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## A Systematic Study of the Knowledge and Perception of Malnutrition on Academic Performance among Public Secondary Schoolstudents in Ondo State, Nigeria

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### ABSTRACT

Malnutrition has a long term consequence on intellectual ability, economic productivity, reproduction performance and susceptibility to diseases in Nigeria, it was estimated that 2 million children are suffering from severe acute malnutrition (SAM) among children of school age. It is in the light of the above that this study aims at assessing knowledge and perception of malnutrition on academic performance among students of government – owned secondary schools in Ondo state. A descriptive cross-sectional design was used for this investigation. The sample consists of three hundred and eighty four (384) Students drawn from six selected Public Secondary Schools across the three senatorial Districts in Ondo State. A systematic sampling technique was used to select the participants from the study population using their school registers. The field work was carried out between February and May 2023. Data were collected through questionnaire and the results were analyzed using descriptive statistics (Frequency table, percentage, standard deviation, mean and numbers) and inferential statistics (chi- square) using statistical package for social sciences (SPSS). The result of the study showed that majority of the respondents have good knowledge and perception of malnutrition as 381 representing 97.2% of the respondents agreed that non-availability of food at home can make children to be malnourished, Also 97.2% of the respondents equally agreed that poor financial status of parents contributed to the issue of malnutrition among learners. In the same vein, 380 of the respondents representing 98% agreed that large family size contributed to malnutrition. The result further showed that there is significant relationship between the knowledge of malnutrition of the respondents and academic performance ( $r = 3.0, p < 0.000$ ). Also, there is significant relationship between perception of malnutrition and academic performance ( $r = 2.755, p < 0.000$ ). Similarly, the findings further showed that there is a significant relationship between the respondents age and malnutrition ( $r = 5.643, p < 0.000$ ). Conclusively, the study reveals that the respondents have good knowledge and perception of malnutrition. They equally agreed that malnutrition has negative effects on their academic performance. However, it is recommended that government should introduce comprehensive nutrition education among the target population, advocate birth control among adults of reproductive age, introduce efficient poverty alleviation programmers' and policies, improve on the home grown School feeding Programmes and extend it to Secondary Schools among other interventions so as to frontally address the problem of malnutrition among Students. Suggestions for future research are provided.

### INTRODUCTION

Malnutrition has been identified as the main factor for poor academic performance in schools. Studies had also shown that malnutrition among the school age children is a risk factor for high absenteeism, early dropout, low school enrolment and unsatisfactory classroom performance.

Malnutrition in all its forms is closely linked, either directly or indirectly, to major causes of death worldwide. Maternal and child under nutrition has long-term consequences for intellectual ability, economic productivity, reproductive performance ease (Black,2008). There are evidence-informed interventions that, when implemented effectively, can dramatically reduce the rate of malnutrition (WHO, 2013a). In Nigeria, the consequences of under nutrition cannot be overemphasized. Nevertheless, global progress has been too slow to meet the nutrition target of Sustainable Development Goals.

On 1st April 2016. the United Nations national assembly proclaimed 2016-2025 the United Nations Decade of Action on Nutrition. This proclamation is a commitment by the United Nations to undertake 10 years of sustained and coherent implementation of polices, programmes and increased investments to eliminate malnutrition in all its forms globally.

The decade with increase visibility of Nutrition of nutrition action at the highest level in order to straighter multi-sectoral collaboration, create synergies and measurable progress towards sustainable food system and nutrition security for all. ( United Nations System Stand and Committee on Nutrition UNSCN).

Other high-level UN initiatives that have focused on nutrition include the revised Comprehensive Framework for Action (High Level Task Force on the Global Food Security Crisis. 2011) and the Global Strategy for Women's and Children's Health (UN Secretary-general, 2010).

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The UN General Assembly also convened the High-level Meeting on the Prevention and Control of Non-communicable Diseases (NCDs), and adopted a political declaration that included reducing NCD risk factors, such as unhealthy diets (UN, 2011a).

