

Challenges in Transitioning from Exclusive Breastfeeding to Complementary Feeding among Nursing Mothers in Nteje, Anambra, Nigeria

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Abstract

The transition from exclusive breastfeeding to complementary feeding is a critical stage in child development, yet it remains fraught with challenges for many nursing mothers, particularly in rural Nigeria. This study explores the challenges encountered by nursing mothers in Nteje, Anambra State, during this transition period. Specifically, it assessed the knowledge and practices of nursing mothers regarding complementary feeding; identified the major challenges faced in transitioning; examined the influence of socio-demographic factors (e.g., education, occupation, income) on complementary feeding practices; and explored sociocultural perceptions influencing complementary feeding in the study area. Anchored on the Health Belief Model (HBM), the study adopted a descriptive cross-sectional mixed-methods research design, combining quantitative survey data from 400 nursing mothers with qualitative interviews involving community health workers and key informants. A multi-stage sampling technique was employed to ensure representative data collection. Findings revealed high awareness of complementary feeding (97.5%) but poor adherence to World Health Organization (WHO) guidelines, with only 40% of mothers initiating complementary feeding at six months. Major challenges included financial constraints, cultural misconceptions, and inadequate support systems. Logistic regression analysis identified maternal education and exposure to health information as significant predictors of appropriate feeding practices. Qualitative insights further highlighted the influence of family dynamics and traditional beliefs in shaping feeding decisions. The study concludes that effective transition to complementary feeding in rural communities requires context-sensitive, culturally respectful, and economically supportive interventions. Recommendations include inclusive nutrition education, empowerment of women, integration of indigenous beliefs, and strengthened public health policy. These findings contribute to ongoing discussions on infant nutrition and maternal health within the context of sub-Saharan Africa.

Keywords: Complementary Feeding, Cultural Practices, Exclusive Breastfeeding; Infant Nutrition; Maternal Health, Nigeria, Socioeconomic Barriers.

Introduction

Optimal infant and young child feeding (IYCF) practices are widely recognized as vital for reducing child morbidity and mortality, promoting healthy growth and cognitive development, and enhancing long-term health outcomes. According to UNICEF (2021),

improving IYCF practices is one of the most cost-effective strategies for advancing child survival and achieving broader public health and development goals. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life, followed by the timely introduction of nutritionally adequate and safe complementary foods, while continuing breastfeeding up to two years of age or beyond (WHO, 2023; Egwuaba, 2018).

Despite increasing global and national advocacy for these recommendations, many low-resource settings continue to face significant barriers in implementing optimal feeding practices. In Nigeria, and particularly in rural communities like Ntege in Anambra State, the transition from exclusive breastfeeding to complementary feeding presents a critical yet challenging phase for caregivers. Complementary feeding, which typically begins at six months of age, is a period when infants require additional energy and micronutrients from external food sources to support their rapid growth and development (Egwuaba, 2018; Dewey & Adu-Afarwuah, 2008).

However, the nutritional needs of infants during this transition are frequently unmet due to poor feeding practices. The 2018 Nigeria Demographic and Health Survey (NDHS) reported that only 11% of children aged 6–23 months in Nigeria receive a minimum acceptable diet, and nearly 37% of children under five are stunted, while 22% are underweight (National Population Commission [NPC] & ICF, 2019). These alarming statistics reflect the broader crisis of child undernutrition, much of which is attributable to inappropriate complementary feeding practices, including untimely introduction of solid foods, poor dietary diversity, and inadequate meal frequency.

The underlying causes of these challenges are multifactorial, often rooted in cultural traditions, misinformation, economic hardship, limited maternal education, and weak health systems (Egwuaba et al., 2024; Black et al., 2013; Victor et al., 2014; Owoyemi et al., 2020). In rural settings like Ntege, cultural beliefs may dictate food taboos that restrict the inclusion of certain nutritious foods in children's diets. At the same time, many mothers lack the resources, time, and support systems necessary to adhere to recommended feeding guidelines. Factors such as early return to work, absence of community-based nutrition programmes, and minimal involvement of fathers or extended family members further complicate the situation (Ogbo et al., 2017).

Despite the significance of this transitional period in child development, there remains a scarcity of localized, context-specific research that examines the challenges nursing mothers face in rural Anambra communities. Most existing studies provide generalized national or regional data, which may not adequately capture the unique sociocultural and economic dynamics influencing feeding practices in smaller communities like Ntege. This gap in knowledge limits the effectiveness of interventions, which often fail to account for the realities on the ground. Therefore, this study seeks to explore the specific barriers and sociocultural determinants influencing the transition from exclusive breastfeeding to complementary feeding among nursing mothers in Ntege, Anambra State.

Statement of the Problem

Malnutrition remains a critical public health concern in Nigeria, particularly among infants and young children, with poor complementary feeding practices identified as a major contributing factor. Inappropriate practices such as early or delayed initiation of complementary feeding, limited dietary diversity, and insufficient feeding frequency are widespread and undermine child health outcomes (NPC & ICF, 2019; Egwuaba, 2018; Egwuaba, 2019). The situation is especially dire in rural communities like Ntege in Anambra State, where structural inequalities, pervasive food insecurity, and entrenched cultural norms further impede the adoption of appropriate feeding practices. Despite increased awareness of the benefits of exclusive breastfeeding for the first six months of life, the subsequent transition to complementary feeding often presents significant challenges for nursing mothers.

