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**Strategies for Promoting Nutritional and Health Status of
Students in Nigerian Higher Institutions of Learning**

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Abstract

The study aimed at investigating the causes of poor nutritional and health status of students in higher institutions in Nigeria and the measures for improvement for sustainable national development. The population comprised nurses, medical doctors, nutritionists, Home Economics lecturers, post graduate students; undergraduate students in colleges of education, polytechnics and universities in Delta, Edo and Lagos States. A sample of 1,500 persons was randomly selected. Questionnaire on a 4-point scale was used for data collection. The data was analysed by the use of percentages, mean and standard deviation. Findings showed that the major causes of

nutritional/health problems are tight schedule and so no enough time to prepare meal; insufficient money to prepare nourishing meals; insufficient time for resting; and insufficient money to purchase prescribed drugs. Some of the students experienced constipation, diarrhoea and typhoid fever. Some of the measures to improve the nutrition and health of the students are as follows: the consumption of fresh fruits and vegetables, the judicious use of foods in season. It was recommended among others that nutrition and health education should be given to the students.

Key words: *Nutrition Education, Health Education, Health Status, Nutritional Status, Health problems, Nutritional problems, Balanced diet, Foods in season*

Introduction

Students in higher institutions can be viewed as immediate leaders of tomorrow. These students have academic success as their goal. For this goal to be attained, this requires dedication, sacrifice, and self discipline. Students at this level are saddled with a lot of responsibilities and challenges. They need good health to be able to succeed in their academic pursuit. They need a healthy mind. A healthy mind can only be found in a healthy body.

Academic work saps a lot of energy. The brain uses glucose as a source of energy while the heart utilizes fat to be able to function appropriately. The body needs vitamins, sufficient amounts of protein, carbohydrates, water and minerals to maintain good health status. This shows that the need for good diet by students in higher institutions of learning cannot be overemphasized.

In the quest for academic success, when the needed quality diet is not available, the resultant effect is malnutrition. Many students go hungry if there is no regular food supply. Malnutrition is a common phenomenon in Nigeria. Ene-Obong (2000) reported that hunger and malnutrition have become important public health problems all over the world. In addition, ACC/SCN(1997) reported that the dietary pattern and dietary quality of most people in developing countries is grossly inadequate. The World Bank (1993) reported that at present, a third of the world's population is poor, hungry and malnourished primarily among these are the underprivileged and peri-urban communities.

Statement of the problem

Good health is fundamental if personal and national developments are to be attained. Good health is often regarded as wealth. An individual who is healthy can go a long way to maximize his potentials and achieve his goals for life. On the other hand, an individual who cannot meet his nutritional and health needs is highly incapacitated. His level of productivity as a student will be highly hindered. Studying with concentration and academic excellence will be a mirage. On this note the need to investigate the nutritional and health problems of students in higher institutions in Nigeria and their causes and the ways of alleviating such problems are timely, urgent and necessary. This is necessary especially in this present period of global economic meltdown. This is actually the central focus of this study

Purpose of the study

The purpose of the study was to find out the causes and effects of malnutrition on the students of higher institutions in Nigeria and the measures for promoting their nutritional and health status.

Specifically the objectives of the study were to:

- 1) Identify the health related problems the students have.
- 2) Identify the causes of malnutrition among the students in higher institutions of learning in Nigeria.
- 3) Identify the effects of poor health on the students in higher institutions in Nigeria.
- 4) Identify the strategies for promoting the nutritional status of the students.
- 5) Find out the various ways the health status of the students in higher institutions of learning in Nigeria can be promoted for national development.

Research questions

- 1) What are the health-related problems the students in higher institutions of learning in Nigeria have?

- 2) What are the causes of malnutrition among the students in Nigerian higher institutions of learning?
- 3) What are the effects of poor health on the students in the higher institutions in Nigeria?
- 4) What are the strategies for promoting the nutritional status of the student?
- 5) What are the various ways of promoting the health status of the students in Nigerian higher institutions of learning?