Two years later, In May 2010, the World Health Assembly adopted a resolution (WHA 63.23) that included urging Member States to increase their political commitment to (WHO, 2010a): prevent and reduce malnutrition in all its forms, strengthen and expedite sustainable implementation of the global strategy for infant and young child feeding, develop or review current policy frameworks for addressing the double burden of malnutrition, scale up interventions to improve infant and young child nutrition and strengthen nutrition surveillance.

In May 2012, the World Health Assembly adopted a resolution (WHA 65.6) that endorsed the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition, which includes six global targets for 2025 (WHO, 2012): 40 % reduction in childhood stunting, 50 % reduction in anemia in women of reproductive age, 30 % decrease in low birth weight, 0 % increase in childhood overweight, an increase in the rate of exclusive breastfeeding in the first 6 months to at least 50%. a reduction in childhood wasting to less than 5%. Recently, the relationship between nutrition, health and academic performance of the children in Nigeria has generated interests of researchers, educators, governments and policy makers.

In Nigeria, the government created the National home grown School feeding program (NHGSFP) in 2016 in its bid to curb malnutrition of children in School. This is to address hunger and malnutrition among children, enhance school enrolment, and increase agricultural production and economic growth. The programme, according to the reports, had fed over 53,000 school and 9.9 million pupils in 35 states and federal capital territory engaging over 127,000 food vendors nationwide. There were also 100 aggregators in preparing a ₦70 per meal per child in a 20 days feeding circle. The programme is being implemented through the state Governments and funded solely by the federal government.

The program for now is being operated only in the primary schools and it is expected to be extended to the secondary Schools in order to make it a holistic approach to reduce malnutrition among the students of both Primary and Secondary Schools.

However, in Ondo state, the programme had run into crisis as the food vendors employed by the state government for cooking for the pupils have reduced the ration served as a result of present hike in food prices, increase in enrolment figures of the pupils and shortage of funds. The impact of malnutrition on the level of educational achievement of students has not been fully diagnosed as a result of wrong perception and inadequate knowledge about the importance of nutrition and many deleterious effects of malnutrition on students academic performance.(Nwuzue, 1995).

In the light of the above, this study aims to find out the knowledge and perception of malnutrition on academic performance among public secondary school students in Ondo State.

### Statement of Problem

Most countries in all regions reported nutrition activities in pre-, primary and secondary schools. Training of staff in nutrition and health was the most commonly reported activity; provision of safe water and hygiene promotion were also frequently reported, except in the countries of the African Region. Clearly, more comprehensive health and nutrition programmes are required to improve the school environment in the African Region to become health and nutrition friendly. In addition, provision of milk, or fruit and vegetables, in schools was reported by half the countries in all regions, except in the African Region and the South-East Asia Region.

In Nigeria, food consumption both in quality and quantity has decreased substantially since the introduction of structural adjustment programme (SAP) in 1986. This period precipitated considerable decrease in household income and an unprecedented increase in food prices. The intervention of the federal government through its home grown school feeding programme (HGSFP) that was kicked off in 2016 to address the hunger and malnutrition among the school children has not delivered on its mandate because of poor implementation and paucity of funds.

Schools offer many opportunities to promote healthy dietary and physical activity patterns for children. They are also a potential access point for engaging parents and community members in preventing children's nutrition problems, including both under-nutrition, and obesity and diet-related NCDs. Comprehensive school health and nutrition programmes also provide a good opportunity to improve nutrition of adolescent girls, which in turn contributes to the improvement of future maternal, infant and young child nutrition, and to the prevention of obesity and diet-related NCDs later in life.

According to Amoah (2019), The main problem, then is simply lack of knowledge about the importance of nutrition and the serious repercussions of malnutrition on school going children in line with academic performances. Therefore the knowledge and perception of malnutrition and its effects on students academic performance needs to be properly evaluated so as to recommend effective polices and intervention programmes that will curb the menace among the secondary schools students in Ondo state.

This study is guided by the following research questions.

1. What is the level of knowledge of students of public secondary schools in Ondo state on malnutrition?
2. What is the level of perception of students of public secondary schools in Ondo state on malnutrition?
3. What are the effects of poor nutrition on academic performance among the students of public secondary schools in Ondo state?

