



*Correlation Between Weaning Practices and Severe Acute Malnutrition on ... Ali, Z. B., Et. al. (2026)*

## **Correlation Between Weaning Practices and Severe Acute Malnutrition on Child Health among Care-Givers attending Aminu Kano Teaching Hospital, Kano State, Nigeria**

**ALI, Zakiyya Baba<sup>1</sup>**

[Zakiyyaalibaba6000@gmail.com](mailto:Zakiyyaalibaba6000@gmail.com)  
07060816000

**SAFIYANU, Lawal Yusuf<sup>2</sup>**

[lawanyusufsufyanu@gmail.com](mailto:lawanyusufsufyanu@gmail.com)  
08146504818

**MAHBOUB, Khadija<sup>2</sup>**

[Khadimahbub015@gmail.com](mailto:Khadimahbub015@gmail.com)  
08134433733

**WADA, Shamsiya<sup>3</sup>**

[shamsiyawada@gmail.com](mailto:shamsiyawada@gmail.com)  
08167138695

**BASHIR, Ibrahim<sup>1</sup>**

[Bmyolah90@gmail.com](mailto:Bmyolah90@gmail.com)

**GWARZO, Auwal Sani<sup>1</sup>**

[auwalsanigwarzo@gmail.com](mailto:auwalsanigwarzo@gmail.com)  
07031964717

<sup>1</sup>Department of Nutrition and Dietetics, Federal Polytechnic Kano, Kano State, Nigeria

<sup>2</sup>Department of Pharmaceutical Science, Federal Polytechnic Kano, Kano State, Nigeria

<sup>3</sup>Department of Biological Science Aliko Dangote University of Science and Technology Wudil, Kano State, Nigeria

### **Abstracts**

*Severe acute malnutrition (SAM) remains a critical public health problem among under-five children in developing countries, particularly in sub-Saharan Africa. This study assessed the relationship between feeding practices, weaning practices, and the occurrence of SAM among children attending Aminu Kano Teaching Hospital, Kano, Nigeria. A descriptive cross-sectional study design was employed involving 150 caregivers of children diagnosed with SAM. Data were collected using a structured and validated questionnaire covering socio-demographic characteristics, breastfeeding practices, feeding frequency, and complementary feeding patterns. Anthropometric indicators were obtained from hospital records to confirm SAM diagnosis. Data were analyzed using descriptive statistics and Chi-square tests at a significance level of  $p < 0.05$ . Findings revealed that only 36.7% of caregivers practiced exclusive breastfeeding for the recommended six months, while 40.0% introduced mixed feeding early. Approximately 33.3% initiated complementary feeding before six months, and 30.0% introduced it later than recommended. Cereal-based foods (46.7%) were the most commonly used complementary foods. A significant association was observed between feeding practices and SAM ( $\chi^2 = 12.45, p = 0.002$ ), as well as between weaning practices and SAM ( $\chi^2 = 10.38, p = 0.005$ ). The study concludes that inappropriate infant feeding and weaning practices significantly contribute to the development of severe acute malnutrition. Strengthening nutrition education, promoting exclusive breastfeeding, and ensuring timely and adequate complementary feeding are essential strategies for reducing the burden of SAM among under-five children.*



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**Keywords:** Severe acute malnutrition, infant feeding practices, complementary feeding, exclusive breastfeeding, weaning practices, under-five children, Nigeria

## Introduction

Child nutrition is a fundamental determinant of health, growth, and development, particularly during the first five years of life, which represent a critical window for physical and cognitive development. Adequate nutrition during this period ensures proper brain development, strengthens the immune system, and reduces susceptibility to infections. Conversely, inadequate nutrition leads to various forms of malnutrition, including stunting, wasting, underweight, and micronutrient deficiencies, all of which contribute significantly to childhood morbidity and mortality (Black *et al.*, 2021). Among the different forms of malnutrition, severe acute malnutrition (SAM) is the most life-threatening. It is characterized by extreme wasting (weight-for-height Z-score below -3 standard deviations), mid-upper arm circumference (MUAC) less than 11.5 cm, or the presence of bilateral pitting oedema (WHO, 2023). Children suffering from SAM have severely compromised immune systems, making them highly vulnerable to infections and increasing their risk of death. Evidence suggests that children with SAM are up to eleven times more likely to die compared to well-nourished children (UNICEF, 2022). Globally, malnutrition remains a major public health concern. According to recent estimates, approximately 45 million children under five years of age suffer from wasting, with a significant proportion residing in sub-Saharan Africa and South Asia (UNICEF, WHO, & World Bank, 2023). These regions are characterized by widespread poverty, limited access to healthcare services, food insecurity, and poor infant feeding practices, all of which contribute to the persistence of malnutrition. Nigeria is among the countries with a high burden of child malnutrition, particularly in the northern regions where socioeconomic challenges are more pronounced. National surveys have consistently reported high prevalence rates of wasting and undernutrition among under-five children (NPC & ICF, 2022). Factors such as low maternal education, inadequate dietary intake, poor sanitation, and limited access to health services further exacerbate the problem. Infant and young child feeding (IYCF) practices are critical determinants of child nutritional status. The World Health Organization recommends early initiation of breastfeeding within one hour of birth, exclusive breastfeeding for the first six months, and the introduction of safe and nutritionally adequate complementary foods thereafter, while continuing breastfeeding up to two years or beyond (WHO, 2023). These practices are essential for ensuring optimal growth and development.