According to the 2018 Nigeria Demographic and Health Survey, only 11% of Nigerian children aged 6–23 months receive a minimum acceptable diet, underscoring the depth of the problem on a national scale (NPC & ICF, 2019; Egwuaba, 2019). This transitional phase, beginning around six months of age, is crucial for maintaining optimal growth and development, yet it is frequently marred by misinformation, lack of maternal education, poverty, and limited access to healthcare services (Dewey & Adu-Afarwuah, 2008; Ogbo et al., 2017; Owoyemi et al., 2020; Egwuaba & Nnatuanya, 2021). In many rural settings, including Ntege, cultural taboos and misconceptions surrounding infant feeding, combined with weak health systems and poor program implementation, exacerbate the risks of undernutrition (Egwuaba, 2019; Egwuaba, 2018; Black et al., 2013; Victor et al., 2014). Although policies and interventions supporting optimal infant and young child feeding exist, their reach and effectiveness in rural communities remain inadequate. Many mothers lack access to accurate nutrition information, adequate family and community support, and health services capable of guiding them through this critical feeding transition. These multifaceted challenges continue to hinder efforts to improve child nutrition outcomes in underserved areas.

Despite the growing recognition of these issues, there is a marked absence of localized research focusing on the specific challenges faced by nursing mothers in rural Anambra communities during the transition from exclusive breastfeeding to complementary feeding. Without evidence that reflects the sociocultural and economic realities of communities like Nteje, current interventions may fail to resonate with or effectively address the needs of target populations. This study, therefore, seeks to fill this important gap by exploring the unique barriers encountered by nursing mothers in Ntege, Anambra State.

Objectives of the Study

This study sought to:

1. To assess the knowledge and practices of nursing mothers regarding complementary feeding in Nteje.

2. To identify the major challenges faced by mothers in transitioning from exclusive breastfeeding to complementary feeding.
3. To examine the influence of socio-demographic factors (e.g., education, occupation, income) on complementary feeding practices.
4. To explore sociocultural perceptions influencing complementary feeding in the study area.

Review of Related Literature

Conceptual Clarifications

Exclusive Breastfeeding refers to the practice of feeding infants only breast milk for the first six months of life without any additional food or water, except for oral rehydration solutions or prescribed medications (WHO, 2023). Complementary Feeding, on the other hand, is the process of introducing solid or semi-solid foods to an infant's diet at around six months while continuing breastfeeding to ensure adequate nutrition (Egwuaba & Olisa, 2020; Dewey & Adu-Afarwuah, 2008). Feeding Transition is the period between exclusive breastfeeding and full integration into family foods, generally from 6 to 24 months (Black et al., 2013), and Feeding Practices encompass the timing, frequency, diversity, and safety of food intake by children (Ogbo et al., 2017). Nursing Mothers are those actively breastfeeding their infants, typically within the 0–24 months period (UNICEF, 2021).

The transition from exclusive breastfeeding to complementary feeding is a complex process influenced by multiple factors spanning individual, household, community, and societal levels. Existing literature underscores the importance of timely and appropriate complementary feeding for optimal child growth and development.

Global and National Context of Complementary Feeding

Complementary feeding practices remain a global public health concern, particularly in low- and middle-income countries (LMICs). According to the World Health Organization (WHO, 2023), only 29% of children aged 6–23 months worldwide receive the minimum acceptable diet, reflecting widespread nutritional inadequacy during a critical period of growth and development. This stage spanning from 6 to 24 months is recognized as a vital window wherein breast milk alone is no longer sufficient to meet the nutritional demands of growing infants, necessitating the timely introduction of diverse and nutrient-rich complementary foods (Dewey & Adu-Afarwuah, 2008).

In Nigeria, complementary feeding indicators are even more alarming. The 2018 Nigeria Demographic and Health Survey (NDHS) reported that just 11% of children aged 6–23 months received a minimum acceptable diet, with wide disparities observed between urban and rural regions (NPC & ICF, 2019). Rural communities, such as Ntege in Anambra State, are particularly affected, with persistent challenges such as poor dietary diversity, delayed initiation of complementary feeding, and low feeding frequency (Ejirefe & Egwuaba, 2023; Egwuaba & Sunday, 2023; Ogbo et al., 2017). These suboptimal practices are closely linked

to Nigeria's high burden of child stunting (37%) and underweight prevalence (22%) among children under five (NPC & ICF, 2019).

Maternal Knowledge and Health Literacy

Maternal knowledge and health literacy play critical roles in shaping complementary feeding practices. Ogbo et al. (2017) found that mothers with higher educational attainment in Nigeria were significantly more likely to initiate complementary feeding at the recommended age, offer a diversified diet, and practice responsive feeding. However, in rural areas like Ntege, many mothers possess limited formal education and depend heavily on informal sources of information including grandmothers, traditional birth attendants, and community elders for infant feeding guidance (UNICEF, 2021; Egwuaba, 2016). This reliance on unverified traditional knowledge often leads to inappropriate feeding decisions. Empirical studies reinforce these concerns. For instance, Ezech et al. (2020), in a study conducted in Enugu State, reported that only 14.3% of rural mothers demonstrated adequate knowledge of complementary feeding guidelines. Similarly, Bisi-Onyemaechi et al. (2019) found that low maternal health literacy significantly increased the likelihood of inappropriate initiation of complementary feeding either too early or too late, thereby exacerbating risks of undernutrition and poor health outcomes in children.

