



# **Mothers' Perception Analysis on Nutritional Health and Malnutrition among Children under 5 Years in the Niger Delta Region**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. Authors DOO and EE conceived the study design and prepared the data set for analysis. Author SJB performed the data analysis, interpreted result and drafted the manuscript. Authors DOO and SJB collated the data and revised the manuscript. All authors deliberated the results and approved the final manuscript.*

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## **ABSTRACT**

**Introduction:** Malnutrition may involve inadequate calories, protein, carbohydrates, vitamins or minerals in the body. It could be under nutrition or undernourishment, where there no enough nutrients in the body from diet or over nutrition when there is hyper concentration of required calories in the system. Malnutrition often is used to specifically refer to under nutrition where an individual is not getting enough calories, protein or micronutrients. Several factors including dietary intake issues, diseases, food insecurity, inadequate maternal and child health care, sanitation services, illiteracy and poverty may also influence the food intake of people.

**Objective:** The purpose of the study was to examine mothers understanding and causes of protein energy malnutrition in children under 5 years of age.

**Methods:** A descriptive research design was used to analyze the causes and effects of malnutrition among mothers that has children of 0-5 years of age in Amassoma District, Bayelsa state. A well-structured and validated questionnaire was used to collect participants' data.

**Results:** Data revealed that majority of the mothers (99.3%) were aware of malnutrition and believed ignorance/ illiteracy as a major predisposing factor to malnutrition. 85% (number of children by parents), 100% (poverty), 79.4% (food taboos), 92.7% (presence of chronic illness and improper breast feeding respectively), socio-economic status defined by education, 96.6% (stated that parents occupation affects children's nutritional health), 88.7% (educational level of mothers has a relationship with children nutritional status) and that, children of 0-10 months (33.3%) are more often predisposed to malnutrition.

**Conclusion:** Data showed no significant association between demographics and awareness level of malnutrition with  $P > 0.05$ . Mothers should therefore, be educated on the importance of exclusively breast feeding their babies especially from 0-6 months and the predisposing factors to malnutrition among children of 0-5 years of age, this would prevent the prevalence of malnutrition in developing nations.

*Keywords: Malnutrition; mothers; protein-energy malnutrition; children.*

## 1. INTRODUCTION

Malnutrition prevails everywhere around the world and both the developed and developing countries are suffering from malnourishment. The effect of malnutrition brings devastation in individual, community and nation standard of living. Among the malnourished, most frequently women, children and elderly are observed to have malnutrition whereas among the children preschool age is an important stage of life where nutrition plays an important role and has long lasting effects in the later years of life [1,2]. It constitutes a major public health problem in developing world and serves as the most important risk factor for the burden of disease among preschool children. Though the United Nations through adoption of the Millennium Development goals seek to halve childhood malnutrition indicators by 2015, yet malnutrition still contributes significant morbidity and mortality among children [3]. Malnutrition results from eating a diet in which one or more nutrients are either not enough or are too much such that the diet causes health problems [4]. Malnutrition may involve inadequate calories, protein, carbohydrates, vitamins or minerals in the body system [5]. There could be under nutrition or over nutrition [6]. Malnutrition is often used to specifically refer to under nutrition [7]. If under nutrition occurs in pregnancy, or before two years of age, it may result in permanent problems with physical and mental development of the young infant [5].

WHO estimates that malnutrition accounts for about 54% of child mortality worldwide, [8]. Another estimates also by WHO states that childhood malnutrition is the cause for about 35% of all deaths of children below 5 years that are stunted, most of whom live in Sub-Saharan

Africa [9]. Malnutrition is the condition that results from the ingestion of unbalanced diets, in which certain nutrients are deficient. Hence, adequate total nutrition includes: protein, energy (calories), vitamin A and carotene, vitamin D, vitamin E, vitamin K, thiamine, riboflavin, niacin vitamin B6, pantothenic acid, biotin, folate, vitamin C, antioxidants, calcium, iron, zinc, selenium; magnesium, and iodine [10]. The concept of Protein-energy malnutrition (PEM) comprises a range of pathological conditions arising from coincident lack of dietary protein or calories [11]. Poverty and ignorance play important roles leading to malnutrition, especially in the developing world. Poor feeding practices have been identified in the developing world, apart from ignorance on adequate breastfeeding and appropriate weaning practices [12,13].

