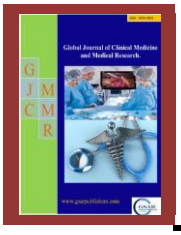

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# Feeding Practices in the Context of Child Malnutrition: Evidence from Ahmadu Bello University Teaching Hospital, Zaria, Nigeria.

**By**

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***Abstract***

*Optimal Infant and Young Child Feeding (IYCF) practices are crucial for child survival, growth, and development, particularly during the first 1,000 days of life. Suboptimal feeeding remains a major contributor to childhood malnutrition in many developing countries, including Nigeria. This study evaluated the knowledge and practces of IYCF among caregivers of malnourished children attending the Institute of Child Health, Ahmadu Bello University Teaching Hospital, Zaria. A descriptive cross-sectional design was employed among caregivers of children aged 6–59 months. Using systematic random sampling, 30 caregivers were recruited. Data were collected through a semi-structured questionnaire and anthropometric measurements, including weight-for-height/length, Mid-Upper Arm Circumference (MUAC), and assessment of bilateral pitting oedema, and were analyzed using descriptive statistics. Results indicated that most caregivers were young mothers aged 20–25 years (42.9%) and predominantly married (78.6%). Among the children, 57.1% were severely acutely malnourished by weight-for-height, while MUAC measurements indicated 35.7% with severe and 42.9% with moderate malnutrition. Early initiation of breastfeeding within the first hour was reported by only 25% of mothers, and 61.5% introduced complementary foods before six months. Additionally, 53% of children were partially or not immunized for their age. These findings reveal significant gaps in caregivers' knowledge and practices of IYCF. Strengthening nutrition education, breastfeeding counseling, and community-based maternal and child health services is essential to promote optimal feeding practices and reduce the burden of childhood malnutrition in vulnerable populations.*

***Keywords:*** *Malnutrition, IYCF, Caregivers, Early Initiation, Complementary feeding.*

## Introduction

Nutrition during infancy and early childhood is a critical determinant of survival, growth, and long-term human capital development. The first 1,000 days of life, from conception to 24 months, represent a physiologically sensitive window characterized by rapid physical growth, brain development, and immune maturation (Suri et al., 2025; Victora et al., 2016). Nutritional deprivation during this critical period can cause lasting damage to physical, cognitive, and socio-emotional development (Omosalewa, 2025; van den Heuvel et al., 2017). Early childhood malnutrition is linked to lower IQ, attention deficits, poorer educational attainment, and reduced economic opportunities later in life, thereby perpetuating the cycle of poverty and potentially affecting subsequent generations (Omosalewa, 2025).

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Optimal infant and young child feeding (IYCF) practices are therefore central to child health and survival. Globally, it is recommended that breastfeeding be initiated within the first hour of birth, maintained exclusively for the first six months of life, and continued thereafter alongside the introduction of safe, nutritionally adequate complementary foods up to two years of age or beyond (WHO, 2023). Complementary feeding refers to the timely transition from exclusive breastfeeding to family foods through the gradual introduction of solid and semi-solid foods of increasing quantity, frequency, and diversity, while breastfeeding continues. This transition coincides with developmental changes in the gastrointestinal tract, immune system, and oral motor function, which enable the infant to process more complex foods (Naylor and Morrow, 2001). By six months of age, breast milk alone is no longer sufficient to meet an infant's energy and micronutrient requirements. At this stage, infants become developmentally ready for complementary foods to support their growing nutritional needs (WHO, 2026a).

Despite this, breastfeeding remains an essential source of energy, high-quality nutrients, and protective bioactive factors during the complementary feeding period. Breast milk provides approximately half of an infant's energy needs up to one year of age and about one-third during the second year (WHO, 2026b). Continued breastfeeding, combined with adequate complementary feeding, is therefore critical to sustaining optimal growth and immune protection.

Paradoxically, the complementary feeding period is also when the risk of malnutrition increases sharply. Inadequate feeding practices, low dietary diversity, food insecurity, and recurrent infections interact to impair nutrient intake and absorption, leading to growth faltering that may be difficult to reverse later in life (Victora et al., 2016). Exposure to contaminated foods and poor hygiene further heightens the risk of gastrointestinal infections, compounding nutritional deficits (Naylor and Morrow, 2015). Caregiver knowledge, socioeconomic constraints, and limited access to context-appropriate feeding guidance further exacerbate these challenges.