### General Objective

The main objective of the study is to examine the knowledge and perception of malnutrition on academic performance among students of public secondary schools in Ondo state.

### Specific Objectives of the Study

- To determine the level of knowledge of students of public secondary schools in Ondo state on malnutrition.
- To assess the level of perception of malnutrition among students of public secondary schools in Ondo state
- To determine the effects of malnutrition on academic performances of students of public secondary schools in Ondo state.

### Research Hypotheses

H<sub>01</sub>: There is no significance relationship between respondents demographic profiles and incidence of malnutrition in public secondary schools in Ondo state

H<sub>02</sub>: There is no significance relationship between the respondents knowledge of malnutrition and academic performance in public secondary schools in Ondo state

H<sub>03</sub>: There is no significance relationship between the respondents level of perception of malnutrition and academic performance in public secondary schools in Ondo state.

## LITERATURE REVIEW

### Concept of Malnutrition

Malnutrition is a complex phenomenon. Broadly defined, malnutrition refers to the condition of inappropriate nutrition (WHO, 2022). In the past, discussions of malnutrition in the context of health issues in low-income countries often used this term to refer to the condition of “under nutrition” associated with what was presumed to be protein-energy malnutrition and operationally defined as a deficit in anthropometric status or by the presence of clinical signs such as oedema or altered hair colour. In more recent years, various vitamin and mineral deficiencies, including vitamin A, iron, iodine and zinc have been recognized as discrete types of malnutrition that adversely affect human health and contribute to disease and mortality. Some of these nutrients affect closely related biological systems; for example both vitamin A and zinc play important roles in maintaining different aspects of immune function (Gandstead, 1986) and both vitamin A and iron affect haemoglobin metabolism (Brown and Pulin, 1986). Ecological-level studies have demonstrated that the prevalence of these micronutrient deficiencies are high in many of the same countries, thus many individuals may suffer from multiple micronutrient deficiencies at the same time. However, relatively few data are currently available for quantifying either the joint distribution of multiple deficiencies or the impact that multiple micronutrient deficiencies have on specific health outcomes.

Vitamin A is an essential nutrient required for maintaining immune function, eye health, vision, growth and survival

in human beings (National Research Council 2017).

At present, vitamin A deficiency remains a widespread public health problem, especially in countries of South Asia and Africa. Globally, preschool-age children and women of reproductive age are the two population groups most commonly recognized to be at risk of this nutritional deficiency and its adverse health consequences. A combination which is chronically lower than required dietary intakes of vitamin A-rich foods (eggs, milk, liver, deep orange fruits and dark green leafy vegetables, etc.) combined with mal absorption and increased vitamin A excretion rates associated with some common illnesses places many women and children at risk of developing vitamin A deficiency (Fawzi, Chelmers, Herrera and Mosteller, 1993).

No single indicator can be reliably used to assess the full spectrum of vitamin A deficiency. Different aspects of vitamin A status are assessed using clinical indicators, biochemical indicators, functional indicators and histological indicators (NRC 2018). In humans, vitamin A is stored almost exclusively (>90 %) in the liver and some investigators propose liver and/or total body stores as a primary indicator of vitamin A status. Although recent isotope dilution techniques is to indirectly measure liver vitamin A stores have yielded promising results (WHO 2012) these techniques have not yet been used in large-scale population-based surveys.

At the population level, the prevalence of vitamin A deficiency can be determined based on the prevalence of either: (i) night blindness, usually obtained by verbal recall; (ii) other eye signs of xerophthalmia (Bitot's spots or corneal lesions); or (iii) biochemical indicator values (serum retinol, breast milk retinol, relative dose-response test, modified relative dose-response test, or serum 30-day response), or histological indicator values (conjunctival impression cytology [CIC] that fall below a defined cut-off point (WHO 1996). Until recently the majority of nationally representative, large-scale surveys related to vitamin A deficiency were conducted primarily among preschool-age children.

