

## Maternal Nutrition Related Knowledge as Correlates of Nutritional Status of Pupils in Etsako West Local Government Area of Edo State

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### Abstract

*The study examined the maternal nutrition related knowledge as correlate of nutritional status of pupils in Etsako West Local Government Area of Edo State. Specifically, the study examined the nutritional knowledge of primary school pupils' mothers, the nutritional status of primary school pupils and further determined how maternal nutritional related knowledge correlate with the nutritional status of pupils in Etsako West Local Government Area of Edo State.*

*The correlational research design was employed. The population of pupils for this study was twenty nine thousand nine hundred and twenty seven (29,927) pupils in Public Primary schools in Etsako West Local Government Area of Edo State. The sample size of 299 pupils representing 1% of the total population of 29,927 pupils was drawn as sample to take the questionnaire on maternal nutrition knowledge to their mothers at home. Two instruments were used for data collection. The first is maternal nutritional knowledge questionnaire (MANKQ), while the second is Nutritional Assessment Sheet (NBAS). The split-half reliability coefficient of 0.73 and 0.88 were obtained on the two instruments respectively. Research questions 1 was answered using means and standard deviation while the Pearson Product Moment Correlation Coefficient (PPMCC) statistics was used to test hypothesis at 0.05 level of significance. The result shows that there was a significant relationship between nutrition related knowledge and the nutritional status of pupils in Etsako West Local Government Area of Edo State. The researcher recommends that nutrition must be mainstreamed into policies, and programs, by all stakeholders who address food insecurity and malnutrition in rural Nigeria and in the country as a whole.*

**KEYWORDS:** Nutritional Status, Maternal, Nutritional Knowledge, Insecurity, Malnutrition.

## Background to the Study

Primary education is the education given to children aged 6-12 years in Nigeria. It is the education that is received after early childhood and kindergarten education but just before secondary education (Federal Republic of Nigeria, 2013). It is the foundation, bedrock and basic education that runs a 6 years programme and awards a certificate known as the First School Leaving Certificate (FSLC). The National Policy on Education stated that the objectives of primary education are to: a) inculcate permanent literacy, numeracy and the ability to communicate effectively; b) lay a sound basis for scientific, critical and reflective thinking; c) promote patriotism, fairness, understanding and national unity; instill social, moral norms; d) values in the child; develop in the child the ability to adapt to the changing environment; and e) provide opportunities for the child to develop life manipulative skills that will enable the child function effectively in the society within the limits of the child's capacity (Federal Republic of Nigeria, 2013). The last objective above shows that the federal government recognizes the place of primary education in providing opportunities for pupils (who are learners at the primary school level) to develop life manipulative skills that will enable them function effectively in the society within the limits of their capacity. To function effectively on any given activity, one essential resource needed to sustain life is food.

Food can be regarded as any substance consumed to provide nutritional support to facilitate growth and development of the body. Olumakaiye, Atinmo and Olubayo-Fatiregun (2020) defined food as any edible substance that can be eaten and digested to provide nourishment for the wellbeing of plant and animals. They added that the body needs variety of nutrients namely: Protein, Carbohydrate, Fat, Vitamins and Minerals. Protein is needed to build, maintain, repair muscle, and other tissues in the body. Foods rich in protein include meat, eggs, dairy and fish. Carbohydrates can be classified into two kinds: starches and sugars. Food rich in starches include rice, maize, wheat and potatoes and sugars include fruit, honey, sweets and chocolate. Likewise, carbohydrate provides the body with the energy needed for daily living.

Another food nutrient is fat - the body's secondary source of energy. Fat actually provides more energy/calories per gram than any other nutrient, but is more difficult to burn. Food sources of fats and oils includes: butter, lard, milk, cheese and some meat. Vitamins and minerals are needed in very small amounts and are sometimes called micronutrients, but are essential for good health. They control many functions and processes in the body sources, and in the case of minerals it also

helps to build body tissue such as bones (calcium) and blood (iron) (Akeredolu, Osisanya, Seriki-Mosadolorun & Okorafor, 2019). Dietitians, Home Economist, Nutritionist, medical practitioners have a common belief that spending on good food to stay healthy with one's household, is better than spending on medical services as a result of poor health. Also, healthy dieting for children such as learners of primary school age (pupils) is more than just giving them large quantity of food; it includes giving them plenty of water and enough protein for growth and cellular repair.