Weaning, also known as complementary feeding, is a particularly sensitive period in a child's life. It involves the gradual transition from exclusive breastfeeding to family foods. This transition typically begins at six months of age when breast milk alone is no longer sufficient to meet the nutritional needs of the child. During this period, children require energy-dense and nutrient-rich foods to support rapid growth and development (Aguayo & Menon, 2021). However, inappropriate weaning practices remain common in many developing countries. Early introduction of complementary foods may expose children to pathogens, increasing the risk of infections such as diarrhea. On the other hand, delayed introduction can lead to nutrient deficiencies and growth faltering. Additionally, the use of nutritionally inadequate foods, particularly cereal-based gruels with low protein and micronutrient content, further increases the risk of malnutrition (UNICEF, 2022). In northern Nigeria, cultural beliefs, economic constraints, and lack of nutrition knowledge significantly influence infant feeding practices. Many caregivers rely on traditional feeding methods that may not meet the nutritional requirements of growing children. These practices contribute to the high prevalence of severe acute malnutrition observed in the region. Understanding the relationship between feeding practices, weaning behaviors, and SAM is essential for designing effective



*Correlation Between Weaning Practices and Severe Acute Malnutrition on ... Ali, Z. B., Et. al. (2026)*

interventions aimed at improving child nutrition outcomes. Therefore, this study aims to assess the relationship between feeding practices, weaning practices, and severe acute malnutrition among under-five children attending Aminu Kano Teaching Hospital, Kano, Nigeria.

## Research Methodology

This study was conducted at Aminu Kano Teaching Hospital, Kano, Nigeria., a major referral center for pediatric care that frequently manages cases of severe acute malnutrition (SAM). Kano State is one of the most populous states in northern Nigeria, characterized by high rates of poverty, food insecurity, and child malnutrition. A descriptive cross-sectional research design was adopted to assess the relationship between feeding practices, weaning practices, and severe acute malnutrition among children under five years of age. This design was appropriate as it allows for the collection and analysis of data at a single point in time to determine associations between variables. The study population consisted of caregivers, primarily mothers, of under-five children diagnosed with SAM and receiving treatment at the hospital. Caregivers were selected because they are directly responsible for child feeding and are the most reliable source of information on infant and young child feeding practices. The sample size was determined using Cochran's formula for cross-sectional studies, with an estimated prevalence of SAM of 10% based on national survey data (NPC & ICF, 2022). After adjusting for a 10% non-response rate, a total sample size of 150 participants was obtained. A systematic random sampling technique was employed to recruit participants. Caregivers attending the nutrition unit during the study period were selected at regular intervals based on clinic attendance records until the required sample size was reached. Data were collected using a structured questionnaire developed from established infant and young child feeding guidelines and previous nutrition studies. The questionnaire comprised four sections: socio-demographic characteristics, breastfeeding and feeding practices, complementary feeding (weaning) practices, and caregiver knowledge of child nutrition. Both open-ended and close-ended questions were included. To ensure validity, the questionnaire was reviewed by experts in nutrition, public health, and pediatric care. A pilot study was conducted in a similar health facility, and reliability was assessed using Cronbach's Alpha, yielding a coefficient of 0.78, indicating acceptable internal consistency. Data collection was conducted through face-to-face interviews with caregivers after obtaining informed consent. Anthropometric data including weight-for-height Z-scores, mid-upper arm circumference (MUAC), and presence of bilateral oedema were obtained from hospital records and used to confirm SAM based on WHO criteria (WHO, 2023). Ethical approval was obtained from the hospital management. Participation was voluntary, and confidentiality of respondents' information was strictly maintained. Data were coded and analyzed using SPSS version 25. Descriptive statistics such as frequencies and percentages were used to summarize the data, while Chi-square tests were employed to determine associations between feeding practices, weaning practices, and SAM. Statistical significance was set at  $p < 0.05$ .

