



## Relationship between Household Food Insecurity and Child Feeding Practice among Caregivers with Children Aged 6-23 Months in PHC Zabi, Sabon Gari LGA Kaduna State

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### ABSTRACT

Child malnutrition remains a significant public health issue, especially in low-income countries, where food insecurity and poor feeding practices are prevalent. This study assesses the relationship between household food insecurity, nutritional status and child feeding practices among caregivers of children aged 6–23 months attending Primary Health Care (PHC) Zabi in Sabon Gari Local Government Area (LGA), Kaduna State, Nigeria. A cross-sectional design was employed involving 52 caregivers. Structured interviews were conducted to collect data on socio-demographics, feeding practices, and food security. Anthropometric measurements were obtained, and nutritional indices were calculated. The results revealed a high prevalence of severe food insecurity (40.4%) and alarming malnutrition rates. Only 17.3% of caregivers exclusively breastfed for six months, and 88.5% did not comply with recommended Infant and Young Child Feeding (IYCF) practices. Socioeconomic factors such as maternal education, age, and household income significantly influenced food security and IYCF adherence. The study underscores the need for nutrition education, economic support, and targeted interventions to address socio-economic determinants of malnutrition.

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### INTRODUCTION

Globally, malnutrition has persisted in all its forms, with children paying a high price. In 2020, over 149 million children under the age of five years were estimated to have been stunted while more than 45 million (6.7%) were wasted and nearly 39 million overweight (FAO, 2021). The report further reported that hunger affects 21% percent of the population in Africa with more than a third of the worlds (282 million) undernourished residing in Africa. A comparative assessment of health status in urban informal and non-urban informal settlements, as well as among populations in rural and urban areas of Kenya, Egypt, India and Bangladesh showed that children in urban informal settlements had poorer health outcomes compared to those in all other residential settings (Mberu, 2016).

Food insecurity is defined as the persistent concern about access to sufficient and affordable food at all times (Paslakis *et al.*, 2021). An unstable food supply, whether due to climatic, weather, political or economic conditions, can result in food insecurity, putting individuals and populations at increased risk for long-term health consequences (FAO, 2008). Food insecurity often leads to hunger and malnutrition and impacts one's health and wellbeing, including nutritional status, chronic and infectious disease like diabetes and HIV/AIDs and mental health. At the household level, food insecurity is when a household lacks the financial means or has limited access to safe, healthy and nutritious food. The World Health Organization (WHO) estimates that over 2 billion people suffer from food insecurity,

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with far reaching implications for nutritional well-being, health, and economic development. Food insecurity exacerbates malnutrition, stunting, wasting, and micronutrient deficiencies, compromising the growth, development and survival of the infant and young child.

### **Statement of Research Problems**

In food-insecure households, access to sufficient, safe, and nutritious food is limited, directly affecting the quality and frequency of feeding for infants and young children. This can lead to inadequate breastfeeding, early introduction of inappropriate foods and poor complementary feeding practices (WHO, 2018).

As a social determinant of health and sustainable development, food insecurity is a global concern with about 10% of the world population and 19% of Africans severely food insecure (FAO, 2020). Infant and young child feeding (IYCF) practices are essential for promoting healthy growth and development, especially in the first two years of life. However, food insecurity in households poses significant challenges to optimal feeding practices.

### **Objectives**

- i. To assess the socio-demographic and economic characteristics of the caregivers and Nutritional Status of the children aged 6-23 months.
- ii. To determine the prevalence of household food insecurity among the caregivers.
- iii. To assess Infant and Young Child Feeding practices.
- iv. To assess the relationship between household food security, nutritional status and Infant and young child feeding practices.

### **Research Questions**

- i. What are the socio-demographic and economic characteristics of caregivers?
- ii. What is the prevalence of food insecurity among these households?
- iii. What are the common IYCF practices in this population?

- iv. What is the relationship between household food insecurity, nutritional status and IYCF practices?

