

Chapter One

Introduction

1.1 Background to the Study

The nutritional status of a child is critically important for their overall health and well-being. Complementary food refers to semi-solid meals introduced by mothers to children from six months of age when breast milk alone is no longer sufficient to meet an infant's nutritional requirements¹. Therefore, additional foods, which may be liquid and/or semi-solid, are needed alongside breast milk from this time onwards². This practice signifies a transition from breastfeeding to the family diet and typically spans the period from 6 to 24 months of age, even though breastfeeding is recommended to continue until the child is two years old. Complementary feeding introduces the child to the family diet and provides an excellent opportunity to improve their nutrient intake and nutritional status⁴, support catch-up growth, and establish healthy eating habits for the preschool years. As a result, this stage is both vital and vulnerable for both the child and the caregiver. Adequate nutrition during early childhood is essential for optimal growth and development.

Childhood is a phase of life characterized by continuous growth and development, which requires adequate caloric, protein, and micronutrient intake. Research has shown that nutritional deficiencies result in stunted growth, leading to decreased height-for-age and weight-for-height. These deficiencies are also associated with higher mortality rates, reduced ability to fight illnesses, and impaired intellectual capacity¹. In 2019, global data revealed that among children under five years of age, 21.3% were stunted, 6.9% were wasted, and 5.6% were overweight⁵. Malnutrition remains a major public health problem, affecting millions of children worldwide

and contributing to over 41% of deaths annually among children aged 6-24 months in developing countries^{6,7}.

In children aged 6-24 months, malnutrition can result in stunting, wasting, and micronutrient deficiencies, all of which have serious consequences for health and development. Breastfeeding is an essential and irreplaceable practice that plays a crucial role in infant development and maternal well-being. Numerous studies have demonstrated the significant benefits of breastfeeding, including improved cognitive and immune system development in infants and a reduced risk of diseases such as diabetes and breast cancer in mothers². Additionally, breast milk provides unique antibodies that strengthen the infant's immune system, protecting against common illnesses like respiratory infections, gastrointestinal diseases, and allergies⁸. Furthermore, breastfeeding fosters a strong mother-infant bond, promoting emotional connection, psychological well-being, and lower postpartum depression rates⁹. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of an infant's life to maximize these advantages for optimal growth and development², after which complementary foods should be introduced.

The choice and use of complementary food for infants aged 6-24 months is the responsibility of the mother. This role, in turn, is influenced by various socio-demographic factors⁴. Several studies have highlighted the impact of maternal factors such as education, socioeconomic status, breastfeeding practices, and complementary feeding practices on a child's nutritional status¹⁰. Families with higher socioeconomic status generally have better access to high-quality food, healthcare services, and education. In contrast, families from lower socioeconomic backgrounds often struggle to meet nutritional requirements due to limited resources, negatively impacting the child's nutritional status.

Breastfeeding practices significantly influence a child's nutritional status. Exclusive breastfeeding for the first six months, followed by continued breastfeeding alongside complementary foods, has been linked to improved child nutrition⁹. Maternal breastfeeding habits, including early initiation, feeding frequency, and duration, play a critical role in a child's well-being⁸.

A mother's health status, both before and during pregnancy, also affects her child's nutritional status¹¹. Conditions such as anemia, malnutrition, obesity, and chronic diseases can negatively impact fetal development, ultimately influencing a child's growth and nutrition⁹. Access to maternal healthcare, including prenatal and postnatal services, is crucial for the early detection and management of health-related factors affecting a child's nutrition.

Maternal education is a key determinant of a child's nutritional status¹². A mother's level of education enhances her knowledge and understanding of nutrition, leading to better feeding practices. Educated mothers are more likely to make informed decisions regarding their child's nutrition, including selecting appropriate food groups and portion sizes. Maternal age also plays a role in infant feeding practices¹². Teenage mothers, for example, are more likely to have children with poor nutritional status. This may be due to various factors, such as being less likely to practice exclusive breastfeeding, having lower levels of income, and being more susceptible to health problems that affect their ability to care for their children¹.

The nutritional status of children aged 6-24 months is crucial and is closely linked to socio-demographic and maternal factors. Given this, the present study aims to assess the maternal factors associated with the nutritional status of children aged 6-24 months attending routine immunization clinics in Abeokuta South Local Government Area of Ogun State. This study

specifically focused on maternal factors such as age, educational level, socioeconomic status, health, breastfeeding practices, and complementary feeding practices to evaluate their impact on the nutritional status of children aged 6-24 months.

1.2 Statement of the Problem

Research evidence indicates that children aged 6-24 months are particularly vulnerable to malnutrition during their transition from breast milk to complementary foods. The quality of complementary foods plays a crucial role in child development, as poor nutrition during this period can lead to malnourishment with severe consequences for growth and overall well-being¹³. Malnutrition poses a significant threat to the health of infants aged 6-24 months, leading to both short-term and long-term challenges such as stunting, wasting, underweight, increased susceptibility to infections, cognitive impairment, behavioral problems like attention deficit hyperactivity disorder (ADHD), and even mortality⁸.

Despite the well-documented importance of complementary feeding, malnutrition remains a persistent public health challenge in many regions, including Nigeria¹⁴. This issue is exacerbated by economic instability, rising food prices, and inflation, which limit household food security and restrict access to diverse and nutritious foods for infants, ultimately leading to poor dietary choices¹⁵.

Studies consistently highlight the negative impact of inadequate nutrition during the critical 6-24-month period. Research shows a clear link between insufficient dietary intake at this stage and increased risks of stunting, wasting, and underweight¹⁶. Long-term consequences of malnutrition include impaired cognitive development, higher susceptibility to infections, and increased mortality rate¹⁷.

Maternal factors are significant predictors of nutritional status in children under five years old. Research has identified key maternal factors that contribute to malnutrition, stunting, and other health issues, including maternal age, education, nutrition, breastfeeding practices, complementary feeding habits, and maternal mental health. Teenage mothers may be more likely to have malnourished children due to limited knowledge and resources³. Similarly, low maternal education often results in poor knowledge of proper nutrition and healthcare, leading to inadequate feeding practices³. If a mother is not well-informed about breastfeeding techniques and their importance, her child may not receive adequate nutrition in the first two years of life⁴. If a mother lacks knowledge of proper complementary feeding practices, her child may not receive a balanced diet⁶. Maternal depression can also lead to neglect of a child's nutritional needs⁷.

While the global impact of malnutrition on child health is well-documented, localized research is necessary to understand the specific maternal factors influencing child nutrition within Abeokuta North Local Government. These maternal factors encompass a broad range of influences, including dietary knowledge, breastfeeding practices, and socioeconomic status, all of which significantly impact infant dietary intake¹⁸. Household income levels directly determine the quality and quantity of food available to children, and limited financial resources can restrict access to diverse and nutrient-rich foods¹⁹.

This study provided insight into the maternal factors affecting the nutritional status of children aged 6-24 months in Abeokuta North, aiming to inform future interventions and policies to improve child health and nutrition outcomes.

1.3 Justification of the Study

Malnutrition is a major public health problem in developing countries⁶. It is particularly prevalent among children and can have a devastating impact on their physical and cognitive development, increasing the risk of mortality. One key factor contributing to malnutrition in infants is the poor quality of complementary feeding provided as they grow beyond six months of age. The long-term effects of malnutrition can significantly affect an infant's quality of life.

Therefore, early detection and intervention are crucial to ensuring that infants achieve their full potential. This study explored maternal factors affecting the nutritional status of children aged 6-24 months, aiming to identify practices that increase the risk of poor nutrition in infants and toddlers. By identifying these factors, the study sought to support efforts to prevent malnutrition and reduce the burden on healthcare systems.

The transition from milk to complementary foods is a critical period for infants aged 6-24 months, as they are particularly vulnerable to malnutrition. Recognizing the importance of high-quality complementary feeding and addressing malnutrition promptly can have a profound impact on the health and development of these infants. By identifying at-risk mothers and providing appropriate interventions, this study aimed to contribute to improving the nutritional status and overall well-being of their children.

Many factors contribute to malnutrition in children, including maternal factors. Maternal factors associated with child malnutrition include low maternal education, low maternal income, poor maternal nutrition, early or late initiation of breastfeeding, inadequate complementary feeding, and maternal health. However, it is not yet known whether these factors play the same role for mothers of children aged 6-24 months in Abeokuta North, Ogun State.

1.4 Aim and Objectives of the Study

This study aims to investigate the maternal factors associated with feeding practices and nutritional status of under-five children in Abeokuta North, Ogun State.

The specific objectives are to:

1. Determine the level of knowledge of mothers on feeding practices for under-five children.
2. Evaluate the feeding practices of mothers of children aged 6-24 months.
3. Assess the attitude of mothers of children aged 6-24 months toward feeding practices.
4. Evaluate the dietary pattern and nutritional status of children aged 6-24 months.

1.5 Research Questions

The following research questions guided this study:

1. What is the level of knowledge of mothers on complementary feeding?
2. What is the level of complementary feeding practice among mothers of children aged 6-24 months?
3. What is the level of breastfeeding practice among mothers of children aged 6-24 months?
4. What is the dietary pattern and nutritional status of children aged 6-24 months?

1.6 Hypotheses

1. There is no significant relationship between the socio-demographic characteristics of mothers and feeding practices.
2. There is no significant association between maternal feeding practice and the nutritional status of children aged 6-24 months.
3. There is no significant relationship between the socio-demographic status of mothers and the nutritional status of children aged 6-24 months.

1.7 Significance of the Study

Maternal factors play a crucial role in shaping a child's development, health, and overall well-being. Understanding the various aspects of maternal factors' influence on children's nutritional status can provide valuable insights for policymakers, researchers, healthcare professionals, and parents in Abeokuta South Local Government and beyond. Maternal health is an essential component of public health strategies worldwide. A woman's health before, during, and after pregnancy can significantly impact the child's health. By investigating various maternal factors, such as pre-existing health conditions, breastfeeding practices, socioeconomic status, and maternal age, the study will help to identify potential risk factors that may hinder the optimal nutritional status of the child. Consequently, this knowledge can guide healthcare professionals in designing effective strategies to promote healthy pregnancies and address maternal risk factors. Studying the maternal factors affecting the nutritional status of children aged 6-24 months is crucial for addressing health disparities across diverse populations. Ultimately, the findings of this research can indirectly contribute to reducing health disparities and promoting optimal outcomes for all mothers and children. By understanding the significance of maternal factors, policymakers can implement evidence-based policies that can positively impact maternal health.

Moreover, healthcare providers and professionals can incorporate these findings into their daily practice, enhancing their ability to provide informed care and support to expectant mothers and their children.

Studying the significance of maternal factors associated with the nutritional status of children aged 6-24 months attending routine immunization clinics will help enhance detection and early intervention strategies. By identifying modifiable factors that affect child development, interventions can be targeted towards high-risk populations, leading to early identification and intervention²⁰. Ultimately, understanding the significance of maternal factors affecting the

1.8 Scope of the Study

This study examines maternal factors associated with the nutritional status of children aged 6-24 months in Abeokuta North Local Government, Ogun State. It includes independent variables such as maternal age, education, nutrition, breastfeeding practices, health status, and socioeconomic status, while the dependent variable is the nutritional status of the children.

1.9 Operational Definition of Terms

The following terms have been defined in the context of this study for clarity: maternal factors, nutritional status, the under-five, and feeding practices.

1. **Maternal Factors:** This refers to maternal age, socioeconomic status, and nutritional knowledge and beliefs of mothers as they affect feeding practices.
2. **The Under-five Children:** Children between the ages of 6-24 months.
3. **Nutritional Status of the Children:** In the context of this study, this refers to stunting and wasting.
4. **Stunted:** Children with a height-for-age Z-score below -2, indicating chronic malnutrition.

5. **Wasted:** Children with a weight-for-height Z-score below -2, indicating acute malnutrition.
6. **Feeding Practices:** This refers to breastfeeding and complementary feeding practices.

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Endnote

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Chapter Two

Literature review

2.0 Conceptual Review

2.1 Complementary Feeding

Complementary feeding refers to the process of introducing solid foods to infants in addition to breast milk or formula¹. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life, followed by complementary feeding from six months to two years or beyond. Complementary feeding is a crucial aspect of infant nutrition, and its importance cannot be overstated². Exclusive breastfeeding is insufficient to meet the energy and nutrient needs of infants aged six months and above¹. Inadequate complementary feeding can lead to malnutrition, stunting, and other health problems³.

Adequate complementary feeding practices are critical for children's health, growth, and development⁴. Inadequate complementary feeding can result in malnutrition, stunting, and other health problems³. Complementary feeding can improve infant and young child feeding practices⁵ and reduce the risk of child stunting.

2.1.1 Knowledge of Complementary Feeding.

Mothers' level of knowledge regarding infant and young child feeding recommendations often shows notable deficiencies, although they generally have a positive attitude towards these recommendations⁶. The determinants of receiving a minimum adequate diet include having adequate knowledge of child feeding recommendations and the child's father reportedly earning enough income to support the family⁷. A significant proportion of mothers/caregivers (92%) practice continued breastfeeding, meeting the infant and young child feeding recommendation to continue breastfeeding and provide complementary foods after six months⁴. However, only 8.5%

of children meet the minimum adequate diet, one of the lowest rates of infant and young child feeding in Ghana and other developing countries⁸.

Maternal knowledge plays a significant role in the success of complementary feeding. Studies indicate that mothers with higher levels of education and better nutritional knowledge are more likely to follow recommended feeding practices⁹. However, various barriers such as cultural beliefs, lack of access to information, and socio-economic factors can impede knowledge dissemination¹⁰. Research has shown that appropriate complementary feeding practices are crucial for optimal infant and young child growth, development, and health. Some key findings from the literature include:

- **Timing:** Introducing complementary foods at around six months is recommended, as this coincides with a decline in breast milk's nutritional adequacy and an increase in infant energy needs⁴.
- **Nutrient density:** Complementary foods should provide essential nutrients, including iron, zinc, and protein, to support rapid growth and development⁵.
- **Dietary diversity:** Offering a variety of foods from different food groups can help ensure adequate nutrient intake and reduce the risk of allergies and intolerances¹¹.
- **Breastfeeding continuation:** Complementary feeding should not replace breastfeeding but rather complement it, as continued breastfeeding provides important health benefits⁴.
- **Hygiene and safety:** Proper food handling, preparation, and storage are essential to prevent contamination and foodborne illnesses⁴.
- **Responsive feeding:** Paying attention to infant cues, such as hunger and fullness, is vital for appropriate feeding practices³.

- **Cultural and socioeconomic factors:** Complementary feeding practices are influenced by cultural and socioeconomic factors, highlighting the need for tailored guidance and support¹².

Overall, the literature emphasizes the importance of timely, nutrient-dense, and diverse complementary feeding practices that continue to support breastfeeding and prioritize infant health and well-being.

A study investigated maternal nutritional knowledge and infant feeding practices in Uganda¹³. The purpose of the study was to assess the association between maternal nutritional knowledge and infant feeding practices in Uganda. The study was a cross-sectional one conducted in the Rakai District of Uganda. A sample of mothers and their infants was recruited from various settings, including hospitals, clinics, and community health centers. The mothers were asked to complete a questionnaire about their nutritional knowledge and their infant's feeding practices. The infants were weighed and measured. The data from the questionnaires and anthropometric measurements were analyzed to assess the association between maternal nutritional knowledge and infant feeding practices.

The findings showed that maternal nutritional knowledge was associated with infant feeding practices in several ways. Mothers with higher nutritional knowledge were more likely to breastfeed their infants, and their infants were more likely to be exclusively breastfed for longer periods. Mothers with higher nutritional knowledge were also more likely to give their infants a variety of nutritious foods, and their infants were less likely to be malnourished. The study recommended that interventions to improve infant feeding practices should focus on increasing maternal nutritional knowledge. These interventions could include providing information about the benefits of breastfeeding, training on how to prepare nutritious foods for infants, and helping

mothers develop healthy feeding practices. The study also identified that the literature review did not assess the long-term effects of maternal nutritional knowledge on infant feeding practices.