In Nigeria, malnutrition is widespread, particularly in the rural areas. This is partly due to inadequate food and low standard of living. The Nigeria Demographic and Health Survey revealed that 38% of under-five children in Nigeria are stunted, 29% underweight and 9.2% wasted [14,15]. Nutritional status can be quantitatively evaluated by assessment technique that provide information on the nutritional and health status of children which are indirect measures on the quality of life in a given Community [16,17]. Malnutrition can also be evaluated by anthropometric measurements (involving height, weights, skin fold, etc), clinical examination, biochemical tests and use of dietary history [18-22]. Illiteracy and poverty may influence the food intake of people in a Community and become causes of malnutrition. There are immediate, underlying and basic causes of malnutrition [23], including poor diet and disease, underlying causes are inadequate maternal and child care, unhealthy environment

and poor or insufficient health services, while the basic causes are political, cultural, environmental, and social factors. Any one or a combination of these can be a basic cause of malnutrition [24,25].

Malnutrition can increase mortality rate, poor wound healing, oedema, anaemia, jaundice, liver, kidney or heart failure. The metabolic effects of over nutrition, or obesity, include heart disease, diabetes, stroke, high blood pressure and certain cancers [26]. Proper balance diet is the most adequate measure in managing malnutrition [9]. The absence of reliable statistical information and baseline data on malnutrition among rural children under the age of five years has been a major obstacle to efforts made by the Ministry of Health [27]. Thus, the purpose of the study was to examine mothers understanding and causes of protein energy malnutrition in children 0 - 5 years of age in Amassoma District, Bayelsa state.

## 2. METHODS

A descriptive research design was used to describe the causes and effects of malnutrition among mothers with children ranging from 0-5 years of age. The study was carried out in Amassoma District, Bayelsa State. It is a semi-urban area where there is high possibility of getting a more factual and homogenous information and population. There was no reliable statistical information and baseline data on malnutrition among children in this district. The people of Amassoma District are majorly Izon (Ijaw), whose main occupation is farming, fishing and trading. Aside the indigenes, it is a home of different ethnic group e.g. Hausa's, Igbos, Yorub as etc. The Community has a population growth of about 176,000 as at 2006 national population census. The target population of this study were mothers with children between the ages of (0-5) years of age. A total of one hundred and fifty (150) mothers participated in the survey based on Taro Yamani's formula for sample size determination [28].

A well-structured and validated questionnaire was used to collect participants' data.

15 set of questionnaire were developed and accessed by a consultant gastroenterologist, same were confirmed to be valid. During the collection procedure, an oral interview was conducted with the help of a local interpreter.

The questionnaire had different sections like demographic data, causes of malnutrition based on correspondent's knowledge and understanding and the possible outcomes of malnutrition. Finally, the age group of children more predisposed to malnutrition was also assessed. This were the list of questions for the respondents. Data obtained from the study was analyzed using and SPSS software package version 23.0. Descriptive statistics such as summaries, frequency, distribution, percentages and charts were used to present results. The Tables and charts presented below shows the statistical data obtained from the study. P values <0.05 was considered as significant.

## 3. RESULTS

Following the demographic data, 48% were between 15-25 years old, 27.3% (26-35), and 24.7% (36-45) years of age, respectively. Less than half of the respondents (42%) had primary education, 34.7%, secondary while 23.3 had tertiary educational qualification. Other results are shown below in figure and Tables.