Sociocultural Influences on Feeding Practices

Sociocultural beliefs and family dynamics strongly influence infant and young child feeding behaviours in Nigeria. In many Igbo-speaking communities, including Anambra State, deeply ingrained myths discourage the inclusion of protein-rich foods such as eggs, fish, or meat—in young children's diets, based on the belief that these foods may cause children to become aggressive or develop undesirable traits (Victor et al., 2014). These cultural misconceptions are often perpetuated by influential family members, especially grandmothers and older female relatives, who act as custodians of traditional child-rearing practices. Ekanem et al. (2020) found that these figures often resist changes in feeding practices, even when caregivers have received modern nutritional advice from health workers. Moreover, patriarchal family structures frequently place decision-making power in the hands of male or senior household members, thereby limiting maternal autonomy over child nutrition. Such social constraints pose significant barriers to the adoption of optimal feeding practices, even when mothers possess the necessary knowledge or willingness to change.

Economic and Environmental Constraints

Economic hardship constitutes a substantial barrier to adequate complementary feeding. Rural and low-income households often rely on inexpensive, carbohydrate-dense foods like pap (fermented maize gruel), which lack the protein, fats, and micronutrients essential for healthy child development (Ejirefe & Egwuaba, 2023; Aguayo et al., 2016). Even when mothers are aware of the need for dietary diversification, financial limitations frequently

prevent them from purchasing animal-source foods, fruits, fortified cereals, or other nutrient-dense options (Dewey & Adu-Afarwuah, 2008). Environmental conditions further complicate complementary feeding efforts. Challenges such as limited access to clean water, poor sanitation, and the absence of refrigeration or safe storage facilities increase the risk of food contamination and spoilage during the weaning process (Egwuaba et al., 2024; Black et al., 2013). Fadare et al. (2019) emphasized that seasonal agricultural dependence and food insecurity substantially reduce household dietary diversity, particularly during lean periods. These factors interact to limit not only the quantity but also the quality and safety of foods provided to young children. While numerous studies have focused on knowledge and attitudes towards complementary feeding, few have integrated socio-cultural determinants within rural contexts or employed mixed-methods approaches. There is also a gap in studies applying theoretical frameworks such as the Health Belief Model (HBM) to explore how perceived risks, benefits, and social cues influence feeding practices. To visually represent the multidimensional influences on complementary feeding, the study adopted the following conceptual framework:

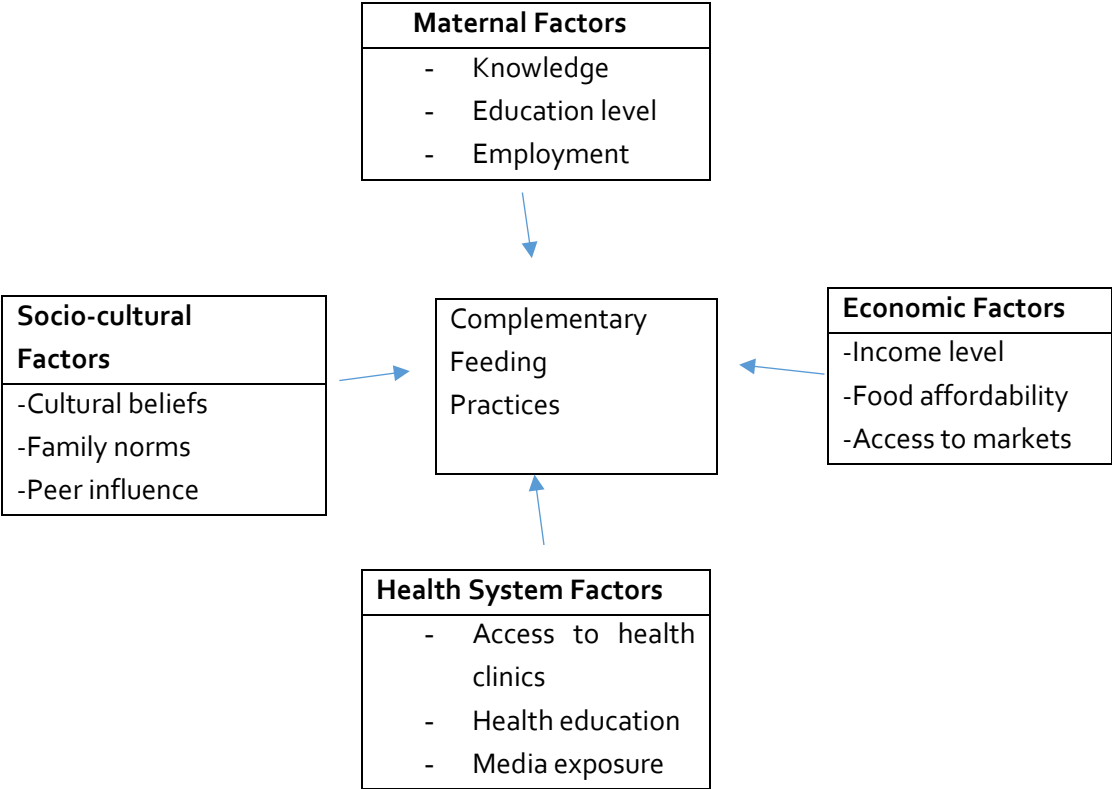


Figure 1: Conceptual Framework on Determinants of Complementary Feeding among Nursing Mothers

This conceptual framework outlines the interconnected factors influencing complementary feeding practices among nursing mothers in rural communities like Ntege, Anambra State.