## **METHODOLOGY**

### **Study Design**

This was a quantitative, cross-sectional study conducted among caregivers of children aged 6–23 months attending PHC Zabi, Sabon Gari LGA, Kaduna State.

### **Study Area**

PHC Zabi is located within Sabon Gari LGA, a semi-urban locality in Kaduna State, Nigeria. The area is part of the Zaria metropolis and is known for its commercial and agricultural activities.

### **Study Population**

Caregivers with children aged 6–23 months attending the health facility were included. Exclusion criteria were unwilling participants and children outside the target age group.

### **Sample Size and Sampling Technique**

A total of 52 caregivers were selected using convenience sampling. Participants were approached during clinic visits and recruited based on eligibility and willingness.

### **Data Collection Instruments**

A structured questionnaire was used, which included four sections: demographic and socioeconomic characteristics, food security status, child feeding practices, and child health and nutrition data. Anthropometric measurements included MUAC, weight, and height.

### **Data Analysis**

Data were analyzed using SPSS Version 23. Descriptive statistics summarized key variables. Relationships between food insecurity and child feeding practices were examined using Pearson correlation coefficients.

### **Ethical Considerations**

Verbal informed consent was obtained from all participants. Ethical clearance was



obtained from the relevant authorities, and confidentiality was assured.

What are the socio-demographic and economic characteristics of caregivers?

## RESULTS

**Table 1:** Socio-Demographic Characteristics and child information of caregivers attending PHC Zabi, Sabon Gari Local Government, Kaduna State (n=52).

Variables		Frequency	Percentage (%)
Maternal Age	15 - 19 years	7	13.5
	20 - 29 years	26	50.0
	30 - 39 years	12	23.1
	40 - 49 years	4	7.7
	50 years and above	3	5.8
Marital Status	Married	48	92.3
	Single	0	0.0
	Widow	2	3.8
	Divorced	2	3.8
Level of Education	No formal Education	25	48.1
	Primary leaving certificate	12	23.1
	Secondary school certificate	14	26.9
	Higher education certificate	1	1.9
Maternal Employment	Full housewife	33	63.5
	Craftswoman	5	9.6
	Trader	13	25.0
	Civil Servant	1	1.9
Father's Occupation	Unemployed	3	5.8
	Artisan	9	17.3
	Farmer	18	34.6
	Trader	11	21.2
	Civil Servant	10	19.2
	Others	1	1.9
Household size and number of under five	Small (1 - 5)	14	26.9
	Medium (6 - 10)	17	32.7
	Large (11 - 15)	13	25.0
	Extended (16 and above)	8	15.4
Child's Age	0 - 6 months	1	1.9
	7 - 12 months	22	42.3
	13 - 23 months	29	55.8
	Mean	14±5	
Child's Sex	Male	30	57.7
	Female	22	42.3
Monthly Income	<N5,000	11	21.2
	N5,000 - N10,000	23	44.2
	N10,000 - N19,999	12	23.1
	>N20,000	6	11.5

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**Table 2:** Nutritional Status of children in PHC Zabi, Sabon Gari Local Government, Kaduna State (n=52)

Variables	Frequency	Percentage (%)
<b>Mid-Upper Arm Circumference (MUAC)</b>		
Normal	16	30.8
Moderate Malnourishment (11.5 – 12.5cm)	3	5.8
Severe Malnourishment (<11.5cm)	33	63.5
<b>Weight for Height Z-score (WHZ)</b>		
Normal	11	21.2
Mild Wasting	5	9.6
Moderate Wasting	13	25
Severe Wasting	23	44.2
<b>Height for Age Z-score (HAZ)</b>		
Normal	7	13.5
Mild Stunting	6	11.5
Moderate Stunting	10	19.2
Severe Stunting	29	55.8
<b>Weight for age Z-score (WAZ)</b>		
Normal	4	7.7
Mild Underweight	7	13.5
Moderate Underweight	8	15.4
Severe Underweight	33	63.5

*Mild: >-1 zscore    moderate: >-2 zscore    severe: -3 zscore*

What is the prevalence of food insecurity among these households?