2.1.2 Complementary Feeding Practices

Complementary feeding practices are crucial for infant nutrition⁴. Strategies for complementary feeding include introducing solid foods at six months, providing nutrient-dense foods, encouraging responsive feeding, and increasing food consistency and variety as the infant grows older^{5,3,11}. Factors influencing complementary feeding include maternal capabilities, paternal involvement¹¹⁵, economic status and food security, media exposure, community illiteracy, and cultural beliefs^{12,14,15}.

Adequate complementary feeding reduces the risk of malnutrition, stunting, and health problems³. Timely introduction of complementary foods (around six months) is essential for optimal growth and development⁴. A varied diet that includes a mix of animal and plant-based foods provides essential nutrients and reduces the risk of nutrient deficiencies¹⁰.

Inadequate complementary feeding can lead to malnutrition, stunting, and increased risk of morbidity and mortality³. Exclusive breastfeeding for the first six months, followed by continued breastfeeding alongside appropriate complementary foods, is recommended⁴.

In practice, complementary feeding varies widely based on cultural, socio-economic, and individual factors. In Ogun State, traditional feeding practices often include the early introduction of solid foods, which can negatively impact nutritional outcomes¹⁶. Factors such as maternal employment, healthcare access, and cultural norms significantly influence feeding practices¹⁷.

2.2 Nutritional Status of Children Age 6-24 months

Nutritional status during infancy is a critical determinant of lifelong health and development, with profound implications for physical growth, cognitive function, and susceptibility to diseases¹⁸. This period represents a crucial window of opportunity for ensuring optimal nutrition, as infants experience rapid growth and development, making them particularly vulnerable to nutritional deficiencies¹⁹. The nutritional status of infants is influenced by a myriad of factors, including maternal influences, which play a pivotal role in shaping infant health outcomes¹⁹.

Adequate nutrition during this period enhances physical and cognitive development. Malnutrition can lead to stunting, wasting, underweight, and increased risk of infections and mortality. The nutritional status of children is assessed using indicators such as stunting, wasting, and underweight. These measures provide insights into the prevalence of malnutrition and its severity²⁰. These indicators offer a comprehensive assessment of a child's nutritional status and help identify potential nutritional deficiencies or disorders²¹. In Ogun State, studies have reported varying levels of malnutrition among children under five, often linked to inadequate complementary feeding practices and maternal knowledge²².

2.2.1 Indicators of Nutritional Status

The nutritional status of children is assessed using various indicators that provide crucial insights into their health and help identify malnutrition. These assessments are vital for determining the need for nutritional interventions. The key indicators include:

1. **Anthropometric measurements:** Height, weight, and mid-upper arm circumference (MUAC) are commonly measured to assess wasting, stunting, and underweight. MUAC is a simple, non-invasive, and cost-effective method used as a proxy indicator of nutritional status, particularly in children¹²³. It provides valuable information for

healthcare professionals and researchers²³. MUAC measurements can identify severe acute malnutrition (SAM), with a cutoff of <11.5 cm, and assess nutritional status in children and adults^{21,23}. It is also used to monitor progress and response to nutritional interventions, offering high sensitivity and specificity^{24,25}.

2. **Clinical indicators:** Physical signs such as muscle wasting, skin changes, and hair thinning can indicate nutrient deficiencies, particularly in proteins, vitamins, and minerals²¹. These indicators help identify visible health issues caused by malnutrition.
3. **Biochemical indicators:** Laboratory tests, including blood tests, measure levels of micronutrients such as iron, vitamin A, and zinc²¹. These assessments are crucial for detecting deficiencies like anaemia and provide more precise information about internal nutritional imbalances.
4. **Dietary assessment:** Techniques like 24-hour dietary recall or food frequency questionnaires help evaluate dietary diversity and nutrient adequacy⁴. These methods offer insights into a child's nutrient intake and help to pinpoint potential nutritional gaps²⁶.

2.2.2 Micronutrient Deficiency and Its Impact on Children's Health.

Breast milk provides optimal nutrition, supports immune system development, and protects against infections and chronic diseases²⁷. Introducing complementary foods at six months is essential for meeting a child's increasing nutritional needs and preventing micronutrient deficiencies⁴. Poor complementary feeding practices, such as delayed introduction or inadequate frequency and diversity, can result in malnutrition and stunted growth²⁸.

Micronutrient deficiencies remain a major public health concern, particularly in low- and middle-income countries²⁹. Key micronutrients, including vitamins and minerals, are vital for

sustaining health and preventing diseases¹²⁰. Iron deficiency affects around 40% of children under five globally¹³². This deficiency can lead to anaemia, causing symptoms such as fatigue, weakness, and impaired cognitive development³⁰.

Vitamin A deficiency is prevalent in many low-income countries³⁰. Vitamin A is critical for maintaining vision, immune function, and the integrity of epithelial cells. Its deficiency may cause night blindness, weakened immune response, and an increased risk of mortality³¹.

Zinc deficiency is another widespread issue, especially in low-income areas³². Zinc is important for immune function, wound healing, and protein synthesis³³. Zinc deficiency can impair growth and development, lower immunity, and elevate the risk of death³⁴.

Strategies such as food fortification and micronutrient supplementation are effective in combating these deficiencies¹⁰. Fortification involves adding essential micronutrients to staple foods like flour and sugar to increase their nutritional value. Supplementation, meanwhile, involves providing deficient individuals with micronutrients in the form of pills or capsules³¹.

2.2.3 Key Factors Influencing Nutritional Status

Several factors contribute to the nutritional status of children under five. These can be broadly categorized into socioeconomic, environmental, and health-related influences:

1. **Socioeconomic factors:** Factors, such as maternal education and household income, play a crucial role in determining access to nutrient-rich foods and healthcare services. Families with higher income levels are generally able to afford better quality diets and healthcare, which contribute positively to the nutritional status of their children^{21, 35}.
2. **Environmental factors:** Conditions such as poor sanitation, unsafe drinking water, and high exposure to infections increase the risk of malnutrition. These factors also contribute to diarrhea and other illnesses that deplete essential nutrients from the body²¹.

3. **Maternal health and practices:** Exclusive breastfeeding for the first six months, followed by appropriate complementary feeding, is vital for optimal growth and immunity^{21,35}. Introducing nutrient-dense complementary foods at six months bridges the gap between exclusive breastfeeding and family foods, ensuring children receive sufficient nutrients for healthy development^{21,35}. Poor maternal health, such as malnutrition, anemia, or mental health issues, can negatively impact infant nutrition and development³⁶. Cultural norms and social beliefs heavily influence feeding practices, which can either support or hinder a child's nutritional adequacy^{12,35}.

2.2.4 Strategies to Improve Nutritional Status

To combat malnutrition and enhance the nutritional status of children, the following strategies are recommended:

1. **Promoting exclusive breastfeeding:** Providing mothers with education on the benefits of breastfeeding and offering lactation support can significantly improve infant nutrition²¹.
2. **Encouraging nutrient-dense complementary feeding:** Introducing a diverse range of iron-rich and protein-based foods at six months helps ensure a child's diet meets nutritional needs^{21,35}.
3. **Food fortification and supplementation:** Enriching staple foods with essential micronutrients, such as iron and vitamin A, and providing direct supplementation can address widespread deficiencies²¹.
4. **Maternal education and empowerment:** Enhancing maternal knowledge about child nutrition and healthcare empowers mothers to make informed decisions about their children's diets^{21,35}.

5. **Improving food security:** Addressing poverty and ensuring access to affordable, nutritious food can reduce the risk of malnutrition, particularly in vulnerable populations^{21,35}.

2.3 Maternal Factors

Maternal factors, including age, education, health, socioeconomic status, and breastfeeding practices, play a critical role in determining the nutritional status of infants. These factors influence not only the mother's knowledge and decision-making abilities regarding feeding practices but also affect the overall health and development of the child. Studies have shown that mothers with higher levels of education, better health, and access to healthcare services are more likely to engage in practices that promote optimal child nutrition. On the other hand, challenges such as maternal depression, low socioeconomic status, and inadequate breastfeeding practices can negatively impact a child's nutritional outcomes³⁷.

For instance, younger mothers and those with lower educational attainment are more likely to have children who are underweight or stunted due to insufficient knowledge about proper feeding practices. Similarly, maternal health conditions, including mental health issues, can hinder a mother's ability to provide adequate care and nutrition to her child³⁸. Access to healthcare services, such as regular check-ups and professional nutrition counseling, further empowers mothers to make informed choices about their children's diets³⁹. Moreover, promoting exclusive breastfeeding and adequate complementary feeding is vital for improving the nutritional status of children⁴⁰.

These maternal factors, individually and collectively, contribute significantly to the health and development of children, making them key areas of focus for interventions aimed at reducing malnutrition and improving child health⁴¹.

2.3.1 Maternal Age

Empirical findings suggest a potential relationship between maternal age and infant nutrition. A study explored this association, focusing on the link between maternal age and infant nutrition³⁷. The objective of the study was to assess this relationship through a systematic review and meta-analysis of observational studies conducted in low- and middle-income countries³⁷. A comprehensive literature search was carried out to identify relevant studies, which were then screened according to predetermined eligibility criteria. Data from the included studies were extracted and summarized, and pooled odds ratios (ORs) with 95% confidence intervals (CIs) were calculated to evaluate the association between maternal age and infant nutrition outcomes. The study's findings revealed that maternal age was linked to several infant nutrition outcomes, such as low birth weight, exclusive breastfeeding, and stunting, all of which were related to maternal factors. The study recommended that interventions aimed at improving infant nutrition should focus on reducing the age gap between mothers and their partners. These interventions might include providing information on the risks of teenage pregnancy, ensuring access to family planning services, and offering support to young mothers³⁷.

2.3.2 Maternal Education

Maternal education plays a crucial role in determining infant nutritional outcomes. Numerous studies have shown that higher levels of maternal education are associated with improved infant feeding practices. Educated mothers tend to have greater knowledge about proper nutrition, which enables them to make informed choices regarding the feeding and overall care of their children³⁷.

Education enhances a mother's ability to understand nutritional guidelines, critically evaluate dietary information, and implement healthy feeding practices. This often translates to higher

breastfeeding rates, timely introduction of complementary foods, and better management of their child's dietary needs³⁸. Mothers with higher educational attainment are also more likely to provide nutrient-dense, balanced diets, thereby reducing the risk of malnutrition in their children³⁹.

Furthermore, maternal education has a positive impact on socioeconomic status, which in turn influences infant nutrition. Mothers with higher education tend to have better employment opportunities and income, enabling them to access nutritious foods and healthcare services more easily⁴⁰. In a study conducted in Bangladesh, maternal education was inversely associated with stunting in infants, highlighting the protective effect of higher education on child growth⁴¹.

Interventions that aim to improve maternal education, particularly in disadvantaged populations, are likely to have a significant impact on reducing malnutrition and improving child health outcomes⁴².

2.3.3 Maternal Health

Maternal health plays a crucial role in determining the nutritional status of infants, with conditions such as anemia, malnutrition, and mental health disorders significantly impacting child health outcomes. Poor maternal health during pregnancy and postpartum can result in adverse nutritional outcomes in infants, including stunting, wasting, and underweight³⁷.

Maternal anemia has been linked to an increased risk of stunting in children under five years. Research in India shows that children born to anemic mothers are more likely to experience stunting compared to those of healthier mothers³⁸. This association is particularly evident in cases of low birth weight or preterm birth, which are connected to poor maternal health during pregnancy³⁹.

In addition, maternal mental health issues, such as depression and anxiety, can impair a mother's ability to provide adequate care and nutrition for her child. Studies indicate that poor maternal mental health correlates with negative infant nutrition outcomes, including low birth weight and inadequate breastfeeding⁴⁰. Improving maternal health through adequate healthcare services and mental health support is essential for enhancing the nutritional status of children⁴¹.

2.3.4 Maternal Socioeconomic Status

Maternal socioeconomic status (SES) plays a pivotal role in determining the nutritional outcomes of children. Higher SES often translates to better access to quality food, healthcare, education, and other resources necessary for optimal child development. Mothers with higher SES are more likely to provide balanced diets that meet the nutritional needs of their children, thereby lowering the risk of malnutrition³⁸. In contrast, mothers from lower socioeconomic backgrounds often face challenges that compromise their ability to provide adequate nutrition. Limited financial resources can restrict access to diverse and nutrient-rich foods, leading to deficiencies that affect the child's growth and overall well-being. Moreover, healthcare access may be limited, which reduces opportunities for mothers to receive guidance on proper infant nutrition and feeding practices³⁸. Studies indicate that children of mothers with higher SES are less likely to suffer from conditions such as stunting, underweight, and wasting, compared to those from lower SES families³⁹.

Improving maternal socioeconomic conditions, through initiatives such as increased access to education, employment opportunities, and healthcare, is crucial for addressing malnutrition in children. Interventions aimed at raising household income and ensuring food security can have a profound impact on improving the nutritional status of children⁴⁰.

2.3.5 Breastfeeding Practice

Breastfeeding practices are fundamental to ensuring the optimal health and nutrition of infants. Exclusive breastfeeding for the first six months of life, as recommended by the World Health Organization, is strongly associated with better growth, cognitive development, and overall health outcomes for children. After six months, continued breastfeeding alongside the introduction of complementary foods is essential for providing the nutrients necessary for sustained growth and development⁶². Breast milk is uniquely formulated to meet the nutritional needs of infants, containing essential proteins, fats, vitamins, and antibodies that support both immune function and physical growth. Studies show that infants who are exclusively breastfed are less likely to suffer from infections, allergies, and respiratory illnesses, and they tend to have better long-term health outcomes compared to non-breastfed infants³⁸. Breastfeeding also fosters strong emotional bonds between mother and child, contributing to the psychological well-being of both³⁹.

The benefits of breastfeeding extend beyond the infant. Mothers who breastfeed experience faster postpartum recovery, and breastfeeding has been shown to reduce the risk of certain diseases, including breast and ovarian cancers and type 2 diabetes. Additionally, breastfeeding can aid in natural family planning by delaying the return of menstruation⁴⁰.

Despite these benefits, breastfeeding practices are often influenced by maternal factors such as education, socioeconomic status, and cultural norms. Mothers with higher levels of education and SES are more likely to breastfeed exclusively and for longer durations, as they tend to have

greater access to information about its benefits and the resources needed to support breastfeeding⁴¹. Conversely, mothers from lower SES backgrounds may face obstacles such as a lack of breastfeeding support, inadequate maternity leave, and the need to return to work early, all of which can negatively impact breastfeeding practices⁴².

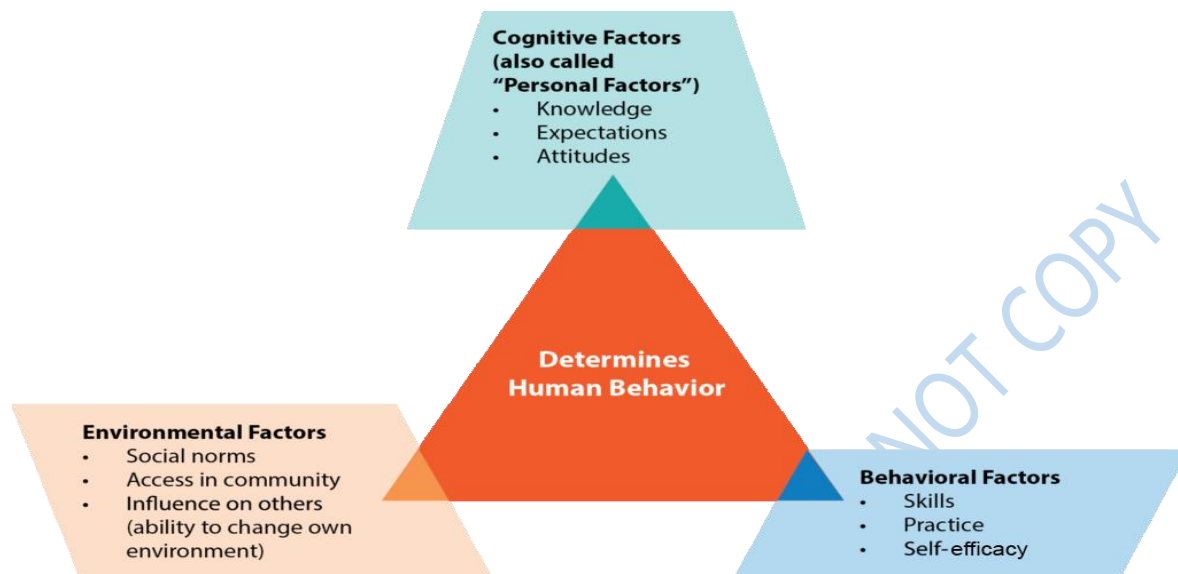
Ensuring that mothers receive adequate support, both in healthcare settings and through community programs, is critical for promoting successful breastfeeding. Providing education on the benefits of breastfeeding, offering lactation support, and creating policies that encourage breastfeeding in the workplace can significantly improve the rates and duration of breastfeeding, ultimately benefiting both mother and child⁴³.