Literature review

The high rate of population growth in Nigeria and the world in general makes the supply of food to be insufficient to meet individual nutritional needs even with much effort from both individual farmers, cooperative societies and the government. Nnanyelugo et al (1992) pointed out that the food and nutrition situation in Nigeria continues to pose a formidable problem. This problem has adversely affected both the young and older people. The food shortage situation has led to malnutrition to a very large extent. Malnutrition has resulted in the prevalence of occurrence of nutritional deficiency diseases e.g anaemia, kwashiorkor and marasmus. This has led to high morbidity and mortality rates.

The major cause of malnutrition is poverty. Poverty according to WHO (1994) has its destructive effects at every stage in human life. It constitutes the world's deadliest cause of disease, death and suffering. Malnutrition predisposes one to chronic diseases such as diabetes, high blood pressure and stroke in later life (Scrimshaw, 1997 Ashworth, 1998)

At present, inadequate food supply is one of the greatest problems facing Nigerians. WHO (1994) noted that extremely poor people suffer from malnutrition, poor health and exposure to multiple diseases. These are caused by unsanitary condition and lack of water.

Inadequate intake of food results in malnutrition (under-nutrition). Malnutrition has a very complex etiology. It is related not only to the quality and quantity of food but also to unsatisfactory physical and psychological environment, poverty, infection, ignorance and lack of adequate medical care (Nnanyelugo 1992). They outlined some of the adverse effects of malnutrition and its various manifestations to include low productivity, low resistance to diseases, nutritional deficiency diseases, high morbidity and mortality rates.

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In addition, Ege and Zambakou (1998) stated that malnutrition leads to functional impairments in terms of cognitive development, educational performance, impaired work capacity and productivity. Malnutrition needs to be eradicated. The eradication of malnutrition is central to any development strategy for Nigeria and Africa in general. Investment in nutrition is an investment in human capital and thus in national development (Ngwu 2005). It was as a result of the realization of the problems of poverty and hunger that the government took a bold step. This step was the inclusion of the eradication of extreme poverty and hunger as the number one goal in the millennium development goals. In order to promote good health, people should avoid negative risk factors such as smoking. Nwagwu and Okafor (2008) stated that smoking and alcoholism are inimical to optimal health and should be avoided. WHO (1993) stated that health promotion and disease prevention are necessary. It was also stated that good health and well-being are vital for continued productivity and independence.

In an attempt to improve nutrition and health, there is now a shift in attention to technologies that are more accessible to the poor families that can be used to prepare adequate food for all groups based on locally available foods that would not demand maximum additional cost and time (Tomkins et al, 1994).

Plant based diets are cheaper and form the larger proportion of the food consumed by many Nigerians. Roots/tubers e.g. cassava and yam form the major sources of energy, protein and small quantities of other nutrients in Nigeria (Imonikebe 2007). As a result of the relatively low cost of purchasing roots/tubers, many people tend to consume them often.

One setback in the consumption of plant foods is that they are usually deficient in some essential amino-acids. They also contain certain anti-nutritional factors, which lead to interference with the availability of some nutrients present in the food that are needed for body functioning (Imonikebe 2007). Most people including students could be eating some of these foods. Certain plant foods need to be processed in order to improve the nutritional quality and organoleptic quantities.

Methodology

The study is a survey research on the measures for promoting the nutritional and health status of students in higher institutions of learning in Nigeria for sustainable national development. The population of the study comprised nurses, doctors, nutritionists, Home Economists, students in colleges of education, polytechnics and universities in Delta, Edo and Lagos States.

Random sampling method was used to obtain a sample of 1,500 persons. Five hundred persons were sampled from each state. Three hundred people were sampled from each university; 100 from one polytechnic and 100 from one college of education. The nutritionists, Home Economists, nurses and doctors were sampled from the Delta State University. This summed up to 21 persons. The others (479) were students. In Edo State, 500 students were sampled; the same with Lagos State. Questionnaire was used for data collection. Copies of the questionnaire were given to Home Economics lecturers to validate. After this, necessary corrections were made on the questionnaire before administering it. Section A of the questionnaire was on the demographic variables of occupation. Section B and C were on a 4-point scale of strongly agree, agree, disagree and strongly disagree. These were effects of poor nutrition and health and the measures for improvement.