Table 1 shows the perception of mothers on the predisposing factors to malnutrition.

Table 2 shows the level of understanding by respondent mothers on the possible meaning of malnutrition.

Table 3 shows the possible outcome of malnutrition based on respondent perspective.

Table 4 shows the cross tabulation of demographic variables and level of mothers perception of malnutrition at P value > 0.05.

## 4. DISCUSSION

From the results analyzed in Table 3, it shows that majority of the respondent mothers (99.3%) in reality believed that ignorance and or illiteracy is major predisposing factor to malnutrition. This is as a result of not giving child/children meal that contains adequate proportion of nutrient required for proper growth and replacement of worn out tissues. This agrees with a report by Park [29], socio-economic factors, who stated that malnutrition is largely the result of ignorance and insufficient education, lack of knowledge regarding inadequate environmental sanitation and large family size. With respect to family size, 85% of the respondent mothers believed that the number of children by parents is actually a

**Table 1. Frequency and Percentage distribution on mothers' perception about predisposing factors to malnutrition (n=150)**

<b>Variables</b>		<b>Frequency (%)</b>
Ignorance/illiteracy	SA	132 (88)
	A	17 (11.3)
	D	1 (0.7)
Poverty	SA	124 (82.7)
	A	26 (17.3)
Food taboos	SA	82 (54.7)
	A	37 (24.7)
	SD	8 (5.3)
	D	15 (10)
Number of children by the parent	SA	92 (61.3)
	A	37 (24.7)
	SD	5 (3.3)
	D	9 (6.0)
Presence of chronic illness	SA	102 (68)
	A	37 (24.7)
	SD	8 (5.3)
	D	2 (1.3)
Improper breast feeding	SA	105 (68)
	A	37 (24.7)
	SD	8 (5.3)
	D	2 (1.3)
Parent's Occupation affects children's nutritional health	SA	92 (61.3)
	A	53 (35.3)
	SD	3 (2.0)
	D	1 (0.7)
Mothers who do not feed well can give birth to underweight children	SA	113 (75.3)
	A	31 (20.7)
	SD	1 (0.7)
	D	5 (3.3)
Marital status increases the incidence of children being predisposed to malnutrition.	SA	79 (52.7)
	A	49 (32.7)
	SD	2 (1.3)
	D	17 (11.3)
Educational level of mothers has a relationship with child nutritional status.	SA	91 (60.7)
	A	42 (28)
	SD	13 (8.7)
	D	4 (2.7)

Key: SA – strongly agree, A – agree, D – disagree, SD – strongly disagree

predisposing factor to malnutrition. A low income earner with large family size will definitely find very difficult to provide and fend for his family. This is a common phenomenon in polygamous homes in the community with high number of children and they are bound to have feeding problems of food shortage, thereby increasing the risk of exposing children from such homes to malnutrition [30]. 100% of the respondent mothers agreed with no reservation that poverty is a major predisposing factor to malnutrition. Although, there was no thorough check on the income level of respondents households, but poverty and poor homes may be unable to

provide the basic needs and adequate nutritional health at all times. Dossey et al. [31] estimated the percentage of income for most African countries when worked out, do not adequately feed his children. The poor are the worst social class of people and unable to afford quality food, thus predispose children to malnutrition. 79.4% of the mothers believed that food taboos is a major predisposing factor to malnutrition. A study by Hampshire et al. [32], concluded that Northern part of Ghana children are denied access to meat and eggs which are the best source of protein and essential nutrients because of the believe that they will begin to steal from the

mothers pot and so, it was believed that forbidden food (food taboos) can eventually predispose children to malnutrition.

