



## Perception of nursing mothers on the causes and prevention of malnutrition among children in selected primary health centers in Ogbomoso

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### Abstract

Malnutrition is a major public health issue, especially in developing countries, contributing significantly to child morbidity and mortality. This study explores the perceptions and knowledge of nursing mothers in Ogbomoso, Nigeria, regarding the causes and prevention of malnutrition. Data from 116 mothers were collected using a structured questionnaire. The results reveal significant gaps in mothers' knowledge about malnutrition, its causes, and preventive measures. Cultural beliefs and practices, including food taboos, were identified as major contributors to undernutrition. Statistical analysis showed no significant relationship between mothers' knowledge of malnutrition and their education or income levels, indicating widespread misinformation across socioeconomic strata.

The study highlights the need for comprehensive, culturally sensitive educational programs to improve maternal knowledge and practices about child nutrition. These findings can help health policymakers and practitioners develop effective public health strategies to combat child malnutrition in developing regions.

**Keywords:** Malnutrition, nutritional knowledge, cultural beliefs, child health

### 1. Introduction

#### 1.1 Background Information

Malnutrition is a pervasive public health challenge that significantly impacts the health and development of children worldwide. Defined as the condition resulting from an imbalance in nutrient intake - either insufficient or excessive - malnutrition encompasses both undernutrition and overnutrition. Undernutrition, which includes stunting (low height for age), wasting (low weight for height), and micronutrient deficiencies, is particularly devastating for children, as it hinders their physical and cognitive development and increases their vulnerability to diseases. Overnutrition, on the other hand, leads to obesity and associated health issues such as diabetes and cardiovascular diseases.

In the global context, the World Health Organization (WHO) estimates that malnutrition contributes to nearly half of all deaths in children under five, amounting to approximately three million deaths annually (WHO, 2020) [1]. This statistic underscores the critical need for addressing malnutrition to improve child survival rates and overall public health.

Nigeria, one of the most populous countries in Africa, faces significant challenges related to child malnutrition. According to the United Nations Children's Fund (UNICEF), 37% of Nigerian children under the age of five are stunted, 7% are wasted, and 22% are underweight (UNICEF, 2019). These figures reflect the severe nutritional deficits that affect a substantial portion of the child

population, with long-term implications for the nation's health, economic productivity, and development.

#### 1.2 Significance of the study

The significance of this study lies in its focus on understanding the perceptions and knowledge of nursing mothers regarding the causes and prevention of malnutrition among children. Nursing mothers play a pivotal role in child nutrition, as they are often the primary caregivers responsible for feeding and caring for their children. Their knowledge, beliefs, and practices directly influence the nutritional status and health outcomes of their children.

By examining the perceptions and knowledge of nursing mothers in Ogbomoso, Oyo State, this study aims to identify critical gaps in nutritional knowledge and the influence of cultural beliefs on child nutrition. Cultural beliefs and practices can significantly impact dietary habits, sometimes leading to food restrictions that contribute to malnutrition. Understanding these cultural dynamics is essential for designing effective, culturally sensitive interventions that can improve child nutrition and reduce malnutrition rates.

The findings from this study will provide valuable insights for healthcare professionals, policymakers, and community leaders. These insights will help in formulating targeted educational programs and policies that address the specific needs and challenges faced by nursing mothers in Ogbomoso. Furthermore, the study's results can serve as a reference for similar communities in Nigeria and other developing countries facing malnutrition challenges.

**Research Objectives**

The primary objective of this study is to assess the perceptions and knowledge of nursing mothers regarding the causes and prevention of malnutrition among children in selected primary health centers in Ogbomoso. The specific objectives of the study include:

1. **To assess the nutritional knowledge of mothers regarding their children's nutrition**
  - This involves evaluating mothers' understanding of essential nutrients, their sources, and their roles in child growth and development.
2. **To identify the factors associated with malnutrition among children**
  - This includes examining socio-economic factors, such as income and education levels, as well as environmental factors that contribute to malnutrition.
3. **To evaluate the adherence of mothers to cultural beliefs regarding food intake for their children**
  - This objective focuses on understanding how cultural practices and taboos influence mothers' dietary choices for their children and how these practices contribute to malnutrition.
4. **To determine the consequences of malnutrition as perceived by the mothers**
  - This involves exploring mothers' awareness of the health implications of malnutrition, including its impact on physical health, cognitive development, and susceptibility to diseases.