One thousand five hundred (1,500) copies of the questionnaire were administered to the respondents by the help of research assistants. The number returned and used for the study was 1,380. The responses to the questionnaire items were put in frequency distribution tables. The percentages of the background information of the respondents were calculated. The mean responses of the items on the causes/effects of malnutrition, nutritional and health measures were computed. Any item with mean between 2.50-4.00 was regarded as being an important cause, or effect or solution. Any item with mean below 2.50 was perceived to be unimportant cause or effect or solution.

Results

Findings showed that 1107 (98.1%) of the respondents were students. Others (21) (18.6%) were Home Economists, nutritionists, nurses and doctors.

It was found that none of the students was below 20 years; 631 (57.0%) were between 20-25 years. Some (311) (28.1%) were between 26-30 years. Only 22 (1.99%) were between 31-35 years. Ninety three (8.4%) of the students stated that their health was very alright; 568 (51.3%) reported that their health was alright. Fourteen (1.26%) said their health was slightly alright. Twenty-one (2.09%) stated that their health was not alright.

Table 1 showed that 20.8% of the students usually received treatment from chemists and 50.1% got treated at their institution's clinic/medical centre. Other sources of treatment are shown on the table.

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The proportion of the students who cook was 607 (66.57%) while 287 (20.17%) did not cook. For those who did not cook 158 (15.7%) of them stated they usually eat in restaurants/cafeteria or purchase food from food vendors/hawkers. Few 111 (10.0%) stated that they purchase fast foods. The students who stated that they usually feed well were 511 (50.7%) while 275 (25.0%) stated they did not often feed well. The reasons given for not feeding well by the students was stomach ache by 36 (3.57%) of the students. Lack of appetite was the reason given by 123 (12.2%) while 112 (11.1%) complained of lack of food.

Table 2 showed that items 1, 2, 3,4,5,6, and 9 each had mean above 2.50. This implied that the items were the serious feeding problems that militate against the students in higher institutions of learning in Nigeria. The other items 7, 8, 10-14 with mean below 2.50 are perceived by the students as minor problems that adversely affect their feed 796 students

Table 3 showed that all items 1-11 have their mean each above 2.50 this indicated that all the items 1-11 are the problems that militate against the health of the students in higher institutions in Nigeria.

Findings from the study showed some of the problems some students have. Some (112) (11.1%) complained of going hungry at times. Also 136 (13.4%) have the problem of poor academic achievement. Also 332 (32.0%) had the problems of lack of energy to work. Few (227) (20.5%) had fear of failure.

Table 4 showed that all the items 1-25 each had a mean above 2.50. This indicated that all the items were perceived by the respondents as useful measures for promoting the nutritional status of the students in higher institutions of learning in Nigeria.

Table 1: Sources of treatment sought by the students in higher institutions of learning in Nigeria

Sources of treatment	Frequency	Percentage
(A) Chemists	230	20.8
(B) Self Medication	115	10.4
(C) Clinic/Medical Centre	505	50.1
(D) Pharmacists	1.4	1.26
(E) Private Hospitals	227	1.26
(G) Herbalist	-	-
(H) Prophet/Pastor/Priest for prayers	-	-
(I) Witch doctor	-	-

Table 2: The problems that the students in higher institutions of learning in Nigeria have in relation to feeding