Children need adequate carbohydrates for their high energy levels and just enough fat to provide essential fatty acids for cell growth. Children's diets require enough iron, calcium and vitamin D to strengthen blood and bones as well as zinc and magnesium to support the immune system. All these nutritional requirements can be met through a diet high in fruits, vegetables, grains and meats. Physically, a child's body is different from that of an adult, and it can be hard to understand that a child is not a miniature adult, because children are growing and developing, they have particular nutritional requirements. Even teenagers are still growing, often in ways we cannot see; and this is why giving children nutritionally dense food is important for proper overall growth and development in the avoidance of health difficulties arising from poor nutritional status.

Nutritional status refers to the measure of diet quality and wellbeing of an individual such as children of school age. Ikujenlola and Adekoya (2020) they are commonly measured to explain the extent of diet soundness, quality of food intake and its corresponding growth outcome on an individual using various anthropometric indicators. Some of these anthropometric indicators include: body mass index (BMI), head circumference, height, weight, height to age, weight to age, height to weight ratio among others. In this regard, using any of these anthropometric indicators could help one to determine the nutritional status or quality of a child or an individual in a household. Ojiako, Manyong and Ikpi (2019) noted that nutritional status of learners may be traced to the food consumption pattern in their various homes.

Nutrition knowledge refers to awareness of the concepts and processes related to diet, health and diseases also knowledge of food nutrients dietary guidelines and recommendations (Ikujenlola & Adekoya, 2020). From the definition, a mother with good knowledge of the concepts and processes related to dieting, health and diseases is likely to understand: the meals that are good sources of protein, vitamins minerals, starchy foods, the foods typically high or low in fibre, meals with high calorie and their attendant effect on health and nutritional status, on growing children of school age. As noted by Olumakaiye et al (2020) maternal nutritional knowledge may favour

healthy food consumption by children and thus promote changes in food habits that may promote their wellbeing and reduce some health risks. This explains that limited maternal knowledge about food choices, feeding, and health care seeking practices may affect nutritional outcomes in children. Ijarotimi, Adebiyi, Fatiregun (2016) noted that poor nutrition knowledge is one of the main factors in the development of malnutrition as it is well known fact that most illiterate mothers tend to adhere to their old eating patterns rather than venturing to seek new and more proper eating habits.

In other to maintain healthful diets, knowledge of variety balance of foods from all food groups and moderate consumption of all food items is very important. Poor nutritional diet may lead to micro nutrients deficiencies and poor nutritional status. The consequences of poor nutritional status at early stage of life may be so serious that it can result in depression, lack of self-esteem, unconsciousness, anxiety, poor cognition, poor academic achievements in extreme condition among school children. In most communities in Estako West Local Government Area of Edo State, most mothers give their children in primary school less fruits and vegetables but rather put starchy foods such as boiled rice, spaghetti and noodles “indomie” in their lunch pack for consumption during their lunch break. Some working mothers who hardly have time to prepare meals before their morning school-run often opt to give their children pastries like doughnut, snacks such as beef roll “gala”, biscuits and flavoured drinks. These “convenience foods” given to pupils by most mothers are high in salt, saturated fats and low in essential micronutrients which may not be too good for pupils undergoing growth spurts.

Healthy eating may vary from person to person. However, most experts agree that a healthy diet is more than what to eat or what not to eat. It includes plenty of water and enough protein for growth and cellular repair. Children need adequate carbohydrates for their high energy levels and just enough fat to provide essential fatty acids for cell growth. Children's diets require enough iron, calcium and vitamin D to strengthen blood and bones as well as zinc and magnesium to support the immune system. All these nutritional requirements can be met through a diet high in fruits, vegetables, grains and meats. Physically, a child's body is different from that of an adult, and it can be hard to understand that a child is not a miniature adult, because children are growing and developing, they have particular nutritional requirements. Even teens are still growing, often in ways we cannot see. Giving children nutritionally dense food is important for proper overall growth and development. A child's body needs good nutrient, not just food, absence of which result to malnutrition.

World Health Organization (2013) noted that one out of three children in Nigeria is overweight or obese as a result of poor food consumption. Allowing children to eat processed and fast foods instead of fruits, vegetables and other whole foods, pushes them toward having lifelong weight issues. Children have a higher metabolic rate, requiring more caloric intake than adults, but it's vital that the calories they consume should have fibres therefore, when considering a child's diet, it's important to know what to include and what not to include in order to avoid weight issues.

Variety is not how much or how often a child eats certain foods, rather it refers to the wide array of food choices that are eaten per time. For instance, making fruits and vegetables the main course for each meal will make certain that a variety of vitamins, minerals and fiber that are consumed by children routinely will facilitate healthy child growth and development. A balanced diet must contain sufficient amount of carbohydrate, protein, fat, vitamins, minerals and fibre in the required amounts to reduce health challenges in children such as malnutrition. WHO (2013) stated that malnutrition in children is among the leading health problems that contribute to the high child morbidity and mortality in the developing world including Nigeria. Malnutrition can be addressed through simple interventions. When addressing micronutrient malnutrition, a combination of interventions may be used, involving the modification of diet, increasing micronutrient bioavailability and consumption as well as increasing food availability, food fortification, supplementation and food diversification, nutrition education and school feeding programmes (UNICEF, 2016).

