

**Food and Nutrition Education and Global Question: Implication for Sustainable Development among Staff of Prince Abubakar Audu University Anyigba, Kogi State**

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**Abstract**

The study aimed at exploring food and nutritional education and global question and its implications for sustainable development. Food is captioned as having three concepts: availability, accessibility and utilization with nutritional value to the populace. Types of food were explicitly discussed under carbohydrate, Fat, Protein, Mineral, Vitamin and Water. Equally, the concept of nutrition was seen as an important factor for growth and maintenance of body. Health was viewed as a functional and metabolic efficiency of living organism. Concept of sustainable development is seen as holistic approach that puts into consideration ecological, social and economic dimensions, recognizing that all must be considered to proffer lasting solution. Inadequate knowledge of nutritional component of food was discussed, component and strategies of nutrition education was also discussed. Conclusively, having adequate knowledge of food and nutritional education will improve/reduce to barest minimum hunger and various health challenges faced by the government. And above all, investing more in capacity building and training of Prince Abubakar Audu University staffs on food and nutritional needs will improve their health condition.

**Keywords:** Education, food, nutrition, development, insecurity.

**Introduction**

The study is aimed at exploring food and nutrition education and global questions: implication for sustainable development. Education is the process of receiving any giving systematic instructions especially at school or University. The global population has increased by nearly 200% in the past 70 years, from 2.6 billion people in 1950 to 7.6 billion in 2017. Food is captioned as having three basic concepts: availability, accessibility and utilization with reference point to adequate nutritional value to the populace. Responsible consumption and production of good food and nutrition meeting the nutritional needs of a growing global population requires sustainable solutions for food production and access to water, as uncontrolled and inefficient food production causes greenhouse gas emissions and soil degradation. Good health is central to ability to handle stress and living a longer, more active life. Health is seen as the way the body is ready to adjust to new threat and infirmities. Though many people

belief that health means absence of disease but in real sense, health denotes vitality, vigour, general physical and mental wellbeing. Sustainable development constitutes those needs that are met at present without compromising the ability of the future generation. Although a lot of factors are associated with food and nutrition but for the purpose of this paper the researcher shall focus on some of the key constituent of food and nutrition.

FAO/WHO (2019) reported that nutritional problems broadly fall into two categories, those resulting from insufficient intake relative to nutritional need and those resulting from excessive and unbalanced intake of food or a particular dietary component in which Prince Abubakar Audu University Anyigba is not exempted. The main problem in Africa and elsewhere in developing countries pertaining to first group. One of the principal aims of nutritional education will be to provide people in rural and urban areas with adequate information, skills and motivation to procure and consume appropriate diets, such education should cover improvement of family food supply and more utilization of available food and economic resources to provide nutritious diet and better care for most vulnerable groups.

Nutrition education program should have at least three components which should be directed at the various social group:

- a. Increasing the nutrition knowledge and awareness of the public and of the policy maker
- b. Promoting desirable food behaviour and nutritional practices
- c. Increasing the diversity and quantity of family food supply.

Promoting food literacy is an essential strategy in supporting the development of healthy food preference and dietary behaviour among Prince Abubakar Audu University staffs. Food literacy includes five main interconnected components (Vaitkeviciute, Ball and Harris, 2015):

1. Food and nutrition knowledge
2. Food skills
3. Self-efficacy and confidence
4. Food decision
5. External factors such as: food system, social determinant of health and cultural influences and eating practices.

The food we take supplies the body with nutrient which the bodies use for growth and development. Food nutrients are group of nourishing substance, which has variety of functions (Samuel, 2012). Equally, Samuel asserts that there are six classes of nutrients, and those nutrients are carbohydrates, fat and oil (lipids), protein, vitamins, minerals and water. The study viewed food we eat in the body has been absorbed to help the body get energy, promote normal growth, maintenance and repair worn out tissue. Food is a substance consisting essentially of protein, carbohydrate, fat and oil and other nutrients used in the body of an organism to sustain growth and vital processes and to furnish energy. Food is one of the basic necessities of life. Food contains nutrients-substances essential for the growth, repair, and maintenance of body tissues and for the regulation of vital processes (Food and Agriculture Organization of the United Nations 2018).

