

Malnutrition Among Children (0 – 5 Years) in Uyo Local Government Area of Akwa Ibom State, Nigeria

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Abstract

This study investigated child malnutrition (ages 0–5) in the study area, focusing on the factors contributing to malnutrition. The study used research questions and two null hypotheses, guided by the biopsychosocial model as the theoretical framework. Both primary and secondary data were collected, with a simple random sampling technique used to distribute 400 questionnaires. Data analysis was conducted using the chi-square statistical tool. The findings identified factors such as family size and dietary patterns, particularly among low-income families, as significant contributors to child malnutrition. The study recommended community programs to promote smaller family sizes, healthy cultural practices, and proper infant feeding as crucial for child development.

Keywords: *malnutrition, family size, dietary patterns, maternal mortality, trafficking of children, health care delivery, sexual behaviours, & health care services utilization, Nigeria*

Introduction

The nutritional status of children under five serves as a critical indicator of a nation's health and economic development. Socio-economic factors influencing infant and child feeding practices are complex and culturally specific, leading to ongoing global debates regarding appropriate feeding methods, timing, and duration (Etobe & Etobe, 2013; Assi & Peters, 2021). Breastfeeding and complementary feeding are standard practices, though decisions are often constrained by cultural beliefs and societal norms (Etobe, 2009; Mboho & Bassey, 2013; Assi & Peters, 2021). For example, Ladipo and Morris (1974) found rural women in Ile-Ife reluctant to feed eggs to children, fearing it might encourage theft. Despite extensive research and policy efforts, malnutrition rates among infants and young children in Sub-Saharan Africa remain high. Campaigns typically target mothers, overlooking broader cultural and societal constraints on maternal decision-making (Yaya & Etobe, 2013; Matusiak, 2005). Malnutrition, encompassing undernutrition, overnutrition, and micronutrient deficiencies, poses a significant threat to health globally (Ge & Chang, 2001; UNICEF, 2019), contributing to over one-third of child deaths, although often indirectly (WHO, 2015).

In 2013, WHO and UNICEF reported that undernutrition affected at least 99 million children globally (WHO, 2015). Undernutrition during the first two years impairs children's immunity, physical capacity, academic achievement, and cognitive development, often establishing a vicious cycle with infection (Shrimpton & Rokx, 2012; Etobe, Tshabalala, & Etobe, 2013; UNICEF, 2019). Malnutrition, encompassing both undernutrition and overweight, remains a critical global health issue, particularly in low- and middle-income countries, despite recent

global focus on obesity and micronutrient interventions (Akpan, 2016; Etobe, Etobe, & Plang, 2019).

Annually, over 3.5 million deaths among mothers and children under five are linked to undernutrition, predominantly in South-Central Asia and Sub-Saharan Africa. In 2011, stunting affected 165 million children under five, while wasting impacted 52 million. Undernutrition, including suboptimal breastfeeding and micronutrient deficiencies, contributes to 45% of child deaths (Bhutta et al., 2013; Etobe, Etobe, & Plang, 2019). Concurrently, overnutrition affected an estimated 42 million children under five by 2013, increasing risks for chronic diseases like hypertension and type II diabetes (FAO, 2008).

Malnutrition delays physical growth, motor skills, cognitive development, and social skills while increasing disease vulnerability (FAO, 2008; UNICEF, 1998). In Sub-Saharan Africa, it accounts for approximately 60% of under-five mortality and remains a major public health burden, particularly where undernutrition and overnutrition coexist (Black et al., 2008; Department of Nutrition for Health and Development). Inappropriate child feeding practices cause about one-third of malnutrition cases globally (WHO, 2009).

Although awareness of early childhood nutrition has improved, one-third of children under five remain malnourished by weight-for-age measures, and interventions have had limited success (Etobe, Etobe, & Plang, 2019; Assi & Peters, 2021). This study aims to examine malnutrition among children aged 0–5 years in Uyo Local Government Area, Akwa Ibom State, Nigeria. Specifically, the study (i) “examine the effect of family size on malnutrition among children 0-5 years in Uyo local government area of Akwa Ibom State” (ii) to identify the effect of dietary patterns on malnutrition among children 0-5 years in Uyo local government area of Akwa Ibom State. The following research questions guided the study: (i) “to what extent does family size affect malnutrition among children 0-5 years in Uyo local government area of Akwa Ibom State?” (ii) “how does dietary patterns contribute to malnutrition among children 0-5 years in Uyo Local Government Area of Akwa Ibom State?” The study hypothesised that: (i) “there is no significant relationship between family size and malnutrition among children 0-5 years in Uyo local government Area, Akwa Ibom State”. (ii) “there is no significant relationship between dietary patterns and malnutrition among children 0-5 years in Uyo local government Area, Akwa Ibom State”.