Malnutrition is defined as a pathological condition resulting from a relative or absolute deficiency or excess of one or more essential nutrients (WHO, 2024). Undernutrition, arising from inadequate intake or utilization of protein, energy, or micronutrients (Mehta et al., 2013), manifests as stunting, wasting, underweight, and in severe cases, nutritional edema. Globally, in 2022 an estimated 144 million children under five are stunted, reflecting chronic nutritional deprivation with lasting consequences for cognitive development and immune competence, 47 million children are wasted and 14.3 million are severely wasted (WHO, 2024). Muscle wasting is linked to frailty (Xu et al., 2020), falls and fractures (Yeung et al., 2019), hospitalizations (Alley et al., 2010; Prado et al., 2018), metabolic syndromes (Kim et al., 2018), and multiorgan failure (Puthucheary et al., 2013), all of which increase mortality risk (Lee et al., 2021; Buchman et al., 2021), particularly in fragile and emergency settings.

In Nigeria, childhood malnutrition remains a major public health concern. National survey data indicate persistently high rates of stunting, wasting, and underweight. In 2018, 37% of children under five were stunted, 7% wasted, and 22% underweight (National Population Commission (NPC) and ICF. (2018); comparable figures remain high in the 2023-24 survey period. Regional disparities are pronounced, with the North West zone bearing the highest burden: 53.2% of children under five are stunted (27.8% severely), 8.3% wasted (1.9% severely), and 33.8% underweight (10.9% severely) (Federal Ministry of Health and Social Welfare (FMoHSW) et al., 2024). Growth faltering commonly accelerates during the complementary feeding period, underscoring the vulnerability of children in this age group (Sithamparapillai et al.,; 2022; Victora et al., 2010; Dewey and Huffman, 2009; Shrimpton et al., 2001).

Adherence to recommended IYCF practices in Nigeria remains suboptimal. Only 35.5% of children born in the two years preceding the survey were breastfed within one hour of birth, 28.8% of infants under six months were exclusively breastfed, and just 12% of children aged 6–23 months met minimum dietary diversity standards (FMoHSW et al., 2024). These gaps highlight the urgent need to strengthen caregiver knowledge and improve feeding practices. Thus, the present study aimed to evaluate the knowledge and practices of Infant and Young Child Feeding among mothers and caregivers of malnourished children attending the Institute of Child Health, Ahmadu Bello University Teaching Hospital, Zaria.

## Methodology

### Study Design and Setting

This study employed a descriptive cross-sectional design to assess the knowledge and practices of Infant and Young Child Feeding (IYCF) among mothers and caregivers of malnourished children attending the Institute of Child Health (ICH), Ahmadu Bello University Teaching Hospital (ABUTH), Banzazzau-Zaria. The ICH serves as the primary health care outlet of ABUTH and is located in the Banzazzau area within the ancient walled city of Zaria, Kaduna State, Nigeria. The Institute provides outpatient services and attends to an average of approximately 200 patients daily.

### Study Population

The study population comprised malnourished children aged 6-59 months who presented to the ICH during the study period and their caregivers. Malnutrition was classified using the World Health Organization (WHO) Z-score criteria based on anthropometric indicators, including weight-for-height/length, mid-upper arm circumference (MUAC), and the presence or absence of bilateral pitting oedema. Children were categorized into mild, moderate, or severe malnutrition accordingly.

### Sample Size and Sampling Technique

A systematic random sampling technique was employed to select eligible participants. Caregivers of malnourished children attending the outpatient clinic between September and October 2022 were recruited. Using patient registration

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order as the sampling frame, every fifth ($5^{th}$) eligible caregiver was selected until the desired sample size of 30 was attained.

**Data Collection**

Data were collected using a semi-structured questionnaire developed in English. The instrument was self-administered to literate caregivers, while the researchers provided interviewer-administered translations into Hausa for non-literate caregivers. The questionnaire was pre-tested using five copies (approximately 15% of the study sample) at the Nutrition Clinic of the Paediatric Department, ABUTH, Shika-Zaria, to ensure clarity and validity. Necessary adjustments were made prior to the main data collection.

Completed questionnaires were reviewed daily for completeness, accuracy, and consistency. All responses were handled confidentially.

Anthropometric measurements were obtained using standard procedures. Weight was measured using digital salter weighing machine, length/height were measured using calibrated length board and stadiometer, respectively, and Mid-Upper Arm Circumference (MUAC) was assessed using a non-stretch MUAC tape.