Furthermore, based on the study outcome, 92.7% of the mothers agreed that the presence of chronic illness and improper breast feeding are a predisposing factors to malnutrition respectively. This is in coherence with a study by Beatty et al. [21]; that 50% of child deaths among 0-5years are associated with malnutrition. Also, children who are not well breast fed have higher risk of being predisposed to malnutrition. In relative to parents' occupation, 96.6% of the respondents believed that parents occupation affects children's nutritional health. 48.7% of the respondents were unemployed, 40.3%, farmers, while only 10.3% were civil servants. Majority of these unemployed mothers are either traders, farmers or fulltime house wives, and they spent a lot of time in their trade, paying little attention to their children nutritional health, thereby exposing such children to malnutrition due to inadequate food consumption. This correlates with a report by Odunayo et al. [33], stated that, most women in African countries are farmers, hence spend majority of their time working in the farm, thus having limited access to food for themselves and their children, thereby exposing both to malnutrition.

Table 3, revealed that, 88.7% of respondents mothers believed that educational level of mothers has a relationship with children

nutritional status because the higher the level of education, the more nutritionally safe the children should be. 33.3% of the respondent mothers agreed that children of 0-10 months were more predisposed to malnutrition. Marital status also known play a role in increasing the incidence malnutrition, as about 42.7% of respondent were cohabiting and some of them were single (6.7%) and 7.5% divorced. This is in coherence with the statement that cohabiting or being a single mother contributes to the incidence of malnutrition amongst children 0-5 years of age [34].

Majority of the mothers (97.3%) understand malnutrition as lack of the right type of food, 90% said lack of protein, 99.3% supported lack of nutrient in the body, 78% understands malnutrition as lack of carbohydrates and 96.6% understands malnutrition as when an individual does not feed well. This is in consonant with a report by Umoh, [35], that malnutrition is a condition in which protein and energy requirement of the body have not been met for some time.

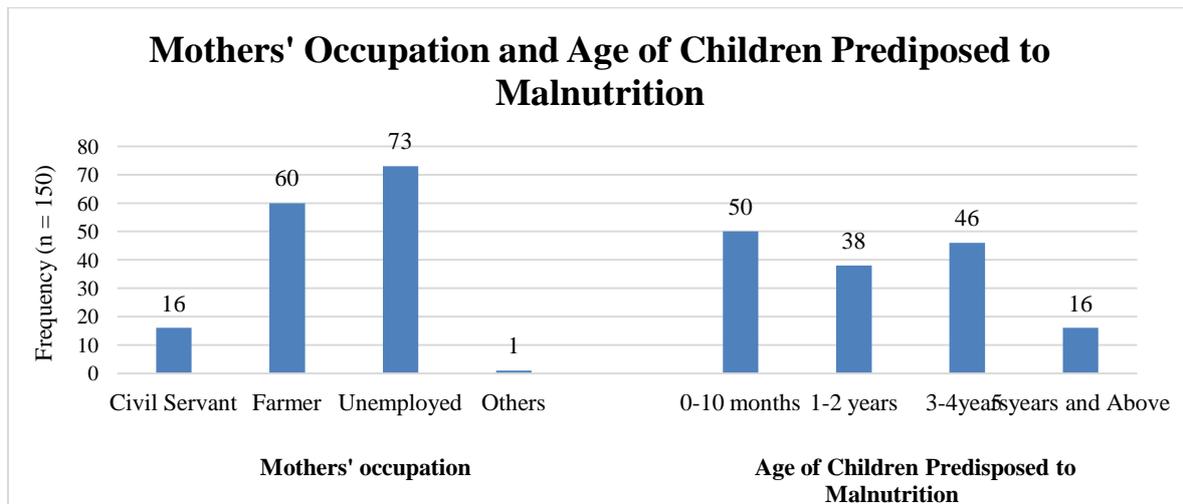
From our survey, 98.3% of the respondent sees overweight as a possible outcome of malnutrition. 76.6% agreed that stunted growth is an outcome of malnutrition, 87.4% (mental retardation), 86.7% (anemia), 72% (sore mouth), 94% (underweight) and 72% (delayed eruption of