Theoretical Framework

Biopsychosocial Model was used as a theoretical framework for this study. This model was developed by at the university of Rochester by Drs. George Engel and John Romano in 1977. The biopsychosocial model suggests that health or illness is determined by constant interaction between biological, social, and psychological factors. The biology contains physical health, the psychological contains coping skills, social skills, intelligent quotient (IQ) and self esteem, the social contains family relationship, family circumstance, socio-economic status, and work issues and beliefs. The biopsychosocial model emphasizes that people cannot be understood as lone individuals, that understanding their health requires examining psychological and social factors especially their relationship with others.

Applicable to this study, the relationship between the biopsychosocial model and malnutrition among children 0-5 years is that large family is widely regarded as a risk factor for malnutrition in developing country like Nigeria particularly for infants and young children. Accordingly, the biological aspect of the biopsychosocial model explains that the biological aspect contains physical health. Applicable to this study, the physical health of children 0-5 years depends on the

mineral element intake such as carbohydrate, vitamins, proteins, and water. Adequate nutrient brings about good healthy body and inadequate nutrient leads to diseases such as kwashiorkor resulting from an imbalance between the production of toxic free radicals and their safe disposal.

Lack of adequate nutrient causes failure to gain weight in short term and in the longer term, results in small stature due to the feeding patterns on children and the mineral elements needed for the growth and development are not embedded in their daily meals. Household of lack of reliable and sufficient income has a high level of hunger and malnutrition. Applicable to this study, biopsychosocial model emphasizes that health is related to socio-economic status and work issues. Poor household income leads to less expenditure on food and low nutrient. Furthermore, the psychological aspect of this model emphasizes on coping skills, social skills, intelligence quotient and self-esteem. Relating to this, household income level is a strong determinant of children nutritional status. A mother with proper nutritional education is more likely to bring up children with normal feeding and proper nutritional status. Applicable to this, the social aspect of biopsychosocial model explains family relationship and family circumstances where family size is widely regarded as a risk factor for malnutrition for developing countries like Nigeria especially in infants and young children. Larger family reduce the amount of resources which includes time, energy, money available for each child, thus hindering social and physical development.

METHODS

The survey research method was adopted by the researcher for the study because the research work covers a large population. Simple random sampling was employed in the selection of respondents. Hence, questionnaire was the main instrument used by the researcher to obtain information concerning malnutrition among children 0-5 years from the respondents. This study was conducted in Uyo Local Government Area (LGA), the capital of Akwa Ibom State, a major oil-producing region in Nigeria. Uyo covers approximately 168 km² and is situated between latitude 5.05°N and longitude 7.9°E, within the tropical equatorial rainforest zone, characterized by dense vegetation including shrubs and oil palm trees. The local diet primarily consists of starchy foods and vegetables. Residents are mainly public servants, farmers, and traders. Due to its oil economy, the cost of living is relatively high. Uyo also preserves cultural practices such as the "fattening room" tradition for young women before marriage.

The LGA hosts numerous health facilities, particularly in urban areas, offering maternal and child health services such as immunization and antenatal care, while rural areas often lack sufficient access. Health information is disseminated mainly through radio, television, and health workers. Uyo LGA consists of 11 wards, including Uyo Urban I-III, Etoi I-II, Offot I-II, Ikono I-II, and Oku I-II.

The study population comprised mothers aged 15–49 years with children under six years. Based on 2019 NPC projections, there are 223,790 women of reproductive age and 102,347 children under six in the area. A sample of 400 respondents was selected using simple random sampling. Data were collected through questionnaires, and hypotheses concerning family size and dietary patterns were tested using the chi-square statistical method.

Findings

Hypothesis one

Table 1: Chi-square analysis on family size and malnutrition among children 0-5 years

Family size	Malnutrition		Number of Respondents	Percentage (%)
	Underweight	Stunting		
Small family size	22	87	109	28
Large family size	232	52	284	72
Total	254	139	393	100

Source: Field Work (2022)

Table 2: Contingency table showing the relationship between family size and malnutrition among children 0-5 years

Cell	Fo	Fe	Fo-fe	(Fo-Fe) ²	<u>(Fo-Fe)²</u> Fe
A	22	70	-48	2304	<u>32.9</u>
B	232	184	48	2304	<u>12.5</u>
C	87	39	48	2304	<u>59.0</u>
D	52	100	-48	2304	<u>23.0</u>
Total					<u>127.4</u>

Source: Field Work (2022)

$$X^2 = 127.4$$

$$d/f = (r-1) \times (c-1)$$

$$(2-1) \times (2-1)$$

$$d/f = 1 \text{ at } 0.05 = 3.841$$

$$\text{Table value} = 3.841$$

Decision Rule

The null hypothesis (H_0) is accepted if the calculated chi-square (X^2) value is less than or equal to the critical (table) value; otherwise, H_0 is rejected in favor of the alternative hypothesis (H_1).