It centers on four key domains: Maternal Factors, Socio-cultural Factors, Economic Factors, and Health System Factors, all of which interact to shape maternal feeding behaviours.

Maternal Factors include a mother's knowledge, education level, and employment status, directly affecting her ability to understand, afford, and apply recommended feeding practices. Socio-cultural Factors involve cultural beliefs, family norms, and peer influence, which may either promote or hinder optimal feeding based on prevailing community practices. Economic Factors such as income level, food affordability, and market access impact a household's capacity to provide diverse and nutritious foods. Health System Factors relate to the availability of clinics, health education, and media outreach, which can reinforce accurate information and counteract harmful cultural norms.

At the center are complementary feeding practices, including appropriate timing, food diversity, feeding frequency, and hygiene, all shaped by these domains. The framework not only aids data collection and analysis but also guides multi-sectoral policies and interventions to improve child nutrition outcomes.

Theoretical Framework

This study adopts the Health Belief Model (HBM) as its theoretical foundation. The HBM, originally developed by Rosenstock (1974) and later expanded by Becker (1974), is a psychological model used to explain and predict health behaviors based on individuals' beliefs and attitudes. It is particularly relevant in understanding maternal decision-making around infant nutrition and child health. The HBM posits that individuals are likely to engage in a health-related behavior if they perceive themselves to be susceptible to a condition, believe the condition has serious consequences, believe that taking a specific action would reduce their susceptibility or severity, and believe the benefits of taking action outweigh the barriers or costs. They must also be exposed to cues to action and possess sufficient self-efficacy to perform the behaviour.

In applying the HBM to the context of complementary feeding in Ntege, Anambra State, the following constructs are relevant: (i) perceive themselves to be susceptible to a health problem, (many nursing mothers may not perceive delayed or poor complementary feeding as posing a serious health threat to their infants. This limited risk awareness can lead to inappropriate practices. (ii) perceive the condition as having serious consequences, (the perceived nutritional and developmental benefits of timely and adequate complementary feeding may be poorly understood, particularly among mothers with limited education or exposure to health information). (iii) believe that taking a particular action would reduce their susceptibility or severity, (these may include economic hardship, cultural myths (e.g., withholding animal proteins from infants), time constraints, and lack of familial or spousal support). (iv) believe that the benefits of the action outweigh the barriers, (community health education, antenatal/postnatal clinics, and peer mothers serve as potential triggers for the adoption of appropriate feeding behaviors. However, in rural areas such as Nteje, these cues are often absent or weak due to inadequate healthcare infrastructure), and (v) have confidence in their ability to execute the behavior (this refers to a mother's confidence

in her ability to initiate and maintain appropriate complementary feeding. Low self-efficacy may stem from lack of skills, social disapproval, or misinformation.), (Bandura, 1997; Rosenstock, 1974).

The HBM provides a robust analytical lens through which the psychosocial and contextual challenges nursing mothers face in transitioning from exclusive breastfeeding to complementary feeding can be examined. It is particularly suitable for this study as it integrates individual cognitive factors with broader sociocultural realities, thereby facilitating a holistic understanding of maternal behavior in the target community. In this study, the HBM is used to examine how mothers' perceptions of child health, knowledge of feeding benefits and risks, socio-cultural barriers, and access to health cues (e.g., clinics or outreach) influence complementary feeding decisions.

Limitations of HBM in the Local Context:

While the HBM is effective for explaining individual-level decision-making, it has notable limitations in the rural Nigerian context: Cultural Oversight: HBM tends to overlook deeply ingrained cultural beliefs and family norms that can strongly influence feeding behaviors, regardless of individual risk perception. Structural Barriers: The model underrepresents systemic issues such as poverty, food insecurity, and lack of healthcare infrastructure, factors beyond personal control that affect mothers' choices. Collectivist Norms: HBM is grounded in individualistic assumptions, which may not fully capture the communal and family-based decision-making processes common in rural communities like Ntege. To mitigate these gaps, the study complements the HBM with insights from socio-cultural theories, enabling a more holistic understanding of feeding practices in the study area.

Methodology

This study employed a descriptive cross-sectional research design to investigate the challenges experienced by nursing mothers during the transition from exclusive breastfeeding to complementary feeding in Nteje, a community in Oyi Local Government Area, Anambra State, Nigeria. The study population comprised nursing mothers with infants aged 6 to 24 months, reflecting those who were either currently transitioning or had recently transitioned to complementary feeding. The sample size was statistically determined using Cochran's formula (1977) for prevalence studies below:

$$n = \frac{Z^2 (pq)}{e^2}$$

where n = sample size, z = z score determined for a specific confidence level as desired by the researcher is 95% confidence level and is 1.96 in z test table, q = the complement of P (proportion) that is p-P = 50%, e = error margin or accuracy level of (0.05) %, p = proportion of occurrence or incidence which is used to measure how relatively varied a target population is. After adjustments for finite population and anticipated non-response, the final sample size was 400 to ensure adequate statistical power. A multi-stage sampling technique was adopted. In the first stage, Nteje was purposively selected due to its