## **Types of food**

Carbohydrates provide energy for the body. Nearly all the carbohydrates we eat come from plants. They include starches found in cereal grains and plants like potatoes and yams. Sugars, found in fruits, vegetables, and milk, are also carbohydrates. Sugarcane and sugar beets are grown specifically for their high sugar content. Many of the starches and sugars we eat have been processed into products, such as flour and corn syrup. These processed carbohydrates are used in cookies, cakes, breads, pastas, and pies.

Fatty food provides much as twice energy as carbohydrates. They also help protect and insulate the body and its internal organs. Common fats include vegetable oils, such as soybean, cottonseed, and corn oil. They are used in cooking and in the processing of many foods. Fats that come from animal products include butter and lard, eggs, milk, cheese, meats, poultry, and fish also contain high levels of fats.

Proteins are the body's chief tissue-builders. They help keep skin, bones, muscles, and blood healthy. Proteins also help regulate bodily processes, including transporting oxygen and nutrients into and out of cells; the clotting of blood; and the formation of antibodies, which help fight disease. Animal products, such as beef, fish, poultry, eggs, and dairy products, are high in protein. Grains, nuts, and some beans are also protein-rich foods.

Minerals and vitamins are called micronutrients because they are needed in very small quantities compared with carbohydrates, fats, and proteins (known as macronutrients). Minerals provide building materials for the body and help regulate its activities, much as proteins do. Calcium and phosphorus build strong bones and teeth, iron contributes to healthy blood, and iodine helps keep the thyroid gland working.

Vitamins help the body make full use of other nutrients by assisting the chemical reactions that make those nutrients work. For example, vitamin B1, or thiamine, helps regulate the release of energy from carbohydrates, promotes a healthy appetite, and aids the functioning of the nervous system. Vitamin D helps in the growth and maintenance of healthy bones.

Other essentials for the body's health include water, oxygen, and fiber. Some scientists include water in the list of basic nutrients. Water makes up more than half of a human body's weight. It is involved in most body processes, such as the regulation of temperature, the transporting of nutrients into cells, and the elimination of waste products from cells (Fang et al., 2023).

Smetana, Bornkessel and Heinz, (2019) stressed that nutrition is the study of how food and drink affect our bodies with special regard to the essential nutrients necessary to support human health. It looks at the physiological and biochemical processes involved in nourishment and how substances in food provide energy or are converted into body tissues. These nutrients, which are the sources of energy for our bodies, are classed as: carbohydrates, fats, fiber, minerals, proteins, vitamins and water. Good nutrition means obtaining the right amount of nutrients from healthy foods in the right combinations while poor nutrition can lead to a lack of energy, digestive problems, food allergies, weight gain, depression and anxiety as well as many of today's most prevalent chronic diseases like coronary heart disease, cancer. Having nutritional knowledge and making right choices about the foods you eat can help you achieve optimum health over your lifetime. An important part

of the study of nutrition is looking at diseases that can result from malnutrition and the role that food plays in the development of chronic disease.

Nutrition is an important factor for growth and maintenance of the body. Nutrition is the right feeding and use of food in the body for growth, repair and maintenance of the body tissues (Samuel, 2012). In the study, nutrition denotes the right feeding and use of food in the body for growth. Nutrients can be macronutrients and micronutrients. The macronutrients provide the calories, the energy that the body need for fuel the daily life activities, these macronutrients are needed in large quantity such as carbohydrates, protein, fat and oil while micronutrients are those food substances needed in small quantity such as vitamins, minerals which permit the body to function appropriately (Thomas, 2005). Nutritionists advise people on what to eat and how to modify their diet so they can maintain or restore optimal health or help relieve ill health and combat disease. Naturopathic nutrition seeks to uncover and support the cause of a disease, rather than just treating the symptoms as conventional medicine often does. Many people discovered that improving a poor diet to cure one symptom can often lead to other health benefits such as increased energy levels, improved skin and better sleep, amongst a number of other benefits. Under nutrition happens when the body does not get enough food to meet its needs. Many diseases and even death are caused by lack of food. Death due to lack of food is called starvation (Smetana, Bornkessel & Heinz, 2019). Therefore, food is a factor that determines one's health.