Protein-energy malnutrition is highly prevalent in Nigeria due to faulty weaning practices, poverty, poor sanitary conditions, inadequate medical attention and endemic childhood infections (Nweze, 1995). Research as proof that deficiency of protein intake which is known as protein energy malnutrition as led to poor academic performance by children and caused young children to be lethargic, withdrawn and passive all of which affect social and emotional development (Amoah, 2019).

Similarly, children suffering from severe protein energy malnutrition (PEM) enroll late in school, drop out early and exhibit academic deficits.

According to Pridmore (2007), Zinc is needed by the children to grow and develop as from a month old. This essential mineral is important for immune function, wound healing and development of senses of smell and taste. Researchers revealed that zinc deficiency may lead to deficits in children's neuropsychological functioning,

activity or motor development, and thus interfere with cognitive performances. Iron-Deficiency Anaemia (IDA) is one of the world's most widespread health problems across African and Asian countries

Iron-Deficiency anaemia is caused by poor diet and loss of blood due to worm infestations. Anaemia leads to weakness and poor physical growth, and a compromised immune system-decreasing the ability to fight infections and increasing morbidity (Pridmore,2007)

### Causes of Malnutrition In Nigeria

Malnutrition in Nigeria directly or indirectly is the cause of 45% of all deaths of under five children. Malnutrition is referred to as deficiency or excesses of nutrient intake, imbalance of essential mineral or impaired nutrient utilization. In Nigeria, the situation of malnutrition is very appalling. In the world, Nigeria has the second highest burden of stunted children with national prevalence rate of 32 percentages of children under five. (Galal and Hulett, 2003).

Also an estimated of 17 million children are suffering from severe acute malnutrition (SAM) giving Nigerian the highest burden of malnutrition in Africa and the second highest in the world. According to Igbedioh (1993). The main reason why malnutrition is high in Nigeria is its close association with poverty, with 47 percent of Nigerians (98 million) living in multi dimensional poverty.

Other underlying causes of malnutrition in Nigeria are;

- Inadequate food intake.
- Inadequate food production.
- Ignorance.
- Uneven distribution of food.
- Poor food preservation techniques.
- Taboos
- Poor sanitation
- Over population
- Diseases like Dysphagia, cancer, malaria e.t.c.
- Alcohol or drug abuse
- Poor lifestyle choices and
- Insecurity which has affected farming activities in rural areas.

### Effects of Malnutrition in Children

According to FOA (2012), The philosophy of any government is geared towards creating individuals that are intellectually spiritual, emotionally and physical balanced with requisite knowledge, skills, values and attitudes for self-actualization and for the socio-economic and political transformation of the nation

In the past, nutrition was relegated to the background and was rarely considered by the policy maker when designing and implementing educational programmes aimed at improving participation and high performance of school children.(Oseyemi,2023)

However, in recent years many countries, developmental partners and other International organizations now recognize the importance and role of health and nutrition as a key component for the achievement of global goals

such as the millennium Development Goal (MDG<sup>2</sup>) and Education for All Campaign (EFAC).

In the same vein, the relationship between nutrition, health and education achievement of children in developing countries has been of interest to many researchers due to the frequent observation that many children do not enroll on time and in most cases do not complete primary school education.

Recent studies have found out severe stunting in the first two years of life lowers test scores in school age (8-11 years) chronic malnutrition lowers language and mathematic test scores and that short stature may lead to late enrolment for primary school children (World Bank, 2017).

In addition, all the following conditions are linked to children health status and malnutrition rates;

- Physical retardation/ stunted growth.
- High rate of absenteeism.
- Reduced intelligence quotient.
- Deficiency of Vitamins.
- Dyslexia.
- Blindness/visual impairment.
- Lethargy.
- Brain shrinkage and
- Illness or Death.

### Theoretical Framework of the Study

The Health Belief Model of the various models in health psychology that are used to explain health behaviour, the health belief model provides the most appropriate theoretical framework in which to examine how Nigerian parents think about malnutrition and educations. The health belief model (HBM) is a social-cognitive model developed in the 1950's by the US public health services (Mullen, Heresy & Iverson 1987 which is often used to explain and predict health related behaviors (Stretcher & Rosenstock 1966). This model is often being used to predict a variety of preventative health behaviours, such as dental checkups, dieting, driving under the influence and sexual risk behaviours.