The National Home Grown School Feeding Programme (NHGSFP) is a government led ₦70 per day school feeding programme that aims to improve the health, nutrition and educational outcomes of public primary school pupils. The NHGSFP which started in 2016 under the first tenure of President Muhammadu Buhari administration was launched by the Vice President – Prof. Yemi Osinbajo at Eyaen Primary School in Uhunwonde Local Government Area of Edo State. In his speech, “the Vice president noted that the social investment programme employs 94422 cooks while over 100000 small holder farmers are linked to the programme while 594 cows are slaughtered, 138,000 chickens and 83million tonnes of fish are used in preparing the meals across the country”. With regards to the objective and impact of the programme, the Vice president added that the programme is geared towards provided vulnerable families the opportunity to feed and send their children and this is expected to reduce the number of malnourished pupils and increase enrollment and school attendance (Vanguard, 2019). This explains that the school feeding

programme was launched to tackle malnourishment among pupils and promote educational outcomes. However, the impact of the school feeding programme may not have felt by many households and primary school children in Etsako West Local Government Area of Edo State.

Estako West Local Government is one of the eighteen local government areas in the District of Edo State. The researcher has observed that many households in various communities in the local government prefer to buy little quantity of starchy foods such as cassava meal “fufu”, cassava flakes (“Garri”) and local rice that will be sufficient for the entire household till the next market day. The reason for this is traceable to the rising cost of food items which has made many fixed amount of budget for family upkeep insufficient. Many women do not consider starchy foods that are fairly cheaper as the most favourable and “pocket friendly” choice to make when buying and preparing food items for their children and family. Aside, the financial inability to buy more nutritious food items and change diet for members of their household, lack of nutrition knowledge food processing methods and storage facilities often makes many home buy less of perishable foods such fruits and vegetables in the market but rather opt for starchy meals that are cheaper, larger in quantity with low perishable duration. Hence, many mothers compromise quality and costly diet for quantity and cheaper food items without considering the nutritional implication of what their children feed on a day to day basis. This study therefore investigates whether food consumption pattern and maternal nutrition knowledge are correlates of nutritional status of pupils in Estako West Local Government Area of Edo State.

### **Statement of the Problem**

In Nigeria, the National Nutrition and Health Survey conducted in 2018 revealed that, 32.0% of children under-5 years are stunted indicating chronic malnutrition, 8.7% and less than a quarter (21.0%) are wasted and underweight, respectively. Without addressing malnutrition, the Sustainable Development Goal two (SDG 2) of ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture may not be realized as malnutrition during early development (0-5years) can harm the body and lead to learning and memory deficits, lower intelligence quotient (IQ), poor school achievement and behavioral problems in childhood and adolescence. Hence, malnutrition in children remains a problem in Nigeria and several other African countries.

Likewise, Ozor, Iyamu and Osifo (2014) found that majority of children consume mostly carbohydrate-based foods and have insufficient intake of macronutrients and micronutrients except



for energy. The low energy intake was further confirmed by the high percentage of stunting followed by underweight and wasting, with low prevalence of overweight and obesity among pupils in Edo State. Low energy intakes has a negative impact on height genes, metabolism, behaviour furthermore, prolonged dietary deficit may result in reduction of physical fitness in school children. The consequences of these as observed by the researcher are that many pupils in public primary schools suffer the problem of malnutrition due to poor food consumption patterns and this could lead to poor academic performance.

Several studies have been carried out on nutritional status of children, under-nutrition and related issues in Edo State. For instance, the study by Ozor, Iyamu and Osifo (2014) focused on the prevalence of under nutrition among under-five's in Ekpoma a community in central part of Edo State, Nigeria. Obarisiagbon, Omuemu and Okojie (2018) assessed the nutritional status and its possible determinants among children attending Early Child Care Centres in Benin City, Edo State while Ehwareme, Ogbogu, Mbadugha and Obiekwu (2018) assessed the nutritional status among under -five children in Evbuotubu Community Egor Local Government Area, Edo State.