**Data Analysis**

Data were entered, cleaned, and analyzed using Statistical Package for the Social Sciences (SPSS) version 20.0. Descriptive statistics were computed to determine the prevalence of early initiation of breastfeeding, exclusive breastfeeding, timely introduction of complementary feeding, and other relevant variables.

## Results and Discussion

Infant and Young Child Feeding (IYCF), including exclusive breastfeeding for six months and timely complementary feeding, is a highly effective strategy endorsed by WHO and UNICEF to reduce under-five mortality, potentially preventing up to one-fifth of deaths in developing countries.

The socio-demographic characteristics of the caregivers are presented in table 1. Age distribution shows that, majority of caregivers were between 20 - 25 years (42.9%), followed by those below 20 years (21.4%) and 26 - 30 years (21.4%), while caregivers above 30 years accounted for 14.3%. Gebru (2007) also reported majoritytof urban mothers participated in his/her study were those within 20 – 25 years. The predominance of young caregivers suggests that childcare responsibilities in the study population are largely undertaken by women in their early reproductive years. Victora et al. (2021) and Black et al. (2013), documented that young maternal age has been reported to influence childcare practices, particularly feeding practices and health-seeking behavior, as younger mothers may have limited childcare experience compared with older mothers. The high proportion (78.6%) of married caregivers is consistent with findings from several studies in Nigeria and other developing countries where childbearing commonly occurs within marriage. Marriage may provide social and economic support systems that influence childcare practices and household food security, both of which are important determinants of child nutritional outcomes (Black et al., 2013).

With respect to parity, half of the caregivers (50.0%) had between 1–3 children, while 28.6% had 7 - 9 children. The presence of relatively high parity among a notable proportion of caregivers reflects the persistence of large family sizes in some households. High parity has been associated with increased pressure on household resources, maternal time, and caregiving capacity, which may adversely affect child nutrition and health outcomes. On distribution of the number of living children, table 1 revealed that the majority of caregivers (57.1%) had 1–3 living children, while 32.1% had 4–6 children and 10.7% had 7–9 living children. The predominance of caregivers with fewer living children may suggest relatively improved child survival in the study population. However, households with larger numbers of children may face challenges related to equitable distribution of food, healthcare, and parental attention, which can increase the risk of malnutrition among young children.

**Table 1: Socio-demographic characteristics of caregivers (age, marital status, parity, and number of living children**

| | Frequency | Percent (%) |
|---|---|---|
| **a) Age of the caregiver** | | |
| <20 years | 6 | 21.4 |
| 20-25 years | 12 | 42.9 |
| 26-30 years | 6 | 21.4 |
| Above 30 years | 4 | 14.3 |
| **Total** | **28** | **100** |
| **b) Caregiver's marital status** | | |
| Married | 22 | 78.6 |
| Not indicated | 5 | 17.9 |
| Divorced/separated | 1 | 3.6 |
| **Total** | **28** | **100** |
| **c) Parity (total number of children)** | | |
| 1 – 3 | 14 | `50.0 |
| 4 – 6 | 4 | 14.3 |
| 7 – 9 | 8 | 28.6 |
| >10 | 2 | 7.1 |
| **Total** | **28** | **100** |
| **d) Number of living children** | | |
| 1 – 3 | 16 | 57.1 |
| 4 – 6 | 9 | 32.1 |
| 7 – 9 | 8 | 10.7 |
| >10 | 0 | 0.0 |
| **Total** | **28** | **100** |

Table 2 presented data on educational attainment, among fathers, 35.7% completed JSSCE, 25.0% had tertiary education and 7.1% had no formal education. Among mothers, 28.6% had FSLC/JSSCE, 10.7% tertiary education and 10.7% had no

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formal education. Low education may limit childcare knowledge and experience, increasing malnutrition risk. Differences in parental education reflect socio-cultural patterns in low-resource settings, where male education is often prioritized. Higher paternal education supports household decision-making and child health, while maternal education strongly influences infant feeding and nutritional outcomes (UNICEF, 2020; Black et al., 2013). The lower maternal education observed may limit knowledge and practices in child nutrition, including complementary feeding and healthcare utilization.

