic characteristics, maternal knowledge and perception of infant feeding. Paired t-test was used to compare the impact of the intervention on the knowledge and perception of child feeding.

3 Results

3.1 Socio-demographic characteristics of breastfeeding mothers

Results from Table 1 revealed the socio-demographic and socio-economic characteristics of breastfeeding mothers. The respondents fell within the age ranges of 25 – 29 (42.0 %), 30 – 34 (26.0 %) and 35 – 39 (18.0 %) years of age. There were more married (84.0 %) than single (16.0 %) respondents involved in this study. Majority (86.0 %) of the respondents had tertiary education while the rest of them were either uneducated (6.0 %) or had secondary education (8.0 %). All (100.0 %) and majority (88.0 %) of them were Christians and from Igbo ethnic group respectively. Family size status of respondents showed that more than half (52.0 %) of the respondents had a family size of 4 – 6 persons; more

Table 1. Socio-demographic characteristics of breastfeeding mothers

Variables	Frequency (N= 100)	%
Age (in years)		
- 20-24	8	8.0
- 25-29	42	42.0
- 30-34	26	26.0
- 35-39	18	18.0
- 40-44	6	6.0
Marital status		
- Married	84	84.0
- Single	16	16.0
Highest educational qualification		
- No formal education	6	6.0
- Secondary education	8	8.0
- Tertiary education	86	86.0
Religion		
- Christianity	100	100.0
Ethnic group		
- Ibo	88	88.0
- Yoruba	7	7.0
- Efik	5	5.0
Family size		
- 1-3	30	30.0
- 4-6	52	52.0
- 7-9	18	18.0
Occupation		
- Housewife/unemployed	8	8.0
- Farming	4	4.0
- Trading	25	25.0
- Civil servants	53	53.0
- Student	10	10.0
Monthly income		
- None	29	29.0
- <₦10,000	6	6.0
- ₦10,000- 20,000	10	10.0
- ₦20,000-50,000	18	18.0
- ₦50,000-100,000	16	16.0
- >₦100,000	27	27.0

than a quarter (30.0 %) had 1-3 household members while few (18.0 %) of them had a family size of 7 – 9. Civil servants (35.0 %), Traders (25.0 %), health workers (16.0 %) and students (10.0 %) dominated the occupational status of the respondents. More than a quarter (29.0 %) of the respondents earned no income, some (27.0 %) earned above 100, 000, while others earned between 20,000 – 50,000 (18.0 %) and 50,000 – 100,000 (16.0 %).

3.2 Wealth index tertile of breastfeeding mothers

Information on the categorized wealth index of respondents is summarized in Table 2. Results showed that most (65.0 %) of the respondents were classified as middle class, a good number (31.0 %) of them were rich while only 4.0 % of the respondents were poor.

Table 2. Wealth index tertile of respondents

Variables	Frequency (N =100)	%	Mean scores ± S.D
Poor (0-4.0)	4	4.0	4.00 ± 0.00
Middle class (4.1-8.0)	65	65.0	6.64 ± 1.01
Rich (8.1-12.0)	31	31.0	9.03 ± 0.64
Total	100	100.0	7.39 ± 1.63

3.3 Infant and child feeding knowledge of breastfeeding mothers

Results on respondents' knowledge of infant feeding prior to and after the intervention is shown in Table 3. Results showed a 4.3 % decline in the correct responses on time of breast milk introduction (pre- 96.0 %; post = 91.7 %). A 0.2 % drop in the percentage of respondents who were of the opinion that colostrum should be given to the baby (pre- 95.0 %; post- 94.8 %) was also reported. There were more responses on the correct duration of feeding on one breast during the post-assessment (37.5 %) than prior to the intervention (27.0 %). The majority (pre- 82.0 %; post- 86.5 %) of the respondents believed that breast milk is insufficient for the child after 6 months. Few of the respondents before (21.0 %) and after (27.1 %) intervention correctly responded to the recommended duration of continued breastfeeding. A good number of the respondents agreed that the texture of complementary food at six months should be similar to breast milk (pre- 53.0 %; post- 45.8 %). Keeping/storing leftover meals to serve later was highlighted as a poor hygienic practice by the majority of the respondents during pre-test (67.0 %) and post- test (84.4 %) sessions. Maintaining fluid and food intake was identified as the best practice for children with diarrhea by most of the participants (pre- 63.0 %; 81.3 %). A 16.0 % increase was observed in the percentage of respondents that identified pastries and sweets as not part of the seven (7) food groups required in a child's diet. The respondents explained that infants should be fed separately (pre- 80.0 %; post- 70.8 %).