S/N	Problems	Strongly agree	Agree	Disagree	Strongly disagree	Mean (X)	Standard deviation	Variance
1	High cost of purchasing the needed food items	480	322	161	1	3.33	0.75	0.54
2	Difficulty in getting foodstuffs to purchase (market is far away)	162	481	320	5	2.83	0.70	0.54
3	No enough time to prepare meals due to tight lecture schedule	333	301	325	3	3.00	0.83	0.69
4	Lack of knowledge of how to prepare nourishing meals	485	159	89	320	2.77	1.30	1.69
5	Lack of knowledge of the food that are nourishing	571	288	107	111	3.22	1.00	1.00
6	Preference of taking snacks most of the time	641	155	166	114	3.23	1.06	1.12
7	Forced to take snacks most of the time	158	156	161	165	2.39	1.20	1.43
8	I hate cooking	16	163	163	616	1.56	0.83	0.69
9	Preference of foods cooked in restaurants (fast foods)	266	516	150	302	2.60	1.08	1.16
10	I don't know how to cook	165	101	56	390	2.06	1.27	1.62
11	Lack of appetite for food	156	161	134	302	2.22	1.18	1.39
12	I don't like food (I force myself to eat)	52	63	169	601	1.51	0.86	0.75
13	No space to cook	22	41	72	870	1.22	0.62	0.38
14	My friends usually eat my food and not enough left for me	12	3	380	515	1.46	0.58	0.33

Table 3: The problems that militate against the health of students in higher institutions of learning in Nigeria

S/N	Problems	Strongly agree	Agree	Disagree	Strongly disagree	Mean (X)	Standard deviation	Variance
1	Difficulty in getting prescribed drugs to purchase	606	161	-	-	3.79	0.41	0.17
2	High population of students attending clinic and so long queues, stress and strain before medical attention	464	259	-	-	3.64	0.48	0.17
3	Infested environment with mosquitoes which makes one to suffer from malaria	646	30	-	-	3.96	0.20	0.40
4	Congestion in halls of residence (many students occupying a room)	706	25	-	-	3.97	0.18	0.03
5	Trekking of long distance to attend lectures due to lack of money to take transport	568	201	-	-	3.74	0.44	0.19
6	Tiredness	336	228	102	115	301	1.07	1.19
7	High cost of prescribed drugs	237	211	114	202	2.63	1.18	0.38
8	Tight lecture schedule and so no enough time to rest	514	214	15	28	3.57	0.71	0.50
9	Irregular water supply	405	209	112	61	3.22	0.96	0.92
10	Frequent blackout due to electricity power cut leading to straining to read with bush lamp/candle/battery lamps.	508	101	80	86	3.33	1.05	1.09
11	Falling sick very often	229	219	104	213	2.60	1.18	1.40

Table 4: Measures for promoting the nutritional status of students in higher institutions in Nigeria for sustainable national development.

S/N	Nutritional Measures	Strongly agree	Agree	Disagree	Strongly disagree	Mean (X)	Standard deviation	Variance
1	Eating of mixed diet comprising of all nutrients in adequate proportions	940	15	-	-	3.98	0.12	0.02
2	Eating much of vegetables to provide vitamins and minerals for good health	911	19	-	-	3.98	0.14	0.02
3	Eating much of fruits	815	49	-	-	3.94	0.23	0.05
4	Avoid eating between meals	13	932	-	-	3.01	0.12	0.01
5	Drinking enough water to aid digestion	920	180	8	-	3.82	0.40	0.16
6	Eating much of foods in season	561	172	289	-	3.29	0.90	0.81
7	Cooking meals instead of eating in restaurants	858	80	-	-	3.91	0.28	0.08
8	Avoidance of or minimizing the intake of soft drinks	751	186	-	-	3.80	0.04	0.16
9	Include milk in your diet	372	388	186	-	3.20	0.74	0.55
10	Avoiding frying of foods	391	396	288	-	3.40	0.79	0.62
11	Eating more of locally available foods	378	560	-	-	3.40	0.49	0.24
12	Avoidance or minimizing the use of refined foods e.g corned beef and biscuits, processed fruit juice	399	597	-	-	3.40	0.49	0.24
13	Minimizing the intake of snacks	356	391	-	-	3.48	0.54	0.24
14	Eating of beans complemented with either rice, yam and plantain.	481	560	61	-	3.38	0.59	0.35
15	Eating major meals instead of snacking most of the time.	913	46	-	-	3.95	0.21	0.05

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	foods e.g rice, yam to provide energy for studying							
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Table 5: Measures the students in higher institutions of learning can use to improve and maintain good health status

