



# INFLUENCE OF MOTHER'S NUTRITIONAL KNOWLEDGE ON DIETARY INTAKE OF JUNIOR SECONDARY SCHOOL STUDENTS IN ASABA METROPOLIS OF DELTA STATE, NIGERIA

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## AUTHORS' CONTRIBUTION

The sole author designed, analyzed, interpreted and prepared the manuscript.

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## ABSTRACT

The study investigated mothers' nutritional knowledge on dietary intakes of junior secondary school students in Asaba metropolis of Delta State. Three research questions and a null hypothesis guided the study. The study adopted a descriptive survey research design. The population of the study comprised mothers of junior secondary school students in Asaba metropolis. The sample of this study was 105 mothers drawn through purposive random sampling technique from five public junior secondary schools in Asaba metropolis of Delta State. The instrument used for data collection was a structured questionnaire constructed by the researcher and titled Mother's Nutritional Knowledge on Dietary Intake of Students Questionnaire (MNKDISQ). The instrument was validated by two experts. The reliability coefficient of the instrument was 0.71 using Cronbach Alpha technique. The data collected were analyzed using mean, standard deviation and Pearson product moment correlation. The null hypothesis was tested at 0.05 level of significance using Pearson product moment correlation statistics. The findings revealed that mothers in Asaba metropolis to a high extent have nutritional knowledge, the extent of dietary intake of Junior secondary school students in Asaba metropolis is high, there is a positive high relationship between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis, and the relationship between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis is significant. Based on the findings, It was recommended among others that mothers should always endeavor to acquire nutritional knowledge which will enable them ensure that their children have a better nutrition throughout their growing stage. Mothers should ensure that their children avoid junk foods at all cost as this will help them stay healthy and sound.

**Keywords:** Nutrition, nutritional knowledge; Mother's Nutritional Knowledge; dietary intake.

## 1. INTRODUCTION

Nutrition is a significant factor in the growth, development, and overall functioning of a child. Good nutrition provides the energy and nutrients that are essential to sustain life and promote physical, social,

emotional, and cognitive development of a child. Nutrition is the study of nutrients in food, how the body uses them and the relationship between diet, health and disease. It focuses on how people can use dietary choices to reduce the risk of diseases. "Nutrition provides nourishment to the body in form

of nutrients such as protein, carbohydrates, fat, vitamins, minerals, fiber and water” [1] Ihiesenkhen and Selami [2] “described nutrition as the science that links food to health and diseases. It includes the processes by which the human body deals with intake of food and how the body processes substances in the food consumed for growth, development and maintenance of life. In another definition, Onimawo” (2001) “stated that nutrition is a science that interprets the relationship between food consumed and its functions in living organisms. In other words, it is the study of food and its utilization within the living system. Nutrition relates food intake to their functions in the body for overall wellbeing of the individual. Similarly, Nwabah” [3] explained nutrition as the study of how the body is nourished. It is also the study of human behaviours related to food. Nutrition is concerned with the composition of foods and how food is used to keep the cells of the body functioning. Nutrition has been described as “the intake of food, considered in relation to the body’s dietary needs which are key determinants of health of an individual” [4]. Furthermore, nutrition is the science that interprets the nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism. It includes food intake, absorption, assimilation, biosynthesis, catabolism and excretion. The World Health Organization (WHO) stated that nutrition is an input to and foundation for an individual’s health and development, good nutrition makes a child stronger and more productive in the society. In addition, WHO states that, healthy nutrition leads to a stronger immune system, less illness, better health as well as a fundamental key to a better quality of life. However, this is dependent on the nutritional knowledge of the individual. Nutritional outcomes among young children in Africa and Nigeria in particular are among the worse globally as a result of paucity of nutritional knowledge.

“Nutritional knowledge has been defined as knowledge of nutrients which is applicable when a mother learns how to benefit from the knowledge of nutrients” (Kruger, 2002). “Nutritional knowledge seems to play an important role in promoting healthier feeding practices, and as a result lead to the maintenance of appropriate body weight” (Kruger, 2002). “Studies have shown that nutritional knowledge influences food habits which ensure that nutrient needs throughout the life cycle are met” [5]. A child needs adequate diet to supply the nutrients and energy needed for the proper growth and development. Healthy eating habits in children as a result mother’s nutritional knowledge are important in preventing under nutrition, growth retardation, and acute child nutritional problems. Lack of good

nutritional knowledge has become a main problem of health in many developed countries or developing countries like Nigeria. The occurrence of nutritional problems in children can actually be avoided if a mother has good nutritional knowledge on how to manage and serve adequate diet to their children. Lack of nutritional knowledge of mothers on children dietary intake may be a factor of inability to serve appropriate food according to nutritional needs for their children which certainly determines the dietary intake for such children. “Mother’s limited knowledge about food choices, feeding, and health care seeking practices contributes significantly to poor dietary intakes of children in most developing countries such as Nigeria. Mother’s adequate knowledge of nutrition is crucial for the child’s health, physical growth, and mental development” [6].