3.4 Categorized IYCF feeding knowledge of breastfeeding mothers

Results from Table 4 showed the categorized knowledge scores of the breastfeeding mothers' child feeding practices. The pre- knowledge assessment showed that most of the respondents had good (61 %) knowledge of infants, some (33.0 %) of them had average knowledge while a few (6.0 %) of them had poor knowledge of child feeding. Post knowledge grades revealed that a quarter of the (25.0 %) respondents had average knowledge while the majority (70.8 %) had good knowledge of infant feeding.

Table 5 revealed a slight but significant increase (pre- 13.71 + 3.67; Post = 15.79 + 3.97) in the mean knowledge score of breastfeeding mothers' child feeding practices was observed in this study ($t = 0.18$; $p = 0.04$).

3.5 Respondents' perception toward child feeding practices

Information on respondents' child feeding perception is summarized in Table 5. A 6.0 % increase was observed in the percentage of respondents who were in agreement that good nutrition is essential for age groups. Majority (pre- 82.0 %; post- 86.5 %) of the respondents positively responded to questions that their breasts will fall if they practice exclusive breastfeeding. Most (pre- 67.0%; post- 58.3 %) of the respondents were in agreement that family support is vital in ensuring optimal infant feeding.

A 5.2 % decline in the percentage of the majority (pre- 76.0 %; post-70.8 %) of respondents that disagreed that well water is clean and safe for preparing complementary feeds. Almost all (pre- 92.0; post- 92.7 %) of the respondents supported that mother's poor nutritional status can influence child's health outcomes. Furthermore, prior to the intervention, majority (84.0 %) of the respondents do not believe that animal proteins can cause abdominal pain to the baby, an increased proportion (89.6 %) had similar views after the intervention.

Table 3. Breastfeeding mothers' knowledge of child feeding

Variables	Correct response	Pre-test (n=100)		Post-test (n=96)		% change (Δ)
		F	%	F	%	
Time of breast milk introduction	Within 30-1hr after birth	96	96.0	88	91.7	-4.3
Colostrum should be given to the baby	Yes	95	95.0	91	94.8	-0.2
Feeding on one breast before switching to the other	≥ 20 minutes	27	27.0	36	37.5	10.5
Age breast-milk is not enough for the baby	After 6 months	82	82.0	83	86.5	4.5
Recommended duration of breastfeeding should continue	24 months	21	21.0	26	27.1	6.1
At 6 months, texture of baby's food should be similar to	Breast milk	53	53.0	44	45.8	-7.2
Hygienic practices to observe during infant feeding includes all except	Keep leftover meals and serve later, to avoid wastage	67	67.0	81	84.4	17.4
Best practice for a child presented with diarrhea	Maintain fluid and food intake	63.0	63.0	78	81.3	18.3
An adequate and diverse, complementary food should contain the following food groups except	Pastries and sweets	59	59.0	72	75.0	16.0
Appropriate method of serving infants food in the home	Separately	80	80.0	68	70.8	-9.2

Some of the respondents disagreed that a child can eat foods of various consistencies after 6 months of age (pre-25.0%; post-15.6 %). Majority (pre- 92.0 %; post- 86.5 %) of them were in objection to the assertion that a well-nourished baby does not need to be immunized. An 18.3 %, 19.9% and 4.3 % increase was observed in the post-intervention prevalence of respondents' disagreement to the following statements; watery porridge is better than soft enriched porridge, addition of groundnut/soya beans to local pap will not improve the nutritional value of the feed, the mother should wait for a sick child to recover before giving more food.

3.6 Categorized perception of respondents towards child feeding practices

The results of respondents' categorized perception score are shown in Table 6. Results on the pre-perception scores revealed that 4.0% of them had low perception, 31.0 % of the respondents had fair perception while 65.0 % of them had a high IYCF perception. Post perception test grades of the respondents showed that more than half (57.3 %) of the respondents had a high perception of infant feeding while a good number (42.7 %) of them had a fair perception toward child feeding.