**2. Literature Review**

Malnutrition is a major public health issue, particularly in developing countries where it significantly impacts child morbidity and mortality rates. It encompasses both undernutrition, which includes stunting, wasting, and micronutrient deficiencies, and overnutrition, which leads to obesity and related health complications. Understanding the multifaceted causes of malnutrition and the role of various socio-economic and cultural factors is critical for developing effective intervention strategies.

**2.1. Definitions and Importance of Nutrition**

The American Medical Association defines nutrition as the science of food and the nutrients and substances therein, their action, interaction, and balance in relation to health and disease. It also includes the processes by which an organism ingests, digests, absorbs, transports, utilizes, and excretes food substances (American Medical Association, 2020) [3]. Proper nutrition is essential for growth, development, and maintenance of health throughout life (Onigbinde, 2021) [7].

**2.2. Prevalence of Malnutrition**

Malnutrition remains a significant issue globally, with a particularly high prevalence in developing countries. UNICEF (2017) [8] reports that undernutrition contributes to

the deaths of about 5.6 million children under five annually. In the least developed countries, 42% of children are stunted and 36% are underweight due to poor nutrition (UNICEF, 2017) [8]. In Nigeria, about 37% of children under five are stunted, and 22% are underweight (UNICEF, 2019). The high rates of malnutrition in Nigeria are attributed to factors such as poverty, food insecurity, and illiteracy.

**2.3. Causes of Malnutrition**

Malnutrition is a complex condition with immediate, underlying, and basic causes. Immediate causes include inadequate dietary intake and disease. Underlying causes encompass food insecurity, inadequate care of women and children, unhealthy living conditions, and poor health services. Basic causes are related to national and household poverty, environmental degradation, conflicts, and gender discrimination (Olamirinde, 2021) [7].

**Immediate causes**

- Inadequate dietary intake due to insufficient quality or variety of food and infrequent meals.
- Diseases that affect nutrient absorption and utilization (Olamirinde, 2021) [7].

**Underlying causes**

- Food insecurity and inadequate care for women and children.
- Poor living conditions such as lack of clean water and sanitation, and inadequate health services (Olamirinde, 2020) [12].

**Basic causes**

- Poverty, lack of education, and socio-economic inequalities.
- Environmental factors and political instability (Olamirinde, 2020) [12].

**2.4. Impact of Cultural Beliefs**

Cultural beliefs and practices play a significant role in dietary habits, which can lead to malnutrition. For instance, certain foods are prohibited for children due to cultural beliefs, leading to nutrient deficiencies. Some locally available foods forbidden to infants and children include black-eyed beans, groundnut, melon seed, coconut water, leafy green vegetables, cocoyam, and sweet potato. These foods are restricted due to beliefs that they cause diarrhea, mental retardation, or other health issues (Ojofeitimi & Teniola, 2019) [6].

**2.5. Nutrient Requirements and Sources**

There are six essential classes of nutrients required for human health: carbohydrates, proteins, lipids, vitamins, minerals, and water. These nutrients serve various functions, including providing energy, promoting growth and development, and regulating body processes (Behrman, Kliegman, & Jenson, 2020) [4].

**Table 1:** Classes and sources of nutrients

Nutrient class	Primary function	Example of sources
Carbohydrates	Provide energy	Rice, maize, wheat, fruits

Proteins	Promote growth and development	Meat, fish, eggs, dairy products
Lipids	Provide energy and support growth	Oils, nuts, seeds
Vitamins	Regulate body processes	Fruits, vegetables, dairy
Minerals	Regulate body processes	Leafy greens, meat, dairy
Water	Essential for all body functions	Drinking water, fruits vegetables

The Recommended Dietary Allowance (RDA) for infants and young children varies based on age and includes

specific amounts for calories, proteins, vitamins, and minerals necessary for healthy growth (Alade, 2021) <sup>[14]</sup>.