In terms of occupation, the majority of fathers were engaged in trading or self-employment (64.3%), followed by farmers (10.7%) and civil servants (10.7%). While among mothers, 60.7% were involved in trading or self-employment, 21.4% were full housewives, 10.7% were casual laborers, and 7.2% were employed in formal sectors, indicating that informal economic activities dominate parental occupation. The predominance of self-employment and trading among caregivers aligns with findings from other studies in rural and peri-urban Nigeria, where informal sector activities are a major source of livelihood. While such occupations provide flexibility for childcare, income instability may likely to interfere with healthy development (Hill et al., 2013) and limit the ability of households to meet children's nutritional needs consistently. In addition, maternal involvement in trading or casual work may reduce the time available for childcare and feeding, potentially affecting children's nutritional outcomes. Limited caregiving time may also compromise hygiene practices such as safe water use, sanitation, and handwashing, thereby increasing the risk of infections and malnutrition among vulnerable children (Bekele et al., 2020).

**Table 2: Educational level and occupation of parents/caregivers**

| | **Father** | | **Mother** | |
|---|---|---|---|---|
| | **Freq.** | **ercent (%)** | **Freq.** | **Percent (%)** |
| **a) Level of education attainment** | | | | |
| None | 2 | 7.1 | 3 | 10.7 |
| FSLC | 5 | 17.9 | 8 | 28.6 |
| JSSCE | 10 | 35.7 | 8 | 28.6 |
| SSCE | 4 | 14.3 | 6 | 21.4 |
| Tertiary | 7 | 25.0 | 3 | 10.7 |
| **Total** | **27** | **100** | **28** | **100** |
| **b) Occupation** | | | | |
| Housewife | - | - | 6 | 21.4 |
| Farmer | 3 | 10.7 | - | - |
| Casual labourers | 2 | 7.1 | 3 | 10.7 |
| Trading/self employed | 18 | 64.3 | 17 | 60.7 |
| Employed/civil servant | 3 | 10.7 | 2 | 7.2 |
| Others (carpenter, keke driver) | 2 | 7.1 | - | - |
| Total | 28 | 100 | 28 | 100 |

FSLC: First School leaving Certificate; WASC: West African School Certificate; GCE: General Certificate in Education; SSCE: Senior Secondary School Certificate in Education; JSSCE: Senior Secondary School Certificate in Education.

Table 3 presents the characteristics of the children included in the study. Majority of the children were within the 6 - 12 months and 13 - 23 months age groups, each accounting for 39.3% of the study population, while 21.4% were older than 23 months. The high proportion of children within the first two years of life is noteworthy because this period represents the critical window for growth and development, often referred to as the first 1,000 days of life. During this stage, inadequate feeding practices and recurrent infections can significantly increase the risk of malnutrition and poor growth outcomes (Likhar and Patil, 2022). Regarding birth order, the majority of the children were 3$^{rd}$ - 4$^{th}$ born (44.9%), followed by 1$^{st}$ - 2$^{nd}$ born children (21.4%), while 17.9% were 5$^{th}$ - 7$^{th}$ born and another 17.9% were 8th born or above. Higher birth order may influence child nutrition outcomes due to competition for household resources, maternal time, and caregiving attention, particularly in households with large family sizes. Studies have shown that children with higher birth orders may have increased vulnerability to malnutrition due to limited household resources and reduced maternal care (Medjo Obia and Asongu, 2025). With regard to the place of birth, more than half of the children (57.1%) were born at home, while 42.9% were delivered in health facilities. The relatively high proportion of home births may reflect limited access to healthcare services, cultural preferences, or financial constraints that influence maternal healthcare utilization. Deliveries occurring outside health facilities may reduce opportunities for early maternal counseling on optimal breastfeeding practices and newborn care, which are essential for improving infant feeding practices and preventing malnutrition.

**Table 3: Characteristics of index children**

| | **Frequency** | **Percent (%)** |
|---|---|---|
| **a) Age of the child (months)** | | |
| 6-12 month | 11 | 39.3 |
| 13-23 months | 11 | 39.3` |
| >23 months | 6 | 21.4 |
| **Total** | **28** | **100** |
| b) Gender | | |
| Male | 16 | 57.1 |

*Corresponding Author: **Sa'eedu Auwal Magaji1**

| | | |
|---|---|---|
| Female | 12 | 42.9 |
| Total | 28 | 100 |
| c) Birth order | | |
| 1st -2nd child | 6 | 21.4 |
| 3rd -4th child | 12 | 44.9 |
| 5th- 7th child | 5 | 17.9 |
| 8th and above | 5 | 17.9 |
| Total | 28 | 100 |
| d) Place of birth | | |
| Home | 16 | 57.1 |
| Health facility | 12 | 42.9 |
| Total | 28 | 100 |