As much as the foregoing studies contributed to literature, none of the studies attempted to determine whether nutritional status of the children was related with nutritional knowledge of the children's mothers who are the provider of foods to these children in Edo State. However, limited empirical evidence exists on the relationship between nutritional related knowledge of illiterate mothers and nutritional status of their children in Etsako West Local government Area of Edo State. Although, maternal education may be an important determinant of nutritional status of children, it remains unclear whether mother's practical knowledge about nutrition is related to nutritional status of primary school pupils in Etsako West local Government Area of Edo State. Furthermore, it seems that factors that influence translation of acquired knowledge into practice are not well-understood. It is this knowledge gap that this study attempts to address. To this end, the researcher seeks to investigate whether there is relationship among mother's nutritional related knowledge and the nutritional status of primary school pupils in Etsako West Local Government Area of Edo State.

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### **Research Design**

The co relational research design was employed in this study to assess the relationship between maternal nutritional related knowledge and nutritional status of pupils in Estako Local Government Area. This is to ascertain the direction, magnitude and significance of any possible relationship existing between these variables in the study area.

### **Population for the Study**

The population of pupils for this study is twenty nine thousand nine hundred and twenty seven (29,927) pupils in Public Primary schools in Etsako West Local Government Area of Edo State. The population covered all the fifty six (56) primary schools in Etsako West Local Government Area of Edo State. This population record as obtained from the Primary School Survey statistics (2020) from the Ministry of Education, Edo State

### **Sample and sampling Techniques**

The sample size of 299 pupils representing 1% of the total population of 29,927 pupils was drawn as sample to take the questionnaire on maternal nutrition knowledge and food consumption pattern to their mothers at home. The simple random sampling, specifically, balloting technique was used to draw sample from the population. For the schools, 10 schools were randomly selected using the balloting technique from the 56 schools. From the 10 schools, 10 pupils were randomly selected from primary 4 and 19 pupils from primary 5 which will be equal to 29 pupils. From the 10 schools will give a total of 299 pupils representing pupils from Etsako. Osuala (2007) postulated that when the population of a study is large, 1% is acceptable, when normal distribution and fairly homogenous characteristics is assumed in the population. Hence, the researcher assumes a position of normal distribution and fair homogeneity of population. Table 1 showed the population and sample drawn from the population.

## Instrument for Data Collection

Three instruments were used for data collection. Three instruments were used for data collection. The first is maternal nutritional knowledge questionnaire (MANKQ), the second is Nutritional Status Assessment Sheet (NSA).

The first instrument (MANKQ) is a self-developed questionnaire designed for pupil's mothers. The questionnaire covers three 30-items and three component parts namely: general nutrition (items 1-10), children needs (items 11 to 20) and malnutrition in children (items 21 to 30). The items were rated on a four point Likert type scale of Strongly Agree -4 to Disagree -1.

The second instrument is the Nutritional Status Assessment Sheet (NSAS) is a checklist to collect data on some anthropometric indicators to measure nutritional status of children. The nutritional status assessment sheet comprise of the pupils' age, height and weight. These measures were used to ascertain nutritional status of pupils on pupils'

## Validity of the Instrument

The face and content validity of the research instrument was established by the judgments of three experts in Home Economics Education Unit in the Department of Vocational and Technical Education, Faculty of Education, Ambrose Alli University, Ekpoma. Copies were given to the experts to critically examine and ascertain whether the content of the instrument covered the contents of the study. They are required to check for the appropriateness of each item in terms of the suitability of the items in the instrument and make necessary corrections. Their constructive criticisms and suggestions were used to modify and produce the instrument that was used for data collection in this present study.

## Reliability of Instrument

The split-half reliability method was used in this study. The three instruments were administered to 30 school pupils randomly selected outside the study area (Etsako East Local Government Area of Edo State) but within the senatorial district to determine the internal consistency of the instrument. In conducting the reliability test, the 30 pupils constituting the pilot test was administered the instruments. The responses collected from them were split on the basis of odd and even numbers. The Pearson Product Moment Correlation Coefficient statistics was used to measure the degree of internal consistency between the two set of response scores. The split-half

reliability coefficient of 0.73, 0.84 and 0.88 were obtained on three instruments respectively. The instrument was adjudged reliability since the reliability coefficient was higher than 0.70.

### **Administration of Instrument**

The researcher went to 10 primary schools in Etsako West Local Government Area of Edo State with the questionnaire for data collection. The researcher along with two trained research assistants administered the questionnaire to pupils. The research assistants were post graduate students from the Faculty of Education of Ambrose Alli University, Ekpoma who already have prior knowledge about research and questionnaire administration. The researcher devoted sufficient amount of time to go through the content of the instrument with the research assistants to ensure that possible sections of the instrument that appeared vague or unclear are clarified. This was done to ensure that the research assistants come to term with the contents of the instrument to make them appropriately collected body measurement data from participants and provision of honest responses on the items.