Health is seen as a functional and metabolic efficiency of a living organism. In humans it is the ability of individuals or community to self - manage when facing physical, mental or social changes (Park, Lim & Hwana et al, as cited in Ayoele, Olowoleni, Adeola, & Adams, 2020). Equally, Kujundzic (2017) stated that health is a relative term and that to the extent an individual is able to perform the function or task assigned to him by the society such an individual should be regarded as being healthy. Health impediments are those serious issues that have negative impact on health, which arise from slight deviation from normal practice and likely increase as someone becomes more and more indulged in such unwholesome practices. Many of these conditions cause long term suffering for individuals and families. In addition, cost for health care can be extremely high (World Health Organization, 2015). Though many people belief that health means absence of disease but in real sense it denotes vitality, vigour, general physical and mental wellbeing.

Kumar and Preetha (2012) viewed good health as central to handling stress and living a longer and more active life. Therefore, health is a state of complete mental and social wellbeing and not merely the absence of diseases or infirmities. Health is ability of body to adapt to new threats and infirmities and the pace at which one is able to adapt to those change is termed as sustainability. A healthy diet contains a balanced mixture of different foods that are combined together to provide all essential nutrients. Malnutrition is the lack of a balanced diet. Too few nutrients, too many nutrients, or an imbalance of nutrients (too many carbohydrates, for instance, and not enough fruits and vegetables) can lead to malnutrition.

Education is both the act of teaching knowledge to others and the act of receiving knowledge from someone else. Education also refers to the knowledge received through schooling or instruction and to the institution of teaching as a whole. Education has a few other senses as a

noun. Education is a word that covers both the act of instructing and the act of learning. It usually refers specifically to the teaching of children or younger people and the learning done by them (National Policy on Education, 2004).

### **Concept of Sustainable Development**

Sustainable development according to Brundtland. Report (1987), is development that meets the needs of the present without compromising the ability of the future generations in order to meet their own need. We cannot talk of sustainable without laying emphasis on sustainability. Sustainability is a holistic approach that puts into consideration ecological, social and economic dimensions, recognizing that all must be considered together to proffer lasting solution. Three things majorly inter play when we discuss sustainable development environment, economic and society.

Environmental sustainability tends to view the ecological integrity and how it is being maintained. All of earth's environmental system is kept in balance while those natural resources within them are consumed by human creature at a higher rate where they are able to replenish it.

Economic sustainability tries to ensure economic viability with the use of environmental resources without compromising the ecological integrity (environmental quality). It implies that human communities across the world are unable to maintain their independence and have access to the resources that they require, financially and otherwise, to meet their needs. Economic system is intact and activities are available to everyone, which may secure the livelihood of an individual. Economic sustainability is the practice of considering natural and financial resources to create long term financial stability. A system that is sustainable can last far into future with minimal negative impact. In real sense, economic sustainability can serve as a means of reducing the worldwide consumption of valuable resources to ensure they are available to future generations to create financial stability and wealth. Creating the infrastructure for economic sustainability is a complex process that involves the full cooperation of both the private and public sector. Economic sustainability helps in attaining the longevity of the global economy, preservation of human life, unrealised discoveries. Above all economic sustainability helps to reduce wasteful system, prioritizing low impact economic development, switching to renewable energy sources.

Social sustainability universally, human right and basic necessities are attainable by all people, who have access to enough resources in order to keep their families and communities healthy and secure. Healthy communities have just leaders who ensure personal labour and cultural rights are respected and all people are protected from discrimination. Sustainability tries to advocate equitable distribution of the dividends of economic gain achieved through sustainable application of environmental resources.

Sustainability is the process of living within the limits of available physical, national and social resources in a way that allows the living systems in which humans are embedded to thrive in perpetuity (Evelyn et al, 2010). The right to adequate food is a universal human right that is realized when all people have physical and economic access at all times to adequate food or the means for its procurement, without discrimination of any kind. Despite progress made in reducing chronic hunger, undernourishment still affects at least 690 million people

worldwide. Food and Agriculture Organization of the United Nations (FAO), (2019). Guaranteeing fair access to resources, rural employment and income are keys to overcoming hunger and food insecurity.