S/N	Health Measures	Strongly agree	Agree	Disagree	Strongly disagree	Mean (X)	Standard deviation	Variance
1	Avoidance of alcoholism	712	102	109	96	3.54	0.95	0.91
2	Avoidance of drugs abuse	910	106	-	-	3.90	0.31	0.09
3	Regular medical check up	717	108	-	-	3.87	0.34	0.11
4	Avoidance of smoking	777	223	-	-	3.87	0.42	0.17
5	Studying during the day instead of late night study	298	111	-	-	3.73	0.45	0.20
6	Avoidance of sleepless nights	898	111	-	-	3.89	0.31	0.20
7	Including of rest periods while working	564	411	-	-	3.58	0.49	0.24
8	Doing light exercise before going to bed and after waking up in the morning	751	119	156	-	3.58	0.74	0.55
9	Plan and have leisure time for relaxation	818	150	-	-	3.85	0.36	0.13
10	Wearing of protective clothing (especially the girls).	912	89	-	-	3.31	0.26	0.08
11	Practising of good oral hygiene	86	711	-	-	3.11	0.31	0.10
12	Reading under a bright clear light	905	57	-	-	3.94	0.23	0.06
13	Going for medial check up regularly	697	300	-	-	3.70	0.46	0.21
14	Avoidance of self medication	842	111	-	-	3.99	0.11	0.11

Table 5 showed that all the items 1-14 each had a mean above 2.50. This indicated that all the items were perceived by the respondents as important measures students in higher institutions of learning in Nigeria can use in improving and maintaining their health status for sustainable national development.

Discussion of results

The study identified the causes of poor nutritional and health status among students of higher institutions in Nigeria and the measures for improvement. One of the problems the students have in relation to feeding is high cost of purchasing the needed food items. This is one of the reasons why many people find it difficult to feed well. The high cost of food commodities is aggravated by the recent global economic down turn. Lack of knowledge of how to prepare nourishing meals is one of the problems experienced by the students. With this it is possible for even the students who have enough money not to feed well due to ignorance and end up eating wrong types of food. This could lead to malnutrition. Those who complain of not knowing how to cook have serious problem. Such people most of the time could depend mainly on eating of snacks or purchase expensive food from food vendors or fast foods sellers. The consumption of wrong food is a major problem. ACC/SCN (1997) reported that the dietary pattern and dietary quality of most people in developing countries is grossly inadequate. The World Bank (1993) made it clear that at present a third part of the world population is poor. There is also the difficulty in getting foodstuffs to purchase due to the fact that the markets are situated far away. This could make the students to feed on only those foodstuffs that are sold in their vicinity which may not be what they really need.

Some students prefer foods that are served in restaurants or fast foods. Such foods are usually expensive. This preference could be due to lack of interest in cooking, no space for cooking or lack of knowledge of how to cook and no enough time to prepare meals due to tight lecture schedule. Many of the students engage in long distance trek to attend their lectures. Such long distant trek could be very tiresome and energy consuming leading to weakness. Anyakoha and Mbanefoh (2002) noted that frequent long distant trek often wears and tears women down. When this is done frequently, it adversely affects one's health.

High population of students attending clinic and so long queues give students stress and strain before getting medical attention. Another problem is the difficulty of getting prescribed drugs to purchase and also lack of money to get the drugs. These are baffling problems which have to be solved urgently if the students are to maintain good health status. It is when they are healthy that they can contribute meaningfully to national development.

Students complained of congestion in their halls of residence. This is because many students are given admission into each room. Congestion does not allow for fresh air which is needed for good health. Lack of fresh air arising from congestion in a room is a predisposing factor to the spread of air borne diseases.

Tight lecture schedule could lead to tiredness, and hence no enough time for resting. This could bring about break down of health. The students falling sick very often could be due to lack of rest and failure to eat balanced diet due to high cost of feeding.