demographic diversity, rural-urban mix, and relatively high population of nursing mothers. In the second stage, the community was stratified into its three major quarters Ezi, Ifite, and Ikenga each comprising several villages (e.g., Ezi: Uruagu, Umuefi, Iruoyim; Ifite: Umuazu, Amaezike; Ikenga: Umuowelle, Umuokpalam). With the support of community health workers and local leaders, lists of households with eligible mothers were compiled using available health records. In the final stage, a systematic random sampling technique was used. A sampling interval was calculated, and every kth mother from the list was selected to participate, ensuring representativeness across quarters and minimizing selection bias. A mixed-methods approach was utilized. Quantitative data were gathered through structured interviewer-administered questionnaires, which covered socio-demographics, knowledge, practices, and perceived challenges related to complementary feeding. In addition, in-depth interviews (IDIs) were conducted with a purposive sub-sample of nursing mothers, community elders, and healthcare workers to generate qualitative insights into sociocultural and systemic influences. Out of the 400 questionnaires distributed, 388 were successfully completed and returned, yielding a response rate of 97%. The high return rate was facilitated by the deployment of trained local research assistants and the face-to-face administration method. To ensure validity, the questionnaire was developed through a review of relevant literature and expert consultations in medical sociology, psychology, and public health. Their feedback ensured comprehensive coverage of relevant constructs such as maternal perceptions, cultural norms, feeding knowledge, and structural barriers. Reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.84, indicating high internal consistency. Quantitative data were analyzed using SPSS version 26. Descriptive statistics (frequencies, percentages, weighted means) were used to summarize the data, while logistic regression was applied to identify significant predictors of appropriate complementary feeding. Qualitative data from the IDIs were transcribed, coded, and analyzed thematically, allowing for in-depth interpretation of participants' narratives and context-specific perspectives. Ethical approval for the study was obtained from the Anambra State Ministry of Health Research Ethics Committee. Informed consent was obtained from all participants after explaining the study's purpose, procedures, and their rights. Participants were assured of confidentiality, voluntary participation, and the freedom to withdraw at any point without consequence.

Results

Table 1. Socio-Demographic Characteristics of Respondents

Variable	Frequency (n=400)	Percentage (%)
Age (years)		
18-24	120	30.0
25-34	180	45.0
35-44	80	20.0
45 years & above	20	5.0
Educational Level		
No formal education	50	12.5
Primary	100	25.5
Secondary	180	45.0
Tertiary	70	17.5
Marital Status		
Single/Others	50	12.5
Married	350	87.5
Occupation		
Civil Service	80	20.0
Trader	150	37.5
Farming	120	30.0
Artisan/Others	50	12.5
Total	400	100.0

Source: Field Survey, 2025

Table 1 presents the socio-demographic characteristics of the 400 nursing mothers who participated in the study. The results show that the majority of respondents (45%) were within the 25–34-year age group, followed by 30% aged 18–24 years and 20% aged 35–44 years. A smaller proportion (5%) were aged 45 years and above. This distribution indicates that most mothers were in their prime reproductive and child-rearing years. Regarding educational attainment, 45% of respondents had completed secondary education, 25% had primary education, and 17.5% had tertiary education. Notably, 12.5% had no formal education. These figures suggest a generally moderate level of education among the participants, an important factor influencing health-seeking behavior and infant feeding practices.

Marital status data show that a significant majority (87.5%) of the respondents were married, while the remaining 12.5% were single, divorced, or widowed. This reflects the sociocultural norms of southeastern Nigeria, where marriage is closely tied to childbearing and parenting roles. The high proportion of married women may imply increase access to family support systems, which could influence complementary feeding practices either positively or negatively, depending on prevailing household norms. Occupationally, 37.5%

of the respondents were traders, 30% were farmers, 20% were civil servants, and 12.5% belonged to other categories such as artisans and homemakers. This distribution suggests that most participants were engaged in informal or semi-formal economic activities. Such engagements, particularly in trading and farming may affect mothers' time availability and economic capacity to provide diverse and adequate complementary foods, both of which are critical to early childhood nutritional outcomes.

Respondents' Knowledge and Practices of Complementary Feeding (n = 400)

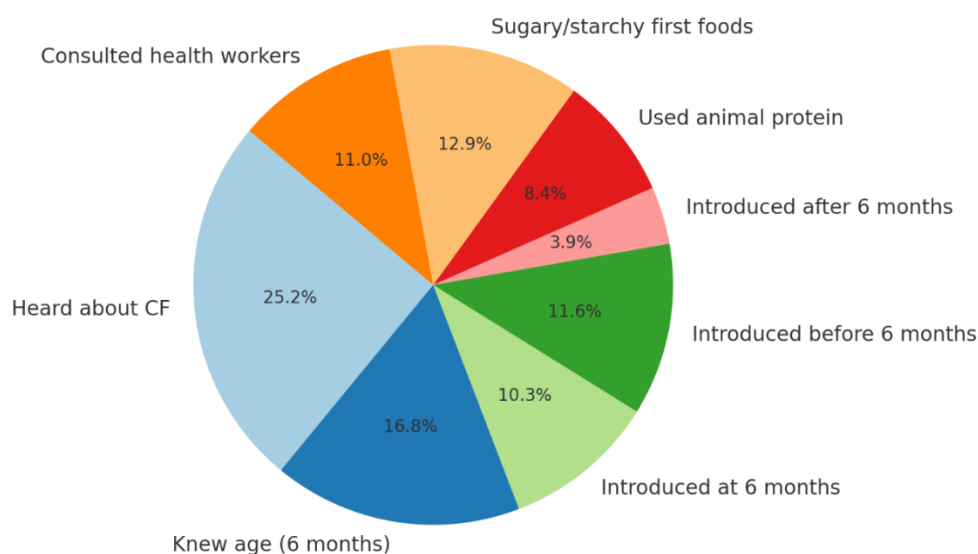


Figure 1

The pie chart presents the distribution of respondents' knowledge and practices related to complementary feeding. A substantial proportion of mothers (97.5%) indicated awareness of complementary feeding, reflecting commendable general exposure. However, this awareness does not uniformly translate into appropriate practices. Although 65.0% of respondents correctly identified six months as the recommended age for introducing complementary feeding, only 40.0% adhered to this guideline in practice. A notable 45.0% introduced feeding prematurely, while 15.0% delayed initiation beyond six months, indicating significant deviation from established infant nutrition standards.