In order to gain access and cooperation from the respondents, permission was taken from head teachers of primary schools to solicit their support for carrying out the investigation. Also, a consent letter of introduction, introducing the researcher and soliciting the permission to carry out the research will be attached to the questionnaire given to pupils. Pupils will be encouraged to hand over the questionnaires to their mothers/guardian and return the filled copy to the school for collation. The researcher and her research assistants hope to spend adequate time with head teachers in each institution to clarify the purpose of the research exercise before administering the instrument or taking body measure parameters from students. The instrument was given to the respondents and was collected immediately, the 299 questionnaires given to the respondents were retrieved making it 100% return rate

Ethical principles of respect for human dignity and justice highlighted in Folayan, Haire, Harrison, Odetoingbo, Fatusi and Brown (2014) was implored throughout the study. According to them, informed consent is a fundamental requirement in research participation. It is obtained through a dialogue that respects the individuality of each prospective participant and allows ample opportunity for the prospective participant to ask questions. They added that informed consent must be voluntarily obtained and devoid of undue inducement and coercion (particularly considering minors). This is central in research.. Consequently, the researcher made informed written consent on

the questionnaire to mothers about the confidentiality, intended use of the data collected from their children/wards and the non-disclosure of personal identity of participants in the study.

### Method of Data Analysis

Research questions 1, was answered using mean and standard deviation. A mean score of 2.5 was used as the benchmark for determining level of nutritional knowledge. A score of 2.50 and higher represents good nutritional knowledge while a score less than 2.5 represents poor nutritional knowledge. Body Mass Index (BMI) was used as the measure for nutritional status. BMI is the ratio of a person's weight in kilogram (kg) to the square of the persons in height metres (m<sup>2</sup>).

PPMCC statistics was used to test the hypothesis. The Pearson Product Moment Correlation Coefficient statistics was used to determine the 3s – sign, strength and significance of a Pearson-r coefficient. Therefore, the first 'S'- sign was used to explain the direction of the relationship (positive or negative). The second 'S' which represents strength of the correlation were used to explain the magnitude (weak, moderate or strong) of the relationship between variables in quantitative terms while the last 'S' representing significance of the Pearson-r was used to determine the relevance of the correlation coefficient.

The decision on the significance of the Pearson-r were reached by comparing the p-value (probability value of the correlation coefficient or what is otherwise abbreviated as sig. value) in relation to the predetermined level of significance at which the hypothesis is tested. Therefore, the decision rule for rejecting the null hypothesis is if only the p-value (or sig. value) is less than the level of significance. That is, the  $p < .05$ . Hence, the null hypothesis will be retained when the p-value is greater than the level of significance (that is, the  $p > .05$ ). The two hypotheses were tested at .05 level of significance.

### Presentation of Results

The results of this study are presented in line with the stated research questions and hypothesis. In analyzing research questions 1 the mean ( $\bar{X}$ ) and standard deviation (S.D) was used.

**Research Question 1:** What is the nutritional knowledge of primary school pupils' mothers in Etsako West Local Government Area of Edo State?

**Table 1:** Analysis of the Nutritional Knowledge of Primary School Pupils' Mothers in Etsako West Local Government Area of Edo State

S/N		X	S D	Remarks
<b>Part A</b>	<b>General Nutrition</b>			
1.	Garri is not source of protein	2.30	0.543	Disagree
2.	One of the sources of protein is yam	2.52	0.655	Agree
3.	Portentous foods helps for growth	2.40	0.551	Disagree
4.	A good source of vitamin A is cassava	2.67	0.453	Agree
5.	An example of energy giving food is fish	2.44	0.754	Disagree
6.	Egg is another source of protein	2.07	0.466	Disagree
7	Garri is source of carbohydrate	2.52	0.544	Agree
8	Vitamin A is essential in a child growth	2.68	0.543	Agree
9	Given my child too much carbohydrate causes obesity	2.35	0.633	Disagree
10	Fatty food is a source of energy	2.06	0.332	Disagree
	<b>Mean score = 2.40</b>			
<b>Part B</b>	<b>Children needs</b>			
11	School age children need more of carbohydrates	2.52	0.524	Agree
12	I give milk to my children everyday	2.23	0.456	Disagree
13	The fish and meat are bigger than fufu/Eba	1.02	0.569	Strongly disagree
14	I give my child breakfast every morning	2.08	0.534	Disagree
15	Fruits is an essential part of their daily consumption	1.45	0.456	Strongly Disagree
16	I give at least 3 eggs per week to my child	2.04	0.634	Disagree
17	Balance diet is my guiding principles	2.06	0.645	Disagree
18	I give my children much fish than meat	2.56	0.567	Agree
19	I give them milk before bed time everyday	1.06	0.653	Strongly