## Presentation of Results

**Table 1: Socio-Demographic Characteristics of Respondents**

Variable	Category	Frequency (n=150)	Percentage (%)
Age of Child (months)	0–12	25	16.7
	13–24	40	26.7
	25–36	35	23.3
	37–48	30	20.0
	49–59	20	13.3



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Variable	Category	Frequency (n=150)	Percentage (%)
<b>Sex of Child</b>	Male	85	56.7
	Female	65	43.3
<b>Caregiver Education</b>	No formal education	50	33.3
	Primary	40	26.7
	Secondary	35	23.3
	Tertiary	25	16.7

**Table 2: Breastfeeding and Feeding Practices**

Variable	Category	Frequency	Percentage (%)
Exclusive breastfeeding	Yes (6 months)	55	36.7
	No	95	63.3
Feeding type	Mixed feeding early	60	40.0
Feeding frequency	1–2 times/day	45	30.0
	3 times/day	65	43.3
	>3 times/day	40	26.7

**Table 3: Complementary Feeding Practices**

Variable	Category	Frequency	Percentage (%)
Timing of introduction	Early (<6 months)	50	33.3
	Timely (6 months)	55	36.7
	Late (>6 months)	45	30.0
Type of food	Cereal-based	70	46.7
	Family food	30	20.0
	Commercial food	20	13.3
	Mixed diet	30	20.0

**Table 4: Correlation Between Feeding Practices and SAM**

Variable	$\chi^2$ Value	p-value	Significance
Feeding practices	12.45	0.002	Significant
Weaning practices	10.38	0.005	Significant

### Result Interpretation

The result indicated highest proportion of SAM cases occurred among children aged 13–24 months (26.7%), coinciding with the weaning period. Male children were more affected (56.7%). A large proportion of caregivers had low educational attainment, with 33.3% having no formal education (Table 1). Also, exclusive breastfeeding was suboptimal, and early mixed feeding was common. Feeding frequency may be inadequate for age-specific nutritional needs (Table 2). There is widespread inappropriate timing of complementary feeding, and a heavy reliance on low-nutrient cereal-based diets (Table 3). However feeding and weaning practices are significantly associated with SAM (Table 4)



## Discussion of Finding

The findings of this study demonstrate that inappropriate infant feeding and weaning practices are major contributors to severe acute malnutrition among under-five children. The highest prevalence of SAM observed among children aged 13–24 months highlights the vulnerability associated with the transition from breastfeeding to complementary feeding. This is consistent with global evidence indicating that the weaning period is a critical window for nutritional risk (UNICEF, WHO, and World Bank, 2023). The low prevalence of exclusive breastfeeding (36.7%) observed in this study is comparable to previous findings in Nigeria, where suboptimal breastfeeding practices remain a major public health concern (NPC & ICF, 2022). Exclusive breastfeeding is known to provide essential nutrients and immune protection, and its absence increases susceptibility to infections and malnutrition (Victora *et al.*, 2021). Early introduction of mixed feeding, reported by 40% of caregivers, may compromise infant health by exposing children to contaminated foods and reducing breast milk intake. Similarly, delayed or early introduction of complementary foods observed in this study aligns with findings by Aguayo and Menon (2021), who reported that inappropriate timing of complementary feeding contributes significantly to undernutrition.

The predominance of cereal-based complementary foods (46.7%) is nutritionally inadequate, as such foods are often low in protein and essential micronutrients. This finding is consistent with UNICEF (2022), which emphasizes that poor dietary diversity is a major driver of child malnutrition in low-resource settings. Caregiver education also plays a crucial role in shaping feeding practices. The high proportion of caregivers with no formal education may limit their understanding of optimal infant feeding recommendations. Previous studies have shown that maternal education is strongly associated with improved child nutrition outcomes (Akombi *et al.*, 2021). The statistically significant association between feeding practices, weaning practices, and SAM observed in this study supports existing literature highlighting poor feeding behaviors as key determinants of malnutrition (Bhutta *et al.*, 2022). These findings underscore the need for targeted nutrition interventions aimed at improving caregiver knowledge and practices.

## Conclusion

This study concludes that inappropriate feeding and weaning practices are significant determinants of severe acute malnutrition among under-five children in Kano State. Suboptimal exclusive breastfeeding, improper timing of complementary feeding, and reliance on nutritionally inadequate diets were identified as key contributing factors. Additionally, low caregiver education and poor knowledge of infant feeding practices further exacerbate the problem. Addressing these factors is critical to reducing the burden of SAM and improving child health outcomes.

## Recommendations

1. Promotion of Exclusive Breastfeeding: Strengthen public health campaigns to encourage exclusive breastfeeding for the first six months.
2. Nutrition Education Programs: Implement community-based education programs targeting caregivers on proper infant feeding practices.
3. Improved Complementary Feeding Practices: Promote timely introduction of diverse, nutrient-rich complementary foods.
4. Healthcare Strengthening: Integrate nutrition counseling into routine maternal and child healthcare services.
5. Community Awareness: Address cultural beliefs and practices that negatively affect child feeding.



*Correlation Between Weaning Practices and Severe Acute Malnutrition on ... Ali, Z. B., Et. al. (2026)*

6. Policy Implementation: Government should strengthen policies on infant and young child feeding programs.

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[des@fugusau.edu.ng](mailto:des@fugusau.edu.ng)

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*Correlation Between Weaning Practices and Severe Acute Malnutrition on ... Ali, Z. B., Et. al. (2026)*

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