2.4 Theoretical Review

This theoretical review is based on the Social Cognitive Theory (SCT) and the Theory of Planned Behavior (TPB). These theories offer a framework for understanding the factors that influence maternal feeding practices and the nutritional status of infants.

2.4.1 Social Cognitive Theory

The Social Cognitive Theory explores the complex interaction between personal, environmental, and behavioral factors that influence maternal feeding practices and, consequently, infant nutritional status³⁷. Reciprocal determinism, a core principle of SCT, highlights that behavior is not solely a result of knowledge but is shaped by the interaction between a person's beliefs, self-efficacy, social environment, and behavior itself³⁸. The theory also emphasizes observational learning, suggesting that mothers may adopt feeding practices by observing role models in their community³⁹. Moreover, self-efficacy refers to the confidence a mother has in her ability to implement and maintain healthy feeding practices for her child⁴⁰.



The Social Cognitive Theory⁴⁴.

2.4.2 Theory of Planned Behaviour

The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1985, is a widely respected framework in psychology used to predict and understand human behaviour in specific contexts. It is especially valuable in health promotion, public health, education, and social sciences, as it provides insight into the cognitive processes that lead to certain actions.

The Theory suggests that a person's behavior is guided by their intention to perform that behavior. This intention is influenced by three core components:

1. Attitude Toward the Behaviour

This refers to the degree to which a person has a favorable or unfavorable evaluation of the behaviour in question. Attitudes are shaped by beliefs about the outcomes of the behaviour and evaluations of these outcomes^{36,44}.

In the context of your study, a mother who believes that exclusive breastfeeding and timely introduction of complementary foods result in better health for her child will have a positive attitude toward these practices, making her more likely to follow them.

1. Subjective Norms

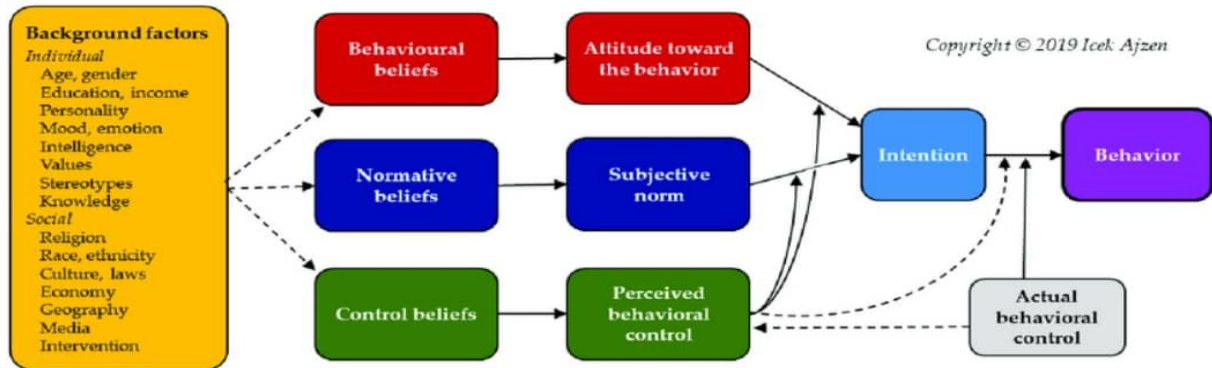
Subjective norms refer to the perceived social pressure to engage or not engage in a particular behaviour. They are shaped by normative beliefs, which are perceptions about whether significant others such as family members, peers, or health professionals approve or disapprove of the behaviour^{36,45}. For instance, if a mother's family and healthcare providers encourage

exclusive breastfeeding or certain types of complementary foods, she may feel motivated to conform to those expectations, even if her own attitude is uncertain.

1. Perceived Behavioral Control

Perceived behavioral control refers to the perceived ease or difficulty of performing a particular behavior and is closely related to the concept of self-efficacy. It reflects both past experiences and anticipated obstacles that may hinder or facilitate the behaviour. For example, a mother with low income and limited access to nutritious foods may feel that, despite knowing the appropriate feeding practices, she cannot consistently implement them. This sense of limited ability illustrates low perceived behavioral control. Together, these components shape a person's intention to perform a behaviour, and this intention, along with their perceived control over the behaviour, helps predict whether they will actually carry it out.

By applying SCT and TPB within this study, the aim is to better understand the motivations and barriers behind maternal feeding behaviors that affect children's nutritional status in Abeokuta North Local Government. These theories provide a lens through which the various factors influencing maternal feeding practices can be analyzed, revealing both drivers and obstacles to healthy child nutrition.



The Theory of Planned Behaviour⁴⁵

2.4 Conceptual Framework for the Study

This conceptual framework focuses on how maternal factors (age, education, health, and socioeconomic status) interact with knowledge, attitudes, and feeding practices to influence the dietary patterns and nutritional status of children aged 6-24 months. The framework is grounded in Social Cognitive Theory (SCT) and the Theory of Planned Behavior (TPB).

Key Concepts:

- **Maternal Factors:** Age, education, socioeconomic status, and health status of the mother.
- **Knowledge and Attitudes:** Maternal knowledge about proper feeding practices and attitudes towards feeding.
- **Feeding Practices:** Actual feeding behaviour, such as exclusive breastfeeding, complementary feeding, and food preparation methods.
- **Nutritional Status and Dietary Patterns:** Nutritional health of the child, measured by anthropometric indicators such as stunting, wasting, and underweight, as well as the dietary diversity and adequacy of the child's meals.

Theoretical Foundations

A. Social Cognitive Theory (SCT)

- **Personal Factors:** SCT highlights that personal factors such as maternal knowledge and self-efficacy (confidence in feeding abilities) play a key role in shaping feeding practices. Mothers with greater knowledge and belief in their ability to provide proper nutrition are more likely to adopt healthy feeding behaviors.
- **Environmental Factors:** External factors, such as socioeconomic status, community support, and access to healthcare, influence how feeding practices are carried out.

- Behaviour: Actual feeding practices (e.g., breastfeeding, complementary feeding) are shaped by the mother's personal and environmental factors.

B. Theory of Planned Behaviour (TPB)

- Attitudes: A mother's attitude towards feeding (e.g., her beliefs about the benefits of exclusive breastfeeding and complementary feeding) influences her intention to adopt these practices. If a mother believes that these practices lead to healthier and well-nourished children, she is more likely to adopt them.
- Subjective Norms: Social pressures from family members, community, and healthcare workers can influence a mother's feeding behaviour. For example, the role of family or societal expectations about breastfeeding duration or the types of food introduced could affect a mother's feeding practices.
- Perceived Behavioral Control: How much a mother believes she can influence feeding her child, based on access to food, healthcare, and support systems.

Factors like socioeconomic status, access to healthcare, education, and support systems influence how empowered a mother feels in ensuring her child's proper nutrition. For instance, mothers with higher socioeconomic status might find it easier to access nutritious food and healthcare services, while those with fewer resources might feel constrained.

Interactions Between Concepts and Theories:

The knowledge, attitudes, and feeding practices of mothers are influenced by maternal factors such as age, education, and socioeconomic status. These factors, in turn, affect the nutritional status and dietary patterns of children through the following pathways:

1. Maternal Knowledge:

Knowledge of recommended feeding practices (e.g., exclusive breastfeeding and proper complementary feeding) is critical to implementing proper dietary patterns.

Educated mothers or those exposed to healthcare services are more likely to possess accurate knowledge about feeding practices.

2. Maternal Attitudes:

Attitudes toward feeding (e.g., belief in the importance of introducing diverse and nutrient-rich foods) shape feeding behaviour. Mothers with positive attitudes towards healthy feeding are more likely to practice exclusive breastfeeding and proper complementary feeding.

These attitudes are influenced by both personal beliefs (SCT) and social pressures (TPB), such as advice from family members or healthcare workers.

3. Feeding Practices:

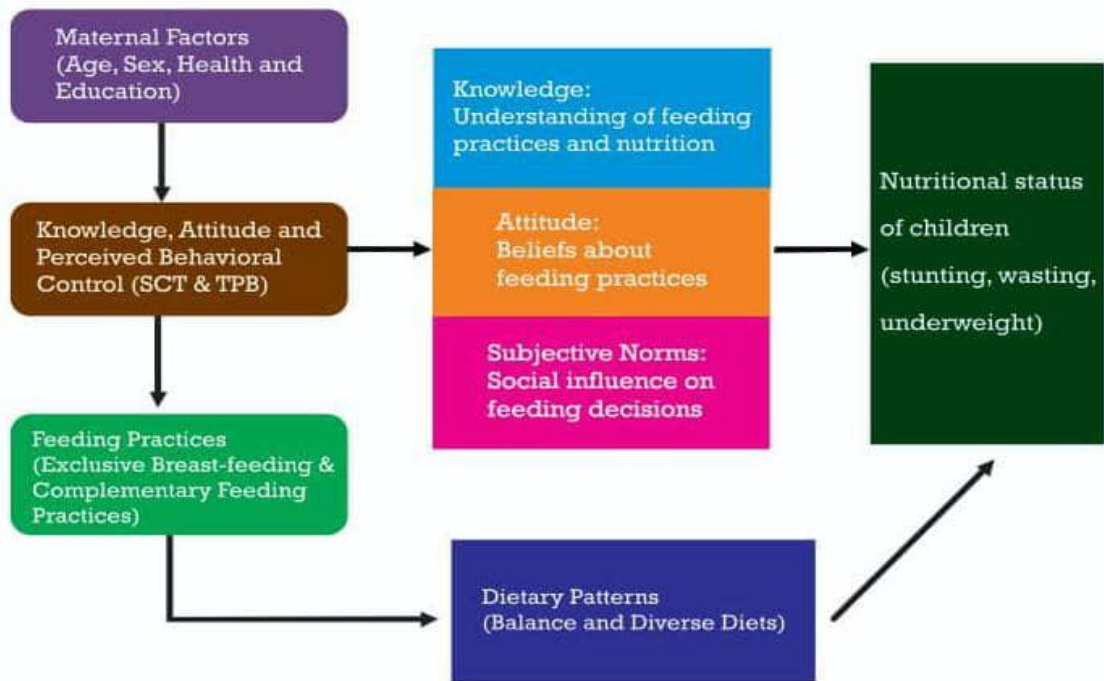
Feeding practices, such as exclusive breastfeeding for the first six months and the timely introduction of complementary foods, directly influence the nutritional status of children.

Maternal education and socioeconomic status influence feeding practices by determining access to nutrient-rich foods, information, and healthcare.

4. Dietary Patterns and Nutritional Status:

Dietary patterns are influenced by feeding practices and the availability of nutritious foods. Mothers with better knowledge and higher socioeconomic status are more likely to provide balanced diets for their children, leading to improved nutritional outcomes.

The nutritional status of children (measured by stunting, wasting, and underweight) is a direct outcome of these feeding practices. Poor feeding practices, often stemming from inadequate knowledge or financial constraints, lead to malnutrition and growth deficiencies.



Conceptual Framework

2.5 Summary of Gaps in Literature

The review of relevant literature reveals notable gaps in understanding the relationship between maternal factors and the nutritional status of children aged 6–24 months, particularly within Abeokuta North Local Government. While maternal influences on child nutrition have been explored broadly, there is a lack of focused research addressing this specific age group and geographic area. Studies rarely examine the distinct maternal factors that may shape nutritional outcomes in this critical developmental stage within the local context.

In addition, although maternal knowledge of feeding practices has been studied, limited attention has been given to how this knowledge translates into actual feeding behaviours and nutritional outcomes. This points to the need for research that bridges the gap between knowledge and practice. Furthermore, behavioural theories such as the Social Cognitive Theory (SCT) and the Theory of Planned Behaviour (TPB) remain underutilized in the study of maternal feeding practices. Incorporating these frameworks could provide deeper insight into maternal decision-making and support the design of more effective interventions.

Moreover, while the influence of socioeconomic and cultural factors on feeding practices is well acknowledged, their interaction within specific, low-resource settings like Abeokuta is not well understood. This highlights the need for more context-specific studies that explore how these factors collectively impact child nutrition. Overall, the identified gaps underscore the importance of conducting locally grounded research that applies relevant theoretical models and examines the interplay of maternal, socioeconomic, and cultural dynamics in shaping child nutrition in Abeokuta North.

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Chapter Three

Methodology

3.1 Research Design

A descriptive cross-sectional research design was used to assess maternal variables associated with the nutritional status of children aged 6-24 months in Abeokuta North Local Government Area of Ogun State.

3.2 Study Location

Abeokuta North is situated in the northern part of Ogun State, about 100 km north of Lagos State. The area is characterized by rolling hills, valleys, and plains. The Ogun River flows through the region, providing water resources for irrigation, fishing, and domestic use. The local government shared boundaries with the following local governments in Ogun state: North of Odeda Local Government, South of Ewekoro Local Government, East of Abeokuta South, and West of Yewa North Local Government. The population in this part of the State is approximately 250,000 people (according to the 2006 census).

This local Government is predominantly occupied by Yoruba people, with some Egba and Owu sub-groups. Yoruba is the primary language spoken, with English as the secondary language. The people are predominantly farmers, most of whom engage in the cultivation of arable crops, while some engage in livestock and fishing. The popular Adire fabrics are also produced in some areas of the local government.

3.3 Study Population

The study population is all mothers of infants aged 6-24 months, who are themselves between 19-55 years of age, attending primary health care centers in Abeokuta North Local Government Area of Ogun State.

3.4 Sample Size Calculation

The sample size for this study was estimated using Cochran's (Cochran, 1977) formula for - single proportion, which is as follows;

$$N = Z^2 pq / d^2 \text{ (Cochran, 1977)}$$

Where:

N = sample size

p = p-value (0.42)

q = q-value (0.58)

d = desired level of precision (margin of error)

$Z\alpha$ = standardized normal deviation, which is a constant (1.96) at a 95% confidence interval.

p = prevalence of malnourishment among children in Abeokuta North/Nigeria (prevalence and determinants of stunting among primary school children in rural and urban communities in Obafemi Owode LGA, southwestern Nigeria¹).

Let's assume a 5% margin of error (d = 0.05):

$$N = (1.96^2 \times 0.42 \times 0.58) / 0.05^2$$

$$N = (3.8416 \times 0.2436) / 0.0025$$

$$N = 0.9358 / 0.0025$$

$$N = 374$$

The sample size is approximately 375.

3.5 Sample and Sampling Techniques

This study employed a multi-stage sampling, and it was broken into the following stages

Stage One: Selection of PHC

Identification of the Study Area and Primary Healthcare Centers (PHCs) in Abeokuta North Local Government Area (LGA). The study area comprised the Abeokuta North Local Government Area (LGA), and all Primary Healthcare Centers (PHCs) within this area were identified.

Stage Two: Selection of PHCs for Sampling.

Out of the fifteen (15) PHCs in Abeokuta North LGA, eight (8) were purposively selected. These include: Imala PHC (rural), Ilewo-Orile HC (rural), Idi-Ori HC (rural), Elegu HC (semi-rural), Sabo HC (semi-rural), Totoro HC (urban), Adeun PHC (urban), and Iberekodo PHC (urban). The selection comprised two rural, three semi-rural, and three urban centres.