Table 4 shows that 16.0% were pre-term births, which may increase vulnerability to growth faltering and malnutrition due to immature physiological development and increased nutritional requirements during infancy (Taylor, 2024; Meiliana et al., 2024). Pre-term infants are known to have higher risks of undernutrition and morbidity compared with full-term infants, particularly in low-resource settings where specialized neonatal care may be limited ((Taylor, 2024; Meiliana et al., 2024; Black et al., 2013). Regarding birth weight, only 3.6% of the children had a recorded birth weight below 2.5 kg, which is considered low birth weight, while 28.6% had birth weights between 2.5 and 4.5 kg. However, a substantial proportion of caregivers (67.9%) reported having no record of the birth weight or were unable to recall it. The high proportion of missing birth weight information may be attributed to home deliveries as more than half (57.1%) of the children were reported to be given birth to outside health facilities or poor documentation of birth records. Birth weight is a critical determinant of neonatal morbidity and mortality, long-term health outcomes, and an important indicator of neonatal health as well as a predictor of future growth and nutritional outcomes (Basnet et al., 2025). The lack of reliable birth records may limit the early identification of children at risk of growth faltering and malnutrition.

Classification of degree of malnutrition using WHO's z-score among the sampled children showed that 57.1% of the children were severely acutely undernourished, 17.9% were moderately undernourished, and 25.0% had mild acute undernutrition. Similarly, Mid-Upper Arm Circumference (MUAC) measurements indicated that 35.7% of the children had severe undernutrition (<11.5 cm), 42.9% had moderate undernutrition (11.5–12.5 cm), and 21.4% had mild undernutrition (>12 cm). The MUAC findings corroborate the WFH/WFL results, showing a considerable burden of moderate and severe acute malnutrition among the children. MUAC is widely recommended for community-level screening and identification of acute malnutrition because it is simple, reliable, and strongly associated with mortality risk among children under five years (Tamirat et al., 2025). With regard to edema, 16.0% of the children presented with bilateral pitting edema, while 84.0% did not show signs of edema. The presence of edema is a clinical sign of severe acute malnutrition (kwashiorkor) and indicates a more severe form of nutritional deficiency requiring immediate clinical attention. Although the proportion of children with edema in this study was relatively small, it highlights the existence of complicated cases of acute malnutrition among the study population. Severe acute malnutrition significantly increases the risk of morbidity and mortality among children under five years if not properly managed (WHO, UNICEF, 2009; WHO, 2018; Black et al., 2008).

**Table 4: Gestational age, birth weight, and degree of malnutrition of index children**

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| **a) Gestational age** | | |
| Pre-term birth | 4 | 16.0 |
| Term birth | 24 | 84.0 |
| **Total** | **28** | **100** |
| **b) Birth weight** | | |
| <2.5kg | 1 | 3.6 |
| 2.5 – 4.5kg | 8 | 28.6 |
| No record and can't remember | 19 | 67.9 |
| **Total** | **28** | **100** |
| **c) Weight For Height/Length (WFH/WFL)** | | |
| Severe Acute under-nutrition (<-3 SD) | 16 | 57.1 |
| Moderate Acute under-nutrition (<-2 to ≥-3 SD) | 5 | 17.9 |
| Mild Acute under-nutrition (≥ -2 SD) | 7 | 25 |
| **Total** | **28** | **100** |
| **d) MUAC** | | |
| Severe under-nutrition (<11.5cm) | 10 | 35.7 |
| Moderate Under-nutrition (11.5 12.5cm) | 12 | 42.9 |
| Mild under-nutrition (>12cm) | 6 | 21.4 |
| **Total** | **28** | **100** |
| **e) Edema** | | |
| Present | 4 | 16.0 |
| Absent | 24 | 84.0 |
| **Total** | **28** | **100** |

Results on immunization status presented in Figure 1 show that 53% of the children were either partially immunized or not immunized for their age, indicating substantial gaps in immunization coverage. Incomplete immunization may increase children's susceptibility to vaccine-preventable diseases, thereby contributing to poor child health outcomes, particularly among those already experiencing undernutrition.