				Disagree
20	I give them meal in between meal to make them healthy	2.08	0.342	Disagree
	<b>Mean score = 1.91</b>			
<b>Part C</b>	<b>Malnutrition in Children</b>			
21	Excessive feeding on carbohydrate food cause malnutrition	2.07	0.621	Disagree
22	Regular intake of starchy foods helps growth	2.53	0.456	Agree
23	Malnutrition is caused by protein foods	1.67	0.543	Strongly Disagree
24	Kwashiorkor is caused by fatty foods	2.52	0.654	Agree
25	Effect of malnutrition is for life	2.32	0.543	Disagree
26	Fruits /vegetable can help manage malnutrition	1.06	0.654	Strongly Disagree
27	Too much intake of sugary food causes obesity	2.56	0.543	Agree
28	Eating excessive processed food causes malnutrition	2.45	0.546	Agree
29	Eating without exercise may causes obesity	1.09	0.743	Strongly Disagree
30	Eating fish can help to manage malnutrition	1.88	0.657	Strongly Disagree
	<b>Mean score = 2.02</b>			

Table 1 shows that the mean on knowledge on general nutrition is 2.40, Child nutrition is 1.91, this indicates that in the area of child nutrition, most of the respondents are very low while malnutrition is 2.20. All are below 2.50 which is less than the criterion mean of 2.50. Therefore, analysis of the research question one shows that the nutritional knowledge of primary school pupil's mothers in Etsako West Local Government Area of Edo State is low

**Research Question 2:** What is the nutritional status of primary school pupils in Etsako Local Government Area of Edo State?



**Table 2: Nutritional status of primary school pupils in Etsako West Local Government Area of Edo State**

BMI range	Nutritional status	Percentile range	No. of pupils	Percentage (%)
Below 18.5	Underweight	Less than the 5 <sup>th</sup> percentile	108	36.1
18.5-24.9	Healthy weight	5 <sup>th</sup> percentile to less than the 85 <sup>th</sup> percentile	86	28.8
25.0-29.9	Overweight	85 <sup>th</sup> to less than the 93 <sup>th</sup> percentile	67	22.4
30 and above	Obese	Equal to or greater than the 95 <sup>th</sup> percentile	38	12.7
<b>Total</b>			299	100

\* Height or Weight is below expected average

The result shows that the 36.1% were underweight, 28.8% were healthy weight, 22.4 % were overweight while 12.7% were obese. This shows that the nutritional status of most of the pupils were poor as majority (n = 108) representing 36.1percent were underweight. This shows that pupils of ages 9-12year were mostly underweight and therefore, their nutritional status was poor.

**Table 3: Relationship between Nutritional Related Knowledge of Mothers and the Nutritional Status of Pupils**

Variables	$\bar{X}$	S.D	Pearson r-coefficient	p-value	Remarks
Nutritional Related Knowledge	2.11	.881	.546**	0.000	Null hypothesis rejected (p<0.05)
Nutritional Status	2.52	.537			

\*. Correlation is significant at the 0.05 level (2-tailed).

**Note:** Pearson r- coefficient  $\pm 0.00 - 0.39$  = Weak relationship

Pearson r- coefficient  $\pm 0.40 - 0.69$  =Moderate relationship

Pearson r- coefficient  $\pm 0.70 - 1.00$  =Strong relationship

The data in Table 3 showed that the mean ( $\bar{X}$ ) and the standard score (S.D) of the respondents (N=299) were 2.11 and 0.881 for nutritional related knowledge and 2.52 and .537 for nutritional status respectively while the Pearson correlation coefficient of 0.546 was statistically significant (p<0.05). Therefore, the null hypothesis was rejected while the alternate hypothesis was

accepted. This indicated that there was a significant relationship between nutritional related knowledge of mothers and the nutritional status of pupils in Etsako West Local Government Area of Edo State.

## **Discussion**

### **Nutritional Knowledge of Primary School Pupil's Mothers**

The result showed that the nutritional knowledge of primary school pupil's mothers in Etsako West Local Government Area of Edo State was poor. The result agreed with that of Mahmoud and Ghaly (2019) who found that only 4.7% of the study subjects – women had good knowledge about nutrition. As much as 81.6% of them had fair knowledge and only 13.8 % had poor knowledge. The result is in line with that of Akeredolu et al (2019) who found that the mothers' nutritional knowledge as revealed by the test score was good in Lagos State, Nigeria. The result supported that of Yabanc, Kısaç and Karakuş (2019) who found that many of the mothers who have good nutritional knowledge level and their children have normal weight in Ankara, Turkey.