Decision: Since the calculated chi-square value exceeds the table value, H_0 is rejected and H_1 is accepted, indicating a significant relationship between family size and malnutrition among children aged 0–5 years.

Hypothesis two

Table 3: Chi-square analysis on dietary pattern and malnutrition among children 0-5 years

Dietary pattern	Malnutrition		Number of Respondents	Percentage (%)
	Underweight	Stunting		
High nutrient intake	20	189	209	53
Low nutrient intake	135	49	184	47
Total	155	238	393	100

Source: Field Work (2022)

Table 4: Contingency table showing the relationship between dietary pattern and malnutrition among children 0-5 years.

Cell	Fo	Fe	Fo-Fe	(Fo-Fe) ²	$\frac{(Fo-Fe)^2}{FE}$
A	20	82	-62	3844	46.9
B	135	73	62	3844	52.7
C	189	127	62	3844	30.3
D	49	111	-62	3844	34.6
Total					164.5

Source: Field Work (2022)

$$X^2 = 164.5$$

$$d/f = (r - 1) \times (c - 1)$$

$$(2 - 1) \times (2 - 1)$$

$$d/f = 1 \text{ at } 0.05 = 3.841$$

$$\text{Table value} = 3.841$$

Decision Rule

The null hypothesis (H_0) is accepted if the calculated chi-square (X^2) value is less than or equal to the table value; otherwise, it is rejected in favour of the alternative hypothesis (H_1).

Decision: As the calculated chi-square value exceeds the table value, H_0 is rejected and H_1 is accepted, indicating a significant relationship between dietary patterns and malnutrition among children aged 0–5 years.

Discussion of Findings

The study findings confirmed that large family size is associated with underweight and stunting among children. The calculated chi-square value (127.4) exceeded the table value (3.841), leading to the rejection of the null hypothesis (H_0) and acceptance of the alternative hypothesis (H_1), indicating a significant relationship between family size and malnutrition among children aged 0–5 years. This aligns with Jain (2012), who noted that smaller families are better nourished and perform better academically, and with Owo (2018), who identified large family size as a risk factor for malnutrition in developing countries. The dilution model further explains that in larger families, limited resources—such as time, money, and energy—negatively affect children's physical and social development.

Evidence gathered from the second hypothesis confirmed that there is a relationship between dietary patterns and malnutrition among children 0-5 years. Low nutrient intake from imbalance diet is related to malnutrition among children 0-5 years. While foods with vitamins required in the body leads to growth and development.

Balance diet contains all the nutrition in the required proportion for the body, and their shortage result in deficiency diseases, wasting and stunting. He also added that nutritional intake that is good for infant 0-1 year is breast milk. Toddlers 1-3 years needs intake like vegetable and fruits and 3-5 years need vegetable, fruits, low fat dairy product such as milk, yoghurt and cheese, bean, chicken, fish egg, whole grains, bread and yam. This study concluded that good nutrient intake helps a child to grow in a healthy condition. The biopsychosocial model is also in support of this findings which says that the physical health of children 0-5 years depends on the mineral elements which brings about good healthy body and inadequate nutrient leads to diseases such as kwashiorkor. The calculated value of 164.5 was greater than the table value of 3.841 which

indicated that there is a significant relationship between dietary patterns and malnutrition among children 0-5 years.

Conclusion and recommendations

The study sought to examine child malnutrition among 0 – 5 years infants in Uyo Local Government Area, Akwa Ibom State. It has been indicated that factors which include family size, dietary patterns, contribute to child malnutrition among the in Uyo Local Government Area. Socio-economic hardship has amplified the impacts of these factors in such a way that an average household in Uyo is likely to have malnourished infant children. Improving nutrition, particularly for children and pregnant women, is crucial for health, physical growth, and cognitive development. Parental education, especially among mothers, significantly influences children's nutritional status. Women, as primary caregivers and income earners, play a vital role; higher educational attainment among women enhances awareness of hygiene and preventive health practices. Increased household income typically leads to higher food expenditure and better nutrient intake, while low income can result in poor nutrition, ultimately reducing productivity, physical capacity, and cognitive performance. Adequate nutrition during the first five years is essential for a child's growth, survival, and development. Based on the findings and objectives of this study the following recommendations were made:

- i. Community programmes should include the significant of small family size and the health of children 0-5 years
- ii. Awareness on proper feeding pattern should be introduced in schools, colleges, hospitals and religious institutions.

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