The basic components of the health belief model are derived from a well-established body of psychological and behavioural theory whose various models hypothesize that behaviour depends mainly upon two variables: 1. The value placed by an individual on a particular goal; and 2. The individual's estimate of the likelihood that a given action will achieve that goal. In the context of health-related behaviour, these correspondences are: 1. The desire to avoid illness (or if ill, to get well); and 2. The belief that a specific health action will prevent illness. For example, if a person's goal is to avoid a health problem, the individual must feel personally vulnerable (perceived susceptibility) to a problem judged to be potentially serious (perceived severity), and he or she must estimate that specific action will be beneficial in reducing the health threat 10(perceived benefit) and will not involve overcoming obstacles (perceived barriers). Thus, as Rosenstock notes in describing this model," the combined levels of susceptibility and severity provided

the energy or force to act and the perception of benefits (less barriers) and provided a preferred path of action. The relevance of this theory to this study is hinged on the fact that the general belief of the students of public secondary schools in Ondo state on malnutrition will go a long way in determining how they will embrace any intervention programme designed to reduce incidence of malnutrition in the schools.

### METHODOLOGY

The research design adopted for the study is descriptive research design. This method allows for collection of data in a quantitative manner. The study population comprises Junior Secondary School Students (JSS 1-3) of the following public schools in Ondo State: Fiwasaye Girls Grammar School, Akure; Ondo Boys High School, Ondo; Jubilee College, IkareAkoko; Owo High School, Owo; Holy Saviours High School, Ile Oluji and Stella Maris College, Okitipupa) to determine the sample size of this study. Leiz Fisher's formula was adopted.

Thus, 384 respondents were considered at the sample size using systematic sampling technique. Consequently, a structured questionnaire was designed and distributed to all the selected students in these schools as follows:

- 64 respondents from Fiwasaye Girls Grammar School, Akure;

- 64 respondents from Ondo Boys High School, Ondo;
- 64 respondents from Jubilee College, IkareAkoko;
- 64 respondents from Owo High School, Owo;
- 64 respondents from Holy Saviours High School, Ile Oluji and

• 64 respondents from Stella Maris College, Okitipupa) The instrument used for data collection is a questionnaire which was constructed by the researchers to obtain information from the respondents for the purpose of the study. The research instrument has four sectors: Section A, B, C and D. Section A deals with the bio-data of the respondents. Section B and other sections consist of questions raised in the research questions embedded in chapter one of the projects. The questions were open & closed ended questions. The researchers were personally involved in administering the questionnaire but was assisted by some of the school teachers at a point. Also, some of the teachers assisted in the collection of the filled questionnaire from the students.

### Data Presentation Analysis

The Data generated were analyzed using descriptive statistics such as: frequency table, percentage and inferential statistics (Chi-square).

Table 1 presents the demographic profile of the

**Table 1:** Social Demographic Profile of the Respondents

Variables	Frequency	Percentage
<b>Gender</b>		
Male	200	52.08
Female	184	47.91
<b>Total</b>	<b>384</b>	<b>100</b>
<b>Age Group (year)</b>		
<12	200	52.08
12yrs – 14 yrs	100	26.04
15yrs and above	84	21.87
<b>Total</b>	<b>284</b>	<b>100</b>
<b>Educational Status</b>		
JSS1	184	47.91
JSS2	100	26.04
JSS3	100	26.04
<b>Total</b>	<b>384</b>	<b>100</b>
<b>Religion</b>		
Christianity	305	79.4
Islam	75	19.5
Traditional	4	1.04
<b>Total</b>	<b>384</b>	<b>100</b>
<b>Marital Status of the Parents</b>		
Married	338	88.02
Single	14	3.64
Divorced	18	4.68
Separated	15	3.98

<b>Total</b>	<b>384</b>	<b>100</b>
<b>Type of Marriage of the Parents</b>		
Monogamy	242	63.02
Polygamy	142	36.9
<b>Total</b>	<b>384</b>	<b>100</b>
<b>Level of Education of the Parents</b>		
No Formal Education	20	5.2
Primary School Education	29	
Secondary School Education	250	76.3
Tertiary Education	105	27.3
<b>Total</b>	<b>384</b>	<b>100</b>

respondents by gender, age, religious status, educational status etc.