The result further agreed with that of Gichana (2019) who concluded that mothers' nutritional knowledge exists but it is poor. The result disagreed with that of Oyira and Opiah (2019) who found that most respondents had higher knowledge of nutritional and the children were well nourished in Calabar Municipality, Cross- River State Nigeria. The result is in consonance with that of Man, Uday, Hassan, Bharat, Paudel and Varalakshmi (2019) who found that most parents lack knowledge of the appropriate food items to prepare and give their girl child as there were indications of high junk foods consumption. The result supported that of Fashola, Abosede and Foluke (2018), who found that majority of the respondents, knew and had a good attitude towards good nutrition supporting studies from Kenya and Northern Nigeria. This, however, did not translate to good practice for about half of the respondents.

### **Maternal Nutritional Related Knowledge and the Nutritional Status of Pupils**

The result showed that there is a significant relationship between nutritional related knowledge of mothers and the nutritional status of pupils in Etsako West Local Government Area of Edo State. The result agreed with that of Berihu, Gerez, Hailemariam and Kidanu (2020) who found knowledge difference among the monthly income and mother's educational level. Mother's knowledge on infant and young child feeding was found to be a predictor of child's health and

nutritional wellbeing. The result is in line with that of Ikorok, Eka, Ogunjimi and Udoh (2020) who found that knowledge of maternal nutritional had significant influence on nutritional status of senior secondary school students in Akwa Ibom State. The result supported that of Akinrinmade, Njogu and Ogada (2020) who found that parents who had knowledge also had well-nourished children.

The result is in line with that of Oldewage-Theron (2019) who found that high frequency of food consumption was associated with good nutritional status of learners selected school in rural QwaQwa. The result supported that of Abdirahman (2018) who found that nutritional related knowledge of adolescent was low and this was associated with in Mandera East Sub-County, Mandera County. The result is in line with that of Ajao, Ojofeitimi, Adebayo, Fatusi and Afolabi (2018) who found that parents' had knowledge food consumption pattern and nutritional status of children in Ile-Ife, Nigeria.

The result is in consonance with that of Oimage and Omuemu (2018) who stated that food consumption patterns are personal behaviors that is developed over the years and may be influenced by physiological and social factors. Furthermore, the result agreed with that of Boylan, Lallukka, Lahelma, Pikhart, Malyutina, Pajak (2011) who found that about one third (32.1%) of secondary school students in New Delhi area consumed fast food (e.g. burgers, pizzas, fried foods etc.) three or more times per week.

## Conclusion

Food can be regarded as any substance consumed to provide nutritional support to facilitate growth and development of the body. It is responsible for sustaining life. It is known that mothers are direct providers of foods for the family. They are expected to be equipped with knowledge of nutrition, which is the science of food. This study extensively examined the nutritional knowledge of pupils mothers as it relates to the pupils' nutritional status. Based on the findings, it was concluded that nutrition related knowledge of pupils mothers in Etsako West Local Government Area of Edo State was low while their nutritional status was equally low. It also emphasized that nutritional related knowledge are direct correlates of the nutritional status of pupils in Etsako West Local Government Area of Edo State.

## Recommendations

Based on the findings, the following recommendations were made:

- a) Comprehensive public nutritional education programme for pupils, their parents and teachers, is needed to promote nutritional health with the necessary political will of the governments at all levels to ensure sustainability; establishment or improvement where it already exists.
- b) The school feeding programme in Edo State should be adequately financed, well managed and monitored by the state ministry of education to ensure pupils are feed with the right diet in quality and quantity in order to make up for whatever good meals their parents could not afford them from home.