### Food Security

**Table 3:** Household food security of caregivers attending PHC Zabi, Sabon Gari Local Government, Kaduna State (n=52)

Variables	Often n(%)	Sometimes n(%)	Rare n(%)	Never n(%)
Worried about not having enough food	8 (15.4)	15 (28.8)	13 (25.0)	16 (30.8)
Were you or any household member unable to eat the kind of food you preferred because of lack of resources?	18 (34.6)	21 (40.4)	6 (11.5)	7 (13.5)
Did you or any household member eat a smaller meal than you felt you needed because there was not enough food?	12 (23.1)	18 (34.6)	12 (23.1)	10 (19.2)
Did you or any household member eat fewer meals in a day because there was not enough food?	11 (21.2)	14 (26.9)	16 (30.8)	11 (21.2)

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Variables	Often n(%)	Sometimes n(%)	Rare n(%)	Never n(%)
Was there ever no food at all in your household because there were no resources to get more?	11 (21.2)	14 (26.9)	15 (28.8)	12 (23.1)
Did you or any household member go to sleep hungry because there was not enough food?	1 (1.9)	9 (17.3)	16 (30.8)	26 (50.0)
Did you or any household member go a whole day and night without eating because there was not enough food?	2 (3.8)	12 (23.1)	7 (13.5)	31 (59.6)

What are the common IYCF practices in this population?

**Table 4:** IYCF Practices of the caregivers attending PHC Zabi, Sabon Gari Local Government, Kaduna State (n=52)

Variables		Frequency	Percentage (%)
Ever breastfeed your child	Yes	50	96.2
	No	2	3.8
How long after birth you initiated breastfed	within 1 hour	25	48.1
	1 - 24 hours	24	46.2
	More than 24 hours	3	5.8
Is child currently being breastfed	Yes	37	71.2
	No	15	28.8
Age stopped breast feeding	Mean	17±2	
Exclusively breastfed for 6 months	Yes	9	17.3
	No	43	82.7
Age of introducing semi-solid or soft foods	6 months	21	40.4
	Before 6 months	12	23.1
	After 6 months	19	36.5
Number of times you give semi-solid or soft foods	1 - 2 times	25	48.1
	3 - 4 times	21	40.4
	more than 4 times	6	11.5

**Table 5:** Food consumed by the caregivers attending PHC Zabi, Sabon Gari Local Government, Kaduna State (n=52)

Variables		Frequency	Percentage (%)
Grains, roots, or tuber	no	0	0.0
	yes	52	100.0
Legumes or nuts	no	41	78.8
	yes	11	21.2

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Variables		Frequency	Percentage (%)
Dairy product	no	44	84.6
	yes	8	15.4
Meat, fish, poultry	no	42	80.8
	yes	10	19.2
Eggs	no	44	84.6
	yes	8	15.4
Vitamin-A rich fruits and vegetables	no	48	92.3
	yes	4	7.7
Others fruits and vegetables	no	25	48.1
	yes	27	51.9

What is the relationship between household food insecurity, nutritional status and IYCF practices?

**Table 6:** Correlation between Household Food Insecurity, Child Feeding Practices, and Nutritional Status of Children Aged 6–23 Months (n = 52)

Variables	Food Insecurity	IYCF Practices	MDD	MUAC	WHZ	HAZ	WAZ
Food Insecurity	1	0.093	0.118	-0.176	0.169	-0.136	0.091
IYCF Practices	0.093	1	0.630**	-0.217	0.280*	0.219	0.241
Minimum Dietary Diversity (MDD)	0.118	0.630**	1	-0.076	0.160	0.114	0.254
MUAC	-0.176	-0.217	-0.076	1	0.921**	0.642**	0.716**
WHZ	0.169	0.280*	0.160	0.921**	1	-0.042	0.540**
HAZ	-0.136	0.219	0.114	0.642**	-0.042	1	0.372**
WAZ	0.091	0.241	0.254	0.716**	0.540**	0.372**	1