The result shows that the majority of the respondents were male respondents 52.08% while 47.9 were female. 52.08% were less than twelve years of age while 26.04% were between ages of 12-14yrs and 21.8% accounts for age 15yrs and above. With respects to education status 47.9% of the students were in JSS1 while 26.04% were

in JSS2 and 26.04% were in JSS3. Their religion status reveals 79.4% Christians, 19.5% Muslim and 1.0% Traditionalists.

**Research Question 1**

What is the level of knowledge of respondents on Malnutrition?

The below table presents the respondents knowledge

**Table 2:** Response on Knowledge of Malnutrition Among Respondents

Variables	Yes%	No%
Where Do You Hear About Malnutrition?		
TV	288(75%)	96(25%)
Radio/ Jingle	299(77,86%)	85(22.14%)
Newspaper	249(65%)	135(35%)
Parents	230(60%)	154(40%)
Schools	300(78.13%)	84(21.87%)
Can non-availability of food at home result in malnutrition?	381(99.22%)	3(0.78%)
Can the financial status of the parents cause malnutrition?	381(99.22%)	3(0.78%)
Malnutrition can cause disease in the body ?	380(98.96%)	4(1.04%)
Poor hygiene condition contribute to issue of malnutrition?	230(60%)	154(40%)
Malnutrition is as a result of poor knowledge of food preparation on the part of parents?	222(58%)	162(42%)
Malnutrition is caused by inflated price of food item in the market?	307(80%)	77(20%)
Large family size can bring about malnutrition?	380(98.96%)	4(1.04%)
Malnutrition is common among the children of the poor?	288(75%)	96(25%)

on malnutrition. The result shows that the majority of the respondents 300 representing 78% heard about the issue of-malnutrition from the school. 381 representing 99.22% agreed that inability of food at home can result in malnutrition while 3 of them representing 0.78% answered in contrary. As regards the financial status of the parents 381 of 99.22% of the students agreed that the poor financial status of the parents can contribute to issue of malnutrition 222(58%) of the students agreed that poor knowledge of food preparation on the part of the parents contribute to issue of malnutrition while 162 (42%) disagree. The majority of the students

380 representing 98.96% agreed that large family size to contribute two issue of malnutrition while 4(1.04%) disagree with the assertion. This implies that majority of the respondents have good knowledge about malnutrition.

**Research Question 2**

What is the level of perception of students of public secondary school in Ondo state on malnutrition?

The below table presents the perceptions of the students on malnutrition. The table reveals that 380 of the respondents representing 98.96% agreed that malnutrition is common among the children of the poor

**Table 3:** Responses on perception of malnutrition among the respondents

Variables	Yes%	No%
Malnutrition can contribute to students failure in an examination	222(58%)	162(42%)
Malnutrition usually leads to truancy on the part of students	222(58%)	162(42%)
Malnutrition usually affects students contributions in class	380(98.96%)	4(1.04%)
Malnourished students are usually fall sick	288(75%)	96(25%)
Children of the rich cannot suffer malnutrition	288(75%)	96(25%)
Most of the malnourished children are from divorced or separated parents	249(65%)	135(35%)
Malnutrition can only be caused worm infestation	307(80%)	77(20%)
Malnutrition is common among the children of the rural dweller	230(60%)	154(40%)

while 4 (1.04%) disagree. In the same vein, 380 of the respondents i.e. 96.9% agreed that malnutrition do affect the students – concentration in class. As regards the financial status of parents majority of the respondents 288 (75%) agreed that children of the rich cannot suffer from malnutrition. 249(65%) of the respondents, equally averred that most of the malnourished children are from divorced or separated parents while only 135 representing 35% disagree. In the same vein, 307(80%) of the respondents agree that malnutrition can also be caused by worm infestation while 77 representing 20% disagree with

the assertion. This implies that majority of the respondent have high level of perception about malnutrition.