Stage Three: Distribution of Sample Size Across the PHCs. A total sample size of 375 mothers was proportionately distributed across the eight selected PHCs. As follows:

IlewoOrile HC	41
Imala Model PHC	30
Idi-Ori HC	44
Adeun PHC	73
Elega Health Center	36
Totoro Health Centre	30
Sabo Health Centre	36
Iberekodo PHC	88
	Total: 375

Stage 4: Random Selection of Participants at Each PHC

3.6 Description of the Research Instrument

Data was collected with a semi-structured interviewer-administered questionnaire which covers the sub-variables such as socio-demographic characteristics of mothers, maternal, infant nutritional status, breastfeeding practice, dietary pattern, (construct of theory applied)., Mid upper arm circumference of their children was used to determine the nutritional status of the children.

3.7 Validity of the Research Instrument

Ensuring the validity of the research instruments that were adopted for this study was crucial, as it referred to the extent to which the instrument accurately measured the variables it was intended to measure. To guarantee the validity of the study, the researcher conducted a comprehensive literature review to identify relevant maternal factors. The researcher also aimed to ensure content validity by including a well-rounded set of questions, established construct validity by clearly defining the constructs, and assessed face validity through feedback from colleagues. Additionally, criterion-related validity was considered by comparing the results with established measures, and cultural adaptation was ensured for diverse populations. The researcher continually reviewed and analyzed the collected data to identify patterns and anomalies, allowing for the ongoing refinement of the instrument before the commencement of the study. The instrument was translated into Yoruba to facilitate effective communication with the respondents.

3.8 Reliability of the Research Instrument

Reliability refers to the consistency and stability of measurements, ensuring dependable and replicable results within a research instrument or study. To ensure instrument reliability, the researcher conducted a pretest by administering the instrument to a subset (10%) of participants with similar characteristics to the main study group at selected Primary Health Centers (PHCs) in

Abeokuta North LGA. Internal consistency reliability was also assessed using Cronbach's alpha, measuring item consistency within the instrument. A Cronbach alpha coefficient of 0.7 or higher was considered acceptable.

3.9 Data Collection

Data was collected by administering the questionnaire to the mothers during clinic days. The questionnaire was administered to the mothers in form of a structured interview so as to accommodate those who cannot read and write. Four trained research assistants assisted in the administration of the instrument.

3.10 Data Analysis

Data collected from the study were coded and subjected to analysis using Statistical Packages for Social Sciences (SPSS). Specifically, data was analyzed using descriptive statistics such as percentage, mean, and standard deviation, as well as inferential statistics like Pearson Moment Correlation and Multiple Regression Analysis, with a significance level set at 0.05

3.11 Ethical Approval

The researcher sought and obtained ethical clearance from the Ogun State Ministry of Health's Institutional Ethical Review Committee before data collection. Clinic workers and experts were informed about the study's rationale. Participants were assured of confidentiality and privacy. Informed consent was obtained from each mother, and those unwilling to participate were excused.

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Chapter Four

4.1 Result and Discussion of Findings

Demographics Data Analysis

Table 4.1 A & B below shows the socio-demographic characteristics of the participants. The mean age of the children is approximately 11.93 ± 5.067 months. When considering the sex of the children, there is a slight male predominance, with 52.8% being male compared to 47.2% female. The age of mothers shows a varied demographic, with the majority (47.5%) in the 20-29 years' age group, followed closely by 42.4% in the 30-39 years range. The mean age of the mothers is 29.06 years with a standard deviation of 6.206, indicating that most mothers are relatively young adults. Notably, very few mothers (2.4%) are aged 19 years or younger, and only a small fraction (0.5%) falls between 50-59 years. The marital status of the mothers predominantly reflects a stable environment, with 83.5% being married. The remaining mothers are mostly single (5.9%), with very few being divorced, widowed, or separated. In terms of family structure, a significant majority (67.7%) live in monogamous families, while 21.6% are in polygamous setups, and 10.7% are single-parent families, indicating that traditional family structures are more common. Religious affiliation shows that the population is predominantly Christian (59.2%), followed by Muslims (33.9%), with a small representation of traditional and other religious beliefs. The educational attainment of mothers reveals that a substantial proportion (48.0%) have completed secondary education, while 40.5% have tertiary education. However, there is a notable minority

with no formal education (3.5%) or only primary education (6.1%). Regarding mothers' occupations, most are traders (38.4%) or civil servants (27.7%), with a smaller number working as artisans (22.1%) or being full-time wives (5.9%). The fathers' occupations indicate a predominance of self-employed individuals (63.5%), followed by those gainfully employed (34.4%), with very few unemployed (2.1%). Ethnicity is predominantly Yoruba (75.7%), followed by Igbo (19.5%), with very few individuals identifying as Hausa or other ethnicities. The household income data reveal that 62.1% of families earn below the minimum wage, suggesting economic challenges among the population. Lastly, the data on the number of children under five shows that most families have one child (62.1%), with 32.0% having two children and a small percentage (5.9%) having three children. This information reflects the dynamics of family size in the context of maternal and child health, which can influence feeding practices and nutritional outcomes. Overall, these socio-demographic factors provide a comprehensive view of the population, essential for understanding the context of feeding practices and nutritional status among children in this age group.

Table 4.1: Socio-demographic characteristics of the participants

Variable (N=375)	Frequency	Percentage
Age of child (months)		
6-12		63.7
13-18	239	24.5
19-24	92	11.7
Mean $\pm$ SD	44 11.93 $\pm$ 5.067	
Sex of child		
Male		52.8
Female	198 177	47.2
Mothers age		
≤ 19	9	2.4
20-29	178	47.5
30-39	159	42.4
40-49	27	7.2
50-59	2	0.5
Mean $\pm$ SD	29.061 $\pm$ 6.206	
Marital status		
Married	313	83.5
Divorced	30	8.0
Widow	5	1.3
Separated	5	1.3
Single	22	5.9
Family structure		
Monogamous	254	67.7
Polygamous	81	21.6
Single parent	40	10.7
Religion		
Christianity	222	59.2
Islam	127	33.9
Traditional	20	5.3
Others	6	1.6
Mother's educational level		
No formal	13	3.5
Adult education	7	1.9
Primary education	23	6.1
Secondary education	180	48.0
Tertiary education	152	40.5
Mothers' occupation		
Full-time wife	22	5.9
Civil servant	104	27.7
Trader	144	38.4

Artisan	83	22.1
Farmer	22	5.9
Fathers' occupation		
Gainfully employed	129	34.4
Self-employed	238	63.5
Unemployed	8	2.1
Ethnicity		
Yoruba	284	75.7
Igbo	73	19.5
Hausa	10	2.7
Others	8	2.1
Household income		
Below the minimum wage		
Above the minimum wage	119	62.1
	256	32.0
Number of children under 5		
1		
2	233	62.1
3	120	32.0
	22	5.9

4.2 Presentation of Data

Research Question One: Level of Maternal Knowledge of Feeding Practices

The assessment of maternal knowledge regarding feeding practices reveals critical insights into their understanding of child nutrition, as shown in Table 4.2 below. When asked about the recommended duration of exclusive breastfeeding, a significant majority, 75.5%, correctly identified the duration as six months, with only a small percentage recognizing shorter or longer durations.

In terms of initiating breastfeeding, 43.7% of mothers believe it should occur after the first bath, while 26.7% advocate for immediate initiation. The frequency of breastfeeding is well understood, with 82.7% of mothers indicating that babies should be fed on demand, reflecting an understanding of the needs of breastfed infants. Conversely, a minority thinks feeding should adhere to specific time intervals. Regarding colostrum, which is vital in the early days post-birth, 68.8% of mothers recognize its primary purpose as providing nutrition, while 20.5% understand its role in providing antibodies.

When it comes to introducing complementary foods, the mean age cited by mothers is approximately 6.1 months, with 74.1% identifying 6 months as the appropriate age for introducing such foods. On the topic of complementary feeding frequency, 44.5% of mothers suggested feeding 2-3 times a day, while 35.7% recommended 3-4 times daily. In recognizing essential nutrients for infants during complementary feeding, a notable 72.8% correctly identified "all of the above" as necessary nutrients, indicating a solid grasp of infant nutrition needs. When discussing potentially harmful foods for infants, the majority of mothers (63.7%) correctly identified the risks associated with honey, emphasizing the understanding of potential

dangers like botulism. However, there are varying levels of knowledge regarding other foods; for instance, 67.2% recognized the risks of high-sodium foods, while only 27.5% identified fish with high mercury levels as harmful.

Furthermore, when queried about why honey should be avoided during complementary feeding, 36.0% cited the risk of botulism, which is crucial for preventing infantile botulism, while others mentioned allergy risk and high sugar content. Lastly, when addressing the risks associated with raw or undercooked eggs and unpasteurized dairy products, a majority of mothers (37.9%) acknowledged the risk of contamination, while a significant portion also considered the allergy risk. This reflects an awareness of food safety issues, although there is a need for enhanced understanding of the specific dangers these foods pose to infants.

Table 4.2: Responses of mothers on knowledge regarding feeding practices

Variables	Frequency	Percent
Response to their recommended duration of exclusive breastfeeding		
0-3months	8	2.1
4-6months	52	13.9
6months	283	75.5
More than 6 months	32	8.5
The best way to initiate breastfeeding		
Immediately after the bath	100	26.7
After the first bath	164	43.7
After the first cry	96	25.6
After the first feeding	15	4.0
The times when a baby should be fed		
On-demand	310	82.7
Every 2 hours	48	12.8
Every 3 hours	15	4.0
Every 4 hours	2	0.5
The purpose of colostrum		
To provide antibodies	77	20.5
To provide nutrition	258	68.8
To stimulate bowel movement	10	2.7
To stimulate urination	30	8.0

What age should complementary food be added to the breast milk? (months)

2	3	0.8
3	3	0.8
4	13	3.5
5	15	4.0
6	278	74.1
7	46	12.3
8	8	2.1
9	5	1.3
12	4	1.1

Mean $\pm$ SD

6.1040 $\pm$ 1.0406

At what age should complementary foods be introduced

Less than 4 months

6months	18	4.8
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More than 6 months	254	67.7
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	103	27.5
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Table 4.3: Response of mothers on knowledge

Variable	Frequency	Percent
What is the recommended frequency of complementary feeding?		
1-2 times a day	74	19.7
2-3 times a day	167	44.5
3-4 times a day	134	35.7
What are the essential nutrients for infants during complementary feeding?		
Protein	70	18.7
Iron	14	3.7
Zinc	6	1.6
Vitamin A	12	3.2
All of the above	273	72.8
Honey	102	27.2
Raw or undercooked egg	239	63.7
Unpasteurized diary	170	45.3
High sugar foods	252	67.2
High sodium foods	205	54.7
Foods high in salt	131	34.9
Unripe or raw fruits and vegetables	247	65.9
Nuts and seeds	103	27.5
Fish with high mercury levels	36	9.6
Excessive caffeine	229	61.1
Processed meat	158	42.1
Foods with artificial additives	217	57.9
Why should honey be avoided during complementary feeding?		
Risk of allergy	135	36.0
Risk of botulism	90	24.0

High sugar content	61	16.3
Others	89	23.7
Why should you avoid raw or undercooked eggs and unpasteurized dairy products?		
Risk of allergy	142	37.9
Risk of contamination	109	29.1
High sugar content	15	4.0
Choking hazard	41	10.9
High sodium content	13	3.5
Risk of bacteria	40	10.7
Others	15	4.0

4.2.1 Level of Maternal Knowledge of Feeding Practices

Table 4.3 below shows the assessment of maternal knowledge of feeding practices revealing that a significant majority, 63.5%, possess a good level of knowledge, while 36.5% fall into the poor knowledge category. This indicates that most mothers demonstrate an understanding of appropriate feeding practices and nutritional guidelines for their children.

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Table 4.4: Level of Maternal Knowledge of Feeding Practices

Level of Maternal Knowledge of Feeding Practices	Frequency	Percent
Good	238	63.5
Poor	137	36.5

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Scoring of Maternal Knowledge of Feeding Practices

Section B of the questionnaire used for this study specifically focused on maternal knowledge of feeding practices. The 10 questions covered areas such as exclusive breastfeeding, complementary feeding, appropriate meal frequency, and awareness of child nutritional requirements for children aged 6-24 months. Each correct response was awarded 1 point, with a maximum possible score of 10 points.

The mothers' total scores were categorized into two levels of knowledge:

- Good Knowledge: Mothers who scored 7 points or more (70% and above) were classified as having good knowledge of feeding practices.
- Poor Knowledge: Mothers who scored less than 7 points (below 70%) were classified as having poor knowledge of feeding practices.

This scoring system of the questionnaire allowed for a clear distinction between mothers with an adequate understanding of feeding practices and those with gaps in knowledge.

Associations between knowledge levels and demographic

Table 4.4 below shows the analysis of associations between maternal knowledge levels regarding feeding practices and various demographic variables. The results indicate that knowledge levels do not significantly differ by the age of the child ($p=0.282$) or the mother's age ($p=0.277$). However, the sex of the child shows a significant association with maternal knowledge, with more mothers of male children exhibiting good knowledge (48.3%) compared to those of female children (39.4%), yielding a p-value of 0.024. Family structure emerges as a critical factor, with a significant association ($p=0.001$) highlighting that mothers from monogamous families have better knowledge levels (74.4%) compared to those from polygamous (16.8%) or single-parent

families (8.8%). This suggests that family dynamics could play a vital role in shaping maternal knowledge.

Religion also significantly influences maternal knowledge ($p=0.048$), with a higher percentage of Christian mothers demonstrating good knowledge (63.4%) compared to their Muslim counterparts (51.8%). Education level is another important determinant, with a p -value of 0.018 indicating that mothers with higher education levels (particularly secondary and tertiary education) are more knowledgeable about feeding practices compared to those with no formal or adult education.

Maternal occupation is significantly associated with knowledge levels as well ($p=0.007$), with traders and civil servants showing better knowledge compared to housewives and farmers. Ethnicity also plays a role, as indicated by a p -value of 0.009, where Yoruba mothers show higher knowledge levels (78.2%) compared to Igbo and Hausa mothers. Household income is significantly associated with knowledge levels ($p=0.049$), where mothers with incomes above the minimum wage demonstrate better knowledge compared to those below it.

Lastly, the number of children under five does not show a significant association with knowledge levels ($p=0.527$), suggesting that this variable may not impact maternal knowledge as significantly as others.

Table 4.4: Associations between maternal knowledge levels regarding feeding practices and various demographic variables

Variables	Good	Poor	P value
Age (months)			0.282
6-12	152(63.9)	87(63.5)	
13-18	54(22.7)	38(27.7)	
19-24	32(13.4)	12(8.8)	
Mothers Age			0.277
≤19	5(2.1)	4(2.9)	
20-29	119(50)	59(43.1)	
30-39	99(41.6)	60(43.8)	
40-49	13(5.5)	14(10.2)	
50-59	2(0.8)	0(0)	
Sex of child			0.024*
Male	115(48.3)	83(60.6)	
Female	123(51.7)	54(39.4)	
Marital status			0.118
Married	201(84.5)	112(81.8)	
Divorced	20(8.4)	10(7.3)	
Widow	5(2.1)	0(0)	
Separated	2(0.8)	3(2.2)	
Single	10(4.2)	12(8.8)	
Family structure			0.001*
Monogamous	177(74.4)	77(56.2)	
Polygamous	40(16.8)	41(29.9)	
Single parent	21(8.8)	19(13.9)	
Religion			0.048*
Christianity	151(63.4)	71(51.8)	
Islam	76(31.9)	51(37.2)	
Traditional	8(3.4)	12(8.8)	

Others	3(1.3)	3(2.2)	
Mothers Education level			0.018*
No formal	4(1.7)	9(6.6)	
Adult education	7(2.9)	0(0)	
Primary	15(6.3)	8(5.8)	
Secondary	109(45.8)	71(51.8)	
Tertiary	103(43.3)	49(35.8)	
Mothers' occupation			0.007*
House wife	16(6.7)	6(4.4)	
Civil servant	74(31.1)	30(21.9)	
Trader	76(31.9)	68(49.6)	
Artisan	60(25.2)	23(16.8)	
Farmer	12(5)	10(7.3)	

Table 4.5: Associations between maternal knowledge levels regarding feeding practices and various demographic variables

Variables	Good	Poor	P value
Fathers' occupation			0.125
Gainfully employed	90(37.8)	39(28.5)	
Self employed	142(59.7)	96(70.1)	
Unemployed	6(2.5)	2(1.5)	
Ethnicity			0.009*
Yoruba	186(78.2)	98(71.5)	
Igbo	41(17.2)	32(23.4)	
Hausa	3(1.3)	7(5.1)	
Others	8(3.4)	0(0)	
Household income			0.049*
Below minimum wage	67(28.2)	52(38)	
Above minimum wage	171(71.8)	85(62)	
Number of children under 5			0.527
1	143(60.1)	90(65.7)	
2	81(34)	39(28.5)	
3	14(5.9)	8(5.8)	

4.2.2 Research Question Two: Feeding practices of mothers of children aged 6-24 months

Table 4.6 below shows the feeding practices of mothers with children aged 6 to 24. When asked about the timing of initiating breastfeeding after giving birth, a significant proportion (47.7%) reported that they initiated breastfeeding within the first hour, while 14.7% did so in less than 24 hours. However, some mothers delayed breastfeeding, with 18.9% starting after one hour and 6.1% after a day, while 12.5% could not remember the exact timing.