Children in primary and secondary schools depend on their mothers for adequate nutrition of which mother’s knowledge of nutrition play a crucial role in this regard. Therefore, mother’s knowledge of good nutrition potentially have a great influence on children’s dietary intakes. Children need adequate dietary intake to provide enough nutrients for proper growth and development without health problems resulting from poor knowledge of nutrition. This implies that adequate dietary intake plays an important role in good health, as it influences factors such as growth, development, and metabolic programming of children. “Poor diet among children does not only have direct negative effects on their weight and health, but also results in significant deficiencies in those nutrients playing an essential role in cognitive development. A child needs a balanced and adequate diet to supply the nutrients and energy needed for the proper growth and development” [7]. Good dietary intakes in children are important in preventing under nutrition, growth retardation, and acute child nutritional problems.

“Studies on mother’s knowledge of nutrition and dietary intake of children have not been widely reviewed in the literature. However, Blaylock, Variyam and Hwan [8] found significant evidence that greater maternal knowledge of health and nutrition leads to better diet quality for preschoolers but not necessarily for school-age children after accounting for the influence of maternal background characteristics, health habits, and household characteristics”. Another study conducted by the USDA’s economic Research Service revealed that mothers’ knowledge about food and nutrition directly affected their children’s diets [5]. “Observations have shown that association between nutritional knowledge and child dietary intakes are inconsistent. Whereas some studies” [9-12] “found significant association

between maternal nutritional knowledge and child dietary intake, other” (e.g. Walia & Gambhir, nd; Grant & Stone, nd) studies reported no correlation between the two.

Asaba metropolis is a high densely populated environment with many young children in primary and secondary schools scattered round the city. Some mothers in Asaba metropolis may not have good nutritional knowledge because of the type of food they give their children. Some of these mothers prefer to give their children junk foods during school hours or even at home. These junk foods make their children dietary intake inappropriate. In addition, some of these mothers do not even know or consider the health implication of the junk foods consumed by their children daily basis.

## 2. STATEMENT OF THE PROBLEM

Mother’s adequate knowledge of nutrition is crucial for the child’s health, physical growth, and mental development. Additionally, mother’s nutritional knowledge is very important in preventing under nutrition, growth retardation, and acute nutritional problems in children. However, it is regrettable that some mothers in Asaba metropolis lack nutritional knowledge, Observation in various secondary schools has shown that some mothers do not prepare food at home but rather patronize food vendors especially in the morning hours for their children’s breakfast and supposed lunch in school. Similarly, some mothers prefer to give their children junk foods within and outside school hours. These mothers, because of lack good nutritional knowledge, they do not consider dietary implication or nutritional deficiencies of these junk foods their children eat on daily and regular basis. These mothers do not have or understand benefits of good nutritional knowledge which definitely will impact on dietary intake and health of their children. Studies reviewed earlier are inconsistent on whether mothers’ nutritional knowledge impacts children’s dietary intake. In addition, many related studies were done outside this country leaving very fewer related studies in Nigeria. Again, fewer related studies done in Nigeria were centered more on impact of mother’s nutritional knowledge on children’s health and not dietary intake of children. Lack of nutritional knowledge of mothers on children dietary intake may be a factor of inability to serve appropriate food according to nutritional needs for their children which certainly determines the dietary intake for such children. Mother’s limited knowledge about food choices, feeding, and health care seeking practices contributes significantly to poor dietary intakes of children in most developing countries such as Nigeria. It is against this backdrop

that this study examined mother’s nutritional knowledge on dietary intake of junior secondary schools students in Asaba metropolis of Delta State.