**Research Question 3**

What are the effects of malnutrition on Academic performance among students of public secondary schools in Ondo state?

The table 3 above presents perception of effects of malnutrition on academic performance among the respondents, the majority of the respondents agree that mal nourished children usually have low intelligence

**Table 4:** Responses on effects of malnutrition among the respondents

Malnutrition is common among the children of the poor	380(98.96%)	4(1.04%)
Malnutrition affects students concentration in the class	288(75%)	96(25%)
Malnourished children usually have low intelligence	222(58%)	162(42%)
Malnourished children are prone to various diseases	381(99.21%)	3(0.78%)
Malnourished students usually isolate themselves from others	288(75%)	96(25%)
Malnourished students always engaged in bullying and fighting	222(57.8%)	162(42.2%)
Malnutrition results in stunted growth	230(60%)	154(40%)
Issue of malnutrition contributed to high school drop out	189(49%)	195(51%)

222(57.8%). Also, 381 representing 99.21% of the respondents agree that malnourished children are usually prone to diseases while only 3 representing 0.78% disagree. On the issue of class interaction 288 representing 75% of the respondents agree that malnourished children usually isolate themselves from others while in class. With respect to bullying among students in school 222 representing 57.8% the respondent s agree that malnourished children do not engage in bullying and in fighting in school. On the issue of physical growth of children, majority of the respondents 230 representing 60% averred that malnutrition can bring about stunted growth on the part of children. This implies that majority of the respondents

have good knowledge about the effects malnutrition among public secondary school students in Ondo State.

**Hypotheses Testing**

**H<sub>0</sub>1**

There is no significant relationship between respondent’s demographic profiles and incidence malnutrition.

The result from the above table shows there is significant association between respondents demographic profiles and incidence of malnutrition in public secondary schools students in Ondo state ( $r = 2.0, p < 0.000$ ). Therefore, null hypothesis is rejected.

**Table 5:**

Variable	N	Mean	Std	r	Sig
Demographic Profile	384	31.02	4.27133	2.0	0.000
Malnutrition	384	35.250	2.753		

n=384

**H<sub>02</sub>**

There is no significant relationship between respondents knowledge of malnutrition and academic performance in public secondary schools Ondo state. The result from the above table shows that there is

significant relationship between respondents knowledge of malnutrition and academic performance among students of public secondary schools Ondo state ( $r = 3.0$ ,  $p < .000$ ). Hence, null hypothesis should be rejected.

**Table 6:**

Variable	N	Mean	Std	r	Sig
Knowledge of Malnutrition	384	32.92	3.434	3.0	0.000
Malnutrition	384	35.250	2.753		

*n=384*

**H<sub>03</sub>**

There is no significant relationship between respondents perception of malnutrition and academic performance in public secondary schools in Ondo state.

Result from the above table shows that is significant relationship between respondents perception of malnutrition and academic performance ( $r = 2.755$ ,  $p < .000$ ). Hence, null hypothesis should be rejected.

**Table 6:**

Variable	N	Mean	Std	r	Sig
Perception of Malnutrition	384	29.441	6.324	2.755	0.000
Academic Performance	384	35.252			

*n=384*

**H<sub>04</sub>**

There is no significant relationship between effects of malnutrition and academic performance in public secondary schools in Ondo state.

Result from the above table shows there is significant relationship between the effects of malnutrition and academic performance ( $r = 3.50$ ,  $P < .000$ ). Hence, null hypothesis should be rejected.