**Table 2:** Recommended dietary allowance (RDA) for infants and young children

Nutrient	0-2 months	2-6 months	6-12 months
Calories	Kg * 120	Kg * 110	Kg * 100
Proteins (g)	Kg * 2.2	Kg * 2.0	Kg * 1.8
Vitamin A (IV)	1500	1500	1500
Vitamin D (IV)	400	400	400
Ascorbic Acid (mg)	35	35	35
Folacin (mcg)	50	50	50
Niacin (mg)	5	6	8
Riboflavin (mg)	0.4	0.5	0.6
Thiamin (mg)	0.3	0.4	0.5
Vitamin B12	1.0	1.5	2.0
Calcium (mg)	400	500	600
Iodine (mcg)	25	40	45
Iron (mg)	6	10	15

## 2.6. Complications of Malnutrition

Malnutrition in children can lead to severe health complications such as anemia, poor mental and cognitive development, stunted growth, cardiovascular diseases, respiratory failure, goiter, infections, prolonged clotting time, xerophthalmia, mental retardation, and blindness (Ojofeitimi, 2019) <sup>[6]</sup>.

## 2.7. Assessment and Diagnosis

The assessment of malnutrition involves monitoring weight gain, comparing a child's weight or height to a healthy reference population, and measuring mid-upper arm circumference. Physical examinations are also conducted to identify signs of malnutrition such as loss of body fat, protrusion of bones, and thin, dry skin (Adetokunbo & Herbert, 2020) <sup>[11]</sup>.

## 2.8. Theoretical Framework

This study is framed by the Theory of Planned Behavior (TPB) by Ajzen & Fishbein, which posits that an individual's behavior is best predicted by their intentions, which are influenced by their attitudes towards the behavior, subjective norms, and perceived behavioral control. This theory is relevant in understanding the nutritional behaviors of mothers and their adherence to cultural beliefs (Ajzen & Fishbein, 2020) <sup>[15]</sup>.

## 2.9. Conceptual Framework

The cognitive theory of motivation, which deals with human cognitive processes such as thinking, perceiving, memory, and judging, is also applicable. This theory helps explain why mothers may adhere to certain cultural beliefs about food and how motivation can be influenced by knowledge and awareness (Audrey & Shirlee, 2021) <sup>[13]</sup>.

## 3. Methodology

This section outlines the research design, setting, sampling

techniques, data collection methods, data analysis procedures, and ethical considerations for the study on the perceptions of nursing mothers regarding the causes and prevention of malnutrition among children in selected primary health centers in Ogbomoso.

### 3.1. Research Design

A descriptive research design was adopted for this study. This design was chosen because it allows for a detailed description and interpretation of the knowledge and perceptions of nursing mothers about the causes and prevention of malnutrition among children. Descriptive research is appropriate for this type of study as it provides an accurate portrayal of characteristics of the subjects being studied.

### 3.2. Setting

The study was conducted in Ogbomoso, a city in Oyo State, southwestern Nigeria. Ogbomoso comprises five local government areas: Ogbomoso North, Ogbomoso South, Orire, Ogo-Oluwa, and Surulere. The primary health centers selected for the study included:

- Ibrahim Taiwo Maternity Center
- Ojagbo Primary Health Center
- Ikose Primary Health Center
- Masifa Primary Health Center

These centers were chosen because they are representative of the primary health services available to nursing mothers in the area.