Ensuring food security requires action in multiple dimensions, including:

1. improving the governance of food systems;
2. inclusive and responsible investments in agriculture and rural areas, in health and education;
3. empowering small producers; and
4. strengthening social protection mechanisms for risk reduction.

Given that food security is defined and understood through its four dimensions availability, accessibility, stability and utilization can best be explained and measured through a ‘suite of indicators’.

### **Influence of hunger on Insecurity**

Hunger and food insecurity can be ended within a generation. For this to happen, however, more concerted efforts are required. All the pledges made to eradicate hunger and food insecurity need to be translated into policy and programme implementation and the mobilization of sufficient financial resources. Beyond its ethical dimension, hunger and food insecurity take an enormous toll on economy and have adverse consequences for the livelihoods and economic capabilities of vulnerable populations in which staff of Prince Abubakar Audu University is not left out of the scourge. The costs to society are enormous in terms of lost in productivity, health, well-being, decreased learning ability and reduced fulfillment of human potential.

Today, millions remain deprived of their right to adequate food. The realization of the right to adequate food will only occur “when every man, woman and child, alone or in community with others, has the physical and economic access at all times to adequate food or means for its procurement”. Enshrined in international law, the legally binding nature of the right to adequate food needs appropriate governance mechanisms to enhance positive realization in the country, to be established at regional and country levels. At global level, the Committee on world Food Security (CFS) provides a unique platform for food security governance. At regional, national and sub-national levels, various sectoral policies and programmes need to be designed and coordinated in ways that ensure relevance and purposeful action towards the eradication of hunger, food insecurity and malnutrition (Lang & Mason, 2017).

Food and Agriculture Organization of the United Nations (FAO), (2019) put forward these three key points

Nutrition represents an important pillar of efforts designed to facilitate achievement of Sustainable Development Goals.

Food security and adoption of healthy and sustainable diets are necessary to meet the proposed target of quality nutrition for all and environmental preservation.

Environmental impact has lessened slightly, but a comprehensive regulatory framework needed to fulfill towards the achievement of environmental and climate targets is lacking.

According to Sachs, Schmidt-Traub & Kroll, et al. (2019). Nutrition in the context of the Sustainable Development Goals agendas is listed below as extracted:



1. No poverty	Poverty limits access to adequate food intake and makes it difficult to reach nutritional recommendations.
2. Zero hunger	Unsustainable food production causes undernourishment.
3. Good health	Healthy and sustainable nutrition may reduce and well being premature death including from non-communicable diseases.
4. Quality education	Malnutrition affects learning abilities, while higher awareness may affect healthy and sustainable food choices.
5. Gender equality	Empowering women to claim their rights leads to improved quality of life and nutrition; proper nutrition improves learning performance, which can be translated into better job opportunities.
6. Clean water	Access to safe drinking water and sanitation may reduce and sanitation under nutrition.
7. Reduced Inequalities	Inequalities cause disparities in income, food, health and education access.
8. Sustainable cities	Expansion into rural area increases food and community needs, creates competition for food and water resources, and finally dependence on food purchases.
9. Responsible	Meeting the nutritional needs of and consumption a growing global population requires sustainable production solutions for food production and access to water, as uncontrolled and inefficient food production causes greenhouse gas emissions and soil degradation.
10. Life below water	Aquaculture reduces hunger and improves nutrition; however, overfishing limits bio-diversity.

Education, decent work and economic growth (SDG 4 and 8) have also been associated with better diet quality, although causal inference is still to be explained, preferential consumption of low-quality foods (energy-dense and nutrient-poor) by lower socio-educational classes may be driven by poorer accessibility to, and/or non-affordability of, higher quality foods, among other factors. United Nation (2019) states that hunger and food insecurity can be stopped within a generation. For this to occur, it requires a more concerted effort. This entire programme put in place to end food insecurity need to be implemented. The number of people in the world that are prone to hunger are approximated to nearly 690 million or 8.9 percent of the world population. In the actual sense hunger and food insecurity take a wholesome impact on economies and have adverse consequences for entire population. Though, this hunger and food insecurity has more effect(s) on rural dwellers.