In terms of current breastfeeding practices, 71.7% of mothers indicated that they are still breastfeeding, while 28.3% are not. The duration of breastfeeding is notably long for many, with 70.9% breastfeeding for more than six months, 26.4% for three to six months, and a small percentage (2.7%) breastfeeding for less than three months. The typical duration of each breastfeeding session varies, with 46.4% breastfeeding for 5 to 10 minutes and 43.5% breastfeeding for more than 10 minutes, whereas 10.1% reported breastfeeding for less than 5 minutes. The introduction of complementary foods is predominantly occurring at around six months, as indicated by 66.9% of mothers, with only 8.0% introducing foods at three months and 25.1% at other ages. When it comes to the types of complementary foods offered, cereals are the most common, given by 47.7% of mothers, followed by fruits (19.2%), cowpea (8.0%), vegetables (9.9%), and other foods (15.2%). The frequency of offering complementary foods shows that 55.7% of mothers feed their children 2 to 3 times a day, while 25.3% do so 3 to 4 times, with a smaller percentage feeding less than once a day (10.6%) or never (8.3%). A vast majority (94.1%) reported continuing to breastfeed while introducing complementary foods.

Regarding dietary patterns, the primary source of nutrition for these children is largely breast milk (61.3%), followed by a combination of foods (22.4%), solid food (12.5%), and formula

(3.7%). In terms of feeding frequency, 43.7% of children are fed 3 to 4 times per day, while 30.7% are fed less than three times, and 25.6% are fed more than four times daily.

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Table 4.6: Feeding practices of mothers of children aged 6-24 months

Feeding Practices Questions	Frequency	Percentage
When did you initiate breastfeeding after giving birth?		
Within 1 hour	179	47.7
Less than 24 hours	55	14.7
After 1 hour	71	18.9
After 1 day	23	6.1
Can't remember	47	12.5
Are you currently breastfeeding a child?		
No	106	28.3
Yes	269	71.7
How long have you been breastfeeding your child?		
Less than 3 months	10	2.7
3-6 months	99	26.4
More than 6 months	266	70.9
How long do you typically breastfeed your child in one session?		
Less than 5 mins	38	10.1
5-10mins	174	46.4
More than 10mins	163	43.5
At what age did you introduce complementary foods to your child?		
3months	30	8.0
6months	251	66.9
Others	94	25.1
What type of complementary food do you normally give your child?		
Cereals	179	47.7
Fruits	72	19.2
Cowpea	30	8.0
Vegetables	37	9.9
Others	57	15.2
How often do you feed your children complementary foods?		
3-4 times a day	95	25.3
2-3 times a day	209	55.7
Less than a time in a day	40	10.6
Never	31	8.3
Did you continue to breastfeed your child while introducing complementary foods?		
No	22	5.9
Yes	353	94.1

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Table 4.6: Feeding practices of mothers of children aged 6-24 months

Feeding practices Questions	Frequency	Percentage
What is the child's primary source of nutrition?		
Breast milk	230	61.3
Formula	14	3.7
Solid food	47	12.5
Combination	84	22.4
How often is the child fed per day?		
Less than 3 times	115	30.7
3-4 times	164	43.7
More than 4 times	96	25.6

Level of Maternal Feeding Practice

Table 4.7 below shows the level of maternal feeding practices. Of the participants, 45.6% demonstrated good feeding practices, while a significant 54.4% exhibited poor feeding practices.

Table 4.7: Level of maternal feeding Practice

Level of Maternal Feeding Practice	Frequency	Percent
Good	171	45.6
Poor	204	54.4

Associations between feeding practices and socio-demographics

Table 4.8 below shows the associations between feeding practices and sociodemographic. There is a statistically significant association ($p = 0.001$) between the age of the child and feeding practices. Mothers of younger children (6-12 months) had better feeding practices (74.3%) compared to those with older children (only 21.1% for 13-18 months and 4.7% for 19-24 months). No significant association was found ($p = 0.225$) between the mother's age and feeding practices, indicating that age may not be a determining factor. The association with the sex of the child is not significant ($p = 0.070$), with similar proportions of good and poor feeding practices reported among boys and girls. There is no significant association ($p = 0.127$) between marital status and feeding practices, suggesting that being married or single does not strongly influence feeding practices.

A significant association ($p = 0.036$) was found with family structure, indicating that mothers in monogamous families had better feeding practices (69%) compared to those in polygamous or single-parent families. There is a statistically significant association ($p = 0.011$) between religion and feeding practices, with Christian mothers showing better feeding practices (56.7%) compared to their Muslim counterparts (39.8%).

A significant association ($p = 0.036$) indicates that mothers with secondary education (46.2%) had better feeding practices compared to those with lower educational attainment. No significant association was observed ($p = 0.084$) for mother's occupation, suggesting that occupation does not notably affect feeding practices. Similarly, no significant association was found ($p = 0.495$) between father's occupation and maternal feeding practices.

There was no significant association ($p = 0.121$) between ethnicity and feeding practices, implying that ethnicity does not significantly affect maternal feeding practices. Household

income did not show a significant association ($p = 0.505$) with feeding practices. A significant association ($p = 0.048$) suggests that mothers with fewer children under 5 (1 child) reported better feeding practices (57.3%) compared to those with 2 or 3 children. Lastly, the association between knowledge level and feeding practices was not statistically significant ($p = 0.453$), indicating that maternal knowledge does not directly correlate with feeding practices.

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Table 4.8: Associations between feeding practices and socio-demographics

Variables (N=375)	Good	Poor	P value
Age (months)			0.001*
6-12	127(74.3)	112(54.9)	
13-18	36(21.1)	56(27.5)	
19-24	8(4.7)	36(17.6)	
Mothers Age			0.225
≤19	5(2.9)	4(2)	
20-29	90(52.6)	88(43.1)	
30-39	66(38.6)	93(45.6)	
40-49	10(5.8)	17(8.3)	
50-59	0(0)	2(1)	
Sex of child			0.070
Male	99(57.9)	99(48.5)	
Female	72(42.1)	105(51.5)	
Marital status			0.127
Married	149(87.1)	164(80.4)	
Divorced	12(7)	18(8.8)	
Widow	3(1.8)	2(1)	
Separated	0(0)	5(2.5)	
Single	7(4.1)	15(7.4)	
Family structure			0.036*
Monogamous	118(69)	136(66.7)	
Polygamous	42(24.6)	39(19.1)	
Single parent	11(6.4)	29(14.2)	
Religion			0.011*
Christianity	97(56.7)	125(61.3)	
Islam	68(39.8)	59(28.9)	
Traditional	3(1.8)	17(8.3)	
Others	3(1.8)	3(1.5)	
Mothers Education level			0.036*
No formal	5(2.9)	8(3.9)	
Adult education	0(0)	7(3.4)	
Primary	12(7)	11(5.4)	
Secondary	79(46.2)	101(49.5)	
Tertiary	75(43.9)	77(37.7)	
Mother's occupation			0.084

House wife	14(8.2)	8(3.9)
Civil servant	50(29.2)	54(26.5)
Trader	70(40.9)	74(36.3)
Artisan	29(17)	54(26.5)
Farmer	8(4.7)	14(6.9)

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Table 4.7: Associations between feeding practices and socio-demographics

Variables (N=375)	Good	Poor	P value
Father's occupation			0.495
Gainfully employed	59(34.5)	70(34.3)	
Self employed	110(64.3)	128(62.7)	
Unemployed	2(1.2)	6(2.9)	
Ethnicity			0.121
Yoruba	139(81.3)	145(71.1)	
Igbo	27(15.8)	46(22.5)	
Hausa	3(1.8)	7(3.4)	
Others	2(1.2)	6(2.9)	
Household income			0.505
Below minimum wage	51(29.8)	68(33.3)	
Above minimum wage	120(70.2)	136(66.7)	
Number of children under 5			0.048*
1	98(57.3)	135(66.2)	
2	58(33.9)	62(30.4)	
3	15(8.8)	7(3.4)	
Knowledge			0.453
Good	105(61.4)	133(65.2)	
Poor	66(38.6)	71(34.8)	

Maternal Factors Associated with Feeding Practices of Children 6-24 Months Old Attending Primary Healthcare Centres in Abeokuta North Local Government

Table 4.9 below shows the analysis of maternal factors associated with the feeding practices of children aged 6-24 months attending primary healthcare centres in Abeokuta North Local Government. Regarding marital status, being married had an adjusted odds ratio (AOR) of 1.023 with a p-value of 0.982, indicating no significant association. Divorced mothers showed an AOR of 0.323 ($p=0.235$), while widows had an AOR of 0.533 ($p=0.640$), also suggesting no significant impact. Family structure revealed an AOR of 0.395 for monogamous families ($p=0.323$) and 0.462 for polygamous families ($p=0.441$), neither of which showed significant associations compared to single-parent families. In terms of religion, the AOR for Christianity was 0.194 ($p=0.149$), for Islam 0.119 ($p=0.047$), suggesting a significant association, while traditional and other religions had an AOR of 1.627 ($p=0.712$), indicating no significant relationship.

For maternal education, those with no formal education had an AOR of 0.982 ($p=0.985$), primary education 1.72 ($p=0.401$), and secondary education 1.76 ($p=0.102$), with only secondary education approaching significance. Maternal occupation showed that housewives had an AOR of 0.088 ($p=0.027$), indicating a significant association, while civil servants, traders, artisans, and farmers did not show significant associations with p-values above 0.05.

Ethnicity indicated that Yoruba had an AOR of 0.153 ($p=0.059$) and Igbo 0.136 ($p=0.051$), suggesting trends towards significance, while Hausa and others showed an AOR of 0.308 ($p=0.461$) with no significant relationship. Household income above minimum wage had an AOR of 1.075 ($p=0.789$), indicating no significant association. The number of children under five years showed a significant association with AORs of 4.786 ($p=0.018$) for one child and

4.231 ($p=0.028$) for two children, indicating that having fewer children is associated with better feeding practices.

Knowledge of feeding practices had an AOR of 1.324 ($p=0.306$), indicating no significant relationship. However, maternal attitude had an AOR of 0.424 ($p=0.001$), demonstrating a significant association, suggesting that positive attitudes towards feeding practices are beneficial for child nutrition.

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Table 4.9: Maternal Factors Associated with Feeding Practices of Children 6 -24 Months
Old Attending Primary Healthcare Centres in Abeokuta North Local Government

Variables	AOR	P value
Marital status		
Married	1.023(0.148,7.069)	0.982
Divorced	0.323(0.050,2.08)	0.235
Widow	0.533(0.038,7.42)	0.640
Single	1	
Family structure		
Monogamous	0.395(0.063,2.49)	0.323
Polygamous	0.462(0.065,3.3)	0.441
Single parent	1	
Religion		
Christianity	0.194(0.021,1.79)	0.149
Islam	0.119(0.013,1.069)	0.047
Traditional	1.627(0.122,21.61)	0.712
Others	1	
Mothers Education level		
No formal	0.982(0.163,5.9)	0.985
Primary	1.72(0.486,6.06)	0.401
Secondary	1.76(0.895,3.45)	0.102
Tertiary	1	
Mother's occupation		
House wife	0.088(0.010,0.759)	0.027*
Civil servant	0.662(0.16,2.74)	0.569
Trader	0.671(0.18,2.48)	0.551
Artisan	0.954(0.259,3.52)	0.944
Farmer	1	
Ethnicity		
Yoruba	0.153(0.022,1.075)	0.059
Igbo	0.136(0.018,1.10)	0.051
Hausa	0.308(0.013,7.08)	0.461
Others	1	
Household income		
Below minimum wage	1.075(0.633,1.83)	0.789
Above minimum wage	1	
Number of children under 5		
1	4.786(1.312,17.453)	0.018*
2	4.231(1.17,15.27)	0.028*

3	1
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Table 4.9: Maternal Factors Associated with Feeding Practices of Children 6-24 Months Old Attending Primary Healthcare Centres in Abeokuta North Local Government

Variables	AOR	P value
Knowledge		
Good	1.324(0.774,2.26)	0.306
Poor	1	
Attitude		
Positive	0.424(0.257,0.699)	0.001*
Negative	1	

4.2.3 Research Question Three: Maternal Attitude Towards Feeding Practices

Table 4.9 below shows the Maternal attitudes towards feeding practices, revealing important insights into how mothers perceive breastfeeding and complementary feeding. A majority of mothers (67.7%) feel comfortable breastfeeding in public, with 22.1% agreeing and only a small percentage feeling neutral (6.1%), disagreeing (1.9%), or strongly disagreeing (2.1%).

The belief that having good knowledge about proper breastfeeding techniques is necessary is strong, with 75.5% of mothers strongly agreeing and 21.6% agreeing, while only a small fraction (2.9%) remained neutral. However, when it comes to the knowledge of appropriate methods for storing expressed breast milk, opinions are more varied: 36.0% strongly agree, 24.8% agree, and a significant percentage (26.1%) disagree, indicating a need for further education on this topic.

Regarding formula feeding, 38.1% of mothers strongly agree that it is a good alternative to breastfeeding, while 28.0% disagree, reflecting mixed feelings about the necessity of formula feeding. A majority of mothers (56.5%) are committed to introducing solid food at the recommended age, with another 29.1% agreeing, while only a small percentage disagree or are neutral. The importance of providing a variety of complementary foods is recognized by 63.2% of mothers, and a similar proportion (59.2%) believes that complementary feeding is crucial for their baby's growth. Additionally, 63.7% state they will choose nutrient-rich foods for their child's complementary feeding, showing a strong inclination towards healthy food choices.

Confidence in preparing nutritious complementary foods is also high, with 59.2% of mothers feeling very confident. Furthermore, a significant majority (89.1%) reported receiving information or advice on the benefits of breastfeeding during pregnancy, primarily from healthcare providers (89.5%), while a smaller percentage cited family and friends (10.5%).