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Children who are partially immunized or not immunized are at greater risk of infections such as measles, pneumonia, and diarrheal diseases, which can worsen nutritional status by increasing metabolic demands and impairing nutrient absorption (Siddiqui et al., 2024). Vaccination status therefore reflects the level of protection against preventable infectious diseases. However, some studies have reported no significant association between wasting and incomplete vaccination status (Fatima et al., 2020). Nevertheless, the interaction between infection and malnutrition remains well established, as recurrent infections can lead to weight loss, impaired growth, and further deterioration of nutritional status. The relatively low proportion of fully immunized children observed in this study may reflect barriers such as limited access to healthcare services, poor caregiver awareness of immunization schedules, missed opportunities during health facility visits, or challenges related to transportation and cost. Similar observation have been made by Mahachi et al. (2022).

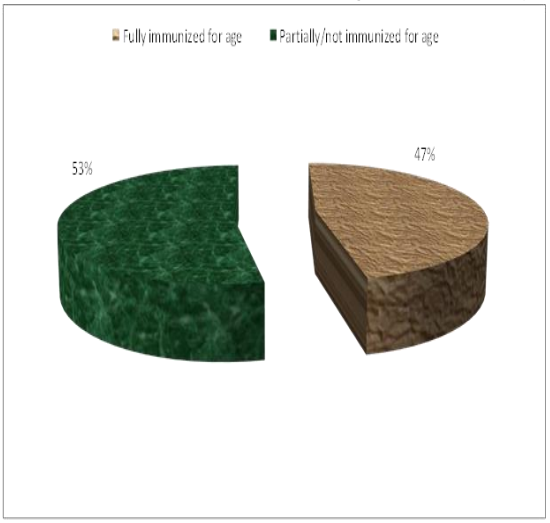


**Figure 1: Immunization history of the index children**

Findings on table 5 presents the caregivers' knowledge of Infant and Young Child Feeding (IYCF) practices, including their sources of information, understanding of exclusive breastfeeding, timing of complementary feeding, and the age of weaning. Regarding the primary sources of information on IYCF, half of the caregivers (50%) reported receiving information from the media, while 42.8% obtained information from healthcare providers, and 7.1% from neighbours, family, and friends. The media serving as the leading source of information suggests that mass communication platforms play an important role in disseminating nutrition and child feeding information to caregivers. However, the relatively lower proportion receiving information directly from healthcare providers may indicate missed opportunities for nutrition education during routine maternal and child health visits. Health professionals are generally considered reliable sources of evidence-based guidance on infant feeding practices and can significantly influence caregivers' knowledge and behaviour.

Regarding knowledge of exclusive breastfeeding, only 25.0% of caregivers correctly identified it as feeding the infant with breast milk alone, while the majority (75.0%) believed it included breast milk with other foods. This contrasts with the findings of Asiimwe et al. (2021), who reported that 77% of caregivers were knowledgeable about key infant and young child feeding practices, including breastfeeding, complementary feeding, and meal frequency. The result therefore indicates a substantial gap in caregivers' understanding of exclusive breastfeeding. The World Health Organization defines exclusive breastfeeding as feeding an infant only breast milk, without any additional food or drink, not even water, during the first six months of life. Interestingly, despite the gap in knowledge of exclusive breastfeeding among the study population, most caregivers (89.3%) correctly reported that complementary foods should be introduced at six months of age. Appropriate timing of complementary feeding is critical to ensure that infants receive sufficient nutrients to support growth and development after six months, when breast milk alone becomes insufficient to meet nutritional requirements (WHO, 2026). With regard to the age at which a child should be weaned from breastfeeding, half of the caregivers (50.0%) indicated 19

- 23 months, while 28.6% reported 13 - 18 months, and 21.4% suggested 24 months and above. Although a considerable proportion of caregivers reported weaning around the second year of life, the World Health Organization recommends continued breastfeeding up to two years and beyond, alongside adequate complementary feeding. Early cessation of breastfeeding may deprive the child of important nutrients and protective immunological benefits provided by breast milk.

**Table 5: Caregivers' Knowledge of Infant and Young Child Feeding (IYCF)**

| | **Frequency** | **centage (%)** |
|---|---|---|
| **a) Primary source(s) of information on IYCF*** | | |
| Health care providers | 12 | 42.8 |
| Media | 14 | 50 |
| Neighbours, Family and friends | 2 | 7.1 |
| **Total** | **28** | **100** |
| **b) Knowledge on exclusive breastfeeding** | | |
| Breast milk alone | 7 | 25.0 |
| Breast milk with other foods | 21 | 75.0 |
| **Total** | **28** | **100** |
| **c) Age to introduce complementary foods** | | |
| $3^{rd}$ – $4^{th}$ month after birth | 2 | 7.1 |
| At $6^{th}$ month | 25 | 89.3 |
| $7^{th}$ month and above | 1 | 3.8 |
| **Total** | **28** | **100** |
| **d) Age to wean a child from** | | |