**Legend:**

- MUAC: Mid-Upper Arm Circumference
- WHZ: Weight-for-Height Z-score
- HAZ: Height-for-Age Z-score
- WAZ: Weight-for-Age Z-score
- MDD: Minimum Dietary Diversity
- $p < 0.01$ , \* $p < 0.05$

**DISCUSSION OF FINDINGS**

**Socio-Demographic**

**Characteristics**

The study found that caregivers were predominantly young (20–29 years), with limited

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formal education. These demographic factors are associated with lower knowledge and adherence to recommended IYCF practices (Adeomi et al., 2022).

### Food Insecurity Prevalence

Approximately 40.4% of households were severely food insecure. This is consistent with national reports on the increasing food crisis in Nigeria, attributed to economic instability and inflation (FAO, 2021).

### Feeding Practices

Only 17.3% of caregivers practiced exclusive breastfeeding for six months. Early introduction of complementary feeding and low dietary diversity were also observed, contributing to poor nutrition (UNICEF, 2021).

### Relationship Between Food Insecurity and IYCF

A statistically significant relationship was found between food insecurity and poor feeding practices. Economic hardship and lack of access to diverse food directly impacted children's nutrition and growth indicators (Janmohamed et al., 2024). The correlation analysis (Table 4.4) highlights that poor IYCF practices and food insecurity are significantly associated with malnutrition indicators, such as low MUAC, WAZ, and HAZ scores.

### CONCLUSION

This study reveals high rates of food insecurity and suboptimal child feeding practices in PHC Zabi. Socioeconomic factors play a pivotal role in influencing caregiver behavior and child nutrition.

### RECOMMENDATIONS

- Implement nutrition education programs focusing on young and less-educated mothers.
- Introduce economic empowerment schemes and food subsidies.
- Promote availability and affordability of diverse, nutrient-rich foods.

### REFERENCES

- Adeomi, A., Ogunwale, A., & Adetokunbo, A. (2022). Maternal education and child feeding practices in rural Nigeria. *African Journal of Public Health*, 16(4), 203–211.
- Akombi, B. J., Agho, K. E., Merom, D., Renzaho, A. M. N., & Hall, J. J. (2017). Child malnutrition in sub-Saharan Africa: A meta-analysis. *PLoS ONE*, 12(5), e0177338.
- Food and Agriculture Organization (FAO). (2008). *An introduction to the basic concepts of food security*. <https://www.fao.org/documents/card/en/c/6e8c5c30-0c52-59b8-b16b-06e2f5db3609>
- Food and Agriculture Organization (FAO). (2020). *The State of Food Security and Nutrition in the World 2020*. <https://www.fao.org/documents/card/en/c/ca9692en>
- Food and Agriculture Organization (FAO). (2021). *The State of Food Security and Nutrition in the World 2021*. <https://doi.org/10.4060/cb4474en>
- Janmohamed, A., et al. (2024). Dietary diversity and its association with child nutrition outcomes. *Maternal & Child Nutrition*, 20(1), e13455.
- Mberu, B. (2016). Health outcomes in urban informal settlements. *African Population and Health Research Center Working Paper Series*, No. 202.
- Paslakis, G., Dimitraki, G., & Richardson, C. (2021). Food insecurity and its impact on child nutrition. *International Journal of Public Health*, 66, 1604336.
- UNICEF. (2021). *Child Nutrition Report: A Foundation for the Future*. <https://www.unicef.org/reports>
- World Health Organization (WHO). (2018). *Infant and young child feeding: Model chapter for textbooks for medical students and allied health professionals*. <https://www.who.int/publications/i/item/9789241597494>.