Table 4.10: Maternal Attitude towards Feeding Practices

Attitudinal Questions	Frequency	Percentage
I feel comfortable breastfeeding in public		
Strongly agree	254	67.7
Agree	83	22.1
Neutral	23	6.1
Disagree	7	1.9
Strongly disagree	8	2.1
I believe having good knowledge about proper breastfeeding techniques is necessary		
Strongly agree	283	75.5
Agree	81	21.6
Neutral	11	2.9
Disagree	0	0
Strongly disagree	0	0
I believe having a good knowledge of the appropriate method of storing expressed breast milk is a must		
Strongly agree	135	36.0
Agree	93	24.8
Neutral	38	10.1
Disagree	98	26.1
Strongly disagree	11	2.9
Formula feeding is a good alternative to breastfeeding		
Strongly agree	143	38.1
Agree	78	20.8
Neutral	41	10.9
Disagree	105	28.0
Strongly disagree	8	2.1
I will introduce solid food at the recommended age		
Strongly agree	212	56.5
Agree	109	29.1
Neutral	44	11.7
Disagree	9	2.4
Strongly disagree	1	0.3
Providing a variety of complementary foods to my child is important		
Strongly agree	237	63.2
Agree	105	28.0
Neutral	26	6.9
Disagree	4	1.1
Strongly disagree	3	0.8

Table 4.10: Maternal Attitude towards Feeding Practices

Attitudinal Questions	Frequency	Percentage
I believe complementary feeding is important for my baby's growth		
Strongly agree	222	59.2
Agree	99	26.4
Neutral	34	9.1
Disagree	17	4.5
Strongly disagree	3	0.8
I will choose nutrient-rich foods for my baby's complementary feeding		
Strongly agree	239	63.7
Agree	95	25.3
Neutral	25	6.7
Disagree	14	3.7
Strongly disagree	2	0.5
I feel very confident about preparing nutritious complementary food for my child		
Strongly agree	222	59.2
Agree	105	28.0
Neutral	29	7.7
Disagree	16	4.3
Strongly disagree	3	0.8
Any information or advice on the benefit of breastfeeding to your child's health and nutrition during pregnancy		
No		
Yes	41	10.9
	334	89.1
If yes, which source (n=334)		
Health care provider	299	89.5
Family and friends	35	10.5

Level of Maternal Attitude Towards Feeding Practices

Table 4.10 shows the level of maternal attitude towards feeding practices. Out of the total respondents, 231 mothers (61.6%) demonstrated a positive attitude towards feeding practices, while 144 mothers (38.4%) exhibited a negative attitude. This suggests that a significant majority of mothers hold favorable views regarding feeding their children, which is essential for promoting healthy feeding practices and improving child nutrition.

Table 4.11

Level of Maternal Attitude Towards Feeding Practices	Frequency	Percent
Positive	231	61.6
Negative	144	38.4

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Association between Maternal Attitude towards Feeding Practices and Socio-demographics

Table 4.12 shows the association between maternal attitude towards feeding practices and socio-demographic variables. Among mothers with children aged 6-12 months, 154 (66.7%) demonstrated a positive attitude, while 85 (59%) of those with children aged 13-18 months had a negative attitude, resulting in a P-value of 0.059, indicating no significant association. Mothers aged 20-29 years had the highest percentage of positive attitudes (130, or 56.3%), whereas a notable P-value of 0.001 indicates a significant association between maternal age and feeding attitudes. Regarding family structure, 142 mothers from monogamous families (61.5%) had a positive attitude, compared to 112 mothers (77.8%) from polygamous families with a negative attitude, yielding a significant P-value of 0.004.

The analysis also found a significant association between religion and maternal attitudes towards feeding, with 131 Christian's mothers (56.7%) having a positive attitude compared to 91 Muslim mothers (63.2%) with a negative attitude, reflected in a P-value of 0.001. In terms of maternal education, 107 mothers (46.3%) with secondary education had a positive attitude, while 73 mothers (50.7%) with secondary education showed a negative attitude, leading to a significant P-value of 0.020. The results also indicated that positive attitudes were more prevalent among mothers with good knowledge of feeding practices, with 139 (60.2%) displaying positive attitudes compared to 99 (68.8%) with poor knowledge, showing a P-value of 0.099, which is not statistically significant.

Finally, there was a significant association between maternal attitude and feeding practices, with 119 mothers (51.5%) exhibiting a positive attitude towards feeding practices compared to 52 (36.1%) with negative attitudes, resulting in a P-value of 0.004.

Table 4.12: Association between Maternal Attitude towards Feeding Practices and socio-Demographics

Variables	Positive	Negative	P value
Age (months)			
6-12	154(66.7)	85(59)	0.059
13-18	57(24.7)	35(24.3)	
19-24	20(8.7)	85(59)	
Mothers Age			
≤19	5(2.2)	4(2.8)	0.001*
20-29	130(56.3)	48(33.3)	
30-39	81(35.1)	78(54.2)	
40-49	15(6.5)	12(8.3)	
50-59	0(0)	2(1.4)	
Sex of child			
Male	124(53.7)	74(51.4)	0.672
Female	107(46.3)	70(48.6)	
Marital status			
Married	190(82.3)	123(85.4)	0.249
Divorced	18(7.8)	12(8.3)	
Widow	5(2.2)	0(0)	
Separated	2(0.9)	3(2.1)	
Single	16(6.9)	6(4.2)	
Family structure			
Monogamous	142(61.5)	112(77.8)	0.004*
Polygamous	58(25.1)	23(16)	
Single parent	31(13.4)	9(6.3)	
Religion			
Christianity	131(56.7)	91(63.2)	0.001*
Islam	74(32)	53(36.8)	
Traditional	20(8.7)	0(0)	
Others	6(2.6)	0(0)	
Mothers Education level			
No formal	7(3)	6(4.2)	0.020*
Adult education	7(3)	0(0)	
Primary	20(8.7)	3(2.1)	
Secondary	107(46.3)	73(50.7)	
Tertiary	90(39)	62(43.1)	
Mothers occupation			
House wife	16(6.9)	6(4.2)	0.328
Civil servant	64(27.2)	40(27.8)	
Trader	94(40.7)	50(34.7)	
Artisan	44(19)	39(27.1)	

Farmer	13(5.6)	9(6.3)
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Table 4.12: Association between Maternal Attitude towards Feeding Practices and sociodemographic

Variables	Positive	Negative	P value
Father's occupation			0.059
Gainfully employed	75(32.5)	54(37.5)	
Self employed	148(64.1)	90(62.5)	
Unemployed	8(3.5)	0(0)	
Ethnicity			0.053
Yoruba	176(76.2)	108(75)	
Igbo	40(17.3)	33(22.9)	
Hausa	10(4.3)	0(0)	
Others	5(2.2)	3(2.1)	
Household income			0.494
Below minimum wage	70(30.3)	49(34)	
Above minimum wage	161(69.7)	95(66)	
Number of children under 5			0.273
1	137(59.3)	96(66.7)	
2	81(35.1)	39(27.1)	
3	13(5.6)	9(6.3)	
Knowledge			0.099
Good	139(60.2)	99(68.8)	
Poor	92(39.8)	45(31.3)	
Practices			0.004*
Positive	119(51.5)	52(36.1)	
Negative	112(48.5)	92(63.9)	

4.2.4 Research Question Four: Assess the Nutritional Status of Children Aged 6-24 Months

Table 4.12 below shows the nutritional status assessment of children aged 6-24 months, revealing significant findings across three key indicators: height-for-age (HAZ), weight-for-height (WHZ), and weight-for-age (WAZ). For height-for-age (HAZ), 229 children (61.1%) were classified as having a normal height, while 102 children (27.2%) exhibited moderate stunting, and 44 children (11.7%) were categorized as severely stunted. In terms of weight-for-height (WHZ), the results showed that 242 children (64.5%) were classified as normal weight. Moderate acute malnutrition was observed in 115 children (30.7%), while only 18 children (4.8%) were categorized as having severe acute malnutrition. For weight-for-age (WAZ), 208 children (55.5%) were found to have a normal weight for their age. However, 76 children (20.3%) fell into the moderate underweight category, and a significant 91 children (24.3%) were categorized as severely underweight.

Table 4.13: Nutritional status assessment of children

Indicators	Normal (≥ 2)	Moderate ($-3 \leq < -2$)	Severe (< -3)
Height-for-Age (HAZ)	229(61.1)	102(27.2)	44(11.7)
Weight-for-Height (WHZ)	242(64.5)	115(30.7)	18(4.8)
Weight-for-Age (WAZ)	208(55.5)	76(20.3)	91(24.3)

Nutritional Status of Children

Table 4.13 shows the assessment of nutritional status among children aged 6-24 months, revealing that 88 children, representing 23.5% of the population, are classified as having an adequate nutritional status. These children fall into the Normal category (≥ -2 Z-score) across all three indicators: height-for-age (HAZ), weight-for-height (WHZ), and weight-for-age (WAZ). Conversely, a significant proportion of 287 children, accounting for 76.5%, are categorized as malnourished. This group includes children who fall into the Moderate ($-3 \leq \text{Z-score} < -2$) or Severe ($\text{Z-score} < -3$) categories for at least one of the indicators. These results highlight a concerning prevalence of malnutrition among children in this age group, emphasizing the need for interventions aimed at improving nutritional outcomes and addressing the underlying factors contributing to malnutrition.

Adequate Nutritional Status (or Normal): Children who fall into the Normal category (≥ -2 Z-score) across all three indicators (Height-for-Age, Weight-for-Height, and Weight-for-Age).

Malnourished: Children who fall into the Moderate ($-3 \leq \text{Z-score} < -2$) or Severe ($\text{Z-score} < -3$) categories for any one of the indicators (HAZ, WHZ, or WAZ)

Table 4.14: Nutritional Status of Children

Nutritional status	Frequency	Percent
Adequate	88	23.5
Malnourished	287	76.5

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4.3 Comparative Analysis by age

Table 4.14 shows the comparative analysis of nutritional status by age among children aged 6-24 months, showing varying outcomes across the height-for-age (HAZ), weight-for-height (WHZ), and weight-for-age (WAZ) indicators. For HAZ, in the 6-12 months' group, 145 children (60.7%) were classified as normal, 68 (28.5%) as moderate, and 26 (10.9%) as severe. In the 13-18 months' age group, 54 (58.7%) were normal, 24 (26.1%) were moderate, and 14 (15.2%) were severe. The 19-24 months' group had 30 (68.2%) in the normal category, with 10 (22.7%) moderate and 4 (9.1%) severe.

Regarding WHZ, the 6-12 months' cohort had 149 (62.3%) classified as normal, 78 (32.6%) as moderate, and 12 (5%) as severe. In the 13-18 months' group, 66 (71.7%) were normal, 21 (22.8%) moderate, and 5 (5.4%) severe. The 19-24 months' group recorded 27 (61.4%) as normal, 16 (36.4%) moderate, and 1 (2.3%) severe. For WAZ, among the 6-12 months' children, 131 (54.8%) were normal, 53 (22.2%) moderate, and 55 (23%) severe. In the 13-18 months' group, 54 (58.7%) were normal, 22 (23.9%) moderate, and 16 (17.4%) severe. The 19-24 months' group showed 23 (52.3%) normal, 7 (15.9%) moderate, and 14 (31.8%) severe.

Overall nutritional status indicates that out of 239 children aged 6-12 months, 52 (21.8%) were adequately nourished, while 187 (78.2%) were malnourished. For the 13-18 months group, 26 (28.3%) were adequately nourished, with 66 (71.7%) malnourished. Lastly, the 19-24 months cohort showed 10 (22.7%) as adequately nourished, while 34 (77.3%) were malnourished. This analysis underscores the substantial challenges regarding malnutrition across all age groups within the studied population.

Table 4.15: Comparative Analysis by age

	6-12(Months)	13-18(months)	19-24(months)
HAZ			
Normal (≥ 2)	145(60.7)	54(58.7)	30(68.2)
Moderate ($-3 \leq & < -2$)	68(28.5)	24(26.1)	10(22.7)
Severe (< -3)	26(10.9)	14(15.2)	4(9.1)
WHZ			
Normal (≥ 2)	149(62.3)	66(71.7)	27(61.4)
Moderate ($-3 \leq & < -2$)	78(32.6)	21(22.8)	16(36.4)
Severe (< -3)	12(5)	5(5.4)	1(2.3)
WAZ			
Normal (≥ 2)	131(54.8)	54(58.7)	23(52.3)
Moderate ($-3 \leq & < -2$)	53(22.2)	22(23.9)	7(15.9)
Severe (< -3)	55(23)	16(17.4)	14(31.8)
NUTRITIONAL STATUS			
Adequate	52(21.8)	26(28.3)	10(22.7)
Malnourished	187(78.2)	66(71.7)	34(77.3)

Comparative Analysis by sex of child

Table 4.16 shows the comparative analysis of nutritional status by the sex of the child, revealing some notable differences across the height-for-age (HAZ), weight-for-height (WHZ), and weight-for-age (WAZ) indicators. For HAZ, among males, 121 children (61.1%) were classified as normal, 55 (27.8%) as moderate, and 22 (11.1%) as severe. In contrast, the female group showed that 108 children (61%) were normal, 102 (27.2%) moderate, and 44 (11.7%) severe. This indicates a relatively balanced distribution in nutritional status between sexes.

In the WHZ category, 129 males (65.2%) were classified as normal, 58 (29.3%) as moderate, and 11 (5.6%) as severe. The female cohort had 113 (63.8%) normal, 57 (32.2%) moderate, and 7 (4%) severe. Again, the results suggest that both male and female children have similar overall nutritional statuses, with slightly more males in the normal category. Regarding WAZ, among males, 113 (57.1%) were normal, 44 (22.2%) moderate, and 41 (20.7%) severe. For females, 95 (53.7%) were normal, 32 (18.1%) moderate, and 50 (28.2%) severe. This shows a slight difference, with more females classified as severely malnourished compared to males.

Overall nutritional status reveals that, among male children, 45 (22.7%) were classified as adequately nourished, while 153 (77.3%) were malnourished. For female children, 43 (24.2%) were adequately nourished, and 134 (75.7%) were malnourished. The analysis highlights a concerning level of malnutrition across both sexes, with slightly more females falling into the malnourished category.

Table 4.16: Comparative Analysis by sex of child

	Male	Female
HAZ		
Normal (≥ 2)	121(61.1)	108(61)
Moderate ($-3 \leq & < -2$)	55(27.8)	102(27.2)
Severe (< -3)	22(11.1)	44(11.7)
WHZ		
Normal (≥ 2)	129(65.2)	113(63.8)
Moderate ($-3 \leq & < -2$)	58(29.3)	57(32.2)
Severe (< -3)	11(5.6)	7(4)
WAZ		
Normal (≥ 2)	113(57.1)	95(53.7)
Moderate ($-3 \leq & < -2$)	44(22.2)	32(18.1)
Severe (< -3)	41(20.7)	50(28.2)
NUTRITIONAL STATUS		
Adequate	45(22.7)	43(24.2)
Malnourished	153(77.3)	134(75.7)

Maternal Factors Associated with Nutritional Status of Children 6-24 Months Old Attending Primary Healthcare Centres in Abeokuta North Local Government

Table 4.17 below shows the logistic regression analysis of the association between various maternal factors and the nutritional status of their wards. Regarding maternal age, those aged 20-29, 30-39, and 40-49 years showed an adjusted odds ratio (AOR) of 4.272, 4.06, and 2.75, respectively, although none of these were statistically significant with p-values of 0.590, 0.331, and 0.343. In contrast, mothers aged ≤ 19 years showed a notable AOR of 2.473 with a p-value of 0.590, indicating no significant association. In terms of marital status, being married had an AOR of 18.16 ($p=0.026$) and divorced mothers had an AOR of 23.15 ($p=0.014$), both showing significant associations. Widows and singles had an AOR of 4.678 and a p-value of 0.391, indicating a non-significant association.

When considering family structure, monogamous families had an AOR of 0.87 ($p=0.062$) while polygamous structures had an AOR of 0.097 ($p=0.092$), both suggesting trends toward significance but not reaching the conventional threshold. In terms of religion, the AOR for Christianity was 7.96 ($p=0.096$), for Islam it was 8.12 ($p=0.086$), indicating potential significance, whereas traditional and other religions showed a less clear association with an AOR of 1.31 ($p=0.837$).

Maternal education level revealed AORs of less than 1 for all categories compared to tertiary education, with none showing significant p-values, indicating that education level may not have a strong association with the outcomes.

Regarding maternal occupation, civil servants had an AOR of 5.514 ($p=0.024$), suggesting a significant association, while other occupations did not show significant associations. Ethnicity did not show strong associations, with AORs all less than 1 and p-values above 0.05. Household

income above minimum wage had an AOR of 1.49 ($p=0.224$), indicating no significant association. The number of children under 5 years did not show significant associations, with p -values above 0.05 for all categories. Knowledge as a factor had an AOR of 0.652 ($p=0.183$), indicating no significant relationship. However, maternal attitude showed a significant association with an AOR of 1.851 ($p=0.036$), indicating that positive attitudes towards feeding practices were beneficial. Practices did not show a significant relationship with an AOR of 0.859 ($p=0.597$).