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| | | |
|---|---|---|
| **breast** | | |
| 13 – 18 months | 8 | 28.6 |
| 19 – 23 months | 14 | 50.0 |
| 24 months and above | 6 | 21.4 |
| **Total** | **28** | **100** |

Human milk, with its nutritional, anti-infective, and biological properties, is essential for infant health and plays a key role in reducing mortality and morbidity, as childhood malnutrition remains a major public health issue. Evidence shows that early, exclusive, and extended breastfeeding for at least 23 months lowers neonatal and child mortality. Breastfeeding within the first hour can prevent 20% of neonatal deaths, while initiation within 24 h reduces the risk of all-cause and infection-related newborn mortality by 44 - 45% (Muktamath et al., 2025). Regarding breastfeeding initiation, only 25.0% of caregivers initiated breastfeeding within the first hour after birth. Early initiation of breastfeeding within the first hour of life is strongly recommended because it promotes bonding between mother and child, stimulates breast milk production, and provides colostrum, which contains essential nutrients and antibodies that protect infants against infections (Tschiderer et al., 2022). The relatively low proportion of early initiation observed in this study suggests gaps in optimal breastfeeding practices and may reflect limited maternal knowledge, cultural beliefs, or inadequate support during delivery, particularly in settings where home births are common.

In terms of breastfeeding duration per feeding session, almost half (42.9%) of mothers reported to breastfed for more than 20 minutes/session on each breast. Adequate breastfeeding duration is important to ensure that infants receive both foremilk and hindmilk, the latter of which is richer in fat and essential for energy intake and growth. Short breastfeeding sessions may limit the infant's intake of nutrient-dense hindmilk, which may contribute to inadequate energy intake. Regarding breastfeeding frequency, the majority of caregivers (53.6%) reported breastfeeding on demand, while 35.7% breastfed when the child cried or when convenient, and 10.7% followed a scheduled feeding pattern. On-demand breastfeeding is recommended by the World Health Organization and UNICEF as it supports adequate milk production through the supply-and-demand mechanism and allows infants to regulate their intake. This responsive feeding approach helps ensure adequate nutrition, hydration, and comfort, and is generally associated with improved growth and breastfeeding success. Similarly, most caregivers (78.6%) reported breastfeeding at least eight times per day, while 21.4% breastfed fewer than eight times daily. Frequent breastfeeding is particularly important during early infancy as it supports adequate milk production and ensures that infants receive sufficient nutrients for optimal growth and development.

Regarding current breastfeeding status, 50.0% of the children were still being breastfed, while the remaining 50.0% had stopped. Among those who had stopped, 42.9% discontinued between 12–18 months, and only 14.3% continued to 24 months or beyond. This suggests that many children were weaned before the recommended two years. International guidelines recommend breastfeeding for at least two years alongside appropriate complementary feeding to support optimal nutrition and immunity. Breast milk provides about half of a child's energy needs between 6–12 months and about one-third between 12–24 months, while also supplying high-quality nutrients and protective factors that reduce illness and mortality, particularly among malnourished children (Brown et al., 1990; Briend and Bari, 1989; Dewey and Brown, 2003; Mobak et al., 1994). The reasons for stopping breastfeeding varied among caregivers. Weaning accounted for 35.7% of cases, while 28.6% stopped breastfeeding due to maternal medical conditions, another 28.6% because the mother became pregnant, and 7.1% due to perceived insufficient breast milk. Maternal health challenges and pregnancy are known factors that may lead to early cessation of breastfeeding. However, misconceptions regarding inadequate milk supply may also contribute to premature discontinuation of breastfeeding.

**Table 6: Breastfeeding practice of mothers/caregivers of Index Children**

| | **Frequency** | **Percent (%)** |
|---|---|---|
| **a) Breastfeeding initiation** | | |
| Within 1st hour | 7 | 25.0 |
| Between 2-4hours | 15 | 53.6 |
| After 4hours | 6 | 21.4 |
| **Total** | **28** | **100** |
| **b) Breastfeeding duration per breastfeeding session** | | |
| <10mins | 11 | 39.3 |
| 10-20mins | 5 | 17.9 |
| >20mins | 12 | 42.9 |
| **Total** | **28** | **100** |
| **c) Breastfeeding frequency** | | |
| On demand | 15 | 53.6 |
| Scheduled time | 3 | 10.7 |
| When the child cries/convenient | 10 | 35.7 |
| **Total** | **28** | **100** |
| **d) Frequency of breastfeeding/day** | | |
| Less than 8 times a day | 6 | 21.4 |
| ≥8 times a day | 22 | 78.6 |
| **Total** | **28** | **100** |
| **e) Current breastfeeding status** | | |
| Yes | 14 | 50.0 |
| No | 14 | 50.0 |
| **Total** | **28** | **100** |
| **f) When does he/she stop breastfeeding?** | | |