### 2.1 Purpose of the Study

The main purpose of this study is to determine mothers’ nutritional knowledge on dietary intakes of junior secondary school students in Asaba metropolis of Delta State. Specifically, the study sought to determine;

1. Extent of nutritional knowledge of mothers in Asaba metropolis
2. Extent of dietary intake of junior secondary school students in Asaba metropolis
3. If there is a relationship between mothers’ nutritional knowledge and dietary intake of secondary school students in Asaba metropolis

### 2.2 Research Questions

The following research questions guided the study;

1. To what extent do mothers have nutritional knowledge in Asaba metropolis?
2. What is the extent of dietary intake of junior secondary school students in Asaba metropolis?
3. What is the relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis?

### 2.3 Hypothesis

The formulated null hypothesis was tested at 0.05 level of significance;

1. There is no significant relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis

## 3. METHODS

### 3.1 Design of the Study

The study adopted a descriptive survey research design. Descriptive survey research design is one in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be a representative of the entire population (Ajayi & Abanobi, 2016). It is deemed suitable for this study, since it collected mothers’ opinion on mother’s nutritional knowledge and

dietary intake of junior secondary school students in Asaba Metropolis of Delta State.

### 3.2 Population of the Study

The population for this study consisted of all mothers of junior secondary school students in Asaba metropolis of Delta State. The choice of this population was informed because mothers are those who care for children in various families in terms of their nutrition and health.

### 3.3 Sample and Sampling Technique

The sample of this study was 105 mothers which were drawn through purposive random sampling technique from five public junior secondary schools in Asaba metropolis of Delta State. Thus, 21 mothers each were selected from the five junior secondary schools selected for this study.

### 3.4 Instrument for Data Collection

The instrument used for data collection was a structured questionnaire constructed by the researcher and titled Mother's Nutritional Knowledge on Dietary Intake of Students Questionnaire (MNKDISQ). The questionnaire has two sections viz; section A and section B. Section A is titled Personal Data used for collection of personal data of the respondents. Section B is titled questionnaire items which are further divided into two clusters of one and two. Each of these clusters was used to address research questions one and two respectively. The MNKDISQ was made up of 44 questionnaire items. The instrument has a four point rating scale with response options of Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE).

### 3.5 Validation of the Instrument

The instrument was validated by two experts, one in Home Economics Department and the other in Measurement and Evaluation, Educational Psychology Department in Federal College of Education (Technical) Asaba. The experts were requested to examine the face and content validity of the items in the questionnaire as regards to sentence construction, appropriateness of language, adequacy of questions in relation to the purpose, research questions and hypotheses. The comments and corrections of the experts were reflected before the production of the final copy of the instrument.

### 3.6 Reliability of the Instrument

Reliability of the instrument was determined through a pilot-test. Copies of the questionnaire will be first

administered on a sample of 20 mothers in junior secondary schools outside Asaba metropolis. The Cronbach Alpha technique was used to measure internal consistency of the research instrument and a coefficient of 0.71 was obtained which indicates that the instrument was fit for the study.

### 3.7 Method of Data Collection

105 copies of the questionnaire were personally delivered by the research assistants (teachers in selected schools) to the respondents in their respective schools. The research assistants were teachers in secondary schools sampled for the study. The researcher briefed the research assistants on what to do and how to handle and distribute the research instruments to the selected respondents. The respondents who were not able to fill their own questionnaire on the spot, on that same day were given more time to return their own copies of the questionnaire the next day. Thereafter, the researcher assistants collected all copies of the questionnaire from such respondents. The data collection exercise lasted for five working days.

### 3.8 Method of Data Analysis

The data collected were analyzed using mean and standard deviation to answer research questions 1 and 2. Pearson product moment correlation was used to answer research question 3. The decision rule for research questions 1 and 2 was that, any item with a mean score of 2.5 and above was regarded as high extent whereas, reverse is the case of any item with a mean score less than 2.5, it was regarded as low extent. The decision rule for research question 3 was that any coefficient between 0.90 and above was regarded as a very high positive correlation, 0.70 to 0.80 was regarded as moderate high positive correlation, 0.50 to 0.60 was regarded as a high positive correlation, below 0.01 to 0.04 was regarded as a low positive correlation. The formulated null hypothesis was tested with Pearson product moment correlation statistics. The decision was that a null hypothesis is accepted if p-value is greater than 0.05 whereas the any null hypothesis with a p-value less than 0.05 is rejected.