Table 4.17: Maternal Factors Associated with Nutritional Status of Children 6-24 Months Old Attending Primary Healthcare Centres in Abeokuta North Local Government

Variables	AOR	P value
Mothers Age		
≤19	2.473(0.092,66.46)	0.590
20-29	4.272(0.229,79.77)	0.331
30-39	4.06(0.224,73.43)	0.343
40-49	2.75(0.135,56.323)	0.511
50-59	1	
Marital status		
Married	18.16(1.42,232.6)	0.026*
Divorced	23.15(1.9,281.97)	0.014*
Widow	4.678(0.137,158.21)	0.391
Single	1	
Family structure		
Monogamous	0.87(0.007,1.13)	0.062
Polygamous	0.097(0.007,1.46)	0.092
Single parent	1	
Religion		
Christianity	7.96(0.691,91.62)	0.096
Islam	8.12(0.742,88.94)	0.086
Traditional	1.31(0.095,18.33)	0.837
Others	1	
Mothers Education level		
No formal	0.841(0.131,5.4)	0.855
Adult education	0.26(0.036,1.95)	0.191
Primary	1.49(0.346,6.413)	0.592
Secondary	1.26(0.598,2.66)	0.541
Tertiary	1	
Mothers occupation		
House wife	3.11(0.559,17.289)	0.195
Civil servant	5.514(1.246,24.4)	0.024*
Trader	2.2(0.596,8.13)	0.237
Artisan	2.02(0.557,7.358)	0.284
Farmer	1	
Ethnicity		
Yoruba	0.649(0.102,4.14)	0.648
Igbo	0.634(0.094,4.275)	0.640
Hausa	0.125(0.004,4.024)	0.240
Others	1	
Household income		
Below minimum wage	1.49(0.782,2.848)	0.224
Above minimum wage	1	

Table 4.18: Maternal Factors Associated with Nutritional Status of Children 6-24 Months Old Attending Primary Healthcare Centres in Abeokuta North Local Government

Variables	AOR	P value
Number of children under 5		
1	1.301(0.377,4.488)	0.677
2	1.19(0.349,4.08)	0.778
3	1	
Knowledge		
Good	0.652(0.347,1.22)	0.183
Poor	1	
Attitude		
Positive	1.851(1.043,3.287)	0.036*
Negative	1	
Practices		
Good	0.859(0.488,1.511)	0.597
Poor	1	

Hypothesis Ho1: Maternal knowledge of feeding practices is positively associated with better nutritional status in children aged 6-24 months

Table 4.19 presents the Fisher's exact test results, indicating that among children with adequate nutritional status, 60 (68.2%) had mothers with good knowledge, while 28 (31.8%) had mothers with poor knowledge. Conversely, among malnourished children, 178 (62%) had mothers with good knowledge, and 109 (38%) had mothers with poor knowledge. The p-value of 0.314 suggests no statistically significant association between maternal knowledge of feeding practices and the nutritional status of children within this age group.

We therefore **fail to reject the null hypothesis** because the data do not provide sufficient evidence to support the hypothesis that maternal knowledge of feeding practices is positively associated with better nutritional status in children aged 6-24 months.

Table 4.18: Maternal knowledge of feeding practices is positively associated with better nutritional status in children aged 6-24 months

Maternal knowledge of feeding practices	Adequate	Malnourished	Test statistic	Df	P value	Decision
Good	60(68.2)	178(62)	1.103	1	0.314	Fail to reject H_0
Poor	28(31.8)	109(38)				(No significant association)

Hypothesis Ho2: Maternal feeding practices are significantly associated with child nutritional status.

Table 4.20 below presents the Fisher's exact test results, showing the association between maternal feeding practices and the nutritional status of children aged 6-24 months. For mothers with good feeding practices, 44.3% of children had adequate nutritional status, while 55.7% were malnourished. Among mothers with poor feeding practices, 46% of children had adequate nutritional status, and 54% were malnourished.

The p-value is 0.808, indicating that there is no statistically significant association between maternal feeding practices and the nutritional status of children. This suggests that variations in feeding practices do not significantly impact whether children fall into the adequate or malnourished categories in this sample.

Table 4.20: Maternal feeding practices are significantly associated with child nutritional status.

Maternal feeding practices	Adequate	Malnourished	Test statistic	Df	P value	Decision rule
Good	39(44.3)	132(46)	0.076	1	0.808	Fail to reject
Poor	49(55.7)	155(54)				Ho (No significant association)

4.4.1 Discussion of Findings

Findings from the study showed that the majority of mothers (75.5%) accurately identified the recommended duration of exclusive breastfeeding as six months. This contradicts global recommendations by organizations like the World Health Organization (WHO) and UNICEF. About 63.5% of mothers demonstrated good knowledge of feeding practices, while 36.5% had poor knowledge. This is similar to a study that stated that less than half (42.6%) of the women had good knowledge of breastfeeding practices, and 40.8% had average knowledge. Likewise, a study conducted in Nigeria showed 78.8% had good nutritional knowledge¹. Family structure was significantly associated with maternal knowledge, with mothers from monogamous families having better knowledge levels. In monogamous families, the parenting and care-giving responsibilities are generally more concentrated, allowing mothers to invest more time in child-rearing activities and access educational resources related to feeding and nutrition. Additionally, these mothers may have fewer competing demands from extended family obligations, which often affect mothers in polygamous families who may share resources and caregiving duties with other wives and family members. Conversely, research indicates that mothers in polygamous families often face distinct challenges that can limit their access to nutrition education and health resources. A study found that in polygamous households, resources such as time, finances, and support are often spread across multiple family units, which can dilute the level of attention each mother can give to her child's feeding practices. Religion also significantly influenced maternal knowledge, with a higher percentage of Christian mothers demonstrating good knowledge compared to Muslim mothers.

Higher education levels were associated with better knowledge of feeding practices. Studies highlight that maternal education significantly influences health-related knowledge, attitudes,

and practices, especially concerning child nutrition². Higher education often equips mothers with critical thinking skills, access to health information, and the ability to interpret and apply guidelines on feeding practices effectively. For instance, a study found that educated mothers are more likely to understand the importance of balanced nutrition, age-appropriate feeding, and hygiene practices in feeding, all of which contribute to improved child health outcomes. Educated mothers are also more likely to follow and trust health recommendations, understand the nutritional value of various foods, and adhere to dietary guidelines, leading to better feeding practices compared to mothers with lower educational attainment. Higher household income was associated with better knowledge of feeding practices. Research consistently shows that families with higher income levels tend to have better access to healthcare professionals, who guide child nutrition and feeding practices³.

Notably, a significant proportion of mothers (47.7%) initiated breastfeeding within the first hour after birth, which is crucial for establishing early nutrition and bonding between mother and child. Furthermore, the current breastfeeding rate stands at 71.7%, indicating a strong commitment to breastfeeding among mothers. A majority of these mothers (70.9%) continued breastfeeding for more than six months, aligning with global recommendations that advocate for exclusive breastfeeding during the first six months of life⁴. Complementary feeding practices also show promising trends, with most mothers (66.9%) introducing complementary foods at the recommended age of six months. Cereals emerged as the most common complementary food,

reflecting a common dietary choice among families. Additionally, more than half of the mothers (55.7%) offered complementary foods two to three times per day, which is essential for meeting the nutritional needs of growing children. Despite these positive practices, it is concerning that only 45.6% of mothers demonstrated good feeding practices overall, while 54.4% exhibited poor feeding practices. This contrasts with a similar study conducted in Nigeria, where Respondents' mean child feeding practices score was 6.05 ± 1.98 , with more than half (59.2%) of the respondents having good child feeding practices³. Several factors were identified as significantly associated with feeding practices. Mothers of younger children (6-12 months) displayed better feeding practices, which may be attributed to heightened awareness and responsiveness to the nutritional needs of infants. Additionally, family structure played a role, with mothers in monogamous families exhibiting better feeding practices compared to those in polygamous or single-parent families. Religious affiliation also influenced feeding practices, as Christian mothers reported better practices than their Muslim counterparts. Education emerged as a critical factor, with mothers holding secondary education demonstrating superior feeding practices compared to those with lower educational attainment. Lastly, mothers with fewer children under five years of age reported better feeding practices, suggesting that family size may impact the ability to provide adequate nutrition. All these align with a similar study in Nigeria¹.

Findings regarding maternal attitudes and practices related to breastfeeding and complementary feeding reveal a generally positive outlook among mothers, with several factors influencing these attitudes. A notable 67.7% of mothers expressed comfort with breastfeeding in public, indicating

a growing acceptance of breastfeeding as a natural and normal practice. Additionally, a significant majority (75.5%) strongly agreed on the importance of having good knowledge about breastfeeding techniques, highlighting the recognition of education as a critical component in promoting successful breastfeeding. Opinions on formula feeding were mixed, suggesting that while some mothers may view it as a necessary alternative, others may prefer to rely on breastfeeding. This ambivalence could reflect varying levels of knowledge, cultural beliefs, or personal experiences with breastfeeding. Furthermore, a commitment to introducing solid food at the recommended age was reported by 56.5% of mothers, which aligns with guidelines that emphasize the timely introduction of complementary foods to support infant growth and development. Most mothers also acknowledged the importance of providing a variety of complementary foods, recognizing their significance for their baby's growth. Overall, 61.6% of mothers demonstrated a positive attitude towards feeding practices, while 38.4% exhibited a negative attitude. This indicates that while many mothers are supportive of healthy feeding practices, there remains a substantial portion that may require further education and encouragement. This aligns with a similar study conducted in Nigeria, which stated that the overall positive attitude was 52.4%. Several factors were identified as significantly associated with maternal attitudes towards feeding practices. Maternal age played a role, with younger mothers tending to have different attitudes compared to older mothers. Family structure also influenced attitudes, as mothers from monogamous families reported more positive attitudes than those from polygamous or single-parent families. Religious affiliation was another significant factor, with Christian mothers exhibiting more positive attitudes compared to Muslim mothers. Education emerged as a critical determinant, with mothers who had secondary education displaying more

positive attitudes than those with lower educational attainment. Importantly, a significant association was found between maternal attitude and feeding practices; mothers with a positive attitude were more likely to engage in better feeding practices.

The nutritional status of children, as assessed through various anthropometric measurements, reveals concerning trends in malnutrition. For height-for-age (HAZ), 61.1% of children were classified as having a normal height, indicating that a majority are not experiencing stunting. However, a significant portion of the population is affected by stunting, with 27.2% exhibiting moderate stunting and 11.7% classified as severely stunted. This suggests that nearly 39% of children are not achieving their potential height for their age, which can have long-term implications for growth and development. This is in contrast with a study conducted in Ethiopia, where the prevalence of stunting was 38% (21% moderately, 17% severely)⁵. In terms of weight-for-height (WHZ), 64.5% of children were classified as having a normal weight, which is a positive indicator. However, 30.7% were found to have moderate acute malnutrition, and 4.8% were classified as having severe acute malnutrition. This is in line with a study that states the overall

prevalence of general acute malnutrition among 6-59 months old children in Dire Dawa and Erer towns was 27.3%. This indicates that while a majority of children maintain a healthy weight relative to their height, a notable proportion is at risk of acute malnutrition, which can lead to serious health complications. For weight-for-age (WAZ), the findings are more alarming, with only 55.5% of children classified as having a normal weight. A significant 20.3% were moderately underweight, and 24.3% were severely underweight. This highlights a critical issue, nearly a quarter of the children are severely underweight, which is a direct indicator of malnutrition and can severely impact their overall health and development. Overall, only 23.5%

of children were classified as having adequate nutritional status, while a staggering 76.5% were categorized as malnourished.

Maternal factors, including marital status, occupation, and attitude towards feeding practices, were shown to influence the nutritional status of their children. The significant association between marital status and nutritional status indicates that children of married or divorced mothers tend to have better nutritional outcomes. This could be attributed to the stability and support that often come with marriage or divorce, which may provide better resources and attention to child nutrition. It suggests that social structures and family dynamics play a crucial role in the nutritional health of children. The association between maternal occupation and nutritional status, particularly noting that children of civil servants have better nutritional outcomes, points to the impact of socioeconomic status on child nutrition. Civil servants may have more stable incomes and access to resources that promote better nutrition, such as healthcare, education, and food security. This highlights the importance of economic stability in improving child nutritional status. The significant association between maternal attitudes towards feeding practices and nutritional status suggests that positive attitudes can lead to better feeding practices, which in turn improve child nutrition. Mothers who are knowledgeable and confident in their feeding practices are more likely to provide adequate and nutritious food for their children.

Endnotes

1. Seun, E., & O., Oyewole. "Nutritional knowledge and feeding practice among mothers of under-five children attending primary health care clinic in Ikorodu local government area." **Texila International Journal of Public Health**, 10(2), 2022,122-139.
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Chapter Five

Conclusion

5.1 Summary of Findings

This study investigates maternal factors associated with feeding practices and the nutritional status of children aged 6–24 months attending primary healthcare centers in Abeokuta North, Ogun State. Data were gathered from 375 women using a structured questionnaire.

The findings revealed that most mothers had good knowledge of infant feeding practices. Many mothers understood the recommended six-month exclusive breastfeeding period, the significance of colostrum, demand feeding, and the appropriate age to introduce complementary foods. Factors such as family structure, religion, education, occupation, ethnicity, and household income influenced maternal knowledge.

While most mothers adhered to recommended feeding practices, such as initiating breastfeeding within the first hour and breastfeeding for over six months, overall adherence to good feeding practices remained low, leaving room for improvement. Factors like family structure, religion, maternal education, and the number of children under five influenced these practices.

Maternal attitudes toward feeding practices were generally positive, with many mothers expressing comfort with breastfeeding in public and recognizing the importance of breastfeeding techniques. Positive attitudes were linked to factors such as maternal age, family structure, religion, and education and were associated with better feeding practices.

The nutritional status of the children showed concerning patterns. While some children had normal growth metrics, a significant proportion were stunted, underweight, or experiencing acute

malnutrition. Factors such as maternal marital status, occupation, and attitudes toward feeding practices influenced children's nutritional outcomes. Also, hypothesis testing the direct association between maternal knowledge of feeding practices and children's nutritional status did not show significant statistical relationships, suggesting the complexity of factors affecting child nutrition and the need for holistic interventions.

5.2 Conclusion

In conclusion, this study provides a comprehensive analysis of maternal knowledge, attitudes, and practices regarding feeding among mothers with children aged 6-24 months. The findings reveal a significant relationship between maternal attitudes and feeding practices, highlighting the importance of fostering positive perceptions towards breastfeeding and complementary feeding. While a majority of mothers demonstrate a good understanding of essential feeding practices, notable gaps in knowledge persist, particularly regarding the storage of expressed breast milk and the timing of introducing complementary foods.

The research highlighted the influence of socio-demographic factors, such as maternal age, education, and family structure, on feeding practices and knowledge levels. These insights suggest that targeted educational interventions and community support programs are essential to address the identified gaps and promote healthier feeding practices among mothers. Furthermore, the study emphasizes the need for a holistic approach that involves not only mothers but also family members and community stakeholders in promoting optimal child nutrition.

Ultimately, this study contributes to the growing body of knowledge in maternal and child nutrition, providing a foundation for future research and practical applications aimed at improving feeding practices and, consequently, child health outcomes. By addressing the identified challenges and leveraging the strengths within the community, stakeholders can work towards ensuring that all children receive the nutrition they need for healthy growth and development.

5.3 Recommendations

Based on the findings presented in the document, here are some recommendations for improving maternal and child nutrition practices:

1. **Enhance Maternal Education Programs:** Given that maternal knowledge did not show a significant association with feeding practices, it is crucial to develop targeted educational programs that focus on practical feeding practices and nutrition. These programs should be tailored to address the specific needs and challenges faced by mothers, particularly those with multiple children.
2. **Support for Families with Fewer Children:** The findings suggest that having fewer children is associated with better feeding practices. Programs that provide support and resources for families with multiple children could help improve feeding practices among these households. This could include access to nutritional counseling and resources for meal planning.
3. **Increase Access to Healthcare Information:** Since a significant percentage of mothers receive information about breastfeeding from healthcare providers, it is essential to ensure that all mothers have access to reliable healthcare information. This could involve regular health check-ups and informational sessions during pregnancy and after childbirth.