### References

- Akeredolu, I. A., Osisanya, J. O. Seriki-Mosadolorun, J. S. & Okorafor, U. (2019). Mothers' nutritional knowledge, practices and nutritional status of children. *European Journal of Nutrition & Food Safety*, 4(4), 364 – 374.
- Akinrinmade, R., N. E. & Ogada, I. (2019). Effectiveness of nutrition education on nutrient intake and nutrition status of infants in Ondo State, Nigeria. *Am Journal of Biomed Science & Research*, 1(1), 12 – 24.
- Abdirahman, M. K. (2018). Nutrition knowledge, dietary practices and nutrition status of adolescents in Mandera County, Kenya. *An unpublished dissertation submitted to Kenyatta University*
- Ajao, K. O., Ojofeitimi, E.O. Adebayo, A. A., Fatusi, A.O. & Afolabi, O.T. (2019). The influence nutritional status of children status of under-five children in Ile-Ife, Nigeria. *African Journal of Reproductive Health*; 14(4),1 23.
- Berihu, A., Gerez,B. A., Hailemariam, B. & Kidanu, K. (2020). Mother's knowledge on nutritional requirement of infant and young child feeding in Mekelle, Ethiopia, Cross sectional study. *Global Journal of Medical research Interdisciplinary*, 1(1), 34 – 48.
- Ehwarieme T.A, Ogbogu, C.J, Mbadugha, C. & Obiekwu, A. L. (2018).Assessment of the nutritional status among under-five children in Evbuotubu community Egor Local Government Area, Edo State. *African Journal of Nursing and Midwifery*, 6(4),772 – 780.
- Federal Republic of Nigeria (2013). *National Policy on Education (6<sup>th</sup> Edition)*. NERDC press.
- Gichana, M. B. (2019). Nutritional knowledge of mothers and nutritional status of their children 6-59 months under Malezi Bora programme in Kawangware sub location, Dagoretti, Nairobi County. *An unpublished dissertation submitted to University of Nairobi*
- Ijarotimi, IT, Adebisi, O.A, Fatiregun, A. (2016). Urban–Rural Disparities and Determinants of Nutritional Status of Under-Five Children: An Example of Akinyele Local Government Area, Ibadan. *International Journal of Tropical Disease and Health*. 16(1),1-11.

- Ikujenlola, A. V. & Adekoya, T. S. (2020). Nutritional status and feeding habits of females in public and private Universities in Osun state, Southwestern, Nigeria. *Journal of Food Science and Technology*, 2(1), 23 – 30.
- Ikorok, M. M., Eka, R. J., Ogunjimi, L. O. & Udoh, N. B. (2020). Determinants of nutritional status of secondary school students in Akwa Ibom State, Nigeria. *International Journal of Nutrition and Metabolism*, 4(7), 94 – 99
- Man K. T., Uday, N. Y., Hassan, H., Bharat K., G. Paudel, S. K. & Varalakshmi C. S. (2019). Nutritional assessment and factors associated with malnutrition among the elderly population of Nepal: a cross-sectional study
- Mahmoud, N. M. & Ghaly, A. S. (2019). Dietary knowledge, practices and adequacy among women. Descriptive research design. The out-patient clinic of Marsa-Matrouh maternity hospital, Egypt. *International Journal of Nursing*, 6(2), 68 – 83.
- Obarisiagbon, O.E., Omuemu, V.O. & Okojie, O.H. (2018). Nutritional status and its possible determinants among children attending early child care centres in Benin City, Edo State, Nigeria. *Niger Journal of Pediatrician*, 45 (3), 151 -158.
- Ojiako, I. A., Manyong, V. M. & Ikpi, A. E. (2019). Determinants of nutritional status of preschool children from rural households in Kaduna and Kano States, Nigeria. *Pakistan Journal of Nutrition*, 8(9), 1497 – 1505.
- Omage, K., & Omuemu, V.O. (2018). Assessment of dietary pattern and nutritional status of Undergraduate students in a private university in southern Nigeria. *Food Science Nutrition*. 1, 1–8.
- Olumakaiye, M. F., Atinmo, T. & Olubayo-Fatiregun, M. A. (2020). Food consumption patterns of Nigerian adolescents and effect on body weight. *Journal of Nutrition Education and Behavior* \_ 42, (3), 20- 32.
- Oyira, E. J. & Opiah, M. M. (2019). Nutritional knowledge and child nutrition among mothers in Calabar Municipality, Cross River State Nigeria. *International Journal of Interdisciplinary Research Methods*, 6 (4), 28 – 51.
- Ozor, M.O., Iyamu, O.A. & Osifo, U.C. (2014). Prevalence of under nutrition among under five year Children in Ekpoma, Edo-Nigeria. *International Journal of Community Research*, 3(1), 34 – 38
- Oldewage-Theron, W. H. (2019). Nutrition knowledge and nutritional status of primary school children in QwaQwa. *African Journal Clinic for Nutrition*, 2(1), 34 – 54.
- United Nations Children’s Emergency Fund. (2016). *More than 5 million Nigerian newborn miss out on head start in life*. Retrieved from [https://www.unicef.org/nigeria/media\\_10520.html](https://www.unicef.org/nigeria/media_10520.html)
- WHO (2013). Global Strategy for Infant and Young Child Feeding Practices, Geneva health organization, Switzerland.
- Yabancı, N., Kışaç, I. & Karakuş, S. S. (2019). The effects of mother’s nutritional knowledge on attitudes and behaviors of children about nutrition. *Procedia - Social and Behavioral Sciences*, 1(1), 4477 – 4481