## 4. RESULTS

**Research Question 1:** To what extent do mothers have nutritional knowledge in Asaba metropolis?

Data analyzed on Table 1 reveals mean and standard deviation scores of extent mothers have nutritional knowledge in Asaba metropolis. The analysis further reveals that the respondents rated all items above a

mean score of 2.50 except items 7, 12 and 20 with mean scores of 1.76, 1.78, & 2.18. This implies that mothers in Asaba metropolis to a high extent have nutritional knowledge. The response by respondents is also evident in a grand mean score of 3.08 which consolidates that mothers in Asaba metropolis to a

high extent have nutritional knowledge in Asaba metropolis. Furthermore, the grand standard deviation score of 0.82 indicates that the respondents were homogeneous in their view on extent of nutritional knowledge among mothers in Asaba metropolis.

**Table 1. Mean and standard deviation scores on the extent Mothers' Nutritional Knowledge in Asaba Metropolis (N = 105)**

S/N	Statement	VHE	HE	LE	VLE	$\bar{x}$	SD	Remark
1	Eggs, meat, milk, beans, soya beans among others are rich in protein	48	40	10	7	3.23	0.88	High Extent
2	Too much sugar is good for children and gives lots of energy	40	39	12	14	3.00	1.02	High Extent
3	Carbohydrates are good for children because they enables them gain weight	43	44	14	4	3.20	0.81	High Extent
4	Fruits contain vitamins which boost children immune system	41	53	8	3	3.26	0.72	High Extent
5	Lots of fats and oil increase cholesterol level in children	40	45	9	11	3.09	0.94	High Extent
6	It is good to use lots of vegetables to prepare various meals for children which helps them stay healthy	52	50	1	2	3.45	0.62	High Extent
7	Fast foods are good for children's growth and development	9	6	41	49	1.76	0.90	Low Extent
8	Homemade natural foods are healthier than junk foods	40	46	13	6	3.14	0.85	High Extent
9	It is good to consider health implication of what children eat at anytime	41	49	5	10	3.15	0.90	High Extent
10	Ice cream should be given to children on regular basis because it helps them grow	42	51	6	6	3.23	0.80	High Extent
11	Fruits are better and nutritious for children than sweets and snacks	47	53	2	3	3.37	0.67	High Extent
12	Children should always take sweet drinks and snacks to school on daily basis	11	5	39	50	1.78	0.95	Low Extent
13	Foods such as rice, yam, cassava contain carbohydrates and are good for children	31	53	19	2	3.08	0.74	High Extent
14	Foods rich in fibre are good for the children	80	16	5	4	3.64	0.75	High Extent
15	Noodles such as indomie is a good food for the children	56	34	7	8	3.31	0.90	High Extent
16	Carrot is healthy for eye development in children	52	48	4	1	3.44	0.62	High Extent
17	Biscuit bone is healthy and should be given to children from time to time	61	37	3	4	3.48	0.74	High Extent
18	Unhealthy foods such as junk foods affects children's growth	42	49	8	6	3.21	0.82	High Extent
19	Balanced diets are good for children's growth and development	73	23	1	8	3.53	0.86	High Extent
20	Regular frying of meals is good for the children	13	20	45	27	2.18	0.96	Low Extent
Grand Mean & SD						3.08	0.82	High Extent

*Field Survey Data, 2021*

**Research Question 2:** What is the extent of dietary intake of junior secondary school students in Asaba metropolis?

Analysis on Table 2 shows mean and standard deviation scores on extent of dietary intake of junior secondary school students in Asaba metropolis. The analysis further indicates that all items were rated above a mean score of 2.50 by the respondents which implies that dietary intake of junior secondary schools in Asaba metropolis is to a high extent. The evidence of above response is shown in a grand mean score of 3.23. In addition, the grand standard deviation of 0.85 reveals that the respondents have similar view on extent of dietary intake of junior secondary school students in Asaba metropolis.

**Research Question 3:** What is the relationship between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis?

Table 3 reveals that a Pearson product-moment correlation was run to determine the relationship

between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis. The analysis reveals a high positive correlation between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis given that ( $n = 105, r = .676$ ).

**Hypothesis:** There is no significant relationship between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis.

Data analyzed on Table 4 shows that mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis were correlated using Pearson product moment correlation to test the significance of the relationship. The result indicates that p-value is less than 0.05 ( $.000 < 0.05$ ), hence, the null hypothesis that the relationship between mothers' nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis is not significant is rejected.