Dietary choices also raise concern: only 32.5% incorporated animal protein, an essential nutrient source into their infant's diet, while 50.0% resorted to sugary or starchy foods as initial complementary options. These patterns suggest nutritional inadequacies potentially rooted in economic hardship, cultural beliefs, or misinformation. Moreover, only 42.5% of respondents consulted health professionals prior to modifying their feeding approach, revealing a limited engagement with formal health systems. This finding may point to accessibility issues, mistrust, or the influence of alternative (often traditional) sources of advice.

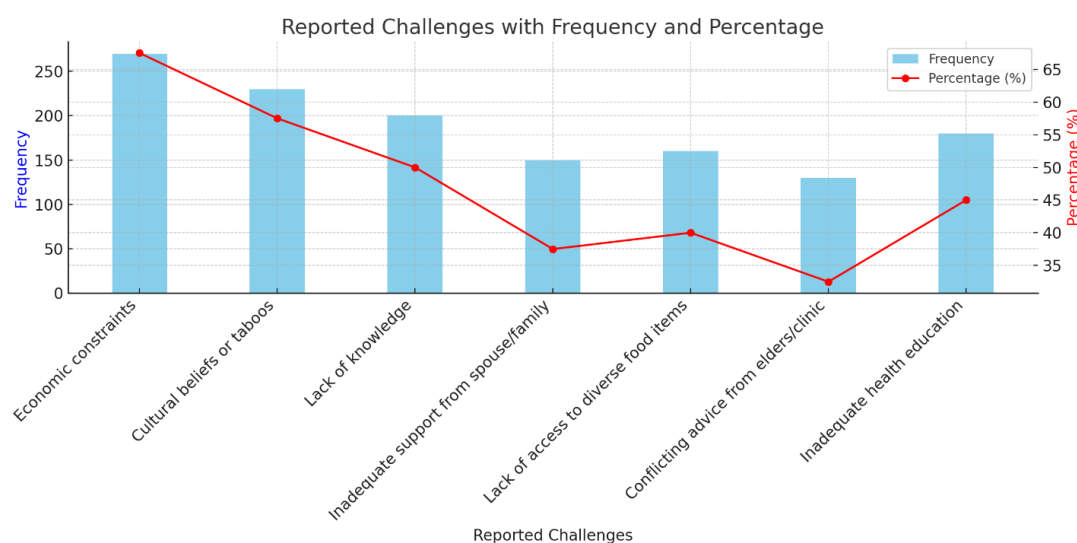


Figure 2: Respondents' Perceived Challenges in the transition to Complementary Feeding

Figure 2 presents the distribution of reported challenges encountered by nursing mothers in transitioning from exclusive breastfeeding to complementary feeding. The data reveals that economic constraints represent the most prevalent challenge, reported by 270 respondents (67.5%). This underscores the significant role of financial hardship in limiting access to appropriate and diverse food options required during the complementary feeding period.

Cultural beliefs or taboos were identified by 230 respondents (57.5%), indicating the persistent influence of sociocultural norms that may restrict feeding practices or discourage the introduction of specific food items. Additionally, lack of knowledge (200 respondents, 50.0%) and inadequate health education (180 respondents, 45.0%) emerged as critical barriers, reflecting deficiencies in maternal health literacy and the inadequacy of community health interventions in addressing informational gaps.

Other notable challenges include lack of access to diverse food items (160 respondents, 40.0%) and inadequate support from spouse or family (150 respondents, 37.5%), both of which point to broader issues of food insecurity and household-level caregiving dynamics. The least reported challenge, conflicting advice from elders or clinic sources (130 respondents, 32.5%), highlights an ongoing need to harmonize traditional and formal health knowledge systems.

Overall, the findings illustrate that economic, cultural, and educational factors intersect to influence complementary feeding practices. The predominance of structural and sociocultural constraints calls for integrated community-based strategies, including targeted health education, culturally-sensitive counselling, and economic empowerment initiatives to enhance maternal and child nutrition outcomes. Corroborating these findings,

an IDI respondents stressed that: *"Sometimes, we cannot afford to buy fruits or animal protein to feed the baby. We just use what we have, mostly yam or maize."* (Mother A, 28 years/IDI/9/4/2025).

Another in alluding to how traditional beliefs shaped the types and timing of complementary foods, opined that: *"In our culture, we are told not to give meat to babies before one year because it is 'heavy' for them."* (Mother B, 32 years/IDI/8/4/2025).

Similarly, another interviewee buttressing family influence, especially from elders and husbands, affected feeding choices, reported that: *"My mother-in-law says to give the baby water early, but the clinic said no; it is confusing."* (Mother D, 30 years/IDI/11/4/2025).

Another participant observed:

"My mother-in-law believes giving pap with crayfish too early will make the baby stop breastfeeding, so I was told to delay it." (35-year-old, petty trader/IDI.8/4/2024)

Another participant emphasized financial barriers:

"Even if I want to give meat or eggs, how can I afford it every day? My husband doesn't see the need." (28-year-old, unemployed/IDI/7/4/2025)

A community health worker noted:

"We try to teach them during antenatal visits, but many don't come or think our advice contradicts their traditional beliefs."