### 3.3. Sampling Techniques

The study used cluster sampling to select participants. The primary health centers were randomly selected from the list of centers in Ogbomoso. Every nursing mother attending these centers during the study period was eligible to participate. The sample size was determined based on the

average attendance of mothers at the selected centers, which ranged between 30 to 55 per week. Using Yamane’s (1967)

formula for sample size determination, the sample size was calculated as follows:

$$n = \frac{N}{1+N(e)^2}$$

where:

- $N = 164$  (target population)
- $e = 0.05$  (level of significance)

$$n = \frac{164}{1 + 164(0.05)^2} = \frac{164}{1.41} \approx 116$$

Thus, the sample size was 116 respondents.

**3.4. Instrument for Data Collection**

Data was collected using a self-designed questionnaire. The questionnaire was divided into three sections:

- **Section A:** Demographic and personal data of the mothers.
- **Section B:** Knowledge of mothers about malnutrition.
- **Section C:** Perceptions of mothers regarding the factors contributing to malnutrition and their adherence to cultural beliefs.

**3.5. Validity and Reliability of the Instrument**

The validity of the questionnaire was assessed through face and content validity. The instrument was reviewed by experts in the field to ensure clarity, relevance, and comprehensiveness. Reliability was established through a pilot study involving 20 nursing mothers from a different primary health center, and the Cronbach’s alpha coefficient

was calculated to ensure internal consistency.

**3.6. Data Collection Procedures**

Data were collected by distributing the questionnaire to nursing mothers at the selected primary health centers. The respondents were informed about the study’s purpose, and their consent was obtained before administering the questionnaire. The data collection spanned four weeks to ensure adequate sample representation.

**3.7. Data Analysis**

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics such as frequencies and percentages were used to summarize the demographic data and the responses to the knowledge and perception questions. Inferential statistics, specifically chi-square tests, were employed to test the hypotheses at a 0.05 level of significance.

**Table 3:** Demographic characteristics of respondents

Demographic variable	Frequency (n=116)	Percentage (%)
<b>Age</b>		
18-25 years	30	25.9
26-35 years	54	46.6
36-45 years	20	17.2
Above 45 years	12	10.3
<b>Educational Level</b>		
Primary Education	20	17.2
SSCE Holder	40	34.5
OND/HND Holder	30	25.9
Degree Holder	26	22.4
<b>Income</b>		
Below #10,000	40	34.5
#10,000-#20,000	35	30.2
#20,000-#30,000	25	21.6
Above #30,000	16	13.8

**Table 4:** Knowledge of mothers about malnutrition

Knowledge Item	Frequency (n=116)	Percentage (%)
<b>Have you heard of malnutrition?</b>		
Yes	100	86.2
No	16	13.8
<b>What is malnutrition?</b>		
The supply of food nutrients in little or excess quantities	50	43.1

Giving of a diet that is below standard	30	25.9
A deficiency of all classes of essential nutrients in a diet	36	31.0
<b>Where did you hear about malnutrition?</b>		
Hospital	60	51.7
Friends	20	17.2
Mass media	26	22.4
Relatives	10	8.6

**Table 5:** Perceptions of mothers on malnutrition

Perception Item	Strongly Agree (SA)	Agree (A)	Disagree (DA)	Undecided (U)
Lack of money can lead to malnutrition in children.	40	50	16	10
An uneducated mother may not have knowledge about nutritional requirements of her child.	50	46	10	10
Mothers' beliefs about some food can lead to malnutrition in their children.	45	48	13	10
Malnutrition can possibly lead to death of a child if not properly treated.	60	40	8	8
A child whose mother does not know his or her nutritional need will certainly be malnourished.	55	44	10	7
Malnutrition can be prevented and avoided.	70	30	10	6
Children in monogamous families are well nourished compared to children in polygamous families.	35	40	30	11

**4. Results**

**4.1. Demographic Characteristics**

The study involved 116 nursing mothers from selected primary health centers in Ogbomoso, Oyo State, Nigeria. The demographic data revealed the following characteristics:

**1. Age Distribution**

- **18-25 years:** 25.9%
- **26-35 years:** 46.6%
- **36-45 years:** 17.2%
- **Above 45 years:** 10.3%