**Table 7:**

Variable	N	Mean	Std	r	Sig
Implication of Malnutrition	384	28.41	5.234	3.50	0.000
Academic Performance	384	34.250	2.755		

*n=384*

**RESULTS DISCUSSION**

The purpose of the study was to determine the knowledge and perception of malnutrition on academic performance among secondary school students referencing some selected secondary schools across the three senatorial districts in Ondo state. The study shows that majority of the students have good knowledge of malnutrition. The study reveals that 78.13% of the respondents heard about malnutrition from the school. Also, 381 (99.22%) agreed that non-availability of food at home can make children to be malnourished. In the same vein, 97.2% representing 381 of the students are aware that poor financial status of the parents can contribute to the issue of malnutrition. In a like manner, the majority of the respondents 380 representing 98.96% agree that large family size contribute to issue of malnutrition among students. On issue of perception of malnutrition among the respondents, the study further shows that the majority of the respondent 98% agree that malnutrition can affect learners concentration in the class. Also, 249 representing 65% of the respondents, agree that ,most of the malnourished children are from broken homes (divorced or separated).

About 288(75%) of the respondents equally agree that most of the malnourished students are from poor family. On the effects of malnutrition on academic performance. The study reveals that majority of the respondents aware of the implications of malnutrition on the academic performance. The study reveals that the majority of the respondents agree that malnourished children usually have low intelligence 222(68%). Also, 381 of the respondents representing 99.21% agree that malnourished children Are usually prone to diseases. On the issue of interaction among students in the class the majority of the respondents 288 representing 75% agree that malnourished children usually isolate themselves from others while in class. With regard to issue of bullying among students, 222 representing 57.8% averred that most malnourished children do engage in bullying in the school and equally reveals that the majority of the respondents 230 representing 60% agree that malnutrition can bring about stunted growth on part of children. According to the study, there is significant association between respondents knowledge of malnutrition academic performance ( $r = 3.0$   $p < .000$ ). In the same

vein, there is also a significant relationship between respondents perception of malnutrition and academic performance ( $r= 2.755$ ,  $P <.000$ ).

This study concluded that over 95 of school children in the area have good knowledge and perception of malnutrition among learners and it is similar to the findings of the study carried out by Amoah (2019) on Academic performance of students in the Basic schools in Ghana. In the same vein, the findings of the study that most students have good knowledge and perception of malnutrition among learners in the area aligned with the findings of Galal and Hulett (2003) on the relationship between nutrition and children's education performance: a focus on the United Arab emirates.

The findings of this study which averred that students have good knowledge of malnutrition and are quite aware of some of its effects contrasted the findings of Fentiman, Hall, Bundy in 1999 on school enrolment patterns in rural Ghana: A comparative study of the impact of location, gender, age and health on children's access to basic schooling comparative education. After due juxtaposition, with respect to the locations of the previous studies, the following remedies were recommended.

However, future researchers should enlist more schools in the scientific excursion to get a boarder participation. Data were generated from the information freely supplied by the respondents whose identity remain confidential. This research was not sponsored but self-financed

## CONCLUSION

Based on the findings from the study it is concluded that the students of public secondary schools in Ondo state have good knowledge and perception of malnutrition. As regards their responses on the effects of malnutrition on academic performance, the majority agree that malnutrition has negative effects on academic performance. Although few of them disagree with the assertion but by and large the majority were quite aware.

## RECOMMENDATIONS

The findings of the study reveal that all the factors investigated are important in a bid to enable the concerned bodies to design interventions. Hence, the following measures are-recommended:

1. There should be a comprehensive nutrition education among the target population by health workers with a particular emphasis on the importance of balanced diet to students.
2. There should be more advocacy programmes for the prevention and control of malnutrition in our schools.
3. Government should further improve on the home grown school feeding programmes for schools by extending it to secondary schools as it will go along way in addressing the problem of malnutrition among learners.
4. Government and NGOs should intensify awareness campaign on food security among the populace.
5. Government should make it compulsory for schools to have school farm in order to alleviate the issue of

malnutrition among learners.

6. Birth control advocacies should be intensified to reduce large family size among the residents.

7. Implementation of socio- economic policies that would alleviate the high level of poverty and hardship among the citizens so as to provide food for the households

8. Distribution of vitamin A and iron supplements in schools

9. Integration of nutrition education in education curricular

10. Increase support for rural farmers to boost food production

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