4. **Community Engagement and Support:** Engaging community leaders and organizations to promote healthy feeding practices can create a supportive environment for mothers. Community campaigns that highlight the importance of nutrition and provide resources can help reinforce positive behaviors.
5. **Integrate Nutritional Assessment and Counseling into Routine Healthcare Services:** All children attending primary healthcare centers should receive regular growth monitoring and nutritional assessments. Healthcare providers should offer personalized counseling to mothers on appropriate feeding practices based on their child's age, growth, and nutritional status

5.4 Contribution to Knowledge

The study contributes to knowledge in several significant ways:

1. Examining the relationship between maternal knowledge, attitude, and practices related to feeding and the nutritional status of children aged 6–24 months in Abeokuta North Local Government. The study provides valuable insights into the feeding practices prevalent in this region and highlights areas where interventions are needed.
2. Identifying specific knowledge gaps among mothers regarding infant feeding. The study revealed that while many mothers correctly understood the recommended duration of exclusive breastfeeding, knowledge about storing expressed breast milk and identifying potentially harmful foods for infants was less consistent.
3. Highlighting the influence of socio-demographic factors on maternal knowledge, attitudes, and practices. The findings show that mothers from monogamous families, with higher education levels, and those working as traders or civil servants tended to have

better knowledge and feeding practices. This information can be used to develop targeted interventions that address the specific needs of different sociodemographic groups.

4. Examining the prevalence of malnutrition among children aged 6–24 months in the study area. The research revealed a high prevalence of stunting, wasting, and underweight among the children, indicating a significant public health concern that requires urgent attention.
5. Investigating the association between maternal factors and child nutritional status. While the study did not find a statistically significant association between maternal knowledge and feeding practices with child nutritional status, it did identify significant associations between specific socio-demographic factors and nutritional outcomes. For example, being married and having fewer children under five were associated with better nutritional status in children.
6. Emphasizing the importance of maternal attitudes towards feeding practices. The study found that positive maternal attitudes were significantly associated with better child nutritional status, suggesting that interventions aimed at promoting positive attitudes and beliefs about feeding practices could be beneficial.
7. These findings contribute to the understanding of the factors influencing child nutrition in Abeokuta North Local Government and provide evidence-based recommendations for interventions to improve child feeding practices and nutritional outcomes in the community.
8. Highlighting the Role of Family Dynamics: The research emphasizes the role of family structure in shaping maternal knowledge and practices. Understanding how family

dynamics influence feeding practices can inform community-based interventions that engage not just mothers but the entire family unit.

9. **Policy Implications:** The findings can inform policymakers and health practitioners about the critical areas that need attention in maternal and child health programs. By understanding the factors that influence feeding practices, stakeholders can design more effective policies and interventions to improve child nutrition outcomes

5.5 Suggestions for Future Research

Here are some suggestions for future research based on the findings of the study:

- 1 **Longitudinal Studies on Maternal Feeding Practices:** Conduct longitudinal studies to track changes in maternal feeding practices over time and their impact on child nutritional status. This would provide insights into how feeding practices evolve with the child's growth and development.
- 2 **Impact of Socioeconomic Status on Feeding Practices:** Investigate the influence of various socioeconomic factors, such as income, education level, and employment status, on maternal knowledge and feeding practices. Understanding these relationships can help identify barriers to optimal feeding practices.
- 3 **Employ a mixed-methods approach to gain a deeper understanding of barriers to optimal feeding practices.** Combining quantitative data on feeding practices and nutritional status with qualitative data from mothers could provide a more comprehensive perspective.
- 4 **Cultural Influences on Feeding Attitudes:** Explore how cultural beliefs and practices influence maternal attitudes towards breastfeeding and complementary feeding. This research could help develop culturally sensitive interventions that resonate with diverse communities.

- 5 **Effectiveness of Educational Interventions:** Evaluate the effectiveness of different educational interventions aimed at improving maternal knowledge and attitudes towards feeding practices. This could include comparing traditional workshops with digital resources or community-based programs.
- 6 **Role of Fathers and Family Dynamics:** Investigate the role of fathers and other family members in supporting maternal feeding practices. Understanding family dynamics can provide a more comprehensive view of the support systems available to mothers.
- 7 **Nutritional Status Assessment:** Conduct studies that assess the nutritional status of children in relation to specific feeding practices. This could help identify which practices are most beneficial for child health and development.
- 8 **Barriers to Implementing Recommended Practices:** Research the barriers mothers face in implementing recommended feeding practices, such as time constraints, access to resources, and social support. Identifying these barriers can inform targeted interventions.
- 9 **Comparative Studies Across Regions:** Conduct comparative studies across different regions or communities to understand how geographic and environmental factors influence maternal feeding practices and child nutrition.

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Appendix 1



OGUN STATE HEALTH RESEARCH ETHICS COMMITTEE

MINISTRY OF HEALTH, BLOCK A, ROOM A131, OKE-MOSAN, ABEOKUTA.
e-mail: ogunstatehrecdeskofficer@gmail.com, ogunstatehrecchairman@gmail.com



OUR REF. NO: NHREC/25/01/OGSHREC/23A

Date: 14/10/2024

YOUR REF. NO: OGHREC/467/2024/433/APP

*Re: MATERNAL FACTORS ASSOCIATED WITH FEEDING PRACTICES AND
NUTRITIONAL STATUS OF UNDER-FIVE CHILDREN IN ABEOKUTA NORTH
LOCAL GOVERNMENT AREA OF OGUN STATE.*

Name of Principal Investigator: Mrs. Adebajo Hannah Oluwaseun

Email: shedandpjfoods2018@gmail.com

Tel: 07069660760

NOTICE OF RESEARCH EXEMPTION

*This is to inform you that the activities described in the submitted
protocol/documents have been reviewed by the Ogun State Health Research Ethics
Committee, the activities described there-in meet the criteria for exemption and is
therefore approved as exempt from OGHREC oversight.*

*The State code for Health Research Ethics requires you to comply with all
institutional guidelines, rules and regulations and with the tenets of the Code. The
HREC reserves the right to conduct compliance visit to your research site without
previous notification.*

*Please note that, you are expected to share with us the findings of your research
work via ogunstatehrecdeskofficer@gmail.com And
ogunstatehrecchairman@gmail.com*

Thank you

Dr. Adekunle Alabi

Chairman, Ogun State Health Research Ethics Committee.

Phone no: 08034468258

Informed consent

Dear Respondents,

I am Mrs. Adebajo H.O., a postgraduate student in the Department of Public Health at Lead City University. I am conducting a research study on maternal factors associated with feeding practices and nutritional status of the under-five attending Primary Health Care Centers in Abeokuta North Local Government, Ogun State, Nigeria, as part of my academic requirements. The purpose of this study is to gain a better understanding of how mothers feed their children and to identify areas for improvement. Your participation in this study will contribute to the advancement of knowledge in public health and help inform strategies to promote healthy feeding practices.

Your name is not needed on the questionnaire. Your participation in this study is voluntary and you may withdraw from the study at any time. Your honest answers are essential for the quality and credibility of this study and I assure you that your answers will be handled with absolute confidentiality and will be used for academic purposes only.

Please read the question carefully and select the response that most accurately reflect your action or experiences. Your sincere responses are highly appreciated.

By signing below, you confirm your consent to participate in this study

Respondent's Signature: _____

Date of Interview: ____/____/____

NAME OF PHC _____

Questionnaire Serial No: _____

PHONE NO

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

For further information or clarification please reach out to:

Mrs. Adebajo

07069660760

Email: shedandpjfoods2018@gmail.com

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**Questionnaire on Maternal Factors Associated with Feeding Practices of Under-Five
Children in Abeokuta North, Ogun State, Nigeria.**

Dear Respondent,

I am a postgraduate student at Lead City University, researching the above topic. Acceptance to answer the questionnaire will be taken as consent to participate in the study. All information will be treated confidentially, and your name is not required on the questionnaire.

Hanna O. Adebajo

Instructions

Please tick (.) the appropriate box option applicable to the question below. You tick one or more boxes as appropriate

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS			Code
<i>INSTRUCTION: Kindly respond appropriately by marking or writing as appropriate in the space provided</i>			
1	Age of child?	 months old	
2	Sex of child?	a. Male b. Female	
3	Mother's age?	 years old	
4	Marital Status?	a. Married b. Divorced c. Widow d. Separated e. Single Others specify _____	
5	Family Structure?	a. Monogamous b. Polygamous c. Single Parent	
6	Religion?	a. Christianity b. Islam c. Traditional Others specify _____	
7	Mother's education level?	a. No Formal education b. Adult Education c. Primary Education d. Secondary Education e. Tertiary Education	
8	Mother's Occupation?	a. Full time wife b. Civil servant c. Trader	

		d. Artisan e. Farmer	
9	Father's Occupation?	a. Gainfully Employed b. Self employed c. Unemployed	
10	Ethnicity?	a. Yoruba b. Igbo c. Hausa Others specify _____	
11	Household income?		
12	Number of children under five?		

SECTION B: Maternal Knowledge of Feeding Practices

***INSTRUCTION:** Please provide appropriate response to the question asked*

	Questions	Options	Score
13	What is the recommended duration of exclusive breastfeeding?	a. 0 -3 Months b. 4 – 6 Months c. 6 Months d. More than 6 months	
14	What is the best way to initiate breastfeeding?	a. Immediately after bath b. After the first bath c. After the first cry d. After the first feeding	
15	How often should a breastfed baby be fed?	a. On demand	

		b. Every 2 hours c. Every 3 hours d. Every 4 hours	
16	What is the purpose of colostrum?	a. To provide antibodies b. To provide nutrition c. To stimulate bowel movement d. To stimulate urination	
17	At what age should complementary food be added to breast milk	months	
	Complementary Feeding Knowledge		
18	At what age should complementary foods be introduced?	a. Less than 4 months b. 6 Months c. More than 6 months	
19	What is the recommended frequency of complementary feeding?	a. 1 – 2 times a day b. 2 – 3 times a day c. 3 – 4 times a day	
20	What are the essential nutrients for infants during complementary feeding?	a. Protein b. Iron c. Zinc d. Vitamin A e. All of the above	

21	Which of the following foods do you know should be avoided during complementary feeding? (Select all that apply)	a. Honey b. Raw or undercooked eggs c. Unpasteurized dairy d. High-sugar foods e. High-sodium foods f. Foods high in added salt g. Unripe or raw fruits/vegetables h. Nuts and seeds i. Fish with high mercury levels j. Excessive caffeine k. Processed meats l. Foods with artificial additives	
22	Why should honey be avoided during complementary feeding? (Select one)	a. Risk of allergy b. Risk of botulism c. High sugar content d. Others please specify	
23	Why should you avoid Raw or undercooked eggs and Unpasteurized dairy products?	a. Risk of allergy b. Risk of contamination c. High sugar content d. Choking hazard e. High sodium content	

		f. Risk of bacterial	
		g. Others, please specify	

SECTION C: Feeding Practices of Mothers of Children aged 6-24 months

INSTRUCTION: Please provide an appropriate response to the question asked

	Questions	Options	Score
24	When did you initiate breastfeeding after giving birth?	a. Within 1hr b. Less than 24hrs c. After 1hr d. Less than 24hrs e. After 1 day f. Can't remember	
25	Are you currently breastfeeding your child?	a. Yes b. No	
26	How long have you been breastfeeding your child?	a. Less than 3 months b. 3-6 months c. More than 6 months	
27	How long do you typically breastfeed your child in one session?	a. Less than 5 minutes b. 5-10 minutes	

		c. More than 10 minutes	
28	At what age did you introduce complementary foods to your child?	a. 3 months b. 6 months c. Others specify_____	
29	What type of complementary foods do you commonly give your child?	a. Cereal b. Fruits c. Cowpea d. Vegetables e. Others	
30	How often do you feed your child complementary foods?	a. 3-4 times a day b. 2-3 times a day c. Less than 1 time a day d. less than 1 time a day e. never	
31	Did you continue to breastfeed your child while introducing complementary foods?	a. Yes b. No	

SECTION E: Attitude of Mothers of Children Aged 6-24 Months Towards Feeding

Practices

S/N	QUESTION	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
32.	I feel comfortable breastfeeding in public.					
33.	I believe having good knowledge about proper breastfeeding techniques is necessary					
34.	I belief having good knowledge about the appropriate method of storing expressed breast milk is a must					
35.	Formula feeding is a good alternative to breastfeeding					
36.	I will introduce solid foods to my baby at the recommended age.					
37.	Providing a variety of complementary foods to my child is very important					
38.	I believe complementary feeding is important for my baby's growth.					
39.	I will choose nutrient-rich foods for					

	my baby's complementary feeding.					
40.	I feel very confident about preparing nutritious complementary foods for my child?					

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SECTION F: Exposure of Mothers of Children aged 6-24 months to Health Information About Feeding Practice

INSTRUCTION: Please provide appropriate response to the question asked

	Questions	Options	Score
41	Did you receive any information or advice on the benefit of breastfeeding to your child's health and nutrition during pregnancy?	a. Yes b. No	
	If yes, from which source?	a. Health care provider b. Family and friend c. Others specify	

SECTION: G Nutritional status of the Child

INSTRUCTION: Please provide appropriate response to the question asked

	Questions	Answer
42	Weight (in kg)	
43	Length/Height (in cm)	
44	Head Circumference (in cm)	
45	Mid-Upper Arm Circumference (MUAC) (in cm)	
46	What is the child's primary source of nutrition?	a. Breast milk b. Formula

		c. Solid food d. Combination
45	How often is the child fed per day?	a. Less than 3 times b. 3-4 times c. More than 4 times

Bio-Data

A. Personal Data

Full Name	Hannah Oluwaseun Adebajo
Date of Birth	19th June, 1983
Gender	Female
Nationality	Nigerian
Marital Status	Married
Phone	07069660760
Email	shedandpjfoods2018@gmail.com
Address	21, Adenekan Street, Okusan Village, Off Obasanjo Hilltop, Okemosan, Abeokuta, Nigeria

B. Educational Background with Date

Tai Solarin University of Education, Ijagun, Ijebu-Ode	2013
B.Sc. (Ed) Health Education	
School of Nursing, Sacred Heart Hospital, Lantoro, Abeokuta	2007
Basic Nursing Certificate (BNC)	
Area Community High School, Owode Yewa	2001
Secondary School Education	

Baptist Primary School, Idi-Aba, Abeokuta

1994

Primary Education

C. Work Experience with Date

Education Officer (Current Role), Ogun State Ministry of Education, Science and Technology, (2015 – Present)

- Supports health and education initiatives across schools.
- Applies leadership, teamwork, and counselling skills to promote development.

Contract Staff, Ogun State Primary Healthcare Development Board

2011 – 2015

- Assisted in healthcare development programmes.
- Strengthened community-based health initiatives.

School Nurse, Our Lady of Apostles Girls' School, Ijebu-Ode

2010 – 2011

- Provided health education and first aid to students.
- Engaged with parents, teachers, and staff on health-related issues.

Staff Nurse, St. Joseph Catholic Hospital, Ijebu-Igbo

2009 – 2010

- Delivered patient care as part of a multidisciplinary team.
- Enhanced clinical skills through hands-on nursing practice.

Staff Nurse, Lafia Kowa Specialist Hospital, Ijebu-Ode

2008 – 2009

- Provided quality nursing services and patient support.
- Developed strong communication and interpersonal abilities.

D. Awards and Fellowship

Nil

E. Membership of Academic/Professional Bodies

Nil

F. Publications

Nil

G. Conference/Workshop Attended

Nil

H. Certification

Nil

I. Reference

Professor Oluseyi Dada Akintunde

University of Calabar

Email: seyidada@gmail.com

Phone: 08033574471

Mr. Olasunkanmi Ogunpola

Director of Education, Ministry of Education, Science and Technology,

Okemesan, Abeokuta.

09050969533

The University Compliance Certification

This is to certify that this thesis by **Hannah Oluwaseun ADEBANJO** with the Matriculation Number LCU/PG/003224 in the Department of Public Health, Faculty of Public Health, Lead City University, Ibadan, is in full compliance with the approved University format and style.

Signature

Date

APPENDIX 3