*Corresponding Author: **Sa'eedu Auwal Magaji1**

| | | |
|---|---|---|
| <12 months | 1 | 7.1 |
| 12-18 months | 6 | 42.9 |
| 19-23months | 5 | 35.7 |
| 24months or above | 2 | 14.3 |
| **Total** | **14** | **100** |
| **g) Why did he/she stop breastfeeding?** | | |
| Weaned | 5 | 35.7 |
| Mother unable to breastfeed for medical reason | 4 | 28.6 |
| Mother was pregnancy | 4 | 28.6 |
| No breast milk | 1 | 7.1 |
| **Total** | **14** | **100** |

The findings presented on table 7 shows that the majority of caregivers (92.9%) had introduced complementary feeding, while 7.1% had not yet introduced complementary foods to their children. This indicates that most caregivers had begun the transition from exclusive breastfeeding to complementary feeding, which is an essential step in ensuring that infants receive adequate nutrients for growth and development after the first six months of life. Complementary feeding is recommended because breast milk alone becomes insufficient to meet the increasing nutritional requirements of infants after six months (Abeshu et al., 2016). However, the timing of complementary feeding varied widely among caregivers. Most respondents (61.5%) introduced complementary foods before six months (50.0% at 0–3 months and 11.5% at 4–6 months), while only 7.7% introduced them at six months and 30.8% at seven months or later. The high rate of early introduction indicates poor adherence to exclusive breastfeeding recommendations. Introducing complementary foods before six months may expose infants to infections and reduce the protective benefits of exclusive breastfeeding, thereby increasing the risk of diarrhea, illness, and malnutrition. On the other hand, delayed introduction of complementary foods beyond six months as reported by 30.8% of the caregivers may also result in inadequate nutrient intake and poor growth outcomes (Butt et al., 2025).

With regard to the reasons for introducing complementary foods, 42.3% of caregivers reported that the decision was based on advice from health workers, while 23.1% were influenced by experienced mothers, mothers-in-law, and friends, 19.2% introduced complementary foods because they believed the child was old enough, 11.5% due to perceived inadequate breast milk, and 3.8% due to the death of the mother. The influence of healthcare workers as the leading source of advice is encouraging, as professional guidance is important for promoting appropriate feeding practices. However, the influence of family members and peers also highlights the role of cultural and social networks in shaping infant feeding decisions. Such influences may sometimes promote practices that do not align with recommended feeding guidelines (Celebier et al., 2025).

**Table 7: Complementary Feeding Practices of Mothers/Caregivers of Index Children**

| | Frequency | Percent (%) |
|---|---|---|
| a) Introduction of Complementary feeding | | |
| Yes | 26 | 92.9 |
| No | 2 | 7.1 |
| Total | 28 | 100 |
| b) Age of complementary feed introduction | | |
| 0-3 month | 13 | 50.0 |
| 4-6 month | 3 | 11.5 |
| At 6 months | 2 | 7.7 |
| $7^{th}$ months and above | 8 | 30.8 |
| Total | 26 | 100 |
| c) Reasons for introduction of complementary feeding | | |
| Advice by health worker | 11 | 42.3 |
| Child was old enough | 5 | 19.2 |
| Advised by experienced mothers, mother in-laws and friends | 6 | 23.1 |
| Inadequate breast milk | 3 | 11.5 |
| Mothers' dead | 1 | 3.8 |
| Total | 26 | 100 |

## Conclusion and Recommendation

The study revealed gaps in caregivers' knowledge and practices of Infant and Young Child Feeding (IYCF), particularly regarding exclusive breastfeeding and the timing of complementary feeding. Early introduction of complementary foods, delayed breastfeeding initiation, and a high prevalence of acute malnutrition were observed among the children. These findings highlight the need to strengthen nutrition education and maternal-child health services to promote optimal feeding practices and improve child nutritional outcomes.

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