Lastly, another IDI interviewee supporting the finding on insufficient understanding of recommended feeding practices posited that:

"I was not told exactly when to start giving other foods after breastfeeding; I just started when I felt the baby was hungry." (Mother C, 24 years/IDI/8/4/2025).

Table 4: Relationship between Maternal Education and Appropriate Complementary Feeding

Maternal Education	Appropriate Complementary Feeding (≥6 months)	χ^2	p-value
No formal education	5 (10%)	25.6	<0.001
Primary	30 (30%)		
Secondary	80 (44.4%)		
Tertiary	35 (50%)		

Source: Field Survey, 2025

Table 4 examines the association between maternal educational attainment and the practice of appropriate complementary feeding, defined in this study as the introduction of complementary foods at six months of age or later. The results reveal a clear positive correlation between higher maternal education levels and adherence to the recommended

feeding timeline. Specifically, only 10% of mothers with no formal education practiced timely complementary feeding, compared to 30% of those with primary education. This proportion increased to 44.4% among mothers with secondary education and reached 50% among those with tertiary education.

Statistical analysis using the chi-square (χ^2) test confirmed that this association was highly significant ($\chi^2 = 25.6, p < 0.001$). These findings suggest that maternal education plays a crucial role in promoting appropriate feeding practices. Educated mothers are more likely to understand and internalize health messages provided during antenatal and postnatal care sessions. They are also better equipped to access, interpret, and apply evidence-based information while resisting traditional misconceptions that may lead to either delayed or premature introduction of complementary foods.

Table 5: Logistic Regression Predictors of Appropriate Complementary Feeding

Predictor	Adjusted Odds Ratio (AOR)	95% Confidence Interval	p-value
Maternal education (Secondary and above)	2.45	1.60 – 3.75	<0.001
Exposure to health education	1.80	1.15 – 2.82	0.010
Perceived economic constraint	0.55	0.35 – 0.86	0.009
Cultural beliefs	0.65	0.40 – 1.05	0.080

Source: Field Survey, 2025

Table 5 presents the results of a multivariate logistic regression analysis examining the key predictors of appropriate complementary feeding, defined as the introduction of complementary foods at six months or later among nursing mothers in Nteje, Anambra State. The analysis reveals that maternal education at the level of secondary school and above was a significant positive predictor of appropriate feeding practices. Mothers with this level of education were 2.45 times more likely to introduce complementary foods at the recommended age compared to those with lower educational attainment (Adjusted Odds Ratio [AOR] = 2.45; 95% Confidence Interval [CI]: 1.60–3.75; $p < 0.001$). This finding reinforces earlier results emphasizing the pivotal role of maternal education in enhancing infant nutrition through improved knowledge, informed decision-making, and increased utilization of health services. Exposure to health education was also significantly associated with appropriate complementary feeding (AOR = 1.80; 95% CI: 1.15–2.82; $p = 0.010$). Mothers who had received structured health education, whether through clinics, community health workers, or media platforms were nearly twice as likely to adhere to the World Health Organization's recommended practices. This underscores the value of sustained, high-quality nutrition counselling as a public health strategy.

In contrast, perceived economic constraint was negatively associated with timely complementary feeding. Mothers who reported financial difficulties were significantly less likely to follow appropriate feeding practices (AOR = 0.55; 95% CI: 0.35–0.86; $p = 0.009$), suggesting that poverty reduced the likelihood of recommended feeding by nearly half.

This highlights the structural challenge posed by economic hardship, even in the presence of adequate awareness or education. Although cultural beliefs showed a negative association with appropriate complementary feeding (AOR = 0.65), this relationship was not statistically significant ($p = 0.080$). This implies that while traditional norms and taboos may influence feeding behaviour, their impact in this context may be mediated by other dominant factors such as education and household income.

Discussion

This study explored the challenges encountered by nursing mothers in Nteje, Anambra State, Nigeria, during the transition from exclusive breastfeeding to complementary feeding. Despite a high level of awareness (97.5%) regarding complementary feeding, only 65% of respondents correctly identified six months as the recommended initiation age, and an even smaller proportion (40%) adhered to this guideline in practice. This knowledge–practice gap is consistent with findings across Nigeria and sub-Saharan Africa, where awareness does not necessarily translate into optimal infant feeding behaviours (Ekure et al., 2014; Agunbiade & Ogunleye, 2012). These findings underscore the urgent need for context-sensitive, culturally grounded health education interventions that address both knowledge and the structural barriers that impede behaviour change. Economic constraint emerged as the most frequently reported challenge (67.5%), followed by cultural beliefs (57.5%) and inadequate knowledge (50%). These findings echo the work of Onah et al. (2014), who highlighted how poverty and food insecurity limit dietary diversity and quality. The high cost of nutrient-rich foods compels mothers to substitute with carbohydrate-dense, nutritionally inadequate alternatives. Additionally, entrenched sociocultural norms such as taboos against feeding infant's animal-source foods like meat, fish, and eggs continue to influence feeding practices during the weaning period (Victor et al., 2014).