**2. Educational Level**

- **Primary Education:** 17.2%
- **SSCE Holder:** 34.5%
- **OND/HND Holder:** 25.9%
- **Degree Holder:** 22.4%

**3. Income Level**

- **Below ₦10,000:** 34.5%
- **₦10,000-₦20,000:** 30.2%
- **₦20,000-₦30,000:** 21.6%
- **Above ₦30,000:** 13.8%

**4.2. Knowledge of Malnutrition**

The assessment of mothers' knowledge about malnutrition showed significant gaps. The findings include:

**1. Awareness of Malnutrition**

- **Yes:** 86.2%
- **No:** 13.8%

**2. Understanding of Malnutrition**

- The supply of food nutrients in little or excess quantities: 43.1%
- Giving of a diet that is below standard: 25.9%
- A deficiency of all classes of essential nutrients in a diet: 31.0%.

**3. Sources of Information on Malnutrition**

- **Hospital:** 51.7%
- **Friends:** 17.2%
- **Mass Media:** 22.4%
- **Relatives:** 8.6%

**4.3. Perceptions and Cultural Beliefs**

Mothers' perceptions and adherence to cultural beliefs were found to influence their dietary practices for their children:

**1. Cultural Beliefs Impacting Nutrition**

- Lack of money can lead to malnutrition: 77.6% agree
- An uneducated mother may not know nutritional requirements: 82.8% agree
- Cultural beliefs about certain foods can lead to malnutrition: 80.2% agree

**4.4. Statistical Analysis**

The chi-square test revealed no significant relationship between mothers' knowledge of malnutrition and their educational level ( $\chi^2 = 3.214, p > 0.05$ ) or income level ( $\chi^2 = 2.873, p > 0.05$ ). This indicates that misinformation and cultural influences on malnutrition are pervasive across different socioeconomic strata.

**5. Discussion**

**5.1. Interpretation of Findings**

The study's findings indicate substantial gaps in nursing mothers' knowledge about malnutrition, its causes, and prevention. Despite high awareness levels, detailed understanding of malnutrition remains limited. This aligns with previous research that highlights the need for enhanced nutritional education among caregivers (Behrman, Kliegman, & Jenson, 2020) [4].

Cultural beliefs and practices were identified as significant contributors to undernutrition. Many mothers adhered to food taboos that restrict the intake of nutritious foods by children. This finding is consistent with studies that

emphasize the impact of cultural practices on dietary habits and child nutrition (Ojofeitimi & Teniola, 2019) <sup>[6]</sup>.

### 5.2. Implications for Public Health

The lack of a significant relationship between mothers' knowledge of malnutrition and their educational or income levels suggests that misinformation and cultural influences are widespread. This underscores the need for comprehensive, culturally sensitive educational programs to improve maternal knowledge and practices regarding child nutrition.

Educational interventions should be tailored to address specific cultural beliefs and provide practical, accessible nutritional information. Health policymakers and practitioners must engage community leaders and use culturally relevant methods to disseminate information effectively.

### 6. Recommendations

#### 1. Develop Culturally Sensitive Educational Programs

- Programs should consider local beliefs and practices and provide clear, practical guidance on child nutrition.

#### 2. Engage Community Leaders

- Collaborate with community leaders to promote nutritional education and counteract harmful cultural beliefs.

#### 3. Enhance Healthcare Services

- Improve the availability and accessibility of nutritional counseling services at primary health centers.

#### 4. Monitor and Evaluate Interventions

- Regularly assess the effectiveness of educational programs and adapt strategies based on feedback and outcomes.

### Conclusion

The study highlights significant gaps in nursing mothers' knowledge about malnutrition and the influence of cultural beliefs on child nutrition. Addressing these gaps through culturally sensitive educational programs is crucial for improving child health outcomes in Ogbomoso and similar settings. This research contributes to the broader discourse on public health strategies aimed at reducing child malnutrition in developing regions.

### Conflict of Interest

Not available

### Financial Support

Not available

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