**Table 2. Mean and Standard Deviation Scores on the Extent of Dietary Intake of Junior Secondary School Students in Asaba Metropolis (N = 105)**

S/N	Statement	VHE	HE	LE	VLE	$\bar{x}$	SD	Remark
21	Children should consume Eggs, milk, beans, soya beans among others in adequate quantities because they are rich in protein	44	50	7	4	3.28	0.75	High Extent
22	Children should take carbohydrates to enable them have energy and gain moderate weight	34	59	4	8	3.13	0.81	High Extent
23	Children should eat fruits on regular basis to boost their immune system	48	45	2	10	3.25	0.90	High Extent
24	Children should eat vegetables prepared in various meals to stay healthy	61	26	12	6	3.35	0.90	High Extent
25	Children should eat foods rich in fibre for proper growth and development	47	48	6	4	3.31	0.75	High Extent
26	Foods that are rich in fats and oil should be consumed by children	62	24	9	10	3.31	0.98	High Extent
27	Children should consume sea foods to stay healthy	40	52	8	5	3.21	0.78	High Extent
28	Foods that are rich in minerals should be given to children	27	55	14	9	2.95	0.86	High Extent
29	Children should drink water adequately for proper metabolism	40	46	8	11	3.10	0.94	High Extent
30	Children should consume junk foods within and outside the school	56	38	4	7	3.36	0.84	High Extent
<b>Grand Mean/SD</b>						<b>3.23</b>	<b>0.85</b>	High Extent

Field Survey Data, 2021

**Table 3. Relationship between Mothers' Nutritional Knowledge and Dietary Intake of Junior Secondary School Students in Asaba Metropolis**

N	Correlation Coefficient ( $\gamma$ )	Remark
105	.676	High Relationship

**Table 4. Test of significance of relationship between Mothers' Nutritional Knowledge and Dietary Intake of Junior Secondary School students in Asaba Metropolis**

N	Correlation Coefficient ( $\gamma$ )	Sig.
105	.676	.000

\* $P < 0.05$ 

## 5. DISCUSSION

“One of the findings of this study revealed that mothers in Asaba metropolis to a high extent have nutritional knowledge. This findings supports the finding of Glewwe & Miguel” [6] that mother’s adequate knowledge of nutrition is crucial for the child’s health, physical growth, and mental development. Kruger (2002) “also found that nutritional knowledge play an important role in promoting healthier feeding practices, and as a result lead to the maintenance of appropriate body weight. Similarly, Worsely” [5] found that nutritional knowledge influences food habits which ensure that nutrient needs throughout the life cycle are met.

Another finding of this study revealed that the extent of dietary intake of junior secondary school students in Asaba metropolis is high. This finding consolidates the finding of Antia and Abraham [7] that good dietary intakes in children are important in preventing under nutrition, growth retardation, and acute child nutritional problems. A child needs a balanced and adequate diet to supply the nutrients and energy needed for the proper growth and development.

Furthermore, the findings revealed that there is a positive high relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis. Additionally, the relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis is significant. This finding is in consonance with the findings of Ruel (nd), Glewwe [9], Webb and Block [12] found significant association between maternal nutritional knowledge and child dietary intake. Additionally, Blaylock, Variyam and Hwan [8,13] “found significant evidence that greater maternal knowledge of health and nutrition leads to better diet quality for preschoolers but not necessarily for school-age children after accounting for the influence of maternal background characteristics, health habits,

and household characteristics. Another study conducted by Worsely “[5,14] found that mothers’ knowledge about food and nutrition directly affected their children’s diets.

## 6. CONCLUSION

Based on the findings, the study therefore conclude that mothers in Asaba metropolis to a high extent have nutritional knowledge, the extent of dietary intake of Junior secondary school students in Asaba metropolis is high, and the relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis is significant.

## 7. SUMMARY OF FINDINGS

The following findings emerged from this study;

1. Mothers in Asaba metropolis to a high extent have nutritional knowledge
2. The extent of dietary intake of Junior secondary school students in Asaba metropolis is high
3. There is a positive high relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis
4. The relationship between mothers’ nutritional knowledge and dietary intake of junior secondary school students in Asaba metropolis is significant

## 8. RECOMMENDATIONS

The following recommendations were made based on the findings;

1. Mothers should always endeavor to acquire nutritional knowledge which will enable them ensure that their children have a better nutrition throughout their growing stage.

2. Mothers should ensure that their children avoid junk foods at all cost as this will help them stay healthy and sound.

## CONSENT

As per international standard or university standard, Mothers written consent has been collected and preserved by the author(s).

## COMPETING INTERESTS

Author has declared that no competing interests exist.

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