The study identified ways of improving the nutritional status of students in higher institutions in Nigeria. One of such measures is the eating of much of fruits especially those in season. These are usually fresher, more attractive, appealing, cheaper, nourishing than those out of season. Fruits are refreshing and have high depurant effects. They supply water, vitamins and minerals to the body. They provide roughage and so aid in bowel motility; thus the eating of fruits prevents constipation.

Another way of improving the nutritional status of the students is by eating of mixed diet (e.g the consumption of rice and beans together, beans and yams) comprising many nutrients in adequate proportion. This is essential because such diets will allow for nutrients interaction which usually enhances proper functioning of tissues and organs of the body.

Another measure is that of including much of vegetables in the diet. Vegetables are rich in vitamins and minerals for promoting good health. They contain roughage for the ease of bowel movement and evacuation of waste matter. The need to drink enough clean water was upheld. Water is needed for ease of digestion and for preventing the gastro-intestinal track from getting clogged. Hence water is also needed for preventing constipation.

One of the ways to promote good health is by eating much of foods in season. Foods in season are usually cheaper, easily available, fresher, nourishing and have better taste than when out of season (Imonikebe 2008). The need for the consumption of locally available food items is justified (Tomkins et al. 1994). Such foods are usually in their natural state. They are cheaper and very nourishing. Such foods should be eaten instead of the processed imported foods such as bottled fruit juice, corned beef, sardine, and biscuits.

The eating of major meals instead of eating snacks most of the time will supply much of the needed nutrients by the body. Snacks are light meals which will not provide enough energy and nutrients for hard work. Students actually need a lot of energy to attend lectures and to study. As such it is necessary to eat much of carbohydrate food e.g rice, garri and yam eaten along with leafy vegetables and meat/fish.

Some of the measures the students need for promoting good health are the avoidance of alcoholism, drug abuse and self medication. Self medication is a form of drug abuse. Swanbory and Selke (1993) referred to the need for avoidance of negative risk factors such as smoking and alcohol abuse.

The need for regular medical checkup cannot be overemphasized. Through this, some underlying ailments can be diagnosed on time and treated promptly to prevent the occurrence of complications (Imonikebe 2008). Studying during the day instead of at night could prevent the problems that arise from staying awake all night to study. While studying, there is need to plan one's time well to include rest periods. Imonikebe (2008) stressed the need to include rest periods while working to prevent one's health from breaking down.

There is need for leisure time for relaxation. All work without play, rest or relaxation leads to boredom and poor academic performance. Practising of good oral hygiene is a health measure which promotes healthy teeth and the occurrence of dental caries is minimized or prevented.

Conclusion

The study identified the nutritional and health related problems encountered by students in higher institutions of learning in Nigeria and the measures for promoting their nutritional and health status for sustainable development. Some of the health related problems they experience often are typhoid fever, diarrhea, constipation, and stomach upset. Such problems could hamper the students' academic performance. Some of the causes of nutritional and health problems are as follows: Insufficient money for feeding, lack of knowledge of how to prepare nourishing meals, long distance trek to attend lectures, and insufficient time for resting. Some of the ways of improving the nutritional and health status of the students are as follows: The students need to pay much attention to the quality of food they eat, eating of more of foods in season, eating much of fruits and vegetables and planning the use of time to include rest periods, prompt medical checkup and treatment. If these

measures are put in place, the nutritional and health status of the students in higher institutions of learning in Nigeria will be greatly improve for sustainable national development.

Recommendations

- 1) Free medical treatment should be given to students in higher institutions of learning in Nigeria. These people need to maintain good health status since they are the immediate future leaders.
- 2) Cafeteria system with highly subsidized meals should be re-introduced to higher institutions in Nigeria. This will ensure balanced diet for good health status.
- 3) Giving of bursary to students in higher institutions by government, organizations or individuals should be highly encouraged and commended. Such money can be utilized to meet the nutritional/health needs and other pressing needs for sustainable development.
- 4) Nutrition Education should be given to the students in higher institutions of learning in Nigeria. This knowledge will help them to maintain good nutritional status for sustainable development.
- 5) Health Education is needed for maintaining good health for self and national development. This is because it is only those who have good health status that can develop themselves and others.

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