**Table 2. Frequency and Percentage distribution of Mothers Awareness and understanding on the possible causes of malnutrition (n=150)**

Variables		Frequency (%)
Lack of right type of food	SA	102 (68)
	A	44 (29.3)
	SD	2 (1.3)
	D	2 (1.3)
Lack of protein	SA	73 (48.7)
	A	62 (41.3)
	D	6 (4.0)
Lack of nutrient in the body	SA	89 (59.3)
	A	60 (40)
	D	1 (0.7)
Lack of carbohydrates	SA	73 (48.7)
	A	59 (29.3)
	SD	2 (1.3)
	D	9 (6.0)
Individual does not feed well	SA	101 (67.3)
	A	44 (29.3)
	SD	2 (1.3)
	D	3 (2)

**Table 3. Frequency and percentage distribution of the possible outcome of malnutrition based on respondent Mothers from study**

Variables		Frequency (%)
Overweight	SA	108 (72)
	A	29 (19.3)
	SD	10 (6.7)
	D	2 (1.3)
Stunted growth	SA	104 (69.3)
	A	41 (27.3)
	SD	2 (1.3)
	D	3 (2)
Mental retardation	SA	94 (62.7)
	A	37 (24.7)
	SD	5 (3.3)
	D	13 (8.7)
Anaemia	SA	91 (60.7)
	A	39 (26)
	SD	6 (4.0)
	D	14 (9.3)
Sore mouth	SA	78 (52)
	A	30 (20)
	SD	6 (4.0)
	D	31 (20.7)
Underweight	SA	109 (72.7)
	A	32 (21.3)
	SD	3 (2.0)
	D	6 (4.0)
Delayed eruption of teeth	SA	83 (55.3)
	A	25 (16.7)
	SD	20 (13.3)
	D	13 (8.7)



**Fig. 1. Frequency of mothers' occupation and Age of children more predisposed to malnutrition**

teeth) respectively as possible outcomes of malnutrition. Majority of the respondent mothers believed that ignorance/illiteracy is major predisposing factor to malnutrition as well as number of children by parents and poverty.

There was no significant association found between demographic data and level of perceptions of malnutrition in Amassoma district with  $P > 0.05$ .

**Table 4. Relationship between of demographic variables and level of mothers awareness to malnutrition (n=150)**

Demographic variables		Awareness level of malnutrition by mothers		Chi square (x <sup>2</sup> )	DF	P-value	Remark
		High	Low				
Age of mothers	15 – 25	62	9	2.956	4	0.565	nsa
	26 - 35	35	6				
	36 – 45	35	2				
Marital status	Single	8	2	7.440	8	0.490	nsa
	Married	60	3				
	Divorced	10	1				
	Widow	2	0				
Educational level	Cohabiting	52	11	7.133	4	0.129	nsa
	Primary	58	5				
	Secondary	41	10				
	Tertiary and above	33	2				
Occupation of mothers	Civil servant	13	2	8.793	6	0.186	nsa
	Farmer	54	6				
	Unemployed	64	9				
	Others	1	0				
Number of children	1 -3	33	3	0.981	4	0.913	nsa
	4 - 6	13	2				
	7 – 9	86	12				

Key: DF – Degree of freedom, nsa - no significant association

## 5. CONCLUSION

There was high prevalence of malnutrition in the district. Mothers should be educated on the importance of exclusively breast feeding their babies especially at 0-6 months of age, that breast milk alone contains the necessary nutrients required by these age group which their system can properly assimilate and metabolize rather than formula feeding. Also health education should be provided through which information can reach parents especially mothers on the predisposing factors to malnutrition among children of 0-5 years of age, this would prevent the prevalence of malnutrition in the developing world.

## DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## CONSENT

Informed and written consent was sought from the participants' prior questionnaire administration.

## ETHICAL APPROVAL

The research and ethics committee of the council of chiefs and elders, Amassoma District approved the study.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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