Qualitative findings from this study further revealed the complex influence of family and community networks on maternal feeding decisions. Many respondents reported that advice from husbands, mothers-in-law, or religious leaders often superseded professional health guidance. These accounts illustrate the embeddedness of infant feeding within a broader sociocultural ecology characterised by patriarchal authority and collective decision-making. Consequently, interventions must go beyond individual-level education to include the wider social network, engaging men, elders, and local opinion leaders as key stakeholders (Okafor, Ugwu, & Obi, 2014).

Maternal education was found to be a statistically significant predictor of appropriate complementary feeding practices. Mothers with secondary education or higher were substantially more likely to initiate complementary feeding at the recommended six-month mark compared to their less-educated counterparts ($p < 0.001$). This aligns with previous research highlighting education as a critical determinant of maternal health-seeking behaviours and positive child nutrition outcomes (Ocheke et al., 2011; Uche-Nwachi & Okeke, 2015). Educated mothers often have better access to health information, are more

likely to challenge harmful traditional practices, and are empowered to make informed decisions regarding child care.

Multivariate logistic regression analysis reinforced the role of maternal education and exposure to health information as significant predictors of adherence to WHO guidelines. Conversely, economic hardship emerged as a key negative predictor. These findings are well explained by the Health Belief Model (HBM) (Rosenstock, 1974), which posits that health behaviours are influenced by individuals' perceptions of risk, benefits, barriers, and external cues to action. Mothers with greater education and health knowledge perceived stronger benefits from timely and appropriate feeding, while those constrained by poverty or social pressure lacked the agency or resources to act accordingly.

However, while the HBM offers a useful lens for understanding individual-level decision-making, it has limitations in capturing the broader structural and relational dynamics observed in this study. In particular, it inadequately accounts for the roles of gender norms, household power dynamics, and food insecurity in shaping maternal behaviour. Future research and interventions may benefit from combining the HBM with more holistic frameworks, such as the socio-ecological model or intersectionality theory, to better reflect the lived realities of mothers in rural Nigeria.

Implications for Policy and Practice

The findings of this study have significant implications for maternal and child health policy and programming in rural and underserved contexts:

1. Complementary feeding education should be systematically integrated into antenatal and postnatal care services, using culturally appropriate messaging and vernacular languages.
2. Programmes should target not only mothers but also male partners, elders, and key community influencers who shape maternal behaviours and norms.
3. Strengthening women's financial autonomy through income-generating activities, food voucher schemes, or conditional cash transfers can enhance their ability to access nutritious foods.
4. There is a pressing need to improve the availability, accessibility, and cultural responsiveness of rural healthcare services, particularly in nutrition counselling.
5. Leveraging radio, mobile health (mHealth), and community drama can facilitate wide-scale dissemination of accurate feeding practices and counteract misinformation.

Contribution to Knowledge

This study contributes to the growing body of literature on infant nutrition in sub-Saharan Africa by offering a nuanced, multi-dimensional understanding of the determinants of complementary feeding. Unlike many studies that focus solely on maternal knowledge or feeding practices, this research incorporates the intersecting roles of maternal education, socio-economic status, cultural norms, and family dynamics. The mixed-methods approach

enriched the analysis by illuminating not only statistical relationships but also lived experiences and community-level influences. By situating these findings within the theoretical framework of the HBM, while acknowledging its limitations, this study advances the understanding of behavioural determinants of maternal practices in rural Nigeria. It underscores the need for comprehensive, socially embedded strategies to improve child nutrition and maternal well-being in similar settings.

Conclusion

This study examined the multifaceted challenges faced by nursing mothers in Nteje, Anambra State, Nigeria, during the transition from exclusive breastfeeding to complementary feeding. Despite high levels of awareness, adherence to World Health Organization (WHO) guidelines was notably low, with only 40% of mothers initiating complementary feeding at the recommended six months. Major barriers included financial constraints, sociocultural beliefs, limited maternal education, and insufficient support systems. Maternal education and exposure to health information emerged as significant predictors of appropriate feeding practices, highlighting the critical role of knowledge empowerment in shaping positive maternal behaviour.

The study contributes meaningfully to the broader discourse on maternal and child health in low-resource settings by demonstrating how structural, cultural, and informational deficits interact to affect early childhood nutrition. These insights offer a contextually grounded understanding of feeding practices in rural Nigeria, with wider relevance to similar environments across sub-Saharan Africa.

Recommendations

Based on the findings of this study, the following recommendations are made:

S/N	Recommendation	Responsible Stakeholder(s)
1	Implement sustained, community-tailored nutrition education programs with practical demonstrations and peer support.	Ministry of Health; Primary Healthcare Centres; Community Health Workers; Religious and Traditional Leaders
2	Institutionalize family-inclusive health education involving husbands, grandmothers, and influential relatives during antenatal and postnatal care.	Health Facilities; Ministry of Women Affairs; NGOs; Local Government Health Departments
3	Promote female education as a long-term strategy to improve infant feeding and child health outcomes.	Ministry of Education; NGOs; Women Development Agencies; Universal Basic Education Board (UBEB)
4	Integrate income-generating programs with maternal health efforts; distribute fortified complementary foods to vulnerable households.	Ministry of Humanitarian Affairs; Social Welfare Departments; International Donors; Ministry of Agriculture

5	Bridge modern nutrition guidelines with indigenous knowledge through respectful, culturally grounded communication strategies.	National Orientation Agency; Community Health Educators; Traditional and Religious Leaders
6	Strengthen infant nutrition policies through increased funding, staff training, and routine follow-up systems in PHC centers.	Federal and State Ministries of Health; PHC Development Agencies; Local Government Councils

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