Table 4. Categorized pre and post knowledge scores of breastfeeding mothers' child feeding practices

Variables	Pre knowledge grade		Post knowledge grade	
	F	%	F	%
Poor (0 – 6)	6	6.0	4	4.2
Average (7 – 13)	33	33.0	24	25.0
Good (14 – 20)	61.0	61.0	68	70.8
Total	**100**	**100.0**	**96**	**100.0**

Table 5. Mean knowledge scores of breastfeeding mothers' child feeding practices

Mean pre-knowledge score	Mean post knowledge score	Statistics (t; p- value)
13.71 ± 3.67	15.79 ± 3.97	t = 0.18; p = 0.04

Table 6. Respondents' perception of child feeding

Variables	Positive response	Pre-test (n=100)		Post-test (n=96)		% Change
		F	%	F	%	
Good nutrition is essential for all age groups	Agree	94	94.0	96	100.0	6.0
My breast will fall if I practice exclusive breastfeeding	Disagree	82	82.0	83	86.5	4.5
Family support is vital in ensuring optimal infant feeding	Agree	67	67.0	56	58.3	-8.7
Well water is clean and safe for preparing complementary feeds	Disagree	76	76.0	68	70.8	-5.2
Mothers' poor nutritional status at pregnancy can negatively affect the health of the new born baby	Agree	92	92.0	89	92.7	0.7
Meat, eggs and fish can cause abdominal pains if given to babies 9-12 months	Disagree	84	84.0	86	89.6	5.6
A child can eat foods of various consistencies after 6 months of age	Disagree	25	25.0	15	15.6	-9.4
A well-nourished baby does not need to be immunized	Disagree	92	92.0	83	86.5	-5.5
Watery porridge is a better food for a 6-month baby than soft enriched porridge	Disagree	65	65.0	80	83.3	18.3
Adding groundnut or soybeans to local pap will not improve the nutritional value of the feed	Disagree	78	78.0	94	97.9	19.9
The mother should wait until the sick child is healthy before giving him/her more food	Disagree	90	90.0	91	94.8	4.8

Table 7. Categorized pre and post perception scores of respondents

Variables	Pre knowledge grade		Post knowledge grade	
	F	%	F	%
Poor (0-8)	4.0	4.0	-	-
Fair (9-16)	31	31.0	41	42.7
High (17-22)	65	65.0	55	57.3
Total	**100**	**100.0**	**96**	**100.0**

Table 8. Mean perception scores of respondents

Mean pre-perception score	Mean post perception score	Statistics (t; p- value)
16.86 ± 4.36	17.21 ± 2.96	t = 0.13; p = 0.09

Overall, the infant/young child feeding baseline perception score (16.86 ± 4.36) of respondents increased to 17.21 ± 2.96 after the intervention.

4 Discussion

Study reports that more educated, young, married and employed persons were involved in this study could have an influence on the respondents' knowledge, perception and intentions towards infant and young child feeding, as this underscores their capacity to receive and apply the lessons learned from this nutrition intervention. Similarly, studies from several countries have shown that one or more of these socio-demographic and socio-economic factors were key determinants of infant and young child feeding practices; religion [31], age [31, 32], education [31, 33], marital status [34, 35], wealth status 4 and employment status [36].

The percentage of poor (4%) women in this study is lower than reports from NDHS, 2018 (Lowest + second category - 36.5 %) [4]. Rich respondents in this study (31.0 %) were also found to be higher than national reports from NDHS, 2018 – (Highest – 22.4 %) [4]. The observed high wealth distribution of respondents studied could be attributed to the high educational status and occupational engagements of the breastfeeding mothers. Furthermore, the observed higher wealth index status may be attributed to the fact that study was conducted in an urban area - Abakaliki metropolis, hence residents are expected to have access to improved living conditions and household assets.