From the ongoing factors, higher and more serious increase in food prices have in a way slow down or even retard the progress in food security in many countries of the world. In which Nigeria is not left out. Quick intervention and strategic approach towards planning for future generation can save the untold hardship premeditated for casted (Helland & Sorbo, 2014).

## **Conclusion**

Conclusively, having adequate knowledge of food and nutritional education will improve/reduce to barest minimum hunger and various health challenges faced by the government. And above all, investing more in capacity building and training of Prince Abubakar Audu University staffs on food and nutritional needs will improve their health condition.

## **Recommendations**

It is recommended that government at all levels should formulate policies that will bring food and nutrition supply to citizenry. For the attainment of the first suggestion, government should put in place a supervisory mechanism that will ensure adherence to citizenry in getting adequate food and nutrition supply and periodic review of those mechanisms to guarantee non-diversion of food to their destination.

## **References**

- Ayodele, K. B., Olowoleni, V. B., Adeola, M. F. & Adams, D. (2021). Lung function, coronary artery classification and metabolic syndrome in 4905 Korean. *Males. Repair Medicine, 104*: 1326- 1335.
- Brundland Commission (1987). *Our common future*. Oxford University Press. Google Scholar Pub med.
- Evelyn, T., Marino, D., Rasor- Greenhalgh, S., & Hudak, S. (2010). Navigating practice and academic change in collaborative partnership with a community advisory board. *Journal of Allied Health 39*(3), 105-10.
- Food and Agriculture Organization of the United Nations (2018). *United Nations Children's Fund, World Food Programme*. WHO. The State of Food Security and Nutrition in the World. Geneva: World Health Organization,
- Food and Agriculture Organization of the United Nations (FAO) (2019). SDG progress digital report. Available at: <http://www.fao.org/sustainable-development-goals/indicators/en/> (10 October 2019, date last accessed).
- Global scientific trend on healthy eating from 2002 to 2021. A bibliometric and visualized analysis. *Nutrients PMID. 36986189*.
- Helland, J. & Sorbo, G. M. (2014). *Food security and social conflict*. Bergen Christian Michelssen Institute.
- Kujundzic, T. M. (2017). *Anniversary of Andrija Stampar School of Public Health: 58:330*.
- Kumar, S. & Preetha, G. S. (2012). Health Promotion. An effective tool for global health. *Indian Journal of Community Medicine, 37* (1), 5-12 <http://doi:104103/0970-0218.94009>
- Lang, T. & Mason, P. (2017). Sustainable diet policy development: implications of multi-criteria and other approaches. *Proc Nutr Soc, 77*:331–46.



- Federal Republic of Nigeria (2004). *National policy on education (4th Edition)*. NERDC.
- Sachs J, Schmidt-Traub G, Kroll C. (2019). *Sustainable development report*.
- Samuel, E. S. (2012). *Our food. Friend and foe*. Snaap press Nigeria.
- Smetana, S. M, Bornkessel, S. & Heinz V. A. (2019). Path from sustainable nutrition to nutritional sustainability of complex food systems. *Front Nutr*; 6:39.
- Thomas, S. (2017). *What does nutritional status mean?* Livestrong. <https://www.livestrong.com/article/4447>.
- United Nation (2019). Sustainable development managing and protecting our common environment. [http://daccess-dds-ng.un.org/doc/UNDOC/GEM/No5/487/60/PDF/No5487/60.pdf? Open Element](http://daccess-dds-ng.un.org/doc/UNDOC/GEM/No5/487/60/PDF/No5487/60.pdf?OpenElement).
- Vaitkeviciute, R. Ball, LE, Harris, N. (2015). The relationship between food literacy and dietary intakes in adolescent. *A Systematic Review of Public Health Nutrition*. 18(4), 649-658.
- World Health Organization (2015). Global action plan on antimicrobial resistance. Available on line at [https://apps.who.int/irs/bitstream/handle/10665/193736/9789241509763-eng.pdf? sequence](https://apps.who.int/irs/bitstream/handle/10665/193736/9789241509763-eng.pdf?sequence).