Majority of the respondents had correct pre and post knowledge of the recommended breastfeeding initiation time and this exceeds findings from studies conducted in Sokoto, Nigeria [37] and Tamale, Ghana [38] which reported prevalence rates of 31.0 % and 39.4 % respectively. Over ninety percent of the respondents were aware that colostrum is good for babies and should not be discarded, this figure compares well with the 87.5 % prevalence observed by Mohammed et al. [39]. Although a mild (4.5 %) increase in knowledge of the appropriate time for complementary feeding introduction was reported, the post knowledge prevalence (85.5 %) exceeds study reports from Lahore city, Pakistan (54 – 57.2 %) [40, 41], Ghana (60.0 %) [42] and Rivers, Nigeria (63%) [43].

Surprisingly, the intervention could not greatly improve the low prevalence of respondents' knowledge of recommended breastfeeding duration. The study report was found to be lower than another study in Pakistan where most of the respondents knew the right time breastfeeding should be discontinued [41]. Similar studies done in Nigeria did not consider maternal knowledge of recommended breastfeeding duration and this hindered possible comparison with local evidence [44-46]. WHO recommended early initiation of breastfeeding within an hour of birth, exclusive breastfeeding (EBF) during the first six months and a continuation of breastfeeding with adequate complementary feed for up to 2 years of life to achieve optimal growth, development and health [47].

More than half (53.1 %) of the respondents were knowledgeable that the texture/consistency of complementary foods should be similar to breast milk. Although little is known about this in our study location knowledge, Safaa and his colleagues [48] found that 63.8 % and 63.4 % of mothers considered yogurt and juice suitable as the main complementary food for feeding infants.

The high baseline knowledge of infant and young child feeding (61.0 %) in this study was reportedly higher than in other studies [41-43, 49]. This difference could be explained by the valuable effort of health professionals in the Institute of Child Health and antenatal clinics who provide advice and support to mothers during antenatal care and immunization visits.

The attainment of an all-positive post-intervention perception score on the importance of good nutrition across all lifecycles is highly commendable. Majority of the respondent in this study had a positive response to perceived breastfeeding ability to cause saggy breasts. This was further improved as a modest increase (4.5 %) in the baseline perception was recorded. On the contrary, a study from the UK revealed the bulk of women perceived that breastfeeding had a negative impact on women's body shape because it changed the breast shape [50]. The underpinning message is rooted in the societies, making women uncomfortable and insecure about their roles as mothers; easily giving up breastfeeding since it is too difficult to handle.

Although the presence of a supportive/enabling environment in the home has been established in literature as integral to optimal feeding practices [51-53], the observed 8.7 % decline in the perceived role of family support in infant feeding may be attributed to the fact that this action-oriented educational intervention designed for mothers outlined and communicated coping strategies that will enable mothers to thrive in unsupportive or hostile environments.

Majority of the respondents disagreed that a child's nutritional status influences compliance with recommended immunization schedule and this corroborates with findings from several studies which reported factors such as access to health facilities [54, 55], socio-economic status of individuals and communities/regions [56, 57], cultural beliefs [58, 59] and vaccine unavailability [58-60] as determinants of immunization uptake in Africa. Therefore, immunization is not nutritional status dependent.

A great rise (19.9 %) in the positive perception responses that pap enriched with groundnut/soybeans improves the nutritive value of feed was recorded. This places the study participants

on par with other study reports where the bulk of the mothers perceived and valued foods fortified/enriched to improve their nutrient content over others with poor nutritional quality[61-63].

Generally, the knowledge and perception of the respondents prior to the intervention increased by a little margin after the intervention. Although studies conducted in developing countries employed two or more study groups, improved maternal nutrition knowledge and attitude towards infant and young child feeding was reported in the intervention group [22, 64-68].

5 Conclusion

This study revealed that the respondents had an average/high socio-economic and wealth index. The child feeding intervention accounted for a mild increase in the knowledge and perception scores of the respondents. The breastfeeding mother identified key areas of poor child feeding practices prior to the intervention, and attested that the nutrition intervention furnished them with adequate knowledge and skills to formulate varieties of local nutritious complementary foods and drinks. Increased nutrition education on local/sustainable approaches to improve infant and young child feeding should be encouraged.

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Authors contribution: All authors contributed to the formulation of research concept and design. L.O.E was responsible for the acquisition and screening of data. G.O.I conducted the statistical analysis. L.O.E and G.O.I drafted the manuscript while C.T.E and U.V.A critically reviewed the manuscript. The final version submitted for publication